



Denver Division- Colorado

DJ - Hereford Ranch
Garden Creek 22-30H
Garden Creek 22-30H

Original Wellbore

Plan: APD

Standard Planning Report

23 February, 2010

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Site Garden Creek 22-30H
Company:	Denver Division- Colorado	TVD Reference:	RIG @ 5197.0ft (TBD)
Project:	DJ - Hereford Ranch	MD Reference:	RIG @ 5197.0ft (TBD)
Site:	Garden Creek 22-30H	North Reference:	True
Well:	Garden Creek 22-30H	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		Garden Creek 22-30H			
Site Position:		Northing:	568,498.59 ft	Latitude:	40° 53' 17.941 N
From:	Lat/Long	Easting:	2,316,602.15 ft	Longitude:	104° 21' 17.932 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.74 °

Well	Garden Creek 22-30H					
Well Position	+N/-S	0.0 ft	Northing:	568,498.59 ft	Latitude:	40° 53' 17.941 N
	+E/-W	0.0 ft	Easting:	2,316,602.15 ft	Longitude:	104° 21' 17.932 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,172.0 ft

Wellbore	Original Wellbore				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	2/22/2010	8.82	67.57	53,583

Design	APD				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	316.38	

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)	(°)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
6,635.5	0.00	0.00	6,635.5	0.0	0.0	0.00	0.00	0.00	0.00	
7,385.5	90.00	316.38	7,113.0	345.7	-329.4	12.00	12.00	0.00	316.38	
12,428.7	90.00	316.38	7,113.0	3,996.8	-3,808.3	0.00	0.00	0.00	0.00	Garden Creek 22-30H

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Site Garden Creek 22-30H
Company:	Denver Division- Colorado	TVD Reference:	RIG @ 5197.0ft (TBD)
Project:	DJ - Hereford Ranch	MD Reference:	RIG @ 5197.0ft (TBD)
Site:	Garden Creek 22-30H	North Reference:	True
Well:	Garden Creek 22-30H	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
1,170.0	0.00	0.00	1,170.0	0.0	0.0	0.0	0.00	0.00	0.00
9 5/8"									
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
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

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Site Garden Creek 22-30H
Company:	Denver Division- Colorado	TVD Reference:	RIG @ 5197.0ft (TBD)
Project:	DJ - Hereford Ranch	MD Reference:	RIG @ 5197.0ft (TBD)
Site:	Garden Creek 22-30H	North Reference:	True
Well:	Garden Creek 22-30H	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)
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
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
6,635.5	0.00	0.00	6,635.5	0.0	0.0	0.0	0.00	0.00	0.00
6,700.0	7.74	316.38	6,699.8	3.1	-3.0	4.3	12.00	12.00	0.00
6,800.0	19.74	316.38	6,796.8	20.3	-19.3	28.0	12.00	12.00	0.00
6,900.0	31.74	316.38	6,886.7	51.7	-49.2	71.4	12.00	12.00	0.00
7,000.0	43.74	316.38	6,965.6	95.9	-91.4	132.5	12.00	12.00	0.00
7,100.0	55.74	316.38	7,030.1	151.1	-143.9	208.6	12.00	12.00	0.00
7,200.0	67.74	316.38	7,077.4	214.7	-204.6	296.6	12.00	12.00	0.00
7,300.0	79.74	316.38	7,105.4	284.1	-270.7	392.4	12.00	12.00	0.00
7,385.5	90.00	316.38	7,113.0	345.6	-329.3	477.4	12.00	12.00	0.00
7"									
7,400.0	90.00	316.38	7,113.0	356.1	-339.3	491.9	0.03	0.03	0.00
7,500.0	90.00	316.38	7,113.0	428.5	-408.3	591.9	0.00	0.00	0.00
7,600.0	90.00	316.38	7,113.0	500.9	-477.3	691.9	0.00	0.00	0.00
7,700.0	90.00	316.38	7,113.0	573.3	-546.3	791.9	0.00	0.00	0.00
7,800.0	90.00	316.38	7,113.0	645.7	-615.3	891.9	0.00	0.00	0.00
7,900.0	90.00	316.38	7,113.0	718.1	-684.3	991.9	0.00	0.00	0.00
8,000.0	90.00	316.38	7,113.0	790.5	-753.2	1,091.9	0.00	0.00	0.00
8,100.0	90.00	316.38	7,113.0	862.9	-822.2	1,191.9	0.00	0.00	0.00
8,200.0	90.00	316.38	7,113.0	935.3	-891.2	1,291.9	0.00	0.00	0.00
8,300.0	90.00	316.38	7,113.0	1,007.7	-960.2	1,391.9	0.00	0.00	0.00
8,400.0	90.00	316.38	7,113.0	1,080.1	-1,029.2	1,491.9	0.00	0.00	0.00
8,500.0	90.00	316.38	7,113.0	1,152.5	-1,098.2	1,591.9	0.00	0.00	0.00
8,600.0	90.00	316.38	7,113.0	1,224.9	-1,167.1	1,691.9	0.00	0.00	0.00
8,700.0	90.00	316.38	7,113.0	1,297.3	-1,236.1	1,791.9	0.00	0.00	0.00
8,800.0	90.00	316.38	7,113.0	1,369.7	-1,305.1	1,891.9	0.00	0.00	0.00
8,900.0	90.00	316.38	7,113.0	1,442.1	-1,374.1	1,991.9	0.00	0.00	0.00
9,000.0	90.00	316.38	7,113.0	1,514.5	-1,443.1	2,091.9	0.00	0.00	0.00
9,100.0	90.00	316.38	7,113.0	1,586.9	-1,512.1	2,191.9	0.00	0.00	0.00
9,200.0	90.00	316.38	7,113.0	1,659.3	-1,581.0	2,291.9	0.00	0.00	0.00
9,300.0	90.00	316.38	7,113.0	1,731.7	-1,650.0	2,391.9	0.00	0.00	0.00
9,400.0	90.00	316.38	7,113.0	1,804.1	-1,719.0	2,491.9	0.00	0.00	0.00
9,500.0	90.00	316.38	7,113.0	1,876.5	-1,788.0	2,591.9	0.00	0.00	0.00
9,600.0	90.00	316.38	7,113.0	1,948.9	-1,857.0	2,691.9	0.00	0.00	0.00
9,700.0	90.00	316.38	7,113.0	2,021.3	-1,926.0	2,791.9	0.00	0.00	0.00
9,800.0	90.00	316.38	7,113.0	2,093.7	-1,994.9	2,891.9	0.00	0.00	0.00
9,900.0	90.00	316.38	7,113.0	2,166.1	-2,063.9	2,991.9	0.00	0.00	0.00
10,000.0	90.00	316.38	7,113.0	2,238.5	-2,132.9	3,091.9	0.00	0.00	0.00
10,100.0	90.00	316.38	7,113.0	2,310.9	-2,201.9	3,191.9	0.00	0.00	0.00

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Site Garden Creek 22-30H
Company:	Denver Division- Colorado	TVD Reference:	RIG @ 5197.0ft (TBD)
Project:	DJ - Hereford Ranch	MD Reference:	RIG @ 5197.0ft (TBD)
Site:	Garden Creek 22-30H	North Reference:	True
Well:	Garden Creek 22-30H	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)	
10,200.0	90.00	316.38	7,113.0	2,383.3	-2,270.9	3,291.9	0.00	0.00	0.00	
10,300.0	90.00	316.38	7,113.0	2,455.7	-2,339.9	3,391.9	0.00	0.00	0.00	
10,400.0	90.00	316.38	7,113.0	2,528.1	-2,408.8	3,491.9	0.00	0.00	0.00	
10,500.0	90.00	316.38	7,113.0	2,600.4	-2,477.8	3,591.9	0.00	0.00	0.00	
10,600.0	90.00	316.38	7,113.0	2,672.8	-2,546.8	3,691.9	0.00	0.00	0.00	
10,700.0	90.00	316.38	7,113.0	2,745.2	-2,615.8	3,791.9	0.00	0.00	0.00	
10,800.0	90.00	316.38	7,113.0	2,817.6	-2,684.8	3,891.9	0.00	0.00	0.00	
10,900.0	90.00	316.38	7,113.0	2,890.0	-2,753.8	3,991.9	0.00	0.00	0.00	
11,000.0	90.00	316.38	7,113.0	2,962.4	-2,822.7	4,091.9	0.00	0.00	0.00	
11,100.0	90.00	316.38	7,113.0	3,034.8	-2,891.7	4,191.9	0.00	0.00	0.00	
11,200.0	90.00	316.38	7,113.0	3,107.2	-2,960.7	4,291.9	0.00	0.00	0.00	
11,300.0	90.00	316.38	7,113.0	3,179.6	-3,029.7	4,391.9	0.00	0.00	0.00	
11,400.0	90.00	316.38	7,113.0	3,252.0	-3,098.7	4,491.9	0.00	0.00	0.00	
11,500.0	90.00	316.38	7,113.0	3,324.4	-3,167.7	4,591.9	0.00	0.00	0.00	
11,600.0	90.00	316.38	7,113.0	3,396.8	-3,236.6	4,691.9	0.00	0.00	0.00	
11,700.0	90.00	316.38	7,113.0	3,469.2	-3,305.6	4,791.9	0.00	0.00	0.00	
11,800.0	90.00	316.38	7,113.0	3,541.6	-3,374.6	4,891.9	0.00	0.00	0.00	
11,900.0	90.00	316.38	7,113.0	3,614.0	-3,443.6	4,991.9	0.00	0.00	0.00	
12,000.0	90.00	316.38	7,113.0	3,686.4	-3,512.6	5,091.9	0.00	0.00	0.00	
12,100.0	90.00	316.38	7,113.0	3,758.8	-3,581.6	5,191.9	0.00	0.00	0.00	
12,200.0	90.00	316.38	7,113.0	3,831.2	-3,650.5	5,291.9	0.00	0.00	0.00	
12,300.0	90.00	316.38	7,113.0	3,903.6	-3,719.5	5,391.9	0.00	0.00	0.00	
12,400.0	90.00	316.38	7,113.0	3,976.0	-3,788.5	5,491.9	0.00	0.00	0.00	
12,428.7	90.00	316.38	7,113.0	3,996.8	-3,808.3	5,520.6	0.00	0.00	0.00	
4 1/2" - Garden Creek 22-30H (BHL)										

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
1,170.0	1,170.0	9 5/8"	9-5/8	13-1/2	
7,385.5	7,113.0	7"	7	8-3/4	
12,428.7	7,113.0	4 1/2"	4-1/2	6-1/4	