



Denver Division- Colorado

Northpark

Surprise

4-06H

Lateral only

Plan: APD

Standard Planning Report

03 February, 2010

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well 4-06H
Company:	Denver Division- Colorado	TVD Reference:	RIG @ 8238.0ft (True 32)
Project:	Northpark	MD Reference:	RIG @ 8238.0ft (True 32)
Site:	Surprise	North Reference:	True
Well:	4-06H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral only		
Design:	APD		

Project	Northpark, Jackson 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	Surprise				
Site Position:		Northing:	431,072.69 ft	Latitude:	40° 30' 47.768 N
From:	Lat/Long	Easting:	1,751,142.04 ft	Longitude:	106° 23' 42.068 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	-0.58 °

Well	4-06H					
Well Position	+N/-S	-251.4 ft	Northing:	430,882.20 ft	Latitude:	40° 30' 45.291 N
	+E/-W	-5,890.3 ft	Easting:	1,745,249.49 ft	Longitude:	106° 24' 58.331 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,217.0 ft

Wellbore	Lateral only				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	1/25/2010	9.88	66.91	53,142

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	199.94

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	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,100.0	2.00	199.94	1,100.0	-1.6	-0.6	2.00	2.00	0.00	199.94	
5,940.3	2.00	199.94	5,937.3	-160.4	-58.2	0.00	0.00	0.00	0.00	
7,294.1	90.00	199.94	6,788.0	-988.6	-358.6	6.50	6.50	0.00	0.00	
8,062.5	90.00	199.94	6,788.0	-1,710.9	-620.7	0.00	0.00	0.00	0.00	Surprise 4-06H (WPT)
11,446.0	86.75	199.93	6,884.0	-4,889.9	-1,773.8	0.10	-0.10	0.00	-179.91	Surprise 4-06H (BHL)

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well 4-06H
Company:	Denver Division- Colorado	TVD Reference:	RIG @ 8238.0ft (True 32)
Project:	Northpark	MD Reference:	RIG @ 8238.0ft (True 32)
Site:	Surprise	North Reference:	True
Well:	4-06H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral only		
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
9 5/8"									
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	2.00	199.94	1,100.0	-1.6	-0.6	1.7	2.00	2.00	0.00
1,200.0	2.00	199.94	1,199.9	-4.9	-1.8	5.2	0.00	0.00	0.00
1,300.0	2.00	199.94	1,299.9	-8.2	-3.0	8.7	0.00	0.00	0.00
1,400.0	2.00	199.94	1,399.8	-11.5	-4.2	12.2	0.00	0.00	0.00
1,500.0	2.00	199.94	1,499.7	-14.8	-5.4	15.7	0.00	0.00	0.00
1,600.0	2.00	199.94	1,599.7	-18.0	-6.5	19.2	0.00	0.00	0.00
1,700.0	2.00	199.94	1,699.6	-21.3	-7.7	22.7	0.00	0.00	0.00
1,800.0	2.00	199.94	1,799.6	-24.6	-8.9	26.2	0.00	0.00	0.00
1,900.0	2.00	199.94	1,899.5	-27.9	-10.1	29.7	0.00	0.00	0.00
2,000.0	2.00	199.94	1,999.4	-31.2	-11.3	33.2	0.00	0.00	0.00
2,100.0	2.00	199.94	2,099.4	-34.4	-12.5	36.6	0.00	0.00	0.00
2,200.0	2.00	199.94	2,199.3	-37.7	-13.7	40.1	0.00	0.00	0.00
2,300.0	2.00	199.94	2,299.2	-41.0	-14.9	43.6	0.00	0.00	0.00
2,400.0	2.00	199.94	2,399.2	-44.3	-16.1	47.1	0.00	0.00	0.00
2,500.0	2.00	199.94	2,499.1	-47.6	-17.3	50.6	0.00	0.00	0.00
2,600.0	2.00	199.94	2,599.1	-50.9	-18.4	54.1	0.00	0.00	0.00
2,700.0	2.00	199.94	2,699.0	-54.1	-19.6	57.6	0.00	0.00	0.00
2,800.0	2.00	199.94	2,798.9	-57.4	-20.8	61.1	0.00	0.00	0.00
2,900.0	2.00	199.94	2,898.9	-60.7	-22.0	64.6	0.00	0.00	0.00
3,000.0	2.00	199.94	2,998.8	-64.0	-23.2	68.1	0.00	0.00	0.00
3,100.0	2.00	199.94	3,098.8	-67.3	-24.4	71.5	0.00	0.00	0.00
3,200.0	2.00	199.94	3,198.7	-70.5	-25.6	75.0	0.00	0.00	0.00
3,300.0	2.00	199.94	3,298.6	-73.8	-26.8	78.5	0.00	0.00	0.00
3,400.0	2.00	199.94	3,398.6	-77.1	-28.0	82.0	0.00	0.00	0.00
3,500.0	2.00	199.94	3,498.5	-80.4	-29.2	85.5	0.00	0.00	0.00
3,600.0	2.00	199.94	3,598.5	-83.7	-30.4	89.0	0.00	0.00	0.00
3,700.0	2.00	199.94	3,698.4	-86.9	-31.5	92.5	0.00	0.00	0.00
3,800.0	2.00	199.94	3,798.3	-90.2	-32.7	96.0	0.00	0.00	0.00
3,900.0	2.00	199.94	3,898.3	-93.5	-33.9	99.5	0.00	0.00	0.00
4,000.0	2.00	199.94	3,998.2	-96.8	-35.1	103.0	0.00	0.00	0.00
4,100.0	2.00	199.94	4,098.2	-100.1	-36.3	106.4	0.00	0.00	0.00
4,200.0	2.00	199.94	4,198.1	-103.3	-37.5	109.9	0.00	0.00	0.00
4,300.0	2.00	199.94	4,298.0	-106.6	-38.7	113.4	0.00	0.00	0.00
4,400.0	2.00	199.94	4,398.0	-109.9	-39.9	116.9	0.00	0.00	0.00
4,500.0	2.00	199.94	4,497.9	-113.2	-41.1	120.4	0.00	0.00	0.00
4,600.0	2.00	199.94	4,597.8	-116.5	-42.3	123.9	0.00	0.00	0.00
4,700.0	2.00	199.94	4,697.8	-119.7	-43.4	127.4	0.00	0.00	0.00
4,800.0	2.00	199.94	4,797.7	-123.0	-44.6	130.9	0.00	0.00	0.00
4,900.0	2.00	199.94	4,897.7	-126.3	-45.8	134.4	0.00	0.00	0.00
5,000.0	2.00	199.94	4,997.6	-129.6	-47.0	137.9	0.00	0.00	0.00
5,100.0	2.00	199.94	5,097.5	-132.9	-48.2	141.3	0.00	0.00	0.00
5,200.0	2.00	199.94	5,197.5	-136.2	-49.4	144.8	0.00	0.00	0.00

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Site:	Surprise	North Reference:	True
Well:	4-06H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral only		
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	2.00	199.94	5,297.4	-139.4	-50.6	148.3	0.00	0.00	0.00
5,400.0	2.00	199.94	5,397.4	-142.7	-51.8	151.8	0.00	0.00	0.00
5,500.0	2.00	199.94	5,497.3	-146.0	-53.0	155.3	0.00	0.00	0.00
5,600.0	2.00	199.94	5,597.2	-149.3	-54.2	158.8	0.00	0.00	0.00
5,700.0	2.00	199.94	5,697.2	-152.6	-55.3	162.3	0.00	0.00	0.00
5,800.0	2.00	199.94	5,797.1	-155.8	-56.5	165.8	0.00	0.00	0.00
5,900.0	2.00	199.94	5,897.1	-159.1	-57.7	169.3	0.00	0.00	0.00
5,940.3	2.00	199.94	5,937.3	-160.4	-58.2	170.7	0.00	0.00	0.00
6,000.0	5.88	199.94	5,996.9	-164.3	-59.6	174.8	6.50	6.50	0.00
6,100.0	12.38	199.94	6,095.6	-179.2	-65.0	190.6	6.50	6.50	0.00
6,200.0	18.88	199.94	6,191.8	-204.5	-74.2	217.6	6.50	6.50	0.00
6,300.0	25.38	199.94	6,284.4	-239.9	-87.0	255.2	6.50	6.50	0.00
6,400.0	31.88	199.94	6,372.1	-285.0	-103.4	303.1	6.50	6.50	0.00
6,500.0	38.38	199.94	6,453.8	-339.0	-123.0	360.6	6.50	6.50	0.00
6,600.0	44.88	199.94	6,528.6	-401.4	-145.6	427.0	6.50	6.50	0.00
6,700.0	51.38	199.94	6,595.3	-471.4	-171.0	501.5	6.50	6.50	0.00
6,800.0	57.88	199.94	6,653.1	-548.0	-198.8	583.0	6.50	6.50	0.00
6,900.0	64.38	199.94	6,701.4	-630.3	-228.7	670.5	6.50	6.50	0.00
7,000.0	70.88	199.94	6,739.4	-717.2	-260.2	762.9	6.50	6.50	0.00
7,100.0	77.38	199.94	6,766.7	-807.6	-293.0	859.1	6.50	6.50	0.00
7,200.0	83.88	199.94	6,783.0	-900.3	-326.6	957.7	6.50	6.50	0.00
7,294.1	90.00	199.94	6,788.0	-988.6	-358.6	1,051.6	6.50	6.50	0.00
7"									
7,300.0	90.00	199.94	6,788.0	-994.1	-360.6	1,057.5	0.01	0.01	0.00
7,400.0	90.00	199.94	6,788.0	-1,088.1	-394.7	1,157.5	0.00	0.00	0.00
7,500.0	90.00	199.94	6,788.0	-1,182.1	-428.9	1,257.5	0.00	0.00	0.00
7,600.0	90.00	199.94	6,788.0	-1,276.1	-463.0	1,357.5	0.00	0.00	0.00
7,700.0	90.00	199.94	6,788.0	-1,370.1	-497.1	1,457.5	0.00	0.00	0.00
7,800.0	90.00	199.94	6,788.0	-1,464.1	-531.2	1,557.5	0.00	0.00	0.00
7,900.0	90.00	199.94	6,788.0	-1,558.1	-565.3	1,657.5	0.00	0.00	0.00
8,000.0	90.00	199.94	6,788.0	-1,652.1	-599.4	1,757.5	0.00	0.00	0.00
8,062.5	90.00	199.94	6,788.0	-1,710.9	-620.7	1,820.0	0.00	0.00	0.00
8,100.0	89.96	199.94	6,788.0	-1,746.1	-633.5	1,857.5	0.10	-0.10	0.00
8,200.0	89.87	199.94	6,788.2	-1,840.1	-667.6	1,957.5	0.10	-0.10	0.00
8,300.0	89.77	199.94	6,788.5	-1,934.2	-701.7	2,057.5	0.10	-0.10	0.00
8,400.0	89.68	199.94	6,789.0	-2,028.2	-735.8	2,157.5	0.10	-0.10	0.00
8,500.0	89.58	199.94	6,789.6	-2,122.2	-769.9	2,257.5	0.10	-0.10	0.00
8,600.0	89.48	199.94	6,790.4	-2,216.2	-804.0	2,357.5	0.10	-0.10	0.00
8,700.0	89.39	199.94	6,791.4	-2,310.2	-838.1	2,457.5	0.10	-0.10	0.00
8,800.0	89.29	199.94	6,792.6	-2,404.2	-872.2	2,557.5	0.10	-0.10	0.00
8,900.0	89.20	199.94	6,793.9	-2,498.2	-906.3	2,657.5	0.10	-0.10	0.00
9,000.0	89.10	199.94	6,795.4	-2,592.2	-940.4	2,757.5	0.10	-0.10	0.00
9,100.0	89.00	199.94	6,797.0	-2,686.1	-974.5	2,857.4	0.10	-0.10	0.00
9,200.0	88.91	199.94	6,798.9	-2,780.1	-1,008.6	2,957.4	0.10	-0.10	0.00
9,300.0	88.81	199.94	6,800.8	-2,874.1	-1,042.7	3,057.4	0.10	-0.10	0.00
9,400.0	88.71	199.94	6,803.0	-2,968.1	-1,076.8	3,157.4	0.10	-0.10	0.00
9,500.0	88.62	199.94	6,805.3	-3,062.1	-1,110.9	3,257.4	0.10	-0.10	0.00
9,600.0	88.52	199.94	6,807.8	-3,156.1	-1,144.9	3,357.3	0.10	-0.10	0.00
9,700.0	88.43	199.94	6,810.5	-3,250.0	-1,179.0	3,457.3	0.10	-0.10	0.00
9,800.0	88.33	199.94	6,813.3	-3,344.0	-1,213.1	3,557.3	0.10	-0.10	0.00
9,900.0	88.23	199.94	6,816.3	-3,438.0	-1,247.2	3,657.2	0.10	-0.10	0.00
10,000.0	88.14	199.94	6,819.5	-3,531.9	-1,281.3	3,757.2	0.10	-0.10	0.00
10,100.0	88.04	199.94	6,822.8	-3,625.9	-1,315.4	3,857.1	0.10	-0.10	0.00

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Site:	Surprise	North Reference:	True
Well:	4-06H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral only		
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	87.95	199.94	6,826.3	-3,719.8	-1,349.4	3,957.0	0.10	-0.10	0.00
10,300.0	87.85	199.94	6,830.0	-3,813.8	-1,383.5	4,057.0	0.10	-0.10	0.00
10,400.0	87.75	199.94	6,833.8	-3,907.7	-1,417.6	4,156.9	0.10	-0.10	0.00
10,500.0	87.66	199.94	6,837.8	-4,001.7	-1,451.7	4,256.8	0.10	-0.10	0.00
10,600.0	87.56	199.94	6,842.0	-4,095.6	-1,485.7	4,356.7	0.10	-0.10	0.00
10,700.0	87.46	199.94	6,846.3	-4,189.5	-1,519.8	4,456.6	0.10	-0.10	0.00
10,800.0	87.37	199.94	6,850.8	-4,283.4	-1,553.9	4,556.5	0.10	-0.10	0.00
10,900.0	87.27	199.94	6,855.5	-4,377.3	-1,587.9	4,656.4	0.10	-0.10	0.00
11,000.0	87.18	199.94	6,860.4	-4,471.2	-1,622.0	4,756.3	0.10	-0.10	0.00
11,100.0	87.08	199.94	6,865.4	-4,565.1	-1,656.0	4,856.2	0.10	-0.10	0.00
11,200.0	86.98	199.94	6,870.6	-4,659.0	-1,690.1	4,956.1	0.10	-0.10	0.00
11,300.0	86.89	199.94	6,875.9	-4,752.9	-1,724.1	5,055.9	0.10	-0.10	0.00
11,400.0	86.79	199.93	6,881.4	-4,846.7	-1,758.2	5,155.8	0.10	-0.10	0.00
11,446.0	86.75	199.93	6,884.0	-4,889.9	-1,773.8	5,201.7	0.10	-0.10	0.00
4 1/2"									

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,294.1	6,788.0	7"	7	8-3/4
800.0	800.0	9 5/8"	9-5/8	12-1/4
11,446.0	6,884.0	4 1/2"	4-1/2	6-1/4