



Well Name: RESOLUTION 12-63-21-28-3NH
Surface Location: RESOLUTION 12-63-21-28-4NH PAD
North American Datum 1983
US State Plane 1983 Colorado Northern Zone
Ground Elevation: 5502.0
WELL @ 5528.0usft (Original Well Elev)

T

M

Azimuths to True North
Magnetic North: 8.90°

Magnetic Field
Strength: 53644.6snT
Dip Angle: 67.65°
Date: 12/31/2009
Model: IGRF200510

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.7	30.1	1609272.68	3292447.77	41.001012	-104.440539

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.0	0.00	0.00	0.0	0.7	30.1	0.00	0.00	0.0
250.0	0.00	0.00	250.0	0.7	30.1	0.00	0.00	0.0
259.7	0.19	192.82	259.7	0.7	30.1	2.00	192.82	0.0
4990.3	0.19	192.82	4990.3	-15.0	26.5	0.00	0.00	15.7
5000.0	0.00	0.00	5000.0	-15.0	26.5	2.00	180.00	15.7
6975.1	0.00	0.00	6975.0	-15.0	26.5	0.00	0.00	15.7
7875.1	90.00	180.00	7548.0	-588.0	26.5	10.00	180.00	588.7
16828.0	90.00	180.00	7548.0	-9540.8	26.5	0.00	0.00	9541.6

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1709.0	1709.0	Base Aquifer (Fox Hills)
7502.0	7643.9	Niobrara

The figure consists of two main plots. The left plot is a 'Vertical Section at 180.00° (2500 usft/in)' showing the wellbore trajectory. The y-axis is 'True Vertical Depth (2500 usft/in)' from -1250 to 7500. The x-axis is 'Vertical Section at 180.00° (2500 usft/in)' from -2500 to 21250. The trajectory starts at the surface (0 depth), goes down to 259.7 MD, then drops to 5000.0 MD, and finally builds to 7875.1 MD. Key points include 'Start Build 2.00', 'Start 4730.5 hold at 259.7 MD', 'Start Drop -2.00', 'Start 1975.0 hold at 5000.0 MD', 'Start Build 10.00', and 'Start 8952.9 hold at 7875.1 MD'. The 'Base Aquifer (Fox Hills)' is indicated between 2500 and 3750 depth, and 'Niobrara' is indicated below 6250 depth. The right plot is a plan view showing the wellbore trajectory in the horizontal plane. The y-axis is 'South(-)/North(+) (2500 usft/in)' from -1250 to -10000. The x-axis is 'West(-)/East(+) (2500 usft/in)' from -6250 to 7500. The trajectory starts at the surface (0 depth), goes down to 259.7 MD, then drops to 5000.0 MD, and finally builds to 7875.1 MD. Key points include 'Start Build 2.00', 'Start 4730.5 hold at 259.7 MD', 'Start Drop -2.00', 'Start 1975.0 hold at 5000.0 MD', 'Start Build 10.00', and 'Start 8952.9 hold at 7875.1 MD'. The 'Base Aquifer (Fox Hills)' is indicated between 2500 and 3750 depth, and 'Niobrara' is indicated below 6250 depth.

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

RESOLUTION 12-63-21-28-4NH PAD

RESOLUTION 12-63-21-28-3NH

Wellbore #1

Plan: PLAN #1

Standard Planning Report

27 January, 2015

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Site RESOLUTION 12-63-21-28-4NH PAD
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5528.0usft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5528.0usft (Original Well Elev)
Site:	RESOLUTION 12-63-21-28-4NH PAD	North Reference:	True
Well:	RESOLUTION 12-63-21-28-3NH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PLAN #1		

Project	COLORADO NORTHERN ZONE - 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	RESOLUTION 12-63-21-28-4NH PAD			
Site Position:		Northing:	1,609,271.59 usft	Latitude: 41.001010
From:	Lat/Long	Easting:	3,292,417.70 usft	Longitude: -104.440648
Position Uncertainty:	0.0 usft	Slot Radius:	13.200 in	Grid Convergence: 0.68 °

Well	RESOLUTION 12-63-21-28-3NH			
Well Position	+N/-S	0.7 usft	Northing:	1,609,272.67 usft
	+E/-W	30.1 usft	Easting:	3,292,447.77 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level: 5,502.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	8.90	67.65	53,645

Design	PLAN #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.7	30.1	180.00

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.7	30.1	0.00	0.00	0.00	0.00	
250.0	0.00	0.00	250.0	0.7	30.1	0.00	0.00	0.00	0.00	
259.7	0.19	192.82	259.7	0.7	30.1	2.00	2.00	0.00	192.82	
4,990.3	0.19	192.82	4,990.3	-15.0	26.5	0.00	0.00	0.00	0.00	
5,000.0	0.00	0.00	5,000.0	-15.0	26.5	2.00	-2.00	0.00	180.00	
6,975.1	0.00	0.00	6,975.0	-15.0	26.5	0.00	0.00	0.00	0.00	
7,875.1	90.00	180.00	7,548.0	-588.0	26.5	10.00	10.00	0.00	180.00	
16,828.0	90.00	180.00	7,548.0	-9,540.8	26.5	0.00	0.00	0.00	0.00	RESOLUTION 12-63-

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Site RESOLUTION 12-63-21-28-4NH PAD
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5528.0usft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5528.0usft (Original Well Elev)
Site:	RESOLUTION 12-63-21-28-4NH PAD	North Reference:	True
Well:	RESOLUTION 12-63-21-28-3NH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PLAN #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.7	30.1	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.7	30.1	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.7	30.1	0.0	0.00	0.00	0.00
250.0	0.00	0.00	250.0	0.7	30.1	0.0	0.00	0.00	0.00
Start Build 2.00									
259.7	0.19	192.82	259.7	0.7	30.1	0.0	2.00	2.00	0.00
Start 4730.5 hold at 259.7 MD									
300.0	0.19	192.82	300.0	0.6	30.1	0.1	0.00	0.00	0.00
400.0	0.19	192.82	400.0	0.2	30.0	0.5	0.00	0.00	0.00
500.0	0.19	192.82	500.0	-0.1	29.9	0.8	0.00	0.00	0.00
600.0	0.19	192.82	600.0	-0.4	29.8	1.1	0.00	0.00	0.00
700.0	0.19	192.82	700.0	-0.8	29.8	1.5	0.00	0.00	0.00
800.0	0.19	192.82	800.0	-1.1	29.7	1.8	0.00	0.00	0.00
900.0	0.19	192.82	900.0	-1.4	29.6	2.1	0.00	0.00	0.00
1,000.0	0.19	192.82	1,000.0	-1.8	29.5	2.5	0.00	0.00	0.00
1,100.0	0.19	192.82	1,100.0	-2.1	29.5	2.8	0.00	0.00	0.00
1,200.0	0.19	192.82	1,200.0	-2.4	29.4	3.1	0.00	0.00	0.00
1,300.0	0.19	192.82	1,300.0	-2.7	29.3	3.5	0.00	0.00	0.00
1,400.0	0.19	192.82	1,400.0	-3.1	29.2	3.8	0.00	0.00	0.00
1,500.0	0.19	192.82	1,500.0	-3.4	29.1	4.1	0.00	0.00	0.00
1,600.0	0.19	192.82	1,600.0	-3.7	29.1	4.5	0.00	0.00	0.00
1,700.0	0.19	192.82	1,700.0	-4.1	29.0	4.8	0.00	0.00	0.00
1,709.0	0.19	192.82	1,709.0	-4.1	29.0	4.8	0.00	0.00	0.00
Base Aquifer (Fox Hills)									
1,800.0	0.19	192.82	1,800.0	-4.4	28.9	5.1	0.00	0.00	0.00
1,900.0	0.19	192.82	1,900.0	-4.7	28.8	5.5	0.00	0.00	0.00
2,000.0	0.19	192.82	2,000.0	-5.1	28.8	5.8	0.00	0.00	0.00
9 5/8"									
2,100.0	0.19	192.82	2,100.0	-5.4	28.7	6.1	0.00	0.00	0.00
2,200.0	0.19	192.82	2,200.0	-5.7	28.6	6.5	0.00	0.00	0.00
2,300.0	0.19	192.82	2,300.0	-6.1	28.5	6.8	0.00	0.00	0.00
2,400.0	0.19	192.82	2,400.0	-6.4	28.5	7.1	0.00	0.00	0.00
2,500.0	0.19	192.82	2,500.0	-6.7	28.4	7.4	0.00	0.00	0.00
2,600.0	0.19	192.82	2,600.0	-7.1	28.3	7.8	0.00	0.00	0.00
2,700.0	0.19	192.82	2,700.0	-7.4	28.2	8.1	0.00	0.00	0.00
2,800.0	0.19	192.82	2,800.0	-7.7	28.2	8.4	0.00	0.00	0.00
2,900.0	0.19	192.82	2,900.0	-8.1	28.1	8.8	0.00	0.00	0.00
3,000.0	0.19	192.82	3,000.0	-8.4	28.0	9.1	0.00	0.00	0.00
3,100.0	0.19	192.82	3,100.0	-8.7	27.9	9.4	0.00	0.00	0.00
3,200.0	0.19	192.82	3,200.0	-9.0	27.9	9.8	0.00	0.00	0.00
3,300.0	0.19	192.82	3,300.0	-9.4	27.8	10.1	0.00	0.00	0.00
3,400.0	0.19	192.82	3,400.0	-9.7	27.7	10.4	0.00	0.00	0.00
3,500.0	0.19	192.82	3,500.0	-10.0	27.6	10.8	0.00	0.00	0.00
3,600.0	0.19	192.82	3,600.0	-10.4	27.6	11.1	0.00	0.00	0.00
3,700.0	0.19	192.82	3,700.0	-10.7	27.5	11.4	0.00	0.00	0.00
3,800.0	0.19	192.82	3,800.0	-11.0	27.4	11.8	0.00	0.00	0.00
3,900.0	0.19	192.82	3,900.0	-11.4	27.3	12.1	0.00	0.00	0.00
4,000.0	0.19	192.82	4,000.0	-11.7	27.3	12.4	0.00	0.00	0.00
4,100.0	0.19	192.82	4,100.0	-12.0	27.2	12.8	0.00	0.00	0.00
4,200.0	0.19	192.82	4,200.0	-12.4	27.1	13.1	0.00	0.00	0.00
4,300.0	0.19	192.82	4,300.0	-12.7	27.0	13.4	0.00	0.00	0.00
4,400.0	0.19	192.82	4,400.0	-13.0	27.0	13.7	0.00	0.00	0.00
4,500.0	0.19	192.82	4,500.0	-13.4	26.9	14.1	0.00	0.00	0.00
4,600.0	0.19	192.82	4,600.0	-13.7	26.8	14.4	0.00	0.00	0.00

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Planning Report

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5528.0usft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5528.0usft (Original Well Elev)
Site:	RESOLUTION 12-63-21-28-4NH PAD	North Reference:	True
Well:	RESOLUTION 12-63-21-28-3NH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PLAN #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,700.0	0.19	192.82	4,700.0	-14.0	26.7	14.7	0.00	0.00	0.00
4,800.0	0.19	192.82	4,800.0	-14.4	26.7	15.1	0.00	0.00	0.00
4,900.0	0.19	192.82	4,900.0	-14.7	26.6	15.4	0.00	0.00	0.00
4,990.3	0.19	192.82	4,990.3	-15.0	26.5	15.7	0.00	0.00	0.00
Start Drop -2.00									
5,000.0	0.00	0.00	5,000.0	-15.0	26.5	15.7	2.00	-2.00	0.00
Start 1975.0 hold at 5000.0 MD									
5,100.0	0.00	0.00	5,100.0	-15.0	26.5	15.7	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	-15.0	26.5	15.7	0.00	0.00	0.00
5,300.0	0.00	0.00	5,300.0	-15.0	26.5	15.7	0.00	0.00	0.00
5,400.0	0.00	0.00	5,400.0	-15.0	26.5	15.7	0.00	0.00	0.00
5,500.0	0.00	0.00	5,500.0	-15.0	26.5	15.7	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	-15.0	26.5	15.7	0.00	0.00	0.00
5,700.0	0.00	0.00	5,700.0	-15.0	26.5	15.7	0.00	0.00	0.00
5,800.0	0.00	0.00	5,800.0	-15.0	26.5	15.7	0.00	0.00	0.00
5,900.0	0.00	0.00	5,900.0	-15.0	26.5	15.7	0.00	0.00	0.00
6,000.0	0.00	0.00	6,000.0	-15.0	26.5	15.7	0.00	0.00	0.00
6,100.0	0.00	0.00	6,100.0	-15.0	26.5	15.7	0.00	0.00	0.00
6,200.0	0.00	0.00	6,200.0	-15.0	26.5	15.7	0.00	0.00	0.00
6,300.0	0.00	0.00	6,300.0	-15.0	26.5	15.7	0.00	0.00	0.00
6,400.0	0.00	0.00	6,400.0	-15.0	26.5	15.7	0.00	0.00	0.00
6,500.0	0.00	0.00	6,500.0	-15.0	26.5	15.7	0.00	0.00	0.00
6,600.0	0.00	0.00	6,600.0	-15.0	26.5	15.7	0.00	0.00	0.00
6,700.0	0.00	0.00	6,700.0	-15.0	26.5	15.7	0.00	0.00	0.00
6,800.0	0.00	0.00	6,800.0	-15.0	26.5	15.7	0.00	0.00	0.00
6,900.0	0.00	0.00	6,900.0	-15.0	26.5	15.7	0.00	0.00	0.00
6,975.1	0.00	0.00	6,975.0	-15.0	26.5	15.7	0.00	0.00	0.00
Start Build 10.00									
7,000.0	2.49	180.00	7,000.0	-15.5	26.5	16.3	10.00	10.00	0.00
7,100.0	12.49	180.00	7,099.0	-28.6	26.5	29.3	10.00	10.00	0.00
7,200.0	22.49	180.00	7,194.2	-58.6	26.5	59.3	10.00	10.00	0.00
7,300.0	32.49	180.00	7,282.8	-104.7	26.5	105.4	10.00	10.00	0.00
7,400.0	42.49	180.00	7,362.1	-165.5	26.5	166.2	10.00	10.00	0.00
7,500.0	52.49	180.00	7,429.6	-239.1	26.5	239.8	10.00	10.00	0.00
7,600.0	62.49	180.00	7,483.2	-323.3	26.5	324.1	10.00	10.00	0.00
7,643.9	66.88	180.00	7,502.0	-363.0	26.5	363.7	10.00	10.00	0.00
Niobrara									
7,700.0	72.49	180.00	7,521.5	-415.6	26.5	416.3	10.00	10.00	0.00
7,800.0	82.49	180.00	7,543.1	-513.1	26.5	513.8	10.00	10.00	0.00
7,875.1	90.00	180.00	7,548.0	-588.0	26.5	588.7	10.00	10.00	0.00
Start 8952.9 hold at 7875.1 MD - 7"									
7,900.0	90.00	180.00	7,548.0	-612.9	26.5	613.6	0.00	0.00	0.00
8,000.0	90.00	180.00	7,548.0	-712.9	26.5	713.6	0.00	0.00	0.00
8,100.0	90.00	180.00	7,548.0	-812.9	26.5	813.6	0.00	0.00	0.00
8,200.0	90.00	180.00	7,548.0	-912.9	26.5	913.6	0.00	0.00	0.00
8,300.0	90.00	180.00	7,548.0	-1,012.9	26.5	1,013.6	0.00	0.00	0.00
8,400.0	90.00	180.00	7,548.0	-1,112.9	26.5	1,113.6	0.00	0.00	0.00
8,500.0	90.00	180.00	7,548.0	-1,212.9	26.5	1,213.6	0.00	0.00	0.00
8,600.0	90.00	180.00	7,548.0	-1,312.9	26.5	1,313.6	0.00	0.00	0.00
8,700.0	90.00	180.00	7,548.0	-1,412.9	26.5	1,413.6	0.00	0.00	0.00
8,800.0	90.00	180.00	7,548.0	-1,512.9	26.5	1,513.6	0.00	0.00	0.00
8,900.0	90.00	180.00	7,548.0	-1,612.9	26.5	1,613.6	0.00	0.00	0.00
9,000.0	90.00	180.00	7,548.0	-1,712.9	26.5	1,713.6	0.00	0.00	0.00

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Site RESOLUTION 12-63-21-28-4NH PAD
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5528.0usft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5528.0usft (Original Well Elev)
Site:	RESOLUTION 12-63-21-28-4NH PAD	North Reference:	True
Well:	RESOLUTION 12-63-21-28-3NH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PLAN #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,100.0	90.00	180.00	7,548.0	-1,812.9	26.5	1,813.6	0.00	0.00	0.00
9,200.0	90.00	180.00	7,548.0	-1,912.9	26.5	1,913.6	0.00	0.00	0.00
9,300.0	90.00	180.00	7,548.0	-2,012.9	26.5	2,013.6	0.00	0.00	0.00
9,400.0	90.00	180.00	7,548.0	-2,112.9	26.5	2,113.6	0.00	0.00	0.00
9,500.0	90.00	180.00	7,548.0	-2,212.9	26.5	2,213.6	0.00	0.00	0.00
9,600.0	90.00	180.00	7,548.0	-2,312.9	26.5	2,313.6	0.00	0.00	0.00
9,700.0	90.00	180.00	7,548.0	-2,412.9	26.5	2,413.6	0.00	0.00	0.00
9,800.0	90.00	180.00	7,548.0	-2,512.9	26.5	2,513.6	0.00	0.00	0.00
9,900.0	90.00	180.00	7,548.0	-2,612.9	26.5	2,613.6	0.00	0.00	0.00
10,000.0	90.00	180.00	7,548.0	-2,712.9	26.5	2,713.6	0.00	0.00	0.00
10,100.0	90.00	180.00	7,548.0	-2,812.9	26.5	2,813.6	0.00	0.00	0.00
10,200.0	90.00	180.00	7,548.0	-2,912.9	26.5	2,913.6	0.00	0.00	0.00
10,300.0	90.00	180.00	7,548.0	-3,012.9	26.5	3,013.6	0.00	0.00	0.00
10,400.0	90.00	180.00	7,548.0	-3,112.9	26.5	3,113.6	0.00	0.00	0.00
10,500.0	90.00	180.00	7,548.0	-3,212.9	26.5	3,213.6	0.00	0.00	0.00
10,600.0	90.00	180.00	7,548.0	-3,312.9	26.5	3,313.6	0.00	0.00	0.00
10,700.0	90.00	180.00	7,548.0	-3,412.9	26.5	3,413.6	0.00	0.00	0.00
10,800.0	90.00	180.00	7,548.0	-3,512.9	26.5	3,513.6	0.00	0.00	0.00
10,900.0	90.00	180.00	7,548.0	-3,612.9	26.5	3,613.6	0.00	0.00	0.00
11,000.0	90.00	180.00	7,548.0	-3,712.9	26.5	3,713.6	0.00	0.00	0.00
11,100.0	90.00	180.00	7,548.0	-3,812.9	26.5	3,813.6	0.00	0.00	0.00
11,200.0	90.00	180.00	7,548.0	-3,912.9	26.5	3,913.6	0.00	0.00	0.00
11,300.0	90.00	180.00	7,548.0	-4,012.9	26.5	4,013.6	0.00	0.00	0.00
11,400.0	90.00	180.00	7,548.0	-4,112.9	26.5	4,113.6	0.00	0.00	0.00
11,500.0	90.00	180.00	7,548.0	-4,212.9	26.5	4,213.6	0.00	0.00	0.00
11,600.0	90.00	180.00	7,548.0	-4,312.9	26.5	4,313.6	0.00	0.00	0.00
11,700.0	90.00	180.00	7,548.0	-4,412.9	26.5	4,413.6	0.00	0.00	0.00
11,800.0	90.00	180.00	7,548.0	-4,512.9	26.5	4,513.6	0.00	0.00	0.00
11,900.0	90.00	180.00	7,548.0	-4,612.9	26.5	4,613.6	0.00	0.00	0.00
12,000.0	90.00	180.00	7,548.0	-4,712.9	26.5	4,713.6	0.00	0.00	0.00
12,100.0	90.00	180.00	7,548.0	-4,812.9	26.5	4,813.6	0.00	0.00	0.00
12,200.0	90.00	180.00	7,548.0	-4,912.9	26.5	4,913.6	0.00	0.00	0.00
12,300.0	90.00	180.00	7,548.0	-5,012.9	26.5	5,013.6	0.00	0.00	0.00
12,400.0	90.00	180.00	7,548.0	-5,112.9	26.5	5,113.6	0.00	0.00	0.00
12,500.0	90.00	180.00	7,548.0	-5,212.9	26.5	5,213.6	0.00	0.00	0.00
12,600.0	90.00	180.00	7,548.0	-5,312.9	26.5	5,313.6	0.00	0.00	0.00
12,700.0	90.00	180.00	7,548.0	-5,412.9	26.5	5,413.6	0.00	0.00	0.00
12,800.0	90.00	180.00	7,548.0	-5,512.9	26.5	5,513.6	0.00	0.00	0.00
12,900.0	90.00	180.00	7,548.0	-5,612.9	26.5	5,613.6	0.00	0.00	0.00
13,000.0	90.00	180.00	7,548.0	-5,712.9	26.5	5,713.6	0.00	0.00	0.00
13,100.0	90.00	180.00	7,548.0	-5,812.9	26.5	5,813.6	0.00	0.00	0.00
13,200.0	90.00	180.00	7,548.0	-5,912.9	26.5	5,913.6	0.00	0.00	0.00
13,300.0	90.00	180.00	7,548.0	-6,012.9	26.5	6,013.6	0.00	0.00	0.00
13,400.0	90.00	180.00	7,548.0	-6,112.9	26.5	6,113.6	0.00	0.00	0.00
13,500.0	90.00	180.00	7,548.0	-6,212.9	26.5	6,213.6	0.00	0.00	0.00
13,600.0	90.00	180.00	7,548.0	-6,312.9	26.5	6,313.6	0.00	0.00	0.00
13,700.0	90.00	180.00	7,548.0	-6,412.9	26.5	6,413.6	0.00	0.00	0.00
13,800.0	90.00	180.00	7,548.0	-6,512.9	26.5	6,513.6	0.00	0.00	0.00
13,900.0	90.00	180.00	7,548.0	-6,612.9	26.5	6,613.6	0.00	0.00	0.00
14,000.0	90.00	180.00	7,548.0	-6,712.9	26.5	6,713.6	0.00	0.00	0.00
14,100.0	90.00	180.00	7,548.0	-6,812.9	26.5	6,813.6	0.00	0.00	0.00
14,200.0	90.00	180.00	7,548.0	-6,912.9	26.5	6,913.6	0.00	0.00	0.00
14,300.0	90.00	180.00	7,548.0	-7,012.9	26.5	7,013.6	0.00	0.00	0.00
14,400.0	90.00	180.00	7,548.0	-7,112.9	26.5	7,113.6	0.00	0.00	0.00

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Site RESOLUTION 12-63-21-28-4NH PAD
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5528.0usft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5528.0usft (Original Well Elev)
Site:	RESOLUTION 12-63-21-28-4NH PAD	North Reference:	True
Well:	RESOLUTION 12-63-21-28-3NH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PLAN #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
14,500.0	90.00	180.00	7,548.0	-7,212.9	26.5	7,213.6	0.00	0.00	0.00	
14,600.0	90.00	180.00	7,548.0	-7,312.9	26.5	7,313.6	0.00	0.00	0.00	
14,700.0	90.00	180.00	7,548.0	-7,412.9	26.5	7,413.6	0.00	0.00	0.00	
14,800.0	90.00	180.00	7,548.0	-7,512.9	26.5	7,513.6	0.00	0.00	0.00	
14,900.0	90.00	180.00	7,548.0	-7,612.9	26.5	7,613.6	0.00	0.00	0.00	
15,000.0	90.00	180.00	7,548.0	-7,712.9	26.5	7,713.6	0.00	0.00	0.00	
15,100.0	90.00	180.00	7,548.0	-7,812.9	26.5	7,813.6	0.00	0.00	0.00	
15,200.0	90.00	180.00	7,548.0	-7,912.9	26.5	7,913.6	0.00	0.00	0.00	
15,300.0	90.00	180.00	7,548.0	-8,012.9	26.5	8,013.6	0.00	0.00	0.00	
15,400.0	90.00	180.00	7,548.0	-8,112.9	26.5	8,113.6	0.00	0.00	0.00	
15,500.0	90.00	180.00	7,548.0	-8,212.9	26.5	8,213.6	0.00	0.00	0.00	
15,600.0	90.00	180.00	7,548.0	-8,312.9	26.5	8,313.6	0.00	0.00	0.00	
15,700.0	90.00	180.00	7,548.0	-8,412.9	26.5	8,413.6	0.00	0.00	0.00	
15,800.0	90.00	180.00	7,548.0	-8,512.9	26.5	8,513.6	0.00	0.00	0.00	
15,900.0	90.00	180.00	7,548.0	-8,612.9	26.5	8,613.6	0.00	0.00	0.00	
16,000.0	90.00	180.00	7,548.0	-8,712.9	26.5	8,713.6	0.00	0.00	0.00	
16,100.0	90.00	180.00	7,548.0	-8,812.9	26.5	8,813.6	0.00	0.00	0.00	
16,200.0	90.00	180.00	7,548.0	-8,912.9	26.5	8,913.6	0.00	0.00	0.00	
16,300.0	90.00	180.00	7,548.0	-9,012.9	26.5	9,013.6	0.00	0.00	0.00	
16,400.0	90.00	180.00	7,548.0	-9,112.9	26.5	9,113.6	0.00	0.00	0.00	
16,500.0	90.00	180.00	7,548.0	-9,212.9	26.5	9,213.6	0.00	0.00	0.00	
16,600.0	90.00	180.00	7,548.0	-9,312.9	26.5	9,313.6	0.00	0.00	0.00	
16,700.0	90.00	180.00	7,548.0	-9,412.9	26.5	9,413.6	0.00	0.00	0.00	
16,800.0	90.00	180.00	7,548.0	-9,512.9	26.5	9,513.6	0.00	0.00	0.00	
16,828.0	90.00	180.00	7,548.0	-9,540.8	26.5	9,541.6	0.00	0.00	0.00	
TD at 16828.0										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
Interp @ 7502.0 (RESOI	0.00	0.00	7,502.0	-363.0	26.5	1,608,908.91	3,292,448.54	41.000014	-104.440552	
- plan hits target center										
- Point										
RESOLUTION 12-63-21	0.00	0.00	7,548.0	-9,540.8	26.5	1,599,731.74	3,292,558.18	40.974825	-104.440552	
- plan hits target center										
- Point										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
2,000.0	2,000.0	9 5/8"	9.625	12.250	
7,875.1	7,548.0	7"	7.000	7.500	

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Site RESOLUTION 12-63-21-28-4NH PAD
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5528.0usft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5528.0usft (Original Well Elev)
Site:	RESOLUTION 12-63-21-28-4NH PAD	North Reference:	True
Well:	RESOLUTION 12-63-21-28-3NH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PLAN #1		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,709.0	1,709.0	Base Aquifer (Fox Hills)			
7,643.9	7,502.0	Niobrara			

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
250.0	250.0	0.7	30.1	Start Build 2.00	
259.7	259.7	0.7	30.1	Start 4730.5 hold at 259.7 MD	
4,990.3	4,990.3	-15.0	26.5	Start Drop -2.00	
5,000.0	5,000.0	-15.0	26.5	Start 1975.0 hold at 5000.0 MD	
6,975.1	6,975.0	-15.0	26.5	Start Build 10.00	
7,875.1	7,548.0	-588.0	26.5	Start 8952.9 hold at 7875.1 MD	
16,828.0	7,548.0	-9,540.8	26.5	TD at 16828.0	