



Well Name: RESOLUTION 12-63-31-6-3NH
Surface Location: RESOLUTION FED 12-63-30-19-2CH PAD
North American Datum 1983
US State Plane 1983 Colorado Northern Zone
Ground Elevation: 5426.0
WELL @ 5452.0usft (Original Well Elev)

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Azimuths to True North
Magnetic North: 8.92°
Magnetic Field
Strength: 53626.6snT
Dip Angle: 67.62°
Date: 12/31/2009
Model: IGRF200510

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1598684.26	3282199.08	40.972284	-104.478106

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
250.0	0.00	0.00	250.0	0.0	0.0	0.00	0.00	0.0
545.0	5.90	189.78	544.5	-15.0	-2.6	2.00	189.78	15.0
2717.5	5.90	189.78	2705.5	-235.0	-40.5	0.00	0.00	235.0
3012.6	0.00	0.00	3000.0	-250.0	-43.1	2.00	180.00	250.0
7166.6	0.00	0.00	7154.0	-250.0	-43.1	0.00	0.00	250.0
8066.6	90.00	180.00	7727.0	-823.0	-43.1	10.00	180.00	823.0
16916.3	90.00	180.00	7727.0	-9672.6	-43.1	0.00	0.00	9672.6

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1412.0	1417.1	Aquifer (Fox Hills)
7527.0	7572.7	Niobrara

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

RESOLUTION FED 12-63-30-19-2CH PAD

RESOLUTION 12-63-31-6-3NH

Wellbore #1

Plan: PLAN #1

Standard Planning Report

25 February, 2015

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well RESOLUTION 12-63-31-6-3NH
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5452.0usft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5452.0usft (Original Well Elev)
Site:	RESOLUTION FED 12-63-30-19-2CH PAD	North Reference:	True
Well:	RESOLUTION 12-63-31-6-3NH	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 FED 12-63-30-19-2CH PAD			
Site Position:		Northing:	1,598,678.49 usft	Latitude: 40.972271
From:	Lat/Long	Easting:	3,282,109.39 usft	Longitude: -104.478431
Position Uncertainty:	0.0 usft	Slot Radius:	13.200 in	Grid Convergence: 0.66 °

Well	RESOLUTION 12-63-31-6-3NH			
Well Position	+N/-S	4.7 usft	Northing:	1,598,684.25 usft
	+E/-W	89.8 usft	Easting:	3,282,199.08 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level: 5,426.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	8.92	67.62	53,627

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	0.0	0.0	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	0.0	0.0	0.00	0.00	0.00	0.00	
250.0	0.00	0.00	250.0	0.0	0.0	0.00	0.00	0.00	0.00	
545.0	5.90	189.78	544.5	-15.0	-2.6	2.00	2.00	0.00	189.78	
2,717.5	5.90	189.78	2,705.5	-235.0	-40.5	0.00	0.00	0.00	0.00	
3,012.6	0.00	0.00	3,000.0	-250.0	-43.1	2.00	-2.00	0.00	180.00	
7,166.6	0.00	0.00	7,154.0	-250.0	-43.1	0.00	0.00	0.00	0.00	
8,066.6	90.00	180.00	7,727.0	-823.0	-43.1	10.00	10.00	0.00	180.00	
16,916.3	90.00	180.00	7,727.0	-9,672.6	-43.1	0.00	0.00	0.00	0.00	RESOLUTION 12-63-

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well RESOLUTION 12-63-31-6-3NH
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5452.0usft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5452.0usft (Original Well Elev)
Site:	RESOLUTION FED 12-63-30-19-2CH PAD	North Reference:	True
Well:	RESOLUTION 12-63-31-6-3NH	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	0.0	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
250.0	0.00	0.00	250.0	0.0	0.0	0.0	0.00	0.00	0.00
Start Build 2.00									
300.0	1.00	189.78	300.0	-0.4	-0.1	0.4	2.00	2.00	0.00
400.0	3.00	189.78	399.9	-3.9	-0.7	3.9	2.00	2.00	0.00
500.0	5.00	189.78	499.7	-10.7	-1.9	10.7	2.00	2.00	0.00
545.0	5.90	189.78	544.5	-15.0	-2.6	15.0	2.00	2.00	0.00
Start 2172.5 hold at 545.0 MD									
600.0	5.90	189.78	599.2	-20.5	-3.5	20.5	0.00	0.00	0.00
700.0	5.90	189.78	698.7	-30.7	-5.3	30.7	0.00	0.00	0.00
800.0	5.90	189.78	798.1	-40.8	-7.0	40.8	0.00	0.00	0.00
900.0	5.90	189.78	897.6	-50.9	-8.8	50.9	0.00	0.00	0.00
1,000.0	5.90	189.78	997.1	-61.0	-10.5	61.0	0.00	0.00	0.00
1,100.0	5.90	189.78	1,096.5	-71.2	-12.3	71.2	0.00	0.00	0.00
1,200.0	5.90	189.78	1,196.0	-81.3	-14.0	81.3	0.00	0.00	0.00
1,300.0	5.90	189.78	1,295.5	-91.4	-15.8	91.4	0.00	0.00	0.00
1,400.0	5.90	189.78	1,394.9	-101.6	-17.5	101.6	0.00	0.00	0.00
1,417.1	5.90	189.78	1,412.0	-103.3	-17.8	103.3	0.00	0.00	0.00
Aquifer (Fox Hills)									
1,500.0	5.90	189.78	1,494.4	-111.7	-19.3	111.7	0.00	0.00	0.00
1,600.0	5.90	189.78	1,593.9	-121.8	-21.0	121.8	0.00	0.00	0.00
1,700.0	5.90	189.78	1,693.4	-132.0	-22.7	132.0	0.00	0.00	0.00
1,800.0	5.90	189.78	1,792.8	-142.1	-24.5	142.1	0.00	0.00	0.00
1,900.0	5.90	189.78	1,892.3	-152.2	-26.2	152.2	0.00	0.00	0.00
2,000.0	5.90	189.78	1,991.8	-162.4	-28.0	162.4	0.00	0.00	0.00
2,008.3	5.90	189.78	2,000.0	-163.2	-28.1	163.2	0.00	0.00	0.00
9 5/8"									
2,100.0	5.90	189.78	2,091.2	-172.5	-29.7	172.5	0.00	0.00	0.00
2,200.0	5.90	189.78	2,190.7	-182.6	-31.5	182.6	0.00	0.00	0.00
2,300.0	5.90	189.78	2,290.2	-192.7	-33.2	192.7	0.00	0.00	0.00
2,400.0	5.90	189.78	2,389.7	-202.9	-35.0	202.9	0.00	0.00	0.00
2,500.0	5.90	189.78	2,489.1	-213.0	-36.7	213.0	0.00	0.00	0.00
2,600.0	5.90	189.78	2,588.6	-223.1	-38.5	223.1	0.00	0.00	0.00
2,700.0	5.90	189.78	2,688.1	-233.3	-40.2	233.3	0.00	0.00	0.00
2,717.5	5.90	189.78	2,705.5	-235.0	-40.5	235.0	0.00	0.00	0.00
Start Drop -2.00									
2,800.0	4.25	189.78	2,787.6	-242.2	-41.8	242.2	2.00	-2.00	0.00
2,900.0	2.25	189.78	2,887.5	-247.8	-42.7	247.8	2.00	-2.00	0.00
3,000.0	0.25	189.78	2,987.4	-250.0	-43.1	250.0	2.00	-2.00	0.00
3,012.6	0.00	0.00	3,000.0	-250.0	-43.1	250.0	2.00	-2.00	0.00
Start 4154.0 hold at 3012.6 MD									
3,100.0	0.00	0.00	3,087.4	-250.0	-43.1	250.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,187.4	-250.0	-43.1	250.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,287.4	-250.0	-43.1	250.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,387.4	-250.0	-43.1	250.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,487.4	-250.0	-43.1	250.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,587.4	-250.0	-43.1	250.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,687.4	-250.0	-43.1	250.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,787.4	-250.0	-43.1	250.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,887.4	-250.0	-43.1	250.0	0.00	0.00	0.00
4,000.0	0.00	0.00	3,987.4	-250.0	-43.1	250.0	0.00	0.00	0.00

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Planning Report

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Site:	RESOLUTION FED 12-63-30-19-2CH PAD	North Reference:	True
Well:	RESOLUTION 12-63-31-6-3NH	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)
4,100.0	0.00	0.00	4,087.4	-250.0	-43.1	250.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,187.4	-250.0	-43.1	250.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,287.4	-250.0	-43.1	250.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,387.4	-250.0	-43.1	250.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,487.4	-250.0	-43.1	250.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,587.4	-250.0	-43.1	250.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,687.4	-250.0	-43.1	250.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,787.4	-250.0	-43.1	250.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,887.4	-250.0	-43.1	250.0	0.00	0.00	0.00
5,000.0	0.00	0.00	4,987.4	-250.0	-43.1	250.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,087.4	-250.0	-43.1	250.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,187.4	-250.0	-43.1	250.0	0.00	0.00	0.00
5,300.0	0.00	0.00	5,287.4	-250.0	-43.1	250.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,387.4	-250.0	-43.1	250.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,487.4	-250.0	-43.1	250.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,587.4	-250.0	-43.1	250.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,687.4	-250.0	-43.1	250.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,787.4	-250.0	-43.1	250.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,887.4	-250.0	-43.1	250.0	0.00	0.00	0.00
6,000.0	0.00	0.00	5,987.4	-250.0	-43.1	250.0	0.00	0.00	0.00
6,100.0	0.00	0.00	6,087.4	-250.0	-43.1	250.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,187.4	-250.0	-43.1	250.0	0.00	0.00	0.00
6,300.0	0.00	0.00	6,287.4	-250.0	-43.1	250.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,387.4	-250.0	-43.1	250.0	0.00	0.00	0.00
6,500.0	0.00	0.00	6,487.4	-250.0	-43.1	250.0	0.00	0.00	0.00
6,600.0	0.00	0.00	6,587.4	-250.0	-43.1	250.0	0.00	0.00	0.00
6,700.0	0.00	0.00	6,687.4	-250.0	-43.1	250.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,787.4	-250.0	-43.1	250.0	0.00	0.00	0.00
6,900.0	0.00	0.00	6,887.4	-250.0	-43.1	250.0	0.00	0.00	0.00
7,000.0	0.00	0.00	6,987.4	-250.0	-43.1	250.0	0.00	0.00	0.00
7,100.0	0.00	0.00	7,087.4	-250.0	-43.1	250.0	0.00	0.00	0.00
7,166.6	0.00	0.00	7,154.0	-250.0	-43.1	250.0	0.00	0.00	0.00
Start Build 10.00									
7,200.0	3.34	180.00	7,187.4	-251.0	-43.1	251.0	10.00	10.00	0.00
7,300.0	13.34	180.00	7,286.2	-265.5	-43.1	265.5	10.00	10.00	0.00
7,400.0	23.34	180.00	7,381.0	-296.9	-43.1	296.9	10.00	10.00	0.00
7,500.0	33.34	180.00	7,468.9	-344.3	-43.1	344.3	10.00	10.00	0.00
7,572.7	40.61	180.00	7,527.0	-388.0	-43.1	388.0	10.00	10.00	0.00
Niobrara									
7,600.0	43.34	180.00	7,547.3	-406.3	-43.1	406.3	10.00	10.00	0.00
7,700.0	53.34	180.00	7,613.7	-480.9	-43.1	480.9	10.00	10.00	0.00
7,800.0	63.34	180.00	7,666.1	-565.9	-43.1	565.9	10.00	10.00	0.00
7,900.0	73.34	180.00	7,703.0	-658.7	-43.1	658.7	10.00	10.00	0.00
8,000.0	83.34	180.00	7,723.1	-756.5	-43.1	756.5	10.00	10.00	0.00
8,066.6	90.00	180.00	7,727.0	-823.0	-43.1	823.0	10.00	10.00	0.00
Start 8849.7 hold at 8066.6 MD - 7"									
8,100.0	90.00	180.00	7,727.0	-856.4	-43.1	856.4	0.00	0.00	0.00
8,200.0	90.00	180.00	7,727.0	-956.4	-43.1	956.4	0.00	0.00	0.00
8,300.0	90.00	180.00	7,727.0	-1,056.4	-43.1	1,056.4	0.00	0.00	0.00
8,400.0	90.00	180.00	7,727.0	-1,156.4	-43.1	1,156.4	0.00	0.00	0.00
8,500.0	90.00	180.00	7,727.0	-1,256.4	-43.1	1,256.4	0.00	0.00	0.00
8,600.0	90.00	180.00	7,727.0	-1,356.4	-43.1	1,356.4	0.00	0.00	0.00
8,700.0	90.00	180.00	7,727.0	-1,456.4	-43.1	1,456.4	0.00	0.00	0.00

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well RESOLUTION 12-63-31-6-3NH
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5452.0usft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5452.0usft (Original Well Elev)
Site:	RESOLUTION FED 12-63-30-19-2CH PAD	North Reference:	True
Well:	RESOLUTION 12-63-31-6-3NH	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)
8,800.0	90.00	180.00	7,727.0	-1,556.4	-43.1	1,556.4	0.00	0.00	0.00
8,900.0	90.00	180.00	7,727.0	-1,656.4	-43.1	1,656.4	0.00	0.00	0.00
9,000.0	90.00	180.00	7,727.0	-1,756.4	-43.1	1,756.4	0.00	0.00	0.00
9,100.0	90.00	180.00	7,727.0	-1,856.4	-43.1	1,856.4	0.00	0.00	0.00
9,200.0	90.00	180.00	7,727.0	-1,956.4	-43.1	1,956.4	0.00	0.00	0.00
9,300.0	90.00	180.00	7,727.0	-2,056.4	-43.1	2,056.4	0.00	0.00	0.00
9,400.0	90.00	180.00	7,727.0	-2,156.4	-43.1	2,156.4	0.00	0.00	0.00
9,500.0	90.00	180.00	7,727.0	-2,256.4	-43.1	2,256.4	0.00	0.00	0.00
9,600.0	90.00	180.00	7,727.0	-2,356.4	-43.1	2,356.4	0.00	0.00	0.00
9,700.0	90.00	180.00	7,727.0	-2,456.4	-43.1	2,456.4	0.00	0.00	0.00
9,800.0	90.00	180.00	7,727.0	-2,556.4	-43.1	2,556.4	0.00	0.00	0.00
9,900.0	90.00	180.00	7,727.0	-2,656.4	-43.1	2,656.4	0.00	0.00	0.00
10,000.0	90.00	180.00	7,727.0	-2,756.4	-43.1	2,756.4	0.00	0.00	0.00
10,100.0	90.00	180.00	7,727.0	-2,856.4	-43.1	2,856.4	0.00	0.00	0.00
10,200.0	90.00	180.00	7,727.0	-2,956.4	-43.1	2,956.4	0.00	0.00	0.00
10,300.0	90.00	180.00	7,727.0	-3,056.4	-43.1	3,056.4	0.00	0.00	0.00
10,400.0	90.00	180.00	7,727.0	-3,156.4	-43.1	3,156.4	0.00	0.00	0.00
10,500.0	90.00	180.00	7,727.0	-3,256.4	-43.1	3,256.4	0.00	0.00	0.00
10,600.0	90.00	180.00	7,727.0	-3,356.4	-43.1	3,356.4	0.00	0.00	0.00
10,700.0	90.00	180.00	7,727.0	-3,456.4	-43.1	3,456.4	0.00	0.00	0.00
10,800.0	90.00	180.00	7,727.0	-3,556.4	-43.1	3,556.4	0.00	0.00	0.00
10,900.0	90.00	180.00	7,727.0	-3,656.4	-43.1	3,656.4	0.00	0.00	0.00
11,000.0	90.00	180.00	7,727.0	-3,756.4	-43.1	3,756.4	0.00	0.00	0.00
11,100.0	90.00	180.00	7,727.0	-3,856.4	-43.1	3,856.4	0.00	0.00	0.00
11,200.0	90.00	180.00	7,727.0	-3,956.4	-43.1	3,956.4	0.00	0.00	0.00
11,300.0	90.00	180.00	7,727.0	-4,056.4	-43.1	4,056.4	0.00	0.00	0.00
11,400.0	90.00	180.00	7,727.0	-4,156.4	-43.1	4,156.4	0.00	0.00	0.00
11,500.0	90.00	180.00	7,727.0	-4,256.4	-43.1	4,256.4	0.00	0.00	0.00
11,600.0	90.00	180.00	7,727.0	-4,356.4	-43.1	4,356.4	0.00	0.00	0.00
11,700.0	90.00	180.00	7,727.0	-4,456.4	-43.1	4,456.4	0.00	0.00	0.00
11,800.0	90.00	180.00	7,727.0	-4,556.4	-43.1	4,556.4	0.00	0.00	0.00
11,900.0	90.00	180.00	7,727.0	-4,656.4	-43.1	4,656.4	0.00	0.00	0.00
12,000.0	90.00	180.00	7,727.0	-4,756.4	-43.1	4,756.4	0.00	0.00	0.00
12,100.0	90.00	180.00	7,727.0	-4,856.4	-43.1	4,856.4	0.00	0.00	0.00
12,200.0	90.00	180.00	7,727.0	-4,956.4	-43.1	4,956.4	0.00	0.00	0.00
12,300.0	90.00	180.00	7,727.0	-5,056.4	-43.1	5,056.4	0.00	0.00	0.00
12,400.0	90.00	180.00	7,727.0	-5,156.4	-43.1	5,156.4	0.00	0.00	0.00
12,500.0	90.00	180.00	7,727.0	-5,256.4	-43.1	5,256.4	0.00	0.00	0.00
12,600.0	90.00	180.00	7,727.0	-5,356.4	-43.1	5,356.4	0.00	0.00	0.00
12,700.0	90.00	180.00	7,727.0	-5,456.4	-43.1	5,456.4	0.00	0.00	0.00
12,800.0	90.00	180.00	7,727.0	-5,556.4	-43.1	5,556.4	0.00	0.00	0.00
12,900.0	90.00	180.00	7,727.0	-5,656.4	-43.1	5,656.4	0.00	0.00	0.00
13,000.0	90.00	180.00	7,727.0	-5,756.4	-43.1	5,756.4	0.00	0.00	0.00
13,100.0	90.00	180.00	7,727.0	-5,856.4	-43.1	5,856.4	0.00	0.00	0.00
13,200.0	90.00	180.00	7,727.0	-5,956.4	-43.1	5,956.4	0.00	0.00	0.00
13,300.0	90.00	180.00	7,727.0	-6,056.4	-43.1	6,056.4	0.00	0.00	0.00
13,400.0	90.00	180.00	7,727.0	-6,156.4	-43.1	6,156.4	0.00	0.00	0.00
13,500.0	90.00	180.00	7,727.0	-6,256.4	-43.1	6,256.4	0.00	0.00	0.00
13,600.0	90.00	180.00	7,727.0	-6,356.4	-43.1	6,356.4	0.00	0.00	0.00
13,700.0	90.00	180.00	7,727.0	-6,456.4	-43.1	6,456.4	0.00	0.00	0.00
13,800.0	90.00	180.00	7,727.0	-6,556.4	-43.1	6,556.4	0.00	0.00	0.00
13,900.0	90.00	180.00	7,727.0	-6,656.4	-43.1	6,656.4	0.00	0.00	0.00
14,000.0	90.00	180.00	7,727.0	-6,756.4	-43.1	6,756.4	0.00	0.00	0.00
14,100.0	90.00	180.00	7,727.0	-6,856.4	-43.1	6,856.4	0.00	0.00	0.00

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well RESOLUTION 12-63-31-6-3NH
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5452.0usft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5452.0usft (Original Well Elev)
Site:	RESOLUTION FED 12-63-30-19-2CH PAD	North Reference:	True
Well:	RESOLUTION 12-63-31-6-3NH	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)	
14,200.0	90.00	180.00	7,727.0	-6,956.4	-43.1	6,956.4	0.00	0.00	0.00	
14,300.0	90.00	180.00	7,727.0	-7,056.4	-43.1	7,056.4	0.00	0.00	0.00	
14,400.0	90.00	180.00	7,727.0	-7,156.4	-43.1	7,156.4	0.00	0.00	0.00	
14,500.0	90.00	180.00	7,727.0	-7,256.4	-43.1	7,256.4	0.00	0.00	0.00	
14,600.0	90.00	180.00	7,727.0	-7,356.4	-43.1	7,356.4	0.00	0.00	0.00	
14,700.0	90.00	180.00	7,727.0	-7,456.4	-43.1	7,456.4	0.00	0.00	0.00	
14,800.0	90.00	180.00	7,727.0	-7,556.4	-43.1	7,556.4	0.00	0.00	0.00	
14,900.0	90.00	180.00	7,727.0	-7,656.4	-43.1	7,656.4	0.00	0.00	0.00	
15,000.0	90.00	180.00	7,727.0	-7,756.4	-43.1	7,756.4	0.00	0.00	0.00	
15,100.0	90.00	180.00	7,727.0	-7,856.4	-43.1	7,856.4	0.00	0.00	0.00	
15,200.0	90.00	180.00	7,727.0	-7,956.4	-43.1	7,956.4	0.00	0.00	0.00	
15,300.0	90.00	180.00	7,727.0	-8,056.4	-43.1	8,056.4	0.00	0.00	0.00	
15,400.0	90.00	180.00	7,727.0	-8,156.4	-43.1	8,156.4	0.00	0.00	0.00	
15,500.0	90.00	180.00	7,727.0	-8,256.4	-43.1	8,256.4	0.00	0.00	0.00	
15,600.0	90.00	180.00	7,727.0	-8,356.4	-43.1	8,356.4	0.00	0.00	0.00	
15,700.0	90.00	180.00	7,727.0	-8,456.4	-43.1	8,456.4	0.00	0.00	0.00	
15,800.0	90.00	180.00	7,727.0	-8,556.4	-43.1	8,556.4	0.00	0.00	0.00	
15,900.0	90.00	180.00	7,727.0	-8,656.4	-43.1	8,656.4	0.00	0.00	0.00	
16,000.0	90.00	180.00	7,727.0	-8,756.4	-43.1	8,756.4	0.00	0.00	0.00	
16,100.0	90.00	180.00	7,727.0	-8,856.4	-43.1	8,856.4	0.00	0.00	0.00	
16,200.0	90.00	180.00	7,727.0	-8,956.4	-43.1	8,956.4	0.00	0.00	0.00	
16,300.0	90.00	180.00	7,727.0	-9,056.4	-43.1	9,056.4	0.00	0.00	0.00	
16,400.0	90.00	180.00	7,727.0	-9,156.4	-43.1	9,156.4	0.00	0.00	0.00	
16,500.0	90.00	180.00	7,727.0	-9,256.4	-43.1	9,256.4	0.00	0.00	0.00	
16,600.0	90.00	180.00	7,727.0	-9,356.4	-43.1	9,356.4	0.00	0.00	0.00	
16,700.0	90.00	180.00	7,727.0	-9,456.4	-43.1	9,456.4	0.00	0.00	0.00	
16,800.0	90.00	180.00	7,727.0	-9,556.4	-43.1	9,556.4	0.00	0.00	0.00	
16,900.0	90.00	180.00	7,727.0	-9,656.4	-43.1	9,656.4	0.00	0.00	0.00	
16,916.3	90.00	180.00	7,727.0	-9,672.6	-43.1	9,672.6	0.00	0.00	0.00	
TD at 16916.3										

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 @ 7527.0 (RESOI	0.00	0.00	7,527.0	-388.0	-43.1	1,598,295.77	3,282,160.45	40.971219	-104.478262
- plan hits target center									
- Point									
RESOLUTION 12-63-31	0.00	0.00	7,727.0	-9,672.6	-43.1	1,589,011.77	3,282,267.45	40.945737	-104.478262
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
2,008.3	2,000.0	9 5/8"	9.625	12.250	
8,066.6	7,727.0	7"	7.000	7.500	

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well RESOLUTION 12-63-31-6-3NH
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5452.0usft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5452.0usft (Original Well Elev)
Site:	RESOLUTION FED 12-63-30-19-2CH PAD	North Reference:	True
Well:	RESOLUTION 12-63-31-6-3NH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PLAN #1		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,417.1	1,412.0	Aquifer (Fox Hills)			
7,572.7	7,527.0	Niobrara			

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
250.0	250.0	0.0	0.0	Start Build 2.00	
545.0	544.5	-15.0	-2.6	Start 2172.5 hold at 545.0 MD	
2,717.5	2,705.5	-235.0	-40.5	Start Drop -2.00	
3,012.6	3,000.0	-250.0	-43.1	Start 4154.0 hold at 3012.6 MD	
7,166.6	7,154.0	-250.0	-43.1	Start Build 10.00	
8,066.6	7,727.0	-823.0	-43.1	Start 8849.7 hold at 8066.6 MD	
16,916.3	7,727.0	-9,672.6	-43.1	TD at 16916.3	