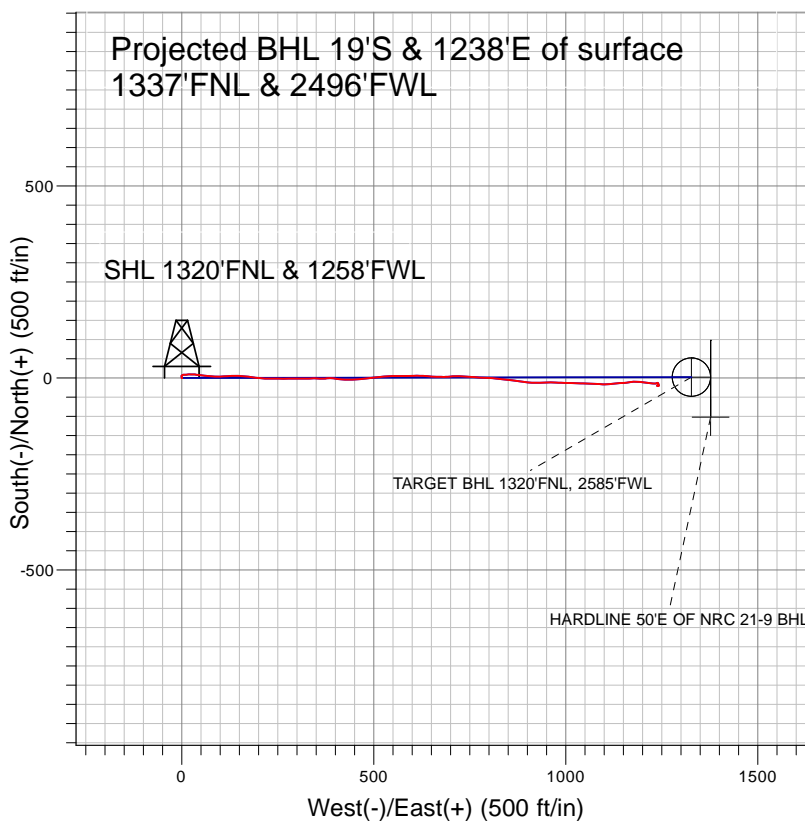





Anadarko, Weld County CO



LEGEND

-  NRC 21-9, Wellbore #1, Plan #1 (6-3-10) V0
-  Wellbore #1
-  Survey #1

Final Survey Plot

Projected Final Survey -
8442'MD & 8295'TVD @ 1238' VS
0.7 deg Inc 295.4 deg AZ

Project: SEC.9-T1N-R67W
Site: NRC 18-9 Pad Sec.9-T1N-R67W
Well: NRC 21-9
Plan: Wellbore #1



Anadarko, Weld County CO

SEC.9-T1N-R67W

NRC 18-9 Pad Sec.9-T1N-R67W

NRC 21-9

Wellbore #1

Survey: Survey #1

Standard Survey Report

24 August, 2010



Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well NRC 21-9
Project:	SEC.9-T1N-R67W	TVD Reference:	WELL @ 5036.0ft (Original Well Elev)
Site:	NRC 18-9 Pad Sec.9-T1N-R67W	MD Reference:	WELL @ 5036.0ft (Original Well Elev)
Well:	NRC 21-9	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM den0-adp01 Server Data

Project	SEC.9-T1N-R67W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	NRC 18-9 Pad Sec.9-T1N-R67W		
Site Position:		Northing:	1,268,598.84 ft
From:	Lat/Long	Easting:	3,167,667.18 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40° 4' 8.900 N
		Longitude:	104° 54' 3.258 W
		Grid Convergence:	0.39 °

Well	NRC 21-9		
Well Position	+N-S	0.0 ft	Northing: 1,268,599.38 ft
	+E-W	0.0 ft	Easting: 3,167,747.50 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40° 4' 8.900 N
		Longitude:	104° 54' 2.225 W
		Ground Level:	5,021.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/28/2010	9.05	66.79	53,051

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N-S (ft)	+E-W (ft)	Direction (°)	
	0.0	0.0	0.0	90.91	

Survey Program	Date	8/24/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
146.0	8,442.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

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	
146.0	0.01	99.00	146.0	0.0	0.0	0.0	0.01	0.01	0.00	
239.0	0.30	164.20	239.0	-0.2	0.1	0.1	0.32	0.31	70.11	
332.0	0.40	18.60	332.0	-0.2	0.3	0.3	0.72	0.11	-156.56	
426.0	0.60	350.00	426.0	0.6	0.3	0.3	0.33	0.21	-30.43	
519.0	0.60	350.00	519.0	1.6	0.1	0.1	0.00	0.00	0.00	
611.0	0.80	332.00	611.0	2.6	-0.3	-0.3	0.32	0.22	-19.57	
704.0	0.80	342.10	704.0	3.8	-0.8	-0.8	0.15	0.00	10.86	
796.0	1.20	15.60	796.0	5.4	-0.7	-0.8	0.75	0.43	36.41	
888.0	2.10	58.40	887.9	7.2	1.0	0.9	1.59	0.98	46.52	
980.0	2.70	78.90	979.8	8.5	4.5	4.4	1.13	0.65	22.28	
1,057.0	3.60	91.40	1,056.7	8.8	8.7	8.6	1.46	1.17	16.23	
1,146.0	4.80	85.80	1,145.5	9.0	15.2	15.1	1.42	1.35	-6.29	

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well NRC 21-9
Project:	SEC.9-T1N-R67W	TVD Reference:	WELL @ 5036.0ft (Original Well Elev)
Site:	NRC 18-9 Pad Sec.9-T1N-R67W	MD Reference:	WELL @ 5036.0ft (Original Well Elev)
Well:	NRC 21-9	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM den0-adp01 Server Data

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)	
1,236.0	6.20	90.40	1,235.1	9.2	23.9	23.7	1.63	1.56	5.11	
1,324.0	7.10	92.90	1,322.5	8.9	34.0	33.9	1.07	1.02	2.84	
1,412.0	9.10	98.40	1,409.6	7.6	46.4	46.2	2.43	2.27	6.25	
1,501.0	10.90	95.40	1,497.2	5.8	61.7	61.6	2.10	2.02	-3.37	
1,591.0	12.50	95.10	1,585.4	4.1	79.9	79.8	1.78	1.78	-0.33	
1,677.0	13.50	88.90	1,669.2	3.5	99.2	99.1	1.99	1.16	-7.21	
1,766.0	12.70	85.80	1,755.9	4.4	119.3	119.2	1.20	-0.90	-3.48	
1,853.0	12.90	88.30	1,840.7	5.4	138.6	138.5	0.68	0.23	2.87	
1,943.0	13.70	95.70	1,928.3	4.6	159.2	159.1	2.09	0.89	8.22	
2,034.0	14.50	97.50	2,016.5	2.1	181.2	181.2	1.00	0.88	1.98	
2,124.0	15.70	95.20	2,103.4	-0.5	204.5	204.5	1.49	1.33	-2.56	
2,215.0	16.10	89.00	2,191.0	-1.4	229.4	229.4	1.92	0.44	-6.81	
2,304.0	15.20	91.90	2,276.7	-1.6	253.4	253.4	1.34	-1.01	3.26	
2,393.0	16.60	88.40	2,362.3	-1.6	277.8	277.8	1.91	1.57	-3.93	
2,483.0	18.40	90.80	2,448.1	-1.4	304.8	304.8	2.15	2.00	2.67	
2,572.0	17.30	88.70	2,532.8	-1.3	332.1	332.1	1.43	-1.24	-2.36	
2,660.0	15.60	91.50	2,617.2	-1.3	357.0	357.0	2.13	-1.93	3.18	
2,749.0	11.00	85.40	2,703.8	-1.0	377.5	377.4	5.40	-5.17	-6.85	
2,839.0	11.30	94.10	2,792.1	-0.9	394.8	394.8	1.90	0.33	9.67	
2,930.0	14.30	97.40	2,880.8	-3.0	414.9	414.9	3.39	3.30	3.63	
3,019.0	15.10	91.10	2,966.9	-4.6	437.4	437.4	2.01	0.90	-7.08	
3,109.0	16.20	83.80	3,053.6	-3.5	461.6	461.6	2.50	1.22	-8.11	
3,198.0	15.60	83.80	3,139.2	-0.9	485.8	485.8	0.67	-0.67	0.00	
3,287.0	16.00	82.40	3,224.8	2.0	509.9	509.8	0.62	0.45	-1.57	
3,376.0	15.80	85.50	3,310.4	4.6	534.1	534.0	0.98	-0.22	3.48	
3,465.0	14.80	92.00	3,396.3	5.2	557.5	557.4	2.23	-1.12	7.30	
3,555.0	14.80	89.40	3,483.3	4.9	580.5	580.4	0.74	0.00	-2.89	
3,646.0	15.50	86.90	3,571.1	5.7	604.3	604.1	1.05	0.77	-2.75	
3,736.0	15.80	94.70	3,657.8	5.3	628.5	628.3	2.36	0.33	8.67	
3,826.0	14.60	92.70	3,744.6	3.8	652.0	651.9	1.45	-1.33	-2.22	
3,917.0	15.90	91.60	3,832.4	2.9	676.0	675.8	1.46	1.43	-1.21	
4,005.0	13.30	84.00	3,917.6	3.6	698.1	697.9	3.66	-2.95	-8.64	
4,096.0	13.40	92.00	4,006.1	4.3	719.0	718.9	2.03	0.11	8.79	
4,186.0	14.30	91.70	4,093.5	3.6	740.6	740.4	1.00	1.00	-0.33	
4,277.0	15.30	96.10	4,181.5	2.0	763.7	763.6	1.65	1.10	4.84	
4,365.0	14.40	91.90	4,266.6	0.4	786.2	786.1	1.59	-1.02	-4.77	
4,454.0	14.60	93.00	4,352.7	-0.5	808.5	808.4	0.38	0.22	1.24	
4,543.0	13.10	97.70	4,439.2	-2.5	829.7	829.6	2.11	-1.69	5.28	
4,632.0	13.00	97.30	4,525.9	-5.1	849.6	849.6	0.15	-0.11	-0.45	
4,719.0	14.40	97.00	4,610.4	-7.6	870.1	870.1	1.61	1.61	-0.34	
4,809.0	13.10	97.70	4,697.8	-10.4	891.3	891.3	1.46	-1.44	0.78	
4,897.0	13.60	93.50	4,783.4	-12.3	911.5	911.6	1.24	0.57	-4.77	
4,987.0	15.20	87.30	4,870.6	-12.4	933.8	933.9	2.47	1.78	-6.89	
5,078.0	13.10	88.10	4,958.8	-11.5	956.1	956.1	2.32	-2.31	0.88	
5,164.0	12.20	94.00	5,042.7	-11.8	974.9	974.9	1.83	-1.05	6.86	
5,255.0	14.20	92.30	5,131.3	-13.0	995.6	995.7	2.24	2.20	-1.87	
5,346.0	13.90	90.70	5,219.6	-13.5	1,017.7	1,017.8	0.54	-0.33	-1.76	
5,432.0	15.10	91.00	5,302.9	-13.9	1,039.2	1,039.3	1.40	1.40	0.35	
5,523.0	11.90	94.30	5,391.4	-14.8	1,060.4	1,060.5	3.62	-3.52	3.63	
5,612.0	11.70	90.70	5,478.5	-15.6	1,078.6	1,078.7	0.86	-0.22	-4.04	
5,702.0	10.90	94.50	5,566.7	-16.4	1,096.2	1,096.3	1.21	-0.89	4.22	
5,791.0	12.00	83.40	5,654.0	-16.0	1,113.8	1,113.9	2.76	1.24	-12.47	
5,880.0	13.10	86.00	5,740.8	-14.2	1,133.1	1,133.1	1.39	1.24	2.92	
5,971.0	11.20	85.30	5,829.8	-12.7	1,152.2	1,152.2	2.09	-2.09	-0.77	

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well NRC 21-9
Project:	SEC.9-T1N-R67W	TVD Reference:	WELL @ 5036.0ft (Original Well Elev)
Site:	NRC 18-9 Pad Sec.9-T1N-R67W	MD Reference:	WELL @ 5036.0ft (Original Well Elev)
Well:	NRC 21-9	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM den0-adp01 Server Data

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)
6,059.0	9.10	81.00	5,916.4	-11.0	1,167.5	1,167.6	2.54	-2.39	-4.89
6,149.0	9.30	90.80	6,005.3	-9.9	1,181.8	1,181.9	1.75	0.22	10.89
6,167.0	9.27	91.76	6,023.0	-10.0	1,184.7	1,184.8	0.87	-0.14	5.34
TARGET BHL 1320'FNL, 2585'FWL									
6,238.0	9.20	95.60	6,093.1	-10.7	1,196.1	1,196.1	0.87	-0.11	5.41
6,327.0	7.80	96.00	6,181.1	-12.1	1,209.2	1,209.2	1.57	-1.57	0.45
6,415.0	5.30	102.50	6,268.5	-13.6	1,219.1	1,219.2	2.96	-2.84	7.39
6,505.0	3.60	91.40	6,358.3	-14.5	1,226.0	1,226.1	2.11	-1.89	-12.33
6,594.0	2.30	87.40	6,447.2	-14.5	1,230.6	1,230.6	1.48	-1.46	-4.49
6,683.0	1.20	99.10	6,536.1	-14.6	1,233.3	1,233.4	1.29	-1.24	13.15
6,774.0	1.30	60.90	6,627.1	-14.2	1,235.1	1,235.2	0.90	0.11	-41.98
6,862.0	1.00	64.20	6,715.1	-13.4	1,236.7	1,236.7	0.35	-0.34	3.75
6,953.0	1.90	86.20	6,806.0	-13.0	1,238.9	1,239.0	1.15	0.99	24.18
7,043.0	1.60	154.90	6,896.0	-14.0	1,240.9	1,241.0	2.21	-0.33	76.33
7,133.0	1.60	163.00	6,986.0	-16.3	1,241.8	1,241.9	0.25	0.00	9.00
7,224.0	0.90	169.00	7,077.0	-18.3	1,242.3	1,242.5	0.78	-0.77	6.59
7,314.0	0.50	193.30	7,166.9	-19.3	1,242.4	1,242.5	0.54	-0.44	27.00
7,405.0	0.50	206.80	7,257.9	-20.1	1,242.1	1,242.3	0.13	0.00	14.84
7,494.0	0.40	240.00	7,346.9	-20.6	1,241.7	1,241.8	0.31	-0.11	37.30
7,582.0	0.80	336.70	7,434.9	-20.2	1,241.2	1,241.3	1.06	0.45	109.89
7,672.0	0.60	229.90	7,524.9	-19.9	1,240.5	1,240.7	1.26	-0.22	-118.67
7,762.0	1.30	257.20	7,614.9	-20.4	1,239.2	1,239.4	0.91	0.78	30.33
7,852.0	0.30	129.40	7,704.9	-20.8	1,238.4	1,238.6	1.67	-1.11	-142.00
7,943.0	1.40	48.80	7,795.9	-20.2	1,239.4	1,239.6	1.52	1.21	-88.57
8,033.0	0.70	109.40	7,885.9	-19.7	1,240.7	1,240.9	1.36	-0.78	67.33
8,123.0	0.10	99.50	7,975.9	-19.9	1,241.3	1,241.5	0.67	-0.67	-11.00
8,214.0	1.00	301.40	8,066.9	-19.5	1,240.7	1,240.9	1.20	0.99	-173.74
8,304.0	0.60	217.90	8,156.9	-19.4	1,239.8	1,239.9	1.23	-0.44	-92.78
8,394.0	0.70	295.40	8,246.9	-19.6	1,239.0	1,239.1	0.91	0.11	86.11
8,442.0	0.70	295.40	8,294.9	-19.3	1,238.5	1,238.6	0.00	0.00	0.00
HARDLINE 50'E OF NRC 21-9 BHL									

Wellbore Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
TARGET BHL 1320'F	0.00	0.00	6,000.0	2.2	1,327.2	1,268,610.58	3,169,074.60	40° 4' 8.922 N	104° 53' 45.154 W
- survey misses target center by 144.8ft at 6167.0ft MD (6023.0 TVD, -10.0 N, 1184.7 E)									
- Circle (radius 50.0)									
HARDLINE 50'E OF N	0.00	0.00	8,308.0	-102.2	1,377.2	1,268,506.49	3,169,125.31	40° 4' 7.890 N	104° 53' 44.510 W
- survey misses target center by 162.1ft at 8442.0ft MD (8294.9 TVD, -19.3 N, 1238.5 E)									
- Polygon									
Point 1			8,308.0	0.0	0.0	1,268,506.49	3,169,125.31		
Point 2			8,308.0	200.0	0.0	1,268,706.48	3,169,123.96		

Checked By: _____ Approved By: _____ Date: _____