



Anadarko

Weld County, Colorado (NAD83)

Northglenn State

16-36

Wellbore #1

Design: Surveys

Standard Survey Report

20 February, 2012

Company:	Anadarko	Local Co-ordinate Reference:	Well 16-36
Project:	Weld County, Colorado (NAD83)	TVD Reference:	WELL @ 5134.00usft (Xtreme 11)
Site:	Northglenn State	MD Reference:	WELL @ 5134.00usft (Xtreme 11)
Well:	16-36	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	Southern Region

Project	Weld County, Colorado (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Well	16-36					
Well Position	+N/-S	0.00 usft	Northing:	1,244,723.54 usft	Latitude:	40° 0' 13.8494 N
	+E/-W	0.00 usft	Easting:	3,153,672.13 usft	Longitude:	104° 57' 5.175 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	5,119.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM_2010	02/19/12	8.83	66.67	52,837

Design	Surveys				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00		111.16

Survey Program	Date	02/19/12			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
103.00	8,925.00	MS MWD (Wellbore #1)	MWD	MWD - Standard	

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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
103.00	1.70	150.50	102.98	-1.33	0.75	1.18	1.65	1.65	0.00	
192.00	2.50	122.20	191.93	-3.51	3.05	4.11	1.45	0.90	-31.80	
279.00	3.30	112.70	278.82	-5.49	6.96	8.47	1.07	0.92	-10.92	
368.00	4.60	114.50	367.60	-7.96	12.57	14.60	1.47	1.46	2.02	
446.00	4.90	112.50	445.33	-10.53	18.50	21.05	0.44	0.38	-2.56	
536.00	5.50	110.60	534.96	-13.52	26.08	29.21	0.69	0.67	-2.11	
627.00	5.50	109.60	625.54	-16.52	34.27	37.93	0.11	0.00	-1.10	
718.00	6.40	110.80	716.05	-19.78	43.12	47.36	1.00	0.99	1.32	
809.00	7.70	110.10	806.36	-23.68	53.59	58.52	1.43	1.43	-0.77	
900.00	8.60	109.70	896.44	-28.07	65.72	71.42	0.99	0.99	-0.44	
991.00	9.50	108.10	986.31	-32.69	79.27	85.72	1.03	0.99	-1.76	
1,087.00	9.40	110.40	1,081.01	-37.89	94.14	101.47	0.41	-0.10	2.40	
1,178.00	9.50	112.50	1,170.77	-43.35	108.05	116.41	0.39	0.11	2.31	
1,268.00	10.60	114.50	1,259.39	-49.63	122.44	132.10	1.28	1.22	2.22	

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Site:	Northglenn State	MD Reference:	WELL @ 5134.00usft (Xtreme 11)
Well:	16-36	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	Southern Region

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)
1,359.00	13.50	113.60	1,348.38	-57.35	139.80	151.07	3.19	3.19	-0.99
1,450.00	15.70	110.30	1,436.43	-65.88	161.08	174.00	2.58	2.42	-3.63
1,540.00	17.50	108.30	1,522.68	-74.35	185.35	199.69	2.10	2.00	-2.22
1,631.00	19.20	108.50	1,609.05	-83.40	212.53	228.31	1.87	1.87	0.22
1,722.00	20.90	113.60	1,694.54	-94.64	241.60	259.47	2.68	1.87	5.60
1,812.00	23.70	116.80	1,777.80	-109.23	272.46	293.52	3.39	3.11	3.56
1,903.00	26.80	115.40	1,860.10	-126.28	307.33	332.19	3.47	3.41	-1.54
1,994.00	27.10	114.10	1,941.22	-143.54	344.78	373.35	0.73	0.33	-1.43
2,085.00	26.60	112.20	2,022.41	-159.70	382.57	414.42	1.09	-0.55	-2.09
2,176.00	24.50	110.60	2,104.50	-174.04	419.09	453.66	2.43	-2.31	-1.76
2,266.00	23.30	112.00	2,186.79	-187.28	453.07	490.12	1.47	-1.33	1.56
2,357.00	25.40	109.70	2,269.69	-200.60	488.13	527.63	2.53	2.31	-2.53
2,448.00	25.10	111.10	2,351.99	-214.13	524.52	566.44	0.73	-0.33	1.54
2,539.00	25.40	111.00	2,434.30	-228.07	560.74	605.26	0.33	0.33	-0.11
2,629.00	25.30	111.30	2,515.63	-241.97	596.68	643.80	0.18	-0.11	0.33
2,720.00	27.10	111.10	2,597.28	-256.50	634.14	683.97	1.98	1.98	-0.22
2,811.00	26.60	111.10	2,678.47	-271.29	672.48	725.07	0.55	-0.55	0.00
2,901.00	26.20	109.40	2,759.08	-285.15	710.02	765.08	0.95	-0.44	-1.89
2,992.00	23.80	109.70	2,841.55	-298.01	746.26	803.52	2.64	-2.64	0.33
3,082.00	23.00	110.40	2,924.15	-310.26	779.84	839.25	0.94	-0.89	0.78
3,173.00	23.80	114.80	3,007.67	-324.16	813.17	875.36	2.11	0.88	4.84
3,264.00	24.80	114.70	3,090.61	-339.84	847.18	912.73	1.10	1.10	-0.11
3,354.00	26.80	112.20	3,171.64	-355.39	883.12	951.86	2.53	2.22	-2.78
3,445.00	25.90	112.40	3,253.18	-370.72	920.49	992.25	0.99	-0.99	0.22
3,536.00	26.30	110.60	3,334.90	-385.39	957.74	1,032.28	0.97	0.44	-1.98
3,627.00	26.80	111.70	3,416.31	-400.07	995.67	1,072.95	0.77	0.55	1.21
3,718.00	27.20	110.10	3,497.39	-414.80	1,034.26	1,114.26	0.91	0.44	-1.76
3,808.00	26.20	108.10	3,577.79	-428.04	1,072.46	1,154.67	1.49	-1.11	-2.22
3,899.00	25.90	107.40	3,659.55	-440.22	1,110.52	1,194.56	0.47	-0.33	-0.77
3,990.00	22.00	106.00	3,742.70	-450.87	1,145.89	1,231.38	4.33	-4.29	-1.54
4,081.00	22.00	110.10	3,827.08	-461.43	1,178.28	1,265.40	1.69	0.00	4.51
4,172.00	22.30	116.40	3,911.37	-474.96	1,209.75	1,299.64	2.63	0.33	6.92
4,262.00	23.00	115.70	3,994.43	-490.18	1,240.89	1,334.17	0.83	0.78	-0.78
4,353.00	24.80	116.10	4,077.62	-506.29	1,274.05	1,370.91	1.99	1.98	0.44
4,444.00	26.60	116.90	4,159.62	-523.90	1,309.37	1,410.20	2.01	1.98	0.88
4,535.00	26.60	113.80	4,240.99	-541.34	1,346.18	1,450.82	1.53	0.00	-3.41
4,626.00	25.60	110.80	4,322.71	-556.55	1,383.20	1,490.84	1.82	-1.10	-3.30
4,716.00	24.30	109.60	4,404.31	-569.66	1,418.82	1,528.79	1.55	-1.44	-1.33
4,807.00	24.10	107.60	4,487.32	-581.56	1,454.17	1,566.05	0.93	-0.22	-2.20
4,898.00	24.10	105.90	4,570.39	-592.27	1,489.75	1,603.10	0.76	0.00	-1.87
4,989.00	24.60	106.60	4,653.29	-602.77	1,525.77	1,640.48	0.63	0.55	0.77
5,080.00	24.10	110.40	4,736.20	-614.66	1,561.34	1,677.94	1.81	-0.55	4.18
5,170.00	24.70	108.00	4,818.16	-626.88	1,596.44	1,715.09	1.29	0.67	-2.67
5,261.00	25.80	107.60	4,900.47	-638.74	1,633.40	1,753.84	1.22	1.21	-0.44

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Survey										
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5,352.00	26.50	102.70	4,982.16	-649.19	1,672.09	1,793.69	2.49	0.77	-5.38	
5,443.00	26.40	105.00	5,063.64	-658.89	1,711.44	1,833.89	1.13	-0.11	2.53	
5,534.00	24.40	106.90	5,145.84	-669.59	1,748.97	1,872.75	2.37	-2.20	2.09	
5,624.00	21.50	106.60	5,228.71	-679.71	1,782.57	1,907.74	3.22	-3.22	-0.33	
5,715.00	18.60	108.70	5,314.18	-689.13	1,812.30	1,938.87	3.28	-3.19	2.31	
5,806.00	16.60	110.60	5,400.92	-698.36	1,838.22	1,966.37	2.29	-2.20	2.09	
5,897.00	15.20	112.40	5,488.44	-707.48	1,861.42	1,991.29	1.63	-1.54	1.98	
5,988.00	13.50	114.50	5,576.60	-716.43	1,882.11	2,013.83	1.95	-1.87	2.31	
6,079.00	11.50	113.20	5,665.44	-724.41	1,900.12	2,033.50	2.22	-2.20	-1.43	
6,169.00	9.40	114.50	5,753.94	-730.99	1,915.05	2,049.80	2.35	-2.33	1.44	
6,260.00	7.40	115.20	5,843.96	-736.57	1,927.12	2,063.07	2.20	-2.20	0.77	
6,351.00	6.90	118.30	5,934.25	-741.66	1,937.24	2,074.34	0.69	-0.55	3.41	
6,441.00	5.20	118.20	6,023.74	-746.15	1,945.59	2,083.75	1.89	-1.89	-0.11	
6,532.00	3.80	116.90	6,114.46	-749.46	1,951.91	2,090.84	1.54	-1.54	-1.43	
6,623.00	2.90	111.50	6,205.31	-751.67	1,956.75	2,096.15	1.05	-0.99	-5.93	
6,714.00	2.10	110.80	6,296.22	-753.10	1,960.45	2,100.12	0.88	-0.88	-0.77	
6,805.00	1.70	105.70	6,387.17	-754.06	1,963.30	2,103.13	0.48	-0.44	-5.60	
6,895.00	1.10	105.50	6,477.14	-754.65	1,965.42	2,105.31	0.67	-0.67	-0.22	
6,986.00	0.80	86.30	6,568.13	-754.85	1,966.90	2,106.76	0.48	-0.33	-21.10	
7,077.00	0.40	45.20	6,659.12	-754.58	1,967.76	2,107.47	0.62	-0.44	-45.16	
7,258.00	0.30	44.20	6,840.12	-753.80	1,968.54	2,107.91	0.06	-0.06	-0.55	
7,440.00	0.40	18.80	7,022.12	-752.85	1,969.07	2,108.07	0.10	0.05	-13.96	
7,622.00	0.60	339.70	7,204.11	-751.36	1,968.95	2,107.41	0.21	0.11	-21.48	
7,803.00	0.40	28.30	7,385.10	-749.91	1,968.92	2,106.86	0.25	-0.11	26.85	
7,985.00	0.80	97.60	7,567.10	-749.52	1,970.48	2,108.18	0.42	0.22	38.08	
8,166.00	1.10	95.70	7,748.07	-749.86	1,973.46	2,111.08	0.17	0.17	-1.05	
8,348.00	1.30	75.30	7,930.03	-749.51	1,977.19	2,114.44	0.26	0.11	-11.21	
8,529.00	1.10	76.90	8,110.99	-748.60	1,980.87	2,117.54	0.11	-0.11	0.88	
8,665.00	0.40	74.70	8,246.98	-748.17	1,982.60	2,119.00	0.52	-0.51	-1.62	
8,802.00	0.40	27.80	8,383.98	-747.62	1,983.29	2,119.44	0.23	0.00	-34.23	
8,865.00	0.20	42.10	8,446.98	-747.35	1,983.46	2,119.50	0.34	-0.32	22.70	
8,925.00	0.20	42.10	8,506.98	-747.19	1,983.60	2,119.58	0.00	0.00	0.00	
Projection to TD-8925.00' MD										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
8,925.00	8,506.98	-747.19	1,983.60	Projection to TD-8925.00' MD	