

30-015-37699



Actual Wellpath Report

No. 1H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 1H SHL
Area	Eddy County, NM	Well	No. 1H
Field	(Penny NAD 27) Sec 21, T19S, R31E	Wellbore	No. 1H AWB
Facility	Penny Pincher Fed Com No. 1H		

REPORT SETUP INFORMATION

Projection System	NAD27 / TM New Mexico State Planes, Eastern Zone (3001), US feet	Software System	WellArchitect® 2.0
North Reference	Grid	User	Victor Hernandez
Scale	0.999931	Report Generated	7/7/2010 at 3:44:07 PM
Convergence at slot	0.25° East	Database/Source file	WA_Midland/No. 1H_AWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[USft]	Northing[USft]	Latitude	Longitude
Slot Location	0.00	0.00	639790.60	600930.80	32°39'04.459"N	103°52'44.943"W
Facility Reference Pt			639790.60	600930.80	32°39'04.459"N	103°52'44.943"W
Field Reference Pt			639790.60	600930.80	32°39'04.459"N	103°52'44.943"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 1H SHL (KB) to GL	18.00ft
Horizontal Reference Pt	SL	Rig on No. 1H SHL (KB) to Mean Sea Level	3498.00ft
Vertical Reference Pt	Rig on No. 1H SHL (KB)	GL to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No. 1H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	188.31°



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Facility	Penny Pincher Fed Com No. 1H		

WELLPATH DATA (164 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]
0.00	0.000	164.640	0.00	0.00	0.00	0.00	639790.60	600930.80	32°39'04.459"N	103°52'44.943"W	0.00
100.00	0.380	164.640	100.00	0.30	-0.32	0.09	639790.69	600930.48	32°39'04.456"N	103°52'44.942"W	0.38
200.00	0.910	165.810	199.99	1.34	-1.41	0.37	639790.97	600929.39	32°39'04.445"N	103°52'44.939"W	0.53
300.00	1.560	177.570	299.97	3.41	-3.54	0.62	639791.22	600927.26	32°39'04.424"N	103°52'44.936"W	0.69
400.00	1.560	173.870	399.93	6.07	-6.25	0.83	639791.43	600924.55	32°39'04.398"N	103°52'44.934"W	0.10
500.00	1.490	155.220	499.90	8.48	-8.79	1.52	639792.12	600922.01	32°39'04.372"N	103°52'44.926"W	0.50
600.00	1.120	147.930	599.87	10.31	-10.80	2.58	639793.18	600920.01	32°39'04.352"N	103°52'44.913"W	0.40
700.00	1.000	152.480	699.85	11.76	-12.40	3.50	639794.10	600918.40	32°39'04.337"N	103°52'44.903"W	0.15
800.00	0.800	154.310	799.84	13.05	-13.80	4.21	639794.81	600917.00	32°39'04.323"N	103°52'44.894"W	0.20
900.00	0.820	158.710	899.83	14.25	-15.10	4.77	639795.37	600915.71	32°39'04.310"N	103°52'44.888"W	0.07
1000.00	0.660	159.810	999.82	15.38	-16.30	5.23	639795.83	600914.50	32°39'04.298"N	103°52'44.883"W	0.16
1100.00	0.420	139.650	1099.82	16.13	-17.12	5.66	639796.26	600913.68	32°39'04.290"N	103°52'44.877"W	0.30
1200.00	0.450	128.740	1199.82	16.57	-17.65	6.21	639796.81	600913.15	32°39'04.285"N	103°52'44.871"W	0.09
1300.00	0.480	82.190	1299.81	16.65	-17.84	6.93	639797.53	600912.96	32°39'04.283"N	103°52'44.863"W	0.37
1400.00	1.190	66.660	1399.80	15.99	-17.37	8.30	639798.90	600913.43	32°39'04.287"N	103°52'44.847"W	0.74
1500.00	1.790	61.480	1499.77	14.51	-16.21	10.62	639801.22	600914.59	32°39'04.299"N	103°52'44.819"W	0.61
1600.00	1.810	60.710	1599.72	12.61	-14.69	13.37	639803.97	600916.11	32°39'04.313"N	103°52'44.787"W	0.03
1700.00	1.590	59.840	1699.67	10.78	-13.22	15.95	639806.55	600917.58	32°39'04.328"N	103°52'44.757"W	0.22
1800.00	1.130	54.870	1799.65	9.24	-11.96	17.96	639808.56	600918.84	32°39'04.340"N	103°52'44.733"W	0.47
1900.00	0.880	54.120	1899.63	8.03	-10.94	19.39	639809.98	600919.86	32°39'04.350"N	103°52'44.717"W	0.25
2000.00	0.660	47.790	1999.62	7.05	-10.10	20.43	639811.03	600920.70	32°39'04.359"N	103°52'44.704"W	0.24
2100.00	0.460	43.500	2099.62	6.27	-9.43	21.14	639811.74	600921.37	32°39'04.365"N	103°52'44.696"W	0.20
2200.00	0.370	58.500	2199.61	5.74	-8.97	21.69	639812.29	600921.83	32°39'04.370"N	103°52'44.690"W	0.14
2300.00	0.260	62.930	2299.61	5.40	-8.69	22.17	639812.76	600922.11	32°39'04.372"N	103°52'44.684"W	0.11
2400.00	0.270	103.690	2399.61	5.29	-8.65	22.60	639813.20	600922.15	32°39'04.373"N	103°52'44.679"W	0.18
2500.00	0.150	82.140	2499.61	5.28	-8.69	22.96	639813.55	600922.12	32°39'04.372"N	103°52'44.675"W	0.14
2600.00	0.110	64.870	2599.61	5.19	-8.63	23.17	639813.77	600922.17	32°39'04.373"N	103°52'44.672"W	0.06
2700.00	0.290	119.450	2699.61	5.23	-8.71	23.48	639814.08	600922.09	32°39'04.372"N	103°52'44.669"W	0.24
2800.00	0.730	134.910	2799.61	5.70	-9.28	24.15	639814.75	600921.52	32°39'04.367"N	103°52'44.661"W	0.46
2900.00	1.000	122.610	2899.59	6.44	-10.20	25.34	639815.94	600920.60	32°39'04.357"N	103°52'44.647"W	0.33



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Field	(Penny NAD 27) Sec 21, T19S, R31E	Wellbore	No. 1H AWP
Facility	Penny Pincher Fed Com No. 1H		

WELLPATH DATA (164 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]
3000.00	0.880	116.110	2999.58	7.03	-11.01	26.76	639817.36	600919.79	32°39'04.349"N	103°52'44.630"W	0.16
3100.00	0.910	118.990	3099.57	7.55	-11.74	28.15	639818.74	600919.07	32°39'04.342"N	103°52'44.614"W	0.05
3200.00	0.850	116.170	3199.56	8.05	-12.45	29.51	639820.10	600918.35	32°39'04.335"N	103°52'44.598"W	0.07
3300.00	0.820	120.990	3299.55	8.56	-13.14	30.79	639821.38	600917.66	32°39'04.328"N	103°52'44.583"W	0.08
3400.00	0.680	125.430	3399.54	9.10	-13.86	31.88	639822.48	600916.95	32°39'04.321"N	103°52'44.571"W	0.15
3500.00	0.630	128.980	3499.53	9.66	-14.55	32.79	639823.39	600916.26	32°39'04.314"N	103°52'44.560"W	0.06
3600.00	0.620	140.560	3599.53	10.30	-15.31	33.56	639824.16	600915.49	32°39'04.307"N	103°52'44.551"W	0.13
3700.00	0.300	128.830	3699.52	10.80	-15.89	34.11	639824.71	600914.91	32°39'04.301"N	103°52'44.545"W	0.33
3800.00	0.090	103.770	3799.52	10.94	-16.07	34.39	639824.99	600914.73	32°39'04.299"N	103°52'44.541"W	0.22
3900.00	0.160	79.380	3899.52	10.90	-16.07	34.61	639825.20	600914.73	32°39'04.299"N	103°52'44.539"W	0.09
4000.00	0.270	93.040	3999.52	10.83	-16.05	34.98	639825.58	600914.75	32°39'04.299"N	103°52'44.535"W	0.12
4100.00	0.320	93.950	4099.52	10.79	-16.09	35.49	639826.09	600914.72	32°39'04.299"N	103°52'44.529"W	0.05
4200.00	0.400	97.400	4199.52	10.76	-16.15	36.12	639826.71	600914.65	32°39'04.298"N	103°52'44.521"W	0.08
4300.00	0.410	98.440	4299.51	10.76	-16.25	36.82	639827.41	600914.55	32°39'04.297"N	103°52'44.513"W	0.01
4400.00	0.410	112.280	4399.51	10.84	-16.43	37.50	639828.10	600914.37	32°39'04.295"N	103°52'44.505"W	0.10
4500.00	0.450	117.800	4499.51	11.06	-16.75	38.18	639828.78	600914.05	32°39'04.292"N	103°52'44.497"W	0.06
4600.00	0.550	113.790	4599.51	11.32	-17.13	38.97	639829.56	600913.67	32°39'04.288"N	103°52'44.488"W	0.11
4700.00	0.540	108.030	4699.50	11.53	-17.47	39.85	639830.45	600913.33	32°39'04.285"N	103°52'44.478"W	0.06
4800.00	0.330	98.880	4799.50	11.61	-17.66	40.59	639831.18	600913.14	32°39'04.283"N	103°52'44.469"W	0.22
4900.00	0.560	35.450	4899.50	11.18	-17.31	41.15	639831.75	600913.49	32°39'04.286"N	103°52'44.462"W	0.51
5000.00	0.410	14.400	4999.49	10.39	-16.56	41.53	639832.12	600914.24	32°39'04.294"N	103°52'44.458"W	0.23
5100.00	0.410	338.090	5099.49	9.72	-15.88	41.48	639832.08	600914.92	32°39'04.300"N	103°52'44.459"W	0.26
5200.00	0.700	334.080	5199.48	8.91	-15.00	41.08	639831.68	600915.80	32°39'04.309"N	103°52'44.463"W	0.29
5300.00	0.700	338.120	5299.48	7.88	-13.89	40.59	639831.18	600916.92	32°39'04.320"N	103°52'44.469"W	0.05
5400.00	0.730	334.100	5399.47	6.82	-12.75	40.08	639830.68	600918.05	32°39'04.332"N	103°52'44.475"W	0.06
5500.00	0.730	332.040	5499.46	5.78	-11.61	39.50	639830.10	600919.19	32°39'04.343"N	103°52'44.481"W	0.03
5600.00	0.600	337.080	5599.45	4.82	-10.57	39.00	639829.60	600920.24	32°39'04.353"N	103°52'44.487"W	0.14
5700.00	0.640	335.500	5699.45	3.90	-9.57	38.57	639829.16	600921.23	32°39'04.363"N	103°52'44.492"W	0.04
5800.00	0.680	324.650	5799.44	3.00	-8.58	37.99	639828.59	600922.22	32°39'04.373"N	103°52'44.499"W	0.13
5900.00	0.770	314.970	5899.43	2.17	-7.62	37.17	639827.77	600923.18	32°39'04.382"N	103°52'44.509"W	0.15



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Operator	Cimarex Energy Co.	Slot	No. 1H SHL
Area	Eddy County, NM	Well	No. 1H
Field	(Penny NAD 27) Sec 21, T19S, R31E	Wellbore	No. 1H AWB
Facility	Penny Pincher Fed Com No. 1H		

WELLPATH DATA (164 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]
6000.00	0.880	316.250	5999.42	1.30	-6.59	36.17	639826.76	600924.21	32°39'04.393"N	103°52'44.520"W	0.11
6100.00	1.010	308.740	6099.41	0.38	-5.49	34.95	639825.55	600925.31	32°39'04.404"N	103°52'44.534"W	0.18
6200.00	1.090	299.630	6199.39	-0.41	-4.47	33.43	639824.03	600926.33	32°39'04.414"N	103°52'44.552"W	0.18
6300.00	1.140	284.960	6299.37	-0.87	-3.74	31.65	639822.24	600927.06	32°39'04.421"N	103°52'44.573"W	0.29
6400.00	1.160	292.170	6399.35	-1.23	-3.10	29.75	639820.35	600927.70	32°39'04.427"N	103°52'44.595"W	0.15
6500.00	1.000	303.480	6499.34	-1.84	-2.24	28.08	639818.68	600928.56	32°39'04.436"N	103°52'44.615"W	0.27
6600.00	0.960	307.750	6599.32	-2.63	-1.24	26.69	639817.29	600929.56	32°39'04.446"N	103°52'44.631"W	0.08
6700.00	1.000	307.780	6699.31	-3.47	-0.20	25.34	639815.94	600930.60	32°39'04.456"N	103°52'44.647"W	0.04
6800.00	1.050	304.310	6799.29	-4.30	0.86	23.89	639814.49	600931.66	32°39'04.467"N	103°52'44.663"W	0.08
6900.00	0.770	294.040	6899.28	-4.88	1.65	22.52	639813.12	600932.45	32°39'04.475"N	103°52'44.679"W	0.32
7000.00	0.780	318.460	6999.27	-5.50	2.43	21.46	639812.06	600933.23	32°39'04.483"N	103°52'44.692"W	0.33
7100.00	0.540	300.200	7099.26	-6.12	3.18	20.60	639811.20	600933.98	32°39'04.490"N	103°52'44.702"W	0.32
7200.00	0.610	300.920	7199.26	-6.50	3.69	19.74	639810.33	600934.49	32°39'04.495"N	103°52'44.712"W	0.07
7300.00	0.700	284.320	7299.25	-6.77	4.11	18.69	639809.29	600934.91	32°39'04.499"N	103°52'44.724"W	0.21
7400.00	0.290	307.990	7399.25	-6.96	4.42	17.90	639808.49	600935.22	32°39'04.502"N	103°52'44.733"W	0.45
7500.00	0.570	303.880	7499.25	-7.30	4.85	17.28	639807.88	600935.65	32°39'04.507"N	103°52'44.741"W	0.28
7600.00	0.470	321.950	7599.24	-7.79	5.45	16.62	639807.22	600936.25	32°39'04.513"N	103°52'44.748"W	0.19
7700.00	0.320	337.780	7699.24	-8.32	6.03	16.26	639806.86	600936.83	32°39'04.518"N	103°52'44.752"W	0.18
7800.00	0.730	298.170	7799.23	-8.78	6.59	15.59	639806.19	600937.39	32°39'04.524"N	103°52'44.760"W	0.52
7900.00	0.850	296.690	7899.23	-9.23	7.23	14.37	639804.97	600938.03	32°39'04.530"N	103°52'44.774"W	0.12
8000.00	0.680	294.620	7999.22	-9.63	7.81	13.17	639803.76	600938.61	32°39'04.536"N	103°52'44.789"W	0.17
8100.00	0.330	321.140	8099.21	-9.99	8.28	12.45	639803.04	600939.08	32°39'04.541"N	103°52'44.797"W	0.41
8200.00	0.350	8.550	8199.21	-10.49	8.80	12.31	639802.91	600939.60	32°39'04.546"N	103°52'44.798"W	0.27
8300.00	0.870	342.520	8299.20	-11.48	9.83	12.13	639802.73	600940.63	32°39'04.556"N	103°52'44.801"W	0.58
8340.00	1.010	331.110	8339.20	-12.03	10.43	11.87	639802.46	600941.23	32°39'04.562"N	103°52'44.804"W	0.58
8687.00	0.800	307.600	8686.16	-15.65	14.58	8.47	639799.07	600945.38	32°39'04.603"N	103°52'44.843"W	0.12
8719.00	4.900	189.500	8718.12	-14.40	13.37	8.07	639798.67	600944.17	32°39'04.591"N	103°52'44.848"W	16.64
8751.00	16.000	185.300	8749.54	-8.61	7.61	7.43	639798.03	600938.41	32°39'04.534"N	103°52'44.856"W	34.75
8783.00	25.500	183.100	8779.43	2.68	-3.68	6.65	639797.25	600927.12	32°39'04.423"N	103°52'44.865"W	29.78
8814.00	35.800	183.800	8806.06	18.41	-19.43	5.69	639796.28	600911.37	32°39'04.267"N	103°52'44.877"W	33.25



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Field	(Penny NAD 27) Sec 21, T19S, R31E	Wellbore	No. 1H AWB
Facility	Penny Pincher Fed Com No. 1H		

WELLPATH DATA (164 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]
8846.00	46.800	184.500	8830.07	39.44	-40.46	4.14	639794.74	600890.34	32°39'04.059"N	103°52'44.896"W	34.40
8877.00	57.100	185.600	8849.15	63.78	-64.75	1.98	639792.58	600866.06	32°39'03.819"N	103°52'44.923"W	33.34
8908.00	67.700	189.100	8863.49	91.21	-91.94	-1.57	639789.03	600838.86	32°39'03.550"N	103°52'44.966"W	35.62
8939.00	75.000	190.100	8873.40	120.55	-120.88	-6.47	639784.13	600809.93	32°39'03.264"N	103°52'45.025"W	23.75
8971.00	76.800	189.500	8881.20	151.57	-151.47	-11.75	639778.85	600779.35	32°39'02.961"N	103°52'45.088"W	5.91
9002.00	78.700	189.700	8887.77	181.86	-181.33	-16.80	639773.80	600749.48	32°39'02.666"N	103°52'45.148"W	6.16
9034.00	80.700	189.700	8893.50	213.33	-212.37	-22.11	639768.50	600718.45	32°39'02.359"N	103°52'45.212"W	6.25
9066.00	83.000	189.900	8898.03	245.00	-243.58	-27.50	639763.11	600687.24	32°39'02.050"N	103°52'45.277"W	7.21
9097.00	86.000	189.500	8901.00	275.84	-273.99	-32.69	639757.91	600656.83	32°39'01.750"N	103°52'45.339"W	9.76
9128.00	87.000	189.200	8902.90	306.78	-304.52	-37.72	639752.88	600626.30	32°39'01.448"N	103°52'45.399"W	3.37
9160.00	86.900	189.200	8904.60	338.73	-336.07	-42.83	639747.77	600594.76	32°39'01.136"N	103°52'45.461"W	0.31
9224.00	87.300	189.000	8907.84	402.64	-399.18	-52.94	639737.66	600531.65	32°39'00.512"N	103°52'45.582"W	0.70
9287.00	88.600	188.800	8910.09	465.59	-461.38	-62.68	639727.92	600469.45	32°38'59.897"N	103°52'45.699"W	2.09
9350.00	90.600	188.900	8910.53	528.59	-523.62	-72.37	639718.23	600407.21	32°38'59.281"N	103°52'45.815"W	3.18
9414.00	90.900	189.000	8909.69	592.58	-586.84	-82.33	639708.28	600344.00	32°38'58.656"N	103°52'45.935"W	0.49
9477.00	91.400	188.800	8908.43	655.56	-649.07	-92.07	639698.53	600281.78	32°38'58.041"N	103°52'46.052"W	0.85
9540.00	91.000	188.800	8907.11	718.54	-711.31	-101.71	639688.90	600219.54	32°38'57.425"N	103°52'46.168"W	0.63
9603.00	89.900	188.600	8906.61	781.54	-773.59	-111.24	639679.37	600157.27	32°38'56.810"N	103°52'46.283"W	1.77
9667.00	89.500	188.700	8906.95	845.54	-836.86	-120.86	639669.75	600094.00	32°38'56.184"N	103°52'46.398"W	0.64
9730.00	89.200	188.700	8907.66	908.53	-899.13	-130.39	639660.22	600031.74	32°38'55.568"N	103°52'46.513"W	0.48
9794.00	88.700	189.100	8908.84	972.52	-962.35	-140.29	639650.32	599968.52	32°38'54.943"N	103°52'46.632"W	1.00
9857.00	89.400	189.600	8909.88	1035.50	-1024.50	-150.53	639640.09	599906.37	32°38'54.329"N	103°52'46.755"W	1.37
9920.00	89.800	189.600	8910.32	1098.48	-1086.62	-161.03	639629.58	599844.26	32°38'53.714"N	103°52'46.880"W	0.63
9983.00	89.600	190.200	8910.65	1161.45	-1148.68	-171.86	639618.75	599782.20	32°38'53.101"N	103°52'47.010"W	1.00
10046.00	89.000	190.000	8911.42	1224.42	-1210.70	-182.91	639607.70	599720.19	32°38'52.488"N	103°52'47.143"W	1.00
10110.00	88.200	190.000	8912.98	1288.37	-1273.70	-194.02	639596.59	599657.19	32°38'51.865"N	103°52'47.276"W	1.25
10173.00	88.900	189.100	8914.58	1351.34	-1335.81	-204.47	639586.15	599595.08	32°38'51.251"N	103°52'47.401"W	1.81
10236.00	87.900	189.400	8916.34	1414.30	-1397.97	-214.59	639576.02	599532.93	32°38'50.636"N	103°52'47.522"W	1.66
10300.00	88.800	188.600	8918.18	1478.27	-1461.15	-224.60	639566.02	599469.75	32°38'50.011"N	103°52'47.643"W	1.88
10363.00	88.400	189.000	8919.72	1541.25	-1523.39	-234.23	639556.38	599407.52	32°38'49.396"N	103°52'47.758"W	0.90



Actual Wellpath Report

No. 1H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 1H SHL
Area	Eddy County, NM	Well	No. 1H
Field	(Penny NAD 27) Sec 21, T19S, R31E	Wellbore	No. 1H AWP
Facility	Penny Pincher Fed Com No. 1H		

WELLPATH DATA (164 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]
10427.00	87.800	189.600	8921.84	1605.20	-1586.51	-244.57	639546.05	599344.40	32°38'48.772"N	103°52'47.882"W	1.33
10490.00	88.600	189.600	8923.82	1668.15	-1648.60	-255.07	639535.55	599282.32	32°38'48.158"N	103°52'48.008"W	1.27
10553.00	87.900	189.200	8925.74	1731.11	-1710.72	-265.36	639525.26	599220.20	32°38'47.544"N	103°52'48.132"W	1.28
10616.00	88.500	188.100	8927.72	1794.08	-1772.98	-274.83	639515.79	599157.95	32°38'46.928"N	103°52'48.246"W	1.99
10679.00	88.400	189.200	8929.43	1857.05	-1835.24	-284.30	639506.32	599095.69	32°38'46.312"N	103°52'48.359"W	1.75
10742.00	88.400	187.100	8931.19	1920.03	-1897.57	-293.23	639497.40	599033.36	32°38'45.696"N	103°52'48.467"W	3.33
10805.00	88.800	187.100	8932.72	1982.99	-1960.07	-301.01	639489.61	598970.87	32°38'45.078"N	103°52'48.561"W	0.63
10868.00	88.900	186.100	8933.99	2045.95	-2022.64	-308.25	639482.37	598908.30	32°38'44.459"N	103°52'48.649"W	1.59
10932.00	88.600	186.200	8935.39	2109.89	-2086.25	-315.10	639475.52	598844.69	32°38'43.830"N	103°52'48.732"W	0.49
10995.00	88.800	186.300	8936.81	2172.83	-2148.86	-321.96	639468.66	598782.09	32°38'43.211"N	103°52'48.816"W	0.35
11058.00	89.200	186.100	8937.91	2235.78	-2211.49	-328.76	639461.86	598719.47	32°38'42.591"N	103°52'48.898"W	0.71
11121.00	89.400	187.000	8938.68	2298.75	-2274.07	-335.95	639454.67	598656.89	32°38'41.972"N	103°52'48.985"W	1.46
11184.00	89.100	186.500	8939.51	2361.72	-2336.63	-343.35	639447.27	598594.34	32°38'41.354"N	103°52'49.075"W	0.93
11247.00	88.700	186.300	8940.72	2424.67	-2399.22	-350.37	639440.25	598531.75	32°38'40.735"N	103°52'49.160"W	0.71
11310.00	89.200	185.400	8941.87	2487.60	-2461.88	-356.79	639433.83	598469.09	32°38'40.115"N	103°52'49.239"W	1.63
11373.00	89.400	184.500	8942.64	2550.49	-2524.64	-362.23	639428.40	598406.33	32°38'39.494"N	103°52'49.305"W	1.46
11436.00	89.300	185.100	8943.36	2613.37	-2587.42	-367.50	639423.12	598343.56	32°38'38.873"N	103°52'49.370"W	0.97
11500.00	89.200	185.900	8944.19	2677.28	-2651.12	-373.64	639416.99	598279.87	32°38'38.243"N	103°52'49.445"W	1.26
11562.00	89.200	184.700	8945.06	2739.19	-2712.84	-379.36	639411.27	598218.15	32°38'37.633"N	103°52'49.515"W	1.94
11625.00	88.400	185.100	8946.38	2802.07	-2775.60	-384.74	639405.89	598155.40	32°38'37.012"N	103°52'49.581"W	1.42
11689.00	87.300	186.600	8948.78	2865.96	-2839.22	-391.26	639399.37	598091.78	32°38'36.383"N	103°52'49.660"W	2.91
11752.00	87.800	186.300	8951.47	2928.87	-2901.76	-398.33	639392.30	598029.24	32°38'35.764"N	103°52'49.746"W	0.93
11815.00	89.300	186.700	8953.07	2991.81	-2964.34	-405.46	639385.17	597966.67	32°38'35.145"N	103°52'49.833"W	2.46
11879.00	89.400	187.700	8953.79	3055.80	-3027.83	-413.48	639377.15	597903.19	32°38'34.517"N	103°52'49.930"W	1.57
11942.00	89.700	188.300	8954.29	3118.79	-3090.21	-422.25	639368.38	597840.81	32°38'33.901"N	103°52'50.035"W	1.06
12005.00	89.800	188.600	8954.56	3181.79	-3152.53	-431.51	639359.12	597778.50	32°38'33.284"N	103°52'50.147"W	0.50
12068.00	89.800	188.100	8954.78	3244.79	-3214.86	-440.65	639349.98	597716.17	32°38'32.668"N	103°52'50.257"W	0.79
12130.00	89.100	187.100	8955.38	3306.78	-3276.31	-448.85	639341.78	597654.72	32°38'32.060"N	103°52'50.356"W	1.97
12193.00	89.100	188.400	8956.37	3369.77	-3338.73	-457.35	639333.28	597592.31	32°38'31.443"N	103°52'50.458"W	2.06
12256.00	89.800	188.000	8956.97	3432.77	-3401.08	-466.33	639324.30	597529.96	32°38'30.826"N	103°52'50.566"W	1.28



Actual Wellpath Report

No. 1H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 1H SHL
Area	Eddy County, NM	Well	No. 1H
Field	(Penny NAD 27) Sec 21, T19S, R31E	Wellbore	No. 1H AWB
Facility	Penny Pincher Fed Com No. 1H		

WELLPATH DATA (164 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]
12320.00	89.500	188.300	8957.36	3496.77	-3464.43	-475.41	639315.23	597466.61	32°38'30.200"N	103°52'50.676"W	0.66
12383.00	89.300	188.600	8958.02	3559.76	-3526.74	-484.66	639305.97	597404.31	32°38'29.584"N	103°52'50.787"W	0.57
12447.00	88.800	190.300	8959.08	3623.74	-3589.86	-495.17	639295.47	597341.19	32°38'28.960"N	103°52'50.913"W	2.77
12510.00	88.400	190.300	8960.62	3686.68	-3651.83	-506.43	639284.21	597279.23	32°38'28.347"N	103°52'51.048"W	0.63
12574.00	88.100	190.500	8962.58	3750.61	-3714.75	-517.98	639272.66	597216.31	32°38'27.725"N	103°52'51.186"W	0.56
12637.00	88.000	190.700	8964.72	3813.52	-3776.64	-529.56	639261.08	597154.43	32°38'27.113"N	103°52'51.324"W	0.35
12700.00	89.100	192.000	8966.32	3876.41	-3838.38	-541.95	639248.68	597092.69	32°38'26.503"N	103°52'51.472"W	2.70
12764.00	88.600	191.400	8967.60	3940.29	-3901.04	-554.93	639235.71	597030.03	32°38'25.883"N	103°52'51.627"W	1.22
12827.00	88.600	191.500	8969.14	4003.17	-3962.77	-567.43	639223.21	596968.31	32°38'25.273"N	103°52'51.777"W	0.16
12891.00	89.800	191.400	8970.03	4067.07	-4025.49	-580.14	639210.50	596905.60	32°38'24.653"N	103°52'51.928"W	1.88
12954.00	90.400	190.100	8969.92	4130.01	-4087.38	-591.89	639198.75	596843.71	32°38'24.041"N	103°52'52.069"W	2.27
13018.00	90.200	190.500	8969.59	4193.97	-4150.35	-603.33	639187.31	596780.75	32°38'23.418"N	103°52'52.206"W	0.70
13050.00	89.800	191.100	8969.59	4225.94	-4181.78	-609.33	639181.32	596749.31	32°38'23.108"N	103°52'52.277"W	2.25
13090.00	89.800	191.100	8969.73	4265.89	-4221.03	-617.03	639173.62	596710.07	32°38'22.720"N	103°52'52.369"W	0.00

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
No. 1H PBHL		8975.00	-4293.70	-626.84	639163.80	596637.40	32°38'22.001"N	103°52'52.488"W	point

WELLPATH COMPOSITION Ref Wellbore: No. 1H AWB Ref Wellpath: No. 1H AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	8340.00	Generic gyro - continuous (Standard)	GYRO <100 - 8340>	No. 1H AWB
8340.00	13050.00	NaviTrak (Standard)	MWD <8687 - 13050>	No. 1H AWB
13050.00	13090.00	Blind Drilling (std)	Projection to bit	No. 1H AWB



Cimarex Energy Co.

Location: Eddy County, NM
Field: (Penny NAD 27) Sec 21, T19S, R31E
Facility: Penny Pincher Fed Com No. 1H

Slot: No. 1H SHL
Well: No. 1H
Wellbore: No. 1H PWB



Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	8340.00	1.010	331.110	8339.20	10.43	11.87	0.00	-12.03
EST. KOP	8705.00	1.010	331.110	8704.14	16.06	8.76	0.00	-17.16
END OF CURVE	9007.78	88.969	188.362	8900.05	-171.37	-20.87	29.65	-172.59
No. 1H PBHL	13175.09	88.969	188.362	8975.00	-4293.70	-626.84	0.00	4339.22

Plot reference wellpath is Plan #2 vs Actual <FINAL>

True vertical depths are referenced to Rig on No. 1H SHL (KB)

Measured depths are referenced to Rig on No. 1H SHL (KB)

Rig on No. 1H SHL (KB) to Mean Sea Level: 3498 feet

Mean Sea Level to Mud line (Facility: Penny Pincher Fed Com No. 1H): -3480 feet

Coordinates are in feet referenced to SL

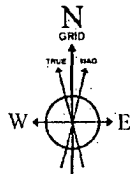
Grid System: NAD27 / TM New Mexico State Planes, Eastern Zone (3001), US feet

North Reference: Grid north

Scale: True distance

Depths are in feet

Created by: Victor Hernandez on 7/7/2010



BGGM (1945.0 to 2011.0) Dip: 60.57° Field: 49004 nT
Magnetic North is 7.92 degrees East of True North (at 6/18/2010)
Grid North is 0.25 degrees East of True North

To correct azimuth from True to Grid add 7.67 degrees

For example: if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7.67 = 97.67

