



Cimarex Energy Co.

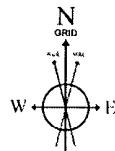
Location Eddy County, NM
Field (Penny) Sec 21, T19S, R31E
Facility Penny Pincher Fed Com No. 3H

Slot No 3H SHL
Well No 3H
Wellbore No 3H PWB



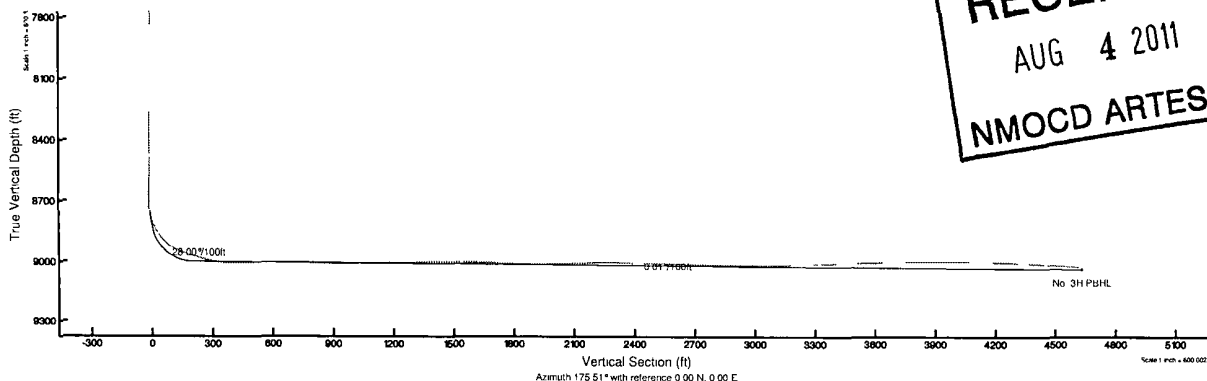
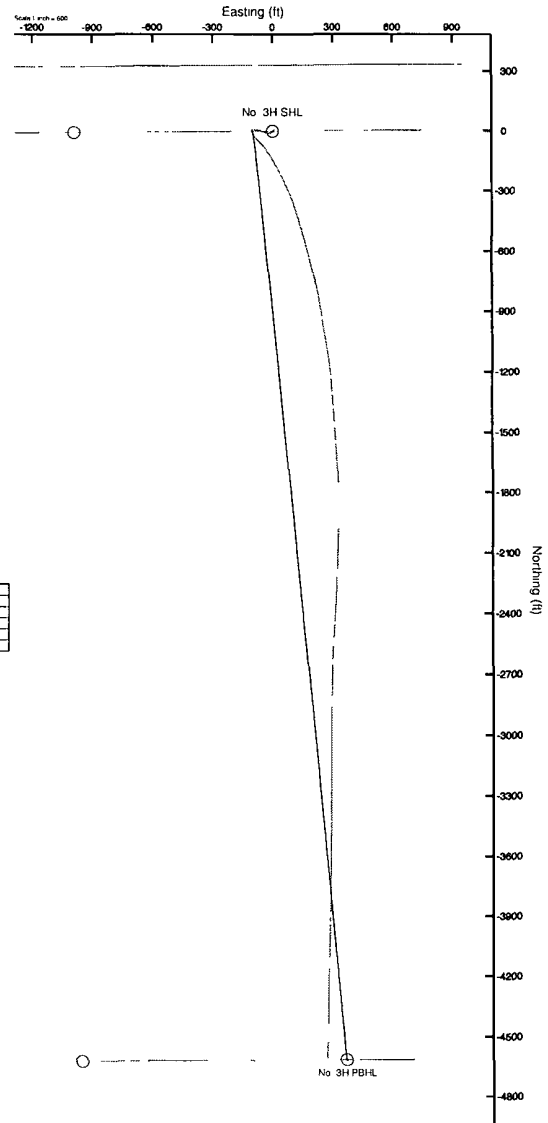
Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (*100ft)	VS (ft)
Tie On (Gyro)	8761.50	9.334	164.010	8759.36	4.73	-102.41	0.00	-12.73
Est KOP	8831.19	9.334	164.010	8828.13	-6.13	-99.29	0.00	-1.66
End of Curve	9118.02	89.500	174.100	9000.00	-204.79	-73.83	28.00	198.38
No 3H PHL	13552.65	89.505	174.603	9038.50	-4617.71	-362.62	0.01	4631.93

30-015-38296



BGGM (1945.0 to 2011.0) Dip: 50.57° Field: 49007.7 nT
Magnetic North is 7.92 degrees East of True North (at 6/8/2010)
Grid North is 0.25 degrees East of True North
To correct azimuth from True to Grid subtract 0.25 degrees
To correct azimuth from Magnetic 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

Plot referenced with the Plan:	
True vertical depths are referenced to Rig on No. 3H SHL (KB)	Grid System: NAD83 / TM New Mexico State Planes, Eastern Zone (2011) UTM test
Measured depths are referenced to Rig on No. 3H SHL (KB)	North Reference: Grid north
Tie on No. 3H SHL (KB) to Mean Sea Level 3508 test	Scale: True distance
Mean Sea Level is Mean Sea Level (Penny Pincher Fed Com No. 3H) 3458 test	Depths are in feet
Coordinates are in feet referenced to Stn	Created by: geomatics on 1/20/2011



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Actual Wellpath Report

No.3H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Eddy County, NM	Well	No. 3H
Field	(Penny) Sec 21, T19S, R31E	Wellbore	No. 3H AWB
Facility	Penny Pincher Fed Com No. 3H		

REPORT SETUP INFORMATION

Projection System	NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet	Software System	WellArchitect® 2.0
North Reference	Grid	User	Gomeoscr
Scale	0.999932	Report Generated	1/20/2011 at 7:37:07 AM
Convergence at slot	0.25° East	Database/Source file	WA Midland/No. 3H_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	682951.40	601335.60	32°39'08.192"N	103°52'23.562"W
Facility Reference Pt			682951.40	601335.60	32°39'08.192"N	103°52'23.562"W
Field Reference Pt			681958.50	601329.30	32°39'08.172"N	103°52'35.176"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 3H SHL (KB) to GL	19.00ft
Horizontal Reference Pt	Slot	Rig on No. 3H SHL (KB) to Mean Sea Level	3508.00ft
Vertical Reference Pt	Rig on No. 3H SHL (KB)	GL to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No. 3H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	175.51°



Actual Wellpath Report

No.3H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Eddy County, NM	Well	No. 3H
Field	(Penny) Sec 21, T19S, R31E	Wellbore	No. 3H AWB
Facility	Penny Pincher Fed Com No. 3H		

WELLPATH DATA (162 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]	Comments
0.00	0.000	213.870	0.00	0.00	0.00	0.00	682951.40	601335.60	32°39'08.192"N	103°52'23.562"W	0.00	
81.10	0.200	213.870	81.10	0.11	-0.12	-0.08	682951.32	601335.48	32°39'08.191"N	103°52'23.563"W	0.25	
176.10	0.130	192.610	176.10	0.34	-0.36	-0.19	682951.21	601335.24	32°39'08.188"N	103°52'23.564"W	0.10	
266.40	0.390	218.630	266.40	0.67	-0.70	-0.41	682950.99	601334.90	32°39'08.185"N	103°52'23.567"W	0.31	
356.80	0.520	205.230	356.80	1.25	-1.31	-0.78	682950.62	601334.29	32°39'08.179"N	103°52'23.571"W	0.18	
444.80	0.650	207.620	444.79	2.02	-2.12	-1.18	682950.22	601333.48	32°39'08.171"N	103°52'23.576"W	0.15	
536.40	0.640	207.180	536.39	2.89	-3.03	-1.65	682949.75	601332.57	32°39'08.162"N	103°52'23.581"W	0.01	
627.00	0.730	226.130	626.98	3.69	-3.88	-2.30	682949.10	601331.72	32°39'08.154"N	103°52'23.589"W	0.27	
722.70	0.320	272.440	722.67	4.04	-4.29	-3.01	682948.39	601331.31	32°39'08.150"N	103°52'23.597"W	0.58	
818.40	0.370	227.820	818.37	4.20	-4.49	-3.50	682947.90	601331.11	32°39'08.148"N	103°52'23.603"W	0.28	
914.10	0.130	343.360	914.07	4.28	-4.59	-3.76	682947.64	601331.01	32°39'08.147"N	103°52'23.606"W	0.46	
1009.80	0.360	249.520	1009.77	4.26	-4.59	-4.07	682947.33	601331.01	32°39'08.147"N	103°52'23.610"W	0.41	
1105.50	0.220	300.310	1105.47	4.24	-4.61	-4.51	682946.89	601331.00	32°39'08.147"N	103°52'23.615"W	0.29	
1201.20	0.470	287.610	1201.17	3.99	-4.39	-5.05	682946.35	601331.21	32°39'08.149"N	103°52'23.621"W	0.27	
1296.90	0.070	22.330	1296.87	3.79	-4.22	-5.40	682946.00	601331.38	32°39'08.150"N	103°52'23.625"W	0.50	
1392.60	0.400	56.820	1392.57	3.57	-3.98	-5.10	682946.30	601331.62	32°39'08.153"N	103°52'23.622"W	0.36	
1488.30	0.810	49.780	1488.26	3.02	-3.36	-4.30	682947.10	601332.24	32°39'08.159"N	103°52'23.612"W	0.43	
1584.00	1.130	55.600	1583.95	2.15	-2.39	-3.01	682948.39	601333.21	32°39'08.168"N	103°52'23.597"W	0.35	
1679.70	1.340	47.970	1679.63	1.00	-1.11	-1.40	682950.00	601334.49	32°39'08.181"N	103°52'23.578"W	0.28	
1775.40	1.580	43.310	1775.29	-0.57	0.60	0.34	682951.74	601336.20	32°39'08.198"N	103°52'23.558"W	0.28	
1871.10	1.760	44.990	1870.95	-2.41	2.60	2.28	682953.68	601338.20	32°39'08.218"N	103°52'23.535"W	0.19	
1966.80	1.660	48.800	1966.61	-4.19	4.55	4.37	682955.77	601340.15	32°39'08.237"N	103°52'23.511"W	0.16	
2062.50	1.090	49.120	2062.28	-5.56	6.06	6.10	682957.50	601341.66	32°39'08.252"N	103°52'23.490"W	0.60	
2158.20	0.500	75.840	2157.97	-6.17	6.76	7.19	682958.59	601342.36	32°39'08.258"N	103°52'23.477"W	0.71	
2253.90	0.610	149.860	2253.67	-5.78	6.42	7.85	682959.25	601342.02	32°39'08.255"N	103°52'23.470"W	0.70	
2349.60	1.420	215.100	2349.36	-4.41	5.01	7.42	682958.82	601340.61	32°39'08.241"N	103°52'23.475"W	1.35	
2445.30	1.090	191.450	2445.03	-2.62	3.14	6.56	682957.96	601338.74	32°39'08.223"N	103°52'23.485"W	0.63	
2541.00	1.360	200.190	2540.71	-0.71	1.19	5.99	682957.39	601336.79	32°39'08.203"N	103°52'23.492"W	0.34	
2636.70	1.060	180.040	2636.39	1.20	-0.77	5.60	682957.00	601334.83	32°39'08.184"N	103°52'23.496"W	0.54	
2732.40	0.600	180.680	2732.08	2.58	-2.15	5.59	682956.99	601333.45	32°39'08.170"N	103°52'23.497"W	0.48	
2828.10	0.400	37.220	2827.78	2.83	-2.39	5.79	682957.19	601333.21	32°39'08.168"N	103°52'23.494"W	0.99	
2923.80	0.150	75.510	2923.48	2.56	-2.09	6.11	682957.51	601333.51	32°39'08.171"N	103°52'23.490"W	0.31	
3019.50	0.260	111.110	3019.18	2.63	-2.14	6.43	682957.83	601333.46	32°39'08.171"N	103°52'23.487"W	0.17	
3115.20	0.320	75.140	3114.88	2.68	-2.15	6.89	682958.29	601333.45	32°39'08.170"N	103°52'23.481"W	0.20	
3210.90	0.370	27.800	3210.58	2.37	-1.80	7.30	682958.70	601333.80	32°39'08.174"N	103°52'23.477"W	0.29	
3306.60	0.220	347.440	3306.27	1.93	-1.35	7.40	682958.80	601334.25	32°39'08.178"N	103°52'23.475"W	0.26	
3402.30	0.320	306.370	3401.97	1.57	-1.01	7.15	682958.55	601334.59	32°39'08.182"N	103°52'23.478"W	0.22	
3498.00	0.390	282.890	3497.67	1.30	-0.78	6.61	682958.01	601334.82	32°39'08.184"N	103°52'23.485"W	0.17	
3593.70	0.410	233.240	3593.37	1.38	-0.91	6.02	682957.42	601334.69	32°39'08.183"N	103°52'23.491"W	0.35	
3689.40	0.710	228.010	3689.06	1.93	-1.52	5.31	682956.71	601334.08	32°39'08.177"N	103°52'23.500"W	0.32	
3785.10	1.110	232.740	3784.75	2.79	-2.47	4.13	682955.53	601333.13	32°39'08.167"N	103°52'23.514"W	0.42	
3880.80	1.200	231.110	3880.43	3.86	-3.66	2.61	682954.01	601331.94	32°39'08.156"N	103°52'23.531"W	0.10	
3976.50	1.550	251.220	3976.11	4.74	-4.71	0.60	682952.00	601330.89	32°39'08.145"N	103°52'23.555"W	0.62	
4072.20	1.740	255.000	4071.77	5.33	-5.50	-2.02	682949.38	601330.10	32°39'08.138"N	103°52'23.586"W	0.23	
4167.90	1.680	261.610	4167.42	5.69	-6.08	-4.82	682946.58	601329.52	32°39'08.132"N	103°52'23.618"W	0.22	



Actual Wellpath Report

No.3H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Eddy County, NM	Well	No. 3H
Field	(Penny) Sec 21, T19S, R31E	Wellbore	No. 3H AWB
Facility	Penny Pincher Fed Com No. 3H		

WELLPATH DATA (162 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]	Comments
4263.60	1.670	252.790	4263.08	6.09	-6.70	-7.54	682943.87	601328.90	32°39'08.126"N	103°52'23.650"W	0.27	
4359.30	1.510	243.470	4358.75	6.87	-7.68	-10.00	682941.41	601327.92	32°39'08.116"N	103°52'23.679"W	0.32	
4455.00	1.550	237.150	4454.41	7.96	-8.94	-12.21	682939.19	601326.66	32°39'08.104"N	103°52'23.705"W	0.18	
4550.70	1.470	238.490	4550.08	9.13	-10.29	-14.35	682937.06	601325.32	32°39'08.091"N	103°52'23.730"W	0.09	
4646.40	1.120	236.600	4645.75	10.14	-11.44	-16.17	682935.23	601324.16	32°39'08.079"N	103°52'23.752"W	0.37	
4742.10	1.080	239.330	4741.44	10.99	-12.42	-17.73	682933.67	601323.18	32°39'08.070"N	103°52'23.770"W	0.07	
4837.80	1.080	238.730	4837.12	11.80	-13.35	-19.28	682932.13	601322.26	32°39'08.061"N	103°52'23.788"W	0.01	
4933.50	0.620	224.630	4932.81	12.54	-14.18	-20.41	682930.99	601321.42	32°39'08.052"N	103°52'23.801"W	0.52	
5029.20	0.230	166.160	5028.51	13.07	-14.74	-20.73	682930.67	601320.86	32°39'08.047"N	103°52'23.805"W	0.56	
5124.90	0.510	102.890	5124.20	13.39	-15.02	-20.27	682931.13	601320.58	32°39'08.044"N	103°52'23.800"W	0.48	
5220.60	0.370	88.290	5219.90	13.53	-15.10	-19.54	682931.86	601320.50	32°39'08.043"N	103°52'23.791"W	0.19	
5316.30	0.300	7.040	5315.60	13.30	-14.85	-19.20	682932.20	601320.75	32°39'08.046"N	103°52'23.787"W	0.46	
5412.00	0.340	337.960	5411.30	12.78	-14.33	-19.28	682932.12	601321.27	32°39'08.051"N	103°52'23.788"W	0.17	
5507.70	0.560	313.520	5507.00	12.16	-13.75	-19.72	682931.68	601321.85	32°39'08.057"N	103°52'23.793"W	0.30	
5603.40	0.910	306.210	5602.69	11.32	-12.98	-20.68	682930.72	601322.62	32°39'08.064"N	103°52'23.804"W	0.38	
5699.10	1.240	295.680	5698.37	10.30	-12.08	-22.22	682929.18	601323.52	32°39'08.073"N	103°52'23.822"W	0.40	
5794.80	1.370	285.530	5794.05	9.39	-11.33	-24.26	682927.14	601324.28	32°39'08.081"N	103°52'23.846"W	0.28	
5890.50	1.500	292.610	5889.72	8.43	-10.54	-26.52	682924.88	601325.06	32°39'08.089"N	103°52'23.872"W	0.23	
5986.20	1.260	296.270	5985.39	7.32	-9.59	-28.62	682922.78	601326.01	32°39'08.098"N	103°52'23.897"W	0.27	
6081.90	1.110	300.870	6081.07	6.25	-8.65	-30.36	682921.05	601326.95	32°39'08.108"N	103°52'23.917"W	0.19	
6177.60	1.000	304.450	6176.75	5.18	-7.70	-31.84	682919.56	601327.90	32°39'08.117"N	103°52'23.935"W	0.13	
6273.30	0.990	299.400	6272.44	4.20	-6.82	-33.25	682918.15	601328.78	32°39'08.126"N	103°52'23.951"W	0.09	
6369.00	1.070	289.780	6368.12	3.37	-6.11	-34.81	682916.59	601329.49	32°39'08.133"N	103°52'23.969"W	0.20	
6464.70	1.160	289.030	6463.80	2.62	-5.50	-36.57	682914.84	601330.10	32°39'08.139"N	103°52'23.990"W	0.10	
6560.40	1.210	290.790	6559.48	1.80	-4.82	-38.43	682912.97	601330.78	32°39'08.146"N	103°52'24.011"W	0.06	
6656.10	1.050	285.710	6655.17	1.06	-4.23	-40.22	682911.19	601331.37	32°39'08.152"N	103°52'24.032"W	0.20	
6751.80	1.110	289.360	6750.85	0.39	-3.68	-41.94	682909.47	601331.92	32°39'08.157"N	103°52'24.052"W	0.10	
6847.50	1.360	294.310	6846.53	-0.54	-2.91	-43.84	682907.56	601332.69	32°39'08.165"N	103°52'24.075"W	0.28	
6943.20	1.580	274.540	6942.20	-1.29	-2.33	-46.19	682905.21	601333.27	32°39'08.171"N	103°52'24.102"W	0.57	
7038.90	1.580	283.930	7037.86	-1.91	-1.91	-48.79	682902.61	601333.69	32°39'08.175"N	103°52'24.133"W	0.27	
7134.60	1.360	286.950	7133.53	-2.75	-1.26	-51.16	682900.25	601334.34	32°39'08.182"N	103°52'24.160"W	0.24	
7230.30	1.620	281.010	7229.20	-3.52	-0.67	-53.57	682897.83	601334.93	32°39'08.188"N	103°52'24.188"W	0.32	
7326.00	2.120	285.050	7324.84	-4.48	0.04	-56.61	682894.79	601335.64	32°39'08.195"N	103°52'24.224"W	0.54	
7421.70	2.230	286.300	7420.47	-5.73	1.03	-60.11	682891.30	601336.63	32°39'08.205"N	103°52'24.265"W	0.13	
7517.40	2.250	289.870	7516.10	-7.16	2.19	-63.66	682887.75	601337.79	32°39'08.216"N	103°52'24.306"W	0.15	
7613.10	2.400	296.620	7611.72	-8.97	3.72	-67.22	682884.19	601339.32	32°39'08.232"N	103°52'24.348"W	0.33	
7708.80	2.170	294.490	7707.35	-10.89	5.37	-70.66	682880.75	601340.97	32°39'08.248"N	103°52'24.388"W	0.26	
7804.50	2.390	274.160	7802.97	-12.07	6.27	-74.30	682877.11	601341.87	32°39'08.257"N	103°52'24.430"W	0.87	
7900.20	1.900	265.220	7898.61	-12.36	6.28	-77.87	682873.54	601341.88	32°39'08.257"N	103°52'24.472"W	0.62	
7995.90	1.710	273.160	7994.26	-12.54	6.23	-80.87	682870.53	601341.83	32°39'08.257"N	103°52'24.507"W	0.33	
8091.60	1.780	278.180	8089.91	-13.06	6.52	-83.77	682867.63	601342.12	32°39'08.260"N	103°52'24.541"W	0.18	
8187.30	1.600	279.240	8185.57	-13.70	6.94	-86.56	682864.84	601342.54	32°39'08.264"N	103°52'24.574"W	0.19	
8283.00	1.640	272.740	8281.23	-14.19	7.22	-89.25	682862.16	601342.82	32°39'08.267"N	103°52'24.605"W	0.20	
8378.70	1.820	264.510	8376.89	-14.33	7.14	-92.13	682859.28	601342.74	32°39'08.267"N	103°52'24.639"W	0.32	
8474.40	1.970	275.950	8472.54	-14.61	7.17	-95.28	682856.13	601342.77	32°39'08.267"N	103°52'24.676"W	0.42	



Actual Wellpath Report

No.3H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Eddy County, NM	Well	No. 3H
Field	(Penny) Sec 21, T19S, R31E	Wellbore	No. 3H AWB
Facility	Penny Pincher Fed Com No. 3H		

WELLPATH DATA (162 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]	Comments
8570.10	1.660	274.620	8568.19	-15.12	7.45	-98.29	682853.11	601343.05	32°39'08.270"N	103°52'24.711"W	0.33	
8665.80	1.720	274.050	8663.85	-15.56	7.66	-101.11	682850.30	601343.26	32°39'08.272"N	103°52'24.744"W	0.07	
8689.00	1.600	267.400	8687.04	-15.62	7.67	-101.78	682849.63	601343.27	32°39'08.272"N	103°52'24.752"W	0.98	
8719.00	1.800	285.000	8717.03	-15.79	7.78	-102.65	682848.75	601343.38	32°39'08.273"N	103°52'24.762"W	1.85	
8752.00	6.500	168.100	8749.96	-14.11	6.08	-102.77	682848.64	601341.68	32°39'08.256"N	103°52'24.763"W	22.69	
8783.00	15.200	160.400	8780.38	-8.43	0.52	-101.04	682850.37	601336.12	32°39'08.201"N	103°52'24.744"W	28.39	
8815.00	23.300	154.700	8810.57	1.55	-9.17	-96.92	682854.49	601326.43	32°39'08.105"N	103°52'24.696"W	25.96	
8847.00	31.200	149.900	8838.99	14.96	-22.08	-90.05	682861.36	601313.52	32°39'07.977"N	103°52'24.616"W	25.61	
8878.00	37.400	144.000	8864.60	30.25	-36.66	-80.48	682870.93	601298.94	32°39'07.833"N	103°52'24.505"W	22.67	
8910.00	45.600	136.100	8888.56	47.41	-52.80	-66.80	682884.60	601282.80	32°39'07.672"N	103°52'24.346"W	30.36	
8941.00	53.000	138.400	8908.76	65.86	-70.06	-50.88	682900.52	601265.54	32°39'07.501"N	103°52'24.160"W	24.52	
8973.00	61.400	141.700	8926.09	87.77	-90.68	-33.66	682917.74	601244.92	32°39'07.296"N	103°52'23.960"W	27.64	
9005.00	69.500	147.600	8939.38	112.74	-114.42	-16.88	682934.52	601221.19	32°39'07.061"N	103°52'23.765"W	30.35	
9036.00	72.600	149.800	8949.45	138.91	-139.47	-1.66	682949.74	601196.14	32°39'06.812"N	103°52'23.588"W	12.04	
9068.00	72.800	149.900	8958.96	166.45	-165.89	13.69	682965.09	601169.73	32°39'06.550"N	103°52'23.410"W	0.69	
9099.00	73.000	151.900	8968.08	193.39	-191.77	28.10	682979.49	601143.84	32°39'06.293"N	103°52'23.243"W	6.20	
9131.00	74.300	153.500	8977.09	221.69	-219.06	42.18	682993.58	601116.56	32°39'06.023"N	103°52'23.080"W	6.29	
9163.00	75.300	154.500	8985.48	250.42	-246.81	55.71	683007.11	601088.80	32°39'05.747"N	103°52'22.923"W	4.34	
9195.00	76.800	155.900	8993.19	279.54	-275.01	68.74	683020.13	601060.61	32°39'05.468"N	103°52'22.772"W	6.32	
9226.00	79.600	157.600	8999.53	308.27	-302.88	80.71	683032.11	601032.74	32°39'05.192"N	103°52'22.633"W	10.51	
9258.00	82.600	159.300	9004.48	338.49	-332.28	92.32	683043.72	601003.34	32°39'04.900"N	103°52'22.499"W	10.74	
9290.00	86.700	160.400	9007.47	369.16	-362.19	103.29	683054.69	600973.44	32°39'04.604"N	103°52'22.372"W	13.26	
9321.00	90.300	161.900	9008.28	399.18	-391.51	113.30	683064.70	600944.12	32°39'04.313"N	103°52'22.256"W	12.58	
9353.00	91.700	162.900	9007.72	430.34	-422.01	122.98	683074.37	600913.62	32°39'04.011"N	103°52'22.145"W	5.38	
9384.00	91.600	163.200	9006.83	460.60	-451.65	132.01	683083.40	600883.98	32°39'03.717"N	103°52'22.041"W	1.02	
9416.00	91.300	163.300	9006.02	491.86	-482.28	141.23	683092.62	600853.35	32°39'03.414"N	103°52'21.934"W	0.99	
9448.00	90.800	163.800	9005.43	523.16	-512.96	150.29	683101.68	600822.67	32°39'03.110"N	103°52'21.830"W	2.21	
9479.00	90.300	164.600	9005.13	553.55	-542.79	158.73	683110.12	600792.85	32°39'02.815"N	103°52'21.733"W	3.04	
9543.00	89.800	164.900	9005.08	616.43	-604.54	175.57	683126.95	600731.10	32°39'02.203"N	103°52'21.539"W	0.91	
9637.00	89.700	167.200	9005.49	709.14	-695.76	198.23	683149.61	600639.89	32°39'01.299"N	103°52'21.279"W	2.45	
9732.00	88.100	168.300	9007.31	803.25	-788.57	218.38	683169.76	600547.08	32°39'00.380"N	103°52'21.048"W	2.04	
9827.00	89.000	170.400	9009.71	897.66	-881.90	235.93	683187.31	600453.76	32°38'59.456"N	103°52'20.847"W	2.40	
9922.00	91.500	171.400	9009.30	992.35	-975.70	250.95	683202.33	600359.97	32°38'58.527"N	103°52'20.676"W	2.83	
10017.00	91.100	170.100	9007.14	1086.99	-1069.43	266.22	683217.60	600266.24	32°38'57.599"N	103°52'20.503"W	1.43	
10112.00	90.900	172.600	9005.49	1181.72	-1163.33	280.50	683231.88	600172.35	32°38'56.669"N	103°52'20.340"W	2.64	
10206.00	91.000	175.000	9003.93	1275.66	-1256.76	290.65	683242.03	600078.93	32°38'55.745"N	103°52'20.226"W	2.56	
10301.00	90.700	175.500	9002.52	1370.65	-1351.42	298.52	683249.90	599984.27	32°38'54.808"N	103°52'20.139"W	0.61	
10396.00	89.700	175.600	9002.19	1465.65	-1446.14	305.89	683257.27	599889.56	32°38'53.870"N	103°52'20.058"W	1.06	
10491.00	89.600	176.000	9002.77	1560.64	-1540.88	312.85	683264.22	599794.83	32°38'52.932"N	103°52'19.981"W	0.43	
10586.00	88.600	176.800	9004.26	1655.62	-1635.68	318.81	683270.19	599700.04	32°38'51.994"N	103°52'19.916"W	1.35	
10680.00	87.100	177.700	9007.79	1749.50	-1729.50	323.32	683274.69	599606.22	32°38'51.066"N	103°52'19.868"W	1.86	
10776.00	88.800	179.100	9011.22	1845.31	-1825.40	326.00	683277.37	599510.33	32°38'50.117"N	103°52'19.842"W	2.29	
10870.00	90.500	180.900	9011.79	1939.02	-1919.39	326.00	683277.37	599416.35	32°38'49.187"N	103°52'19.847"W	2.63	
10966.00	91.800	181.300	9009.87	2034.54	-2015.35	324.15	683275.53	599320.39	32°38'48.237"N	103°52'19.873"W	1.42	
11060.00	91.400	181.400	9007.24	2128.01	-2109.28	321.94	683273.32	599226.46	32°38'47.308"N	103°52'19.904"W	0.44	



Actual Wellpath Report

No.3H AWP

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Eddy County, NM	Well	No. 3H
Field	(Penny) Sec 21, T19S, R31E	Wellbore	No. 3H AWP
Facility	Penny Pincher Fed Com No. 3H		

WELLPATH DATA (162 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]	Comments
11155.00	90.900	181.800	9005.34	2222.46	-2204.23	319.29	683270.66	599131.53	32°38'46.369"N	103°52'19.939"W	0.67	
11250.00	88.800	182.500	9005.58	2316.82	-2299.15	315.72	683267.10	599036.61	32°38'45.430"N	103°52'19.986"W	2.33	
11343.00	89.300	183.400	9007.13	2409.02	-2392.02	310.94	683262.32	598943.75	32°38'44.511"N	103°52'20.047"W	1.11	
11439.00	88.800	184.300	9008.72	2503.99	-2487.79	304.49	683255.87	598847.99	32°38'43.564"N	103°52'20.127"W	1.07	
11534.00	89.200	183.100	9010.38	2598.00	-2582.57	298.36	683249.74	598753.21	32°38'42.626"N	103°52'20.203"W	1.33	
11629.00	88.000	183.300	9012.70	2692.12	-2677.39	293.06	683244.44	598658.39	32°38'41.688"N	103°52'20.270"W	1.28	
11724.00	89.000	181.200	9015.18	2786.42	-2772.28	289.33	683240.71	598563.51	32°38'40.749"N	103°52'20.319"W	2.45	
11819.00	89.900	180.800	9016.10	2880.98	-2867.26	287.68	683239.06	598468.54	32°38'39.810"N	103°52'20.343"W	1.04	
11913.00	88.900	180.400	9017.08	2974.61	-2961.25	286.69	683238.07	598374.56	32°38'38.880"N	103°52'20.359"W	1.15	
12007.00	90.400	179.800	9017.65	3068.30	-3055.24	286.53	683237.91	598280.57	32°38'37.950"N	103°52'20.366"W	1.72	
12102.00	91.800	180.000	9015.83	3163.00	-3150.22	286.69	683238.07	598185.60	32°38'37.010"N	103°52'20.369"W	1.49	
12197.00	91.100	180.200	9013.43	3257.66	-3245.19	286.53	683237.91	598090.63	32°38'36.070"N	103°52'20.375"W	0.77	
12292.00	91.900	180.100	9010.94	3352.32	-3340.16	286.28	683237.66	597995.67	32°38'35.131"N	103°52'20.383"W	0.85	
12385.00	91.600	180.100	9008.10	3444.98	-3433.12	286.12	683237.50	597902.72	32°38'34.211"N	103°52'20.390"W	0.32	
12480.00	91.500	180.300	9005.53	3539.63	-3528.08	285.79	683237.17	597807.77	32°38'33.271"N	103°52'20.398"W	0.24	
12575.00	91.500	180.200	9003.04	3634.27	-3623.05	285.37	683236.75	597712.81	32°38'32.332"N	103°52'20.408"W	0.11	
12670.00	91.100	180.700	9000.89	3728.89	-3718.02	284.63	683236.01	597617.84	32°38'31.392"N	103°52'20.422"W	0.67	
12765.00	90.300	181.000	8999.73	3823.47	-3813.00	283.22	683234.60	597522.87	32°38'30.452"N	103°52'20.443"W	0.90	
12861.00	89.900	181.000	8999.56	3919.03	-3908.99	281.54	683232.92	597426.89	32°38'29.503"N	103°52'20.467"W	0.42	
12955.00	89.600	181.200	8999.97	4012.58	-4002.97	279.74	683231.12	597332.91	32°38'28.573"N	103°52'20.493"W	0.38	
13050.00	89.000	182.100	9001.13	4107.03	-4097.92	277.00	683228.38	597237.97	32°38'27.634"N	103°52'20.530"W	1.14	
13145.00	88.600	181.700	9003.12	4201.42	-4192.85	273.85	683225.23	597143.05	32°38'26.695"N	103°52'20.572"W	0.60	
13240.00	88.000	180.400	9005.94	4295.93	-4287.79	272.11	683223.49	597048.11	32°38'25.755"N	103°52'20.597"W	1.51	
13335.00	87.100	180.300	9010.00	4390.50	-4382.70	271.53	683222.91	596953.21	32°38'24.816"N	103°52'20.609"W	0.95	
13429.00	85.900	181.100	9015.74	4483.94	-4476.51	270.39	683221.77	596859.40	32°38'23.888"N	103°52'20.627"W	1.53	
13511.00	86.000	181.600	9021.53	4565.31	-4558.28	268.46	683219.84	596777.63	32°38'23.079"N	103°52'20.653"W	0.62	
13563.00	86.000	181.600	9025.16	4616.89	-4610.14	267.01	683218.39	596725.79	32°38'22.566"N	103°52'20.673"W	0.00	Proj to Bit



Actual Wellpath Report

No.3H AWP

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Eddy County, NM	Well	No. 3H
Field	(Penny) Sec 21, T19S, R31E	Wellbore	No. 3H AWB
Facility	Penny Pincher Fed Com No. 3H		

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
No. 3H PBHL		9038.50	-4617.71	362.62	683313.99	596718.21	32°38'22.487"N	103°52'19.555"W	point

WELLPATH COMPOSITION Ref Wellbore: No. 3H AWB Ref Wellpath: No.3H AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	8665.80	Generic gyro - northsecking (Standard)	Gyro	No. 3H AWB
8665.80	13563.00	NaviTrak (Standard)	MWD	No. 3H AWB