

Results of Directional Survey

API number:	30-025-40086		
OGRID:		Operator:	CIMAREX ENERGY CO. OF COLORADO
		Property:	MALLON 35 FEDERAL # 7H

surface	ULSTR:	D	35	T 19S	R 34E
				585 FNL	330 FWL

BH Loc	ULSTR:	A	35	T 19S	R 34E
15359 MD		10913.4	TVD	574 FNL	340 FEL
					4940 FWL

Top Perf/OH	ULSTR:	D	35	T 19S	R 34E
10901 MD		18984.1	TVD	592 FNL	499 FWL

Bot Perf/OH	ULSTR:	A	35	T 19S	R 34E
15326 MD		10912.8	TVD	574 FNL	373 FEL
					4907 FWL

	MD	N/S	E/W	VD
	10875	-7.50	148.54	10843.26
TOP PERFS/OH	10901	-6.58	169.10	18984.11
	10907	-6.37	173.85	20862.77
	15304	11.50	4554.70	10912.44
BOT PERFS/OH	15326	11.38	4576.70	10912.82
	15359	11.21	4609.69	10913.40

NEXT TO LAST	15304	11.50	4554.70	10912.44
LAST READING	15359	11.21	4609.69	10913.40
TD	15359	11.21	4609.69	10913.40

Surface Location	585 FN	330 FW
Projected BHL	574 FN	4940 FW
Location of		
Top Perfs/OH	592 FN	499 FW
Bottom Perfs/OH	574 FN	4907 FW

SUMMARY of Subsurface Locations

Surface Location	D-35-19S-34E	585 FN	330 FW	Vert. Depth
Top Perfs/OH	D-35-19S-34E	592 FN	499 FW	18984.11
Bottom Perfs/OH	A-35-19S-34E	574 FN	4907 FW	10912.82
Projected TD	A-35-19S-34E	574 FN	4940 FW	10913.40

FEB 21 2012



Cimarex Energy Co.

Location: Lea County, NM
Field: (Mallon) Sec 35, T19S, R34E
Facility: Mallon 35 Fed No. 7H

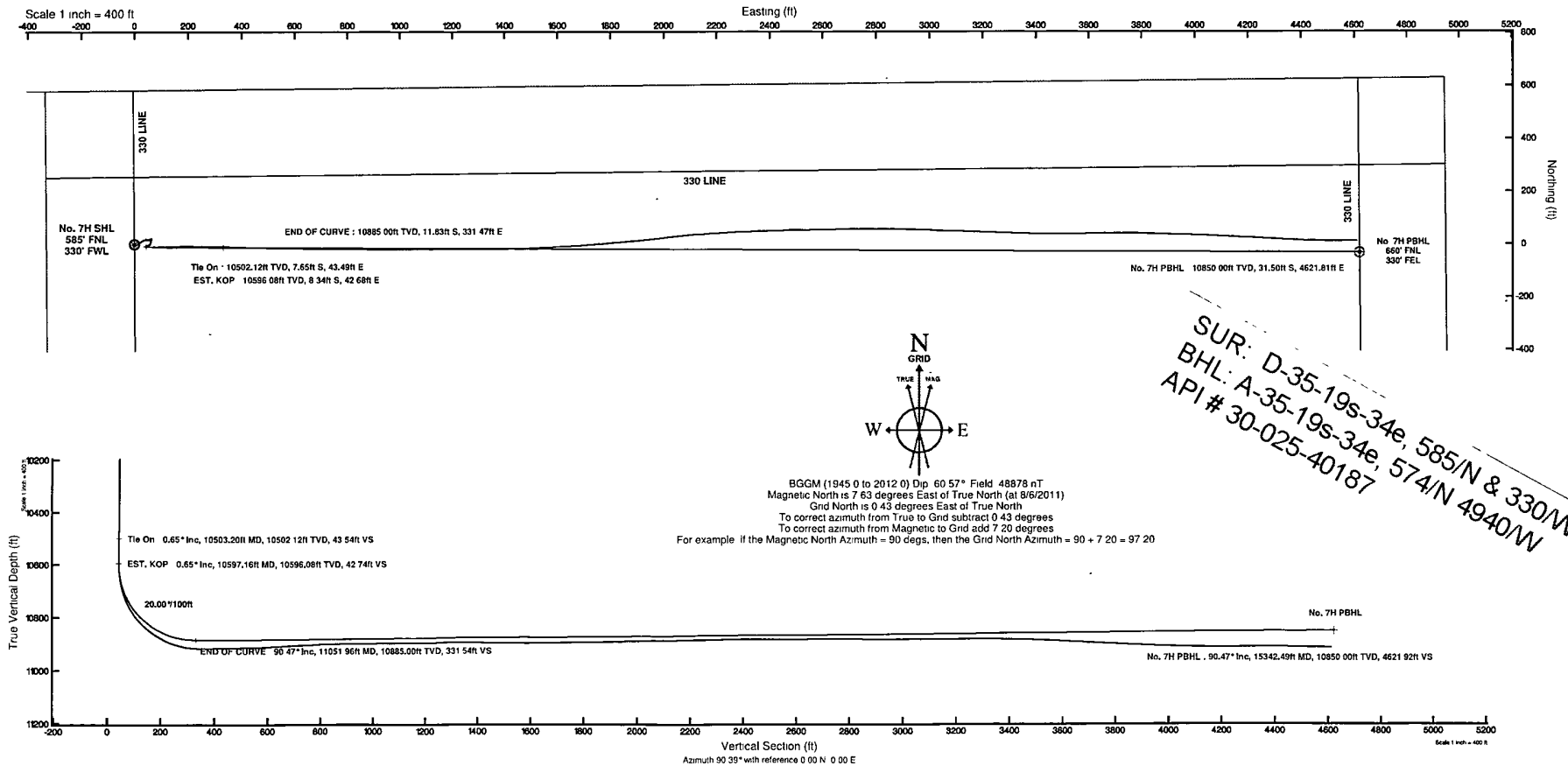
Slot: No. 7H SHL
Well: No. 7H
Wellbore: No. 7H PWB



Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	10503.20	0.650	229.500	10502.12	-7.65	43.49	0.00	43.54
EST. KOP	10597.16	0.650	229.500	10596.08	-8.34	42.68	0.00	42.74
END OF CURVE	11051.96	90.467	90.263	10885.00	-11.83	331.47	20.00	331.54
No. 7H PBHL	15342.49	90.467	90.263	10850.00	-31.50	4621.81	0.00	4621.92

Plot reference wellpath is Plan 1	
True vertical depths are referenced to Rig on No. 7H SHL (KB)	Grid System: NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No. 7H SHL (KB)	North Reference: Grid north
Rig on No. 7H SHL (KB) to Mean Sea Level 3738.6 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot No. 7H SHL) -3720 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: calphik on 8/6/2011





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HOBBS OCD

FEB 08 2012



REFERENCE WELLPATH IDENTIFICATION

RECEIVED

Operator	Cimarex Energy Co.	Slot	No. 7H SHL
Area	Lea County, NM	Well	No. 7H
Field	(Mallon) Sec 35, T19S, R34E	Wellbore	No. 7H AWB
Facility	Mallon 35 Fed No. 7H		

REPORT SETUP INFORMATION

Projection System	NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 3.0.0
North Reference	Grid	User	Gentbry
Scale	0.999978	Report Generated	8/17/2011 at 1:02:16 PM
Convergence at slot	0.43° East	Database/Source file	WA Midland/No. 7H_AWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	786080.10	591079.40	32°37'20.681"N	103°32'18.256"W
Facility Reference Pt			786080.10	591079.40	32°37'20.681"N	103°32'18.256"W
Field Reference Pt			786447.20	587045.00	32°36'40.736"N	103°32'14.318"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 7H SHL (KB) to GL	18.60ft
Horizontal Reference Pt	Slot	Rig on No. 7H SHL (KB) to Mean Sea Level	3738.60ft
Vertical Reference Pt	Rig on No. 7H SHL (KB)	Rig on No. 7H SHL (KB) to Mud Line at Slot (No. 7H SHL)	18.60ft
MD Reference Pt	Rig on No. 7H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	90.39°



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BAKER HUGHES

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 7H SHL
Area	Lea County, NM	Well	No. 7H
Field	(Mallon) Sec 35, T19S, R34E	Wellbore	No. 7H AWB
Facility	Mallon 35 Fed No. 7H		

WELLPATH DATA (191 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00†	0.000	92.040	0.00	0.00	0.00	0.00	786080.10	591079.40	32°37'20.681"N	103°32'18.256"W	0.00	
18.60	0.000	92.040	18.60	0.00	0.00	0.00	786080.10	591079.40	32°37'20.681"N	103°32'18.256"W	0.00	
100.00	0.110	92.040	100.00	0.08	0.00	0.08	786080.18	591079.40	32°37'20.681"N	103°32'18.255"W	0.14	
200.00	0.110	142.920	200.00	0.23	-0.08	0.23	786080.33	591079.32	32°37'20.680"N	103°32'18.254"W	0.09	
300.00	0.160	79.100	300.00	0.43	-0.13	0.43	786080.53	591079.27	32°37'20.680"N	103°32'18.251"W	0.15	
400.00	0.150	79.750	400.00	0.69	-0.08	0.69	786080.79	591079.32	32°37'20.680"N	103°32'18.248"W	0.01	
500.00	0.160	53.550	500.00	0.93	0.02	0.93	786081.03	591079.42	32°37'20.681"N	103°32'18.245"W	0.07	
527.50	0.180	56.070	527.50	1.00	0.07	1.00	786081.10	591079.47	32°37'20.682"N	103°32'18.245"W	0.08	
621.70	0.270	43.690	621.70	1.27	0.31	1.28	786081.38	591079.71	32°37'20.684"N	103°32'18.241"W	0.11	
715.80	0.280	43.700	715.80	1.58	0.64	1.59	786081.69	591080.04	32°37'20.687"N	103°32'18.238"W	0.01	
809.90	0.230	49.390	809.90	1.88	0.93	1.89	786081.99	591080.33	32°37'20.690"N	103°32'18.234"W	0.06	
904.00	0.140	89.210	904.00	2.14	1.05	2.15	786082.25	591080.45	32°37'20.691"N	103°32'18.231"W	0.16	
998.10	0.260	114.170	998.09	2.45	0.97	2.46	786082.56	591080.37	32°37'20.690"N	103°32'18.228"W	0.15	
1092.20	0.350	131.280	1092.19	2.87	0.69	2.87	786082.97	591080.09	32°37'20.688"N	103°32'18.223"W	0.14	
1186.30	0.390	124.380	1186.29	3.35	0.32	3.35	786083.45	591079.72	32°37'20.684"N	103°32'18.217"W	0.06	
1280.40	0.340	126.700	1280.39	3.84	-0.03	3.84	786083.94	591079.37	32°37'20.680"N	103°32'18.212"W	0.06	
1374.50	0.330	150.770	1374.49	4.20	-0.43	4.19	786084.29	591078.97	32°37'20.676"N	103°32'18.207"W	0.15	
1468.60	0.500	189.830	1468.59	4.26	-1.07	4.26	786084.36	591078.33	32°37'20.670"N	103°32'18.207"W	0.34	
1562.80	0.530	206.540	1562.78	4.00	-1.87	3.99	786084.09	591077.53	32°37'20.662"N	103°32'18.210"W	0.16	
1656.90	0.490	225.560	1656.88	3.53	-2.54	3.51	786083.61	591076.86	32°37'20.656"N	103°32'18.216"W	0.18	
1751.00	0.390	238.700	1750.98	2.97	-2.99	2.95	786083.05	591076.41	32°37'20.651"N	103°32'18.222"W	0.15	
1845.10	0.120	118.520	1845.07	2.78	-3.20	2.76	786082.86	591076.20	32°37'20.649"N	103°32'18.224"W	0.49	
1939.20	0.160	122.170	1939.17	2.98	-3.32	2.96	786083.06	591076.08	32°37'20.648"N	103°32'18.222"W	0.04	
2033.30	0.170	107.940	2033.27	3.23	-3.43	3.20	786083.30	591075.97	32°37'20.647"N	103°32'18.219"W	0.04	
2127.40	-0.190	103.790	2127.37	3.51	-3.51	3.49	786083.59	591075.89	32°37'20.646"N	103°32'18.216"W	0.03	
2221.50	0.260	72.280	2221.47	3.87	-3.48	3.84	786083.94	591075.92	32°37'20.646"N	103°32'18.212"W	0.15	
2315.60	0.300	57.400	2315.57	4.28	-3.28	4.25	786084.35	591076.12	32°37'20.648"N	103°32'18.207"W	0.09	
2409.70	0.360	52.490	2409.67	4.72	-2.97	4.70	786084.80	591076.43	32°37'20.651"N	103°32'18.202"W	0.07	
2503.90	0.360	47.900	2503.87	5.17	-2.59	5.15	786085.25	591076.81	32°37'20.655"N	103°32'18.196"W	0.03	
2598.00	0.420	57.750	2597.97	5.68	-2.21	5.66	786085.76	591077.19	32°37'20.659"N	103°32'18.190"W	0.10	
2692.10	0.660	46.800	2692.06	6.36	-1.66	6.35	786086.45	591077.74	32°37'20.664"N	103°32'18.182"W	0.28	
2786.20	1.470	54.370	2786.15	7.73	-0.58	7.72	786087.82	591078.82	32°37'20.675"N	103°32'18.166"W	0.87	
2880.30	2.090	59.520	2880.20	10.18	0.99	10.18	786090.28	591080.39	32°37'20.690"N	103°32'18.137"W	0.68	
2974.40	2.160	62.600	2974.23	13.22	2.68	13.24	786093.34	591082.08	32°37'20.707"N	103°32'18.101"W	0.14	
3068.50	2.200	57.760	3068.27	16.31	4.46	16.34	786096.44	591083.86	32°37'20.724"N	103°32'18.065"W	0.20	
3162.60	2.330	60.450	3162.29	19.49	6.37	19.53	786099.63	591085.76	32°37'20.743"N	103°32'18.027"W	0.18	
3256.70	2.250	56.430	3256.32	22.68	8.33	22.73	786102.83	591087.73	32°37'20.762"N	103°32'17.990"W	0.19	
3350.80	1.960	56.370	3350.35	25.54	10.24	25.61	786105.71	591089.64	32°37'20.780"N	103°32'17.956"W	0.31	
3445.00	1.730	53.750	3444.51	28.02	11.98	28.10	786108.20	591091.38	32°37'20.797"N	103°32'17.927"W	0.26	
3539.10	1.640	56.280	3538.56	30.27	13.56	30.37	786110.47	591092.96	32°37'20.813"N	103°32'17.900"W	0.12	
3633.20	1.540	56.700	3632.63	32.44	15.00	32.54	786112.64	591094.40	32°37'20.827"N	103°32'17.875"W	0.11	
3727.30	1.430	61.350	3726.70	34.52	16.26	34.63	786114.73	591095.66	32°37'20.839"N	103°32'17.850"W	0.17	
3821.40	1.210	69.420	3820.77	36.47	17.17	36.59	786116.69	591096.57	32°37'20.848"N	103°32'17.827"W	0.31	
3915.50	1.380	76.530	3914.85	38.50	17.79	38.62	786118.72	591097.19	32°37'20.854"N	103°32'17.803"W	0.25	
4009.60	1.300	78.790	4008.92	40.65	18.26	40.77	786120.87	591097.66	32°37'20.859"N	103°32'17.778"W	0.10	



Actual Wellpath Report

No. 7H AWP

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BAKER HUGHES

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 7H SHL
Area	Lea County, NM	Well	No. 7H
Field	(Mallon) Sec 35, T19S, R34E	Wellbore	No. 7H AWP
Facility	Mallon 35 Fed No. 7H		

WELLPATH DATA (191 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4103.70	1.070	86.590	4103.00	42.57	18.52	42.70	786122.80	591097.92	32°37'20.861"N	103°32'17.756"W	0.30	
4197.80	0.980	92.730	4197.09	44.25	18.53	44.38	786124.48	591097.93	32°37'20.861"N	103°32'17.736"W	0.15	
4291.90	0.890	99.780	4291.17	45.78	18.37	45.90	786126.00	591097.77	32°37'20.859"N	103°32'17.718"W	0.16	
4386.10	0.620	110.530	4385.37	46.98	18.07	47.10	786127.20	591097.47	32°37'20.856"N	103°32'17.704"W	0.32	
4480.20	0.710	113.650	4479.46	47.99	17.65	48.11	786128.21	591097.05	32°37'20.852"N	103°32'17.692"W	0.10	
4574.30	0.580	96.130	4573.55	49.00	17.37	49.12	786129.22	591096.77	32°37'20.849"N	103°32'17.681"W	0.25	
4668.40	0.560	83.400	4667.65	49.93	17.37	50.05	786130.15	591096.77	32°37'20.849"N	103°32'17.670"W	0.14	
4762.50	0.510	78.500	4761.75	50.80	17.51	50.92	786131.01	591096.91	32°37'20.850"N	103°32'17.660"W	0.07	
4856.60	0.330	87.950	4855.84	51.48	17.60	51.60	786131.70	591097.00	32°37'20.851"N	103°32'17.652"W	0.20	
4950.70	0.430	85.610	4949.94	52.10	17.64	52.22	786132.32	591097.04	32°37'20.852"N	103°32'17.644"W	0.11	
5044.80	0.700	77.420	5044.04	53.01	17.79	53.13	786133.23	591097.19	32°37'20.853"N	103°32'17.634"W	0.30	
5138.90	0.480	83.340	5138.13	53.96	17.96	54.09	786134.18	591097.36	32°37'20.855"N	103°32'17.622"W	0.24	
5233.00	0.510	55.840	5232.23	54.70	18.24	54.82	786134.92	591097.64	32°37'20.857"N	103°32'17.614"W	0.25	
5327.20	0.600	43.840	5326.42	55.38	18.83	55.51	786135.61	591098.23	32°37'20.863"N	103°32'17.606"W	0.16	
5421.30	0.640	45.430	5420.52	56.09	19.56	56.23	786136.33	591098.96	32°37'20.870"N	103°32'17.597"W	0.05	
5515.40	0.550	49.440	5514.61	56.81	20.22	56.95	786137.04	591099.62	32°37'20.877"N	103°32'17.589"W	0.11	
5609.50	0.520	57.290	5608.71	57.50	20.74	57.65	786137.75	591100.14	32°37'20.882"N	103°32'17.581"W	0.08	
5703.60	0.550	94.670	5702.80	58.31	20.94	58.46	786138.56	591100.34	32°37'20.884"N	103°32'17.571"W	0.37	
5891.80	0.570	71.850	5891.00	60.10	21.16	60.25	786140.35	591100.56	32°37'20.886"N	103°32'17.550"W	0.12	
5985.90	0.570	57.530	5985.09	60.94	21.55	61.09	786141.18	591100.95	32°37'20.890"N	103°32'17.540"W	0.15	
6080.00	0.560	70.380	6079.19	61.76	21.96	61.91	786142.01	591101.36	32°37'20.894"N	103°32'17.531"W	0.13	
6174.10	0.230	109.480	6173.28	62.37	22.05	62.53	786142.62	591101.45	32°37'20.895"N	103°32'17.523"W	0.43	
6268.30	0.190	173.370	6267.48	62.57	21.83	62.72	786142.82	591101.23	32°37'20.892"N	103°32'17.521"W	0.24	
6362.40	0.310	174.710	6361.58	62.62	21.42	62.76	786142.86	591100.82	32°37'20.888"N	103°32'17.521"W	0.13	
6456.50	0.450	175.120	6455.68	62.68	20.80	62.82	786142.92	591100.20	32°37'20.882"N	103°32'17.520"W	0.15	
6550.60	0.530	178.480	6549.78	62.72	20.00	62.86	786142.96	591099.40	32°37'20.874"N	103°32'17.520"W	0.09	
6644.70	0.510	184.650	6643.87	62.71	19.15	62.84	786142.94	591098.55	32°37'20.866"N	103°32'17.520"W	0.06	
6738.80	0.550	195.100	6737.97	62.56	18.29	62.69	786142.79	591097.69	32°37'20.857"N	103°32'17.522"W	0.11	
6832.90	0.810	197.100	6832.06	62.26	17.22	62.37	786142.47	591096.62	32°37'20.847"N	103°32'17.526"W	0.28	
6927.00	1.120	193.700	6926.15	61.85	15.69	61.96	786142.06	591095.09	32°37'20.832"N	103°32'17.531"W	0.33	
7021.10	1.080	194.240	7020.23	61.43	13.94	61.52	786141.62	591093.34	32°37'20.814"N	103°32'17.536"W	0.04	
7115.20	1.020	195.820	7114.32	60.99	12.27	61.08	786141.18	591091.67	32°37'20.798"N	103°32'17.541"W	0.07	
7209.40	0.980	191.500	7208.50	60.61	10.68	60.69	786140.79	591090.08	32°37'20.782"N	103°32'17.546"W	0.09	
7303.50	0.880	200.810	7302.59	60.21	9.21	60.27	786140.37	591088.61	32°37'20.768"N	103°32'17.551"W	0.19	
7397.60	0.920	187.770	7396.68	59.86	7.79	59.91	786140.01	591087.19	32°37'20.754"N	103°32'17.555"W	0.22	
7491.70	0.820	192.510	7490.77	59.62	6.38	59.67	786139.76	591085.78	32°37'20.740"N	103°32'17.558"W	0.13	
7585.80	0.680	193.070	7584.86	59.36	5.18	59.39	786139.49	591084.58	32°37'20.728"N	103°32'17.562"W	0.15	
7679.90	0.550	191.020	7678.95	59.15	4.19	59.18	786139.28	591083.59	32°37'20.718"N	103°32'17.564"W	0.14	
7774.00	0.570	213.450	7773.05	58.81	3.36	58.84	786138.93	591082.76	32°37'20.710"N	103°32'17.568"W	0.23	
7868.10	0.610	210.160	7867.14	58.31	2.54	58.33	786138.42	591081.94	32°37'20.702"N	103°32'17.574"W	0.06	
7962.20	0.610	204.020	7961.24	57.86	1.65	57.87	786137.97	591081.05	32°37'20.693"N	103°32'17.580"W	0.07	
8056.30	0.580	212.510	8055.33	57.40	0.79	57.41	786137.51	591080.19	32°37'20.685"N	103°32'17.585"W	0.10	
8150.50	0.650	215.010	8149.53	56.85	-0.05	56.85	786136.95	591079.35	32°37'20.676"N	103°32'17.592"W	0.08	
8244.60	0.470	207.210	8243.62	56.37	-0.83	56.37	786136.46	591078.57	32°37'20.669"N	103°32'17.597"W	0.21	
8338.70	0.460	203.600	8337.72	56.05	-1.52	56.04	786136.14	591077.88	32°37'20.662"N	103°32'17.601"W	0.03	



Actual Wellpath Report

No. 7H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 7H SHL
Area	Lea County, NM	Well	No. 7H
Field	(Mallon) Sec 35, T19S, R34E	Wellbore	No. 7H AWB
Facility	Mallon 35 Fed No. 7H		

WELLPATH DATA (191 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8432.80	0.140	197.760	8431.82	55.86	-1.98	55.85	786135.95	591077.42	32°37'20.657"N	103°32'17.604"W	0.34	
8526.90	0.240	11.040	8525.92	55.87	-1.89	55.85	786135.95	591077.51	32°37'20.658"N	103°32'17.604"W	0.40	
8621.00	0.750	349.160	8620.02	55.78	-1.10	55.78	786135.87	591078.30	32°37'20.666"N	103°32'17.604"W	0.57	
8715.10	0.770	357.330	8714.11	55.63	0.14	55.63	786135.73	591079.54	32°37'20.678"N	103°32'17.606"W	0.12	
8809.20	0.380	316.810	8808.20	55.38	1.00	55.39	786135.49	591080.40	32°37'20.687"N	103°32'17.609"W	0.57	
8903.30	0.460	212.260	8902.30	54.97	0.91	54.97	786135.07	591080.31	32°37'20.686"N	103°32'17.614"W	0.71	
8997.40	0.350	184.530	8996.40	54.74	0.30	54.75	786134.85	591079.70	32°37'20.680"N	103°32'17.616"W	0.24	
9091.60	0.610	255.120	9090.60	54.24	-0.11	54.24	786134.34	591079.29	32°37'20.676"N	103°32'17.622"W	0.63	
9185.70	0.690	273.820	9184.69	53.19	-0.20	53.19	786133.29	591079.20	32°37'20.675"N	103°32'17.635"W	0.24	
9279.80	0.450	241.440	9278.79	52.30	-0.34	52.30	786132.40	591079.06	32°37'20.674"N	103°32'17.645"W	0.42	
9373.90	0.680	205.170	9372.88	51.75	-1.02	51.74	786131.84	591078.38	32°37'20.667"N	103°32'17.652"W	0.44	
9468.00	0.610	209.720	9466.98	51.27	-1.97	51.25	786131.35	591077.43	32°37'20.658"N	103°32'17.657"W	0.09	
9562.10	0.610	216.990	9561.07	50.72	-2.80	50.70	786130.80	591076.60	32°37'20.650"N	103°32'17.664"W	0.08	
9656.20	0.700	229.310	9655.16	49.99	-3.58	49.97	786130.07	591075.82	32°37'20.642"N	103°32'17.673"W	0.18	
9750.30	0.820	223.040	9749.26	49.10	-4.44	49.07	786129.17	591074.96	32°37'20.633"N	103°32'17.683"W	0.15	
9844.40	0.870	239.070	9843.35	48.03	-5.30	48.00	786128.10	591074.10	32°37'20.625"N	103°32'17.696"W	0.26	
9938.50	0.540	259.600	9937.44	46.99	-5.75	46.95	786127.05	591073.65	32°37'20.621"N	103°32'17.708"W	0.44	
10032.70	0.190	212.930	10031.64	46.47	-5.96	46.43	786126.53	591073.44	32°37'20.619"N	103°32'17.714"W	0.46	
10126.80	0.240	248.470	10125.74	46.20	-6.16	46.16	786126.26	591073.24	32°37'20.617"N	103°32'17.717"W	0.15	
10220.90	0.400	255.990	10219.83	45.70	-6.32	45.66	786125.76	591073.09	32°37'20.615"N	103°32'17.723"W	0.18	
10315.00	0.490	239.830	10313.93	45.04	-6.60	44.99	786125.09	591072.80	32°37'20.612"N	103°32'17.731"W	0.16	
10409.10	0.550	235.870	10408.03	44.32	-7.05	44.27	786124.37	591072.35	32°37'20.608"N	103°32'17.739"W	0.07	
10503.20	0.650	229.500	10502.12	43.54	-7.65	43.49	786123.59	591071.75	32°37'20.602"N	103°32'17.749"W	0.13	
10588.00	0.600	240.200	10586.92	42.79	-8.19	42.74	786122.84	591071.21	32°37'20.597"N	103°32'17.757"W	0.15	
10652.00	7.200	94.000	10650.76	46.51	-8.63	46.45	786126.55	591070.77	32°37'20.592"N	103°32'17.714"W	12.04	
10684.00	12.400	94.100	10682.28	51.95	-9.02	51.89	786131.98	591070.38	32°37'20.588"N	103°32'17.651"W	16.25	
10716.00	19.100	91.900	10713.06	60.62	-9.44	60.56	786140.65	591069.96	32°37'20.583"N	103°32'17.549"W	21.02	
10748.00	25.000	90.500	10742.71	72.62	-9.67	72.56	786152.66	591069.73	32°37'20.580"N	103°32'17.409"W	18.51	
10780.00	30.700	89.300	10770.99	87.57	-9.63	87.50	786167.60	591069.77	32°37'20.579"N	103°32'17.234"W	17.90	
10812.00	37.800	88.800	10797.43	105.56	-9.32	105.50	786185.60	591070.08	32°37'20.581"N	103°32'17.024"W	22.20	
10844.00	43.100	87.500	10821.77	126.30	-8.64	126.24	786206.34	591070.76	32°37'20.586"N	103°32'16.781"W	16.77	
10875.00	49.100	86.700	10843.26	148.58	-7.50	148.54	786228.63	591071.90	32°37'20.596"N	103°32'16.520"W	19.44	
10907.00	55.700	88.100	10862.77	173.89	-6.37	173.85	786253.95	591073.03	32°37'20.605"N	103°32'16.224"W	20.91	
10939.00	61.200	90.400	10879.51	201.14	-6.03	201.10	786281.20	591073.37	32°37'20.607"N	103°32'15.906"W	18.24	
10971.00	66.600	91.300	10893.58	229.87	-6.46	229.83	786309.92	591072.94	32°37'20.600"N	103°32'15.570"W	17.06	
11003.00	73.800	91.400	10904.41	259.95	-7.17	259.91	786340.00	591072.23	32°37'20.591"N	103°32'15.218"W	22.50	
11035.00	79.900	91.300	10911.69	291.09	-7.90	291.04	786371.14	591071.50	32°37'20.581"N	103°32'14.854"W	19.06	
11067.00	85.600	91.700	10915.73	322.82	-8.73	322.76	786402.86	591070.67	32°37'20.571"N	103°32'14.484"W	17.86	
11099.00	90.300	91.800	10916.87	354.78	-9.71	354.72	786434.81	591069.69	32°37'20.559"N	103°32'14.110"W	14.69	
11131.00	90.800	91.900	10916.56	386.77	-10.74	386.70	786466.79	591068.66	32°37'20.546"N	103°32'13.736"W	1.59	
11163.00	90.700	91.700	10916.15	418.75	-11.75	418.68	786498.77	591067.65	32°37'20.534"N	103°32'13.362"W	0.70	
11195.00	90.800	91.800	10915.73	450.74	-12.73	450.67	786530.75	591066.68	32°37'20.522"N	103°32'12.989"W	0.44	
11259.00	92.000	91.500	10914.16	514.71	-14.57	514.62	786594.71	591064.83	32°37'20.499"N	103°32'12.241"W	1.93	
11322.00	92.400	90.900	10911.74	577.65	-15.89	577.56	786657.64	591063.51	32°37'20.481"N	103°32'11.505"W	1.14	
11386.00	93.100	91.200	10908.67	641.57	-17.06	641.47	786721.56	591062.34	32°37'20.465"N	103°32'10.758"W	1.19	



Actual Wellpath Report

No. 7H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 7H SHL
Area	Lea County, NM	Well	No. 7H
Field	(Mallon) Sec 35, T19S, R34E	Wellbore	No. 7H AWP
Facility	Mallon 35 Fed No. 7H		

WELLPATH DATA (191 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11450.00	92.700	90.400	10905.44	705.49	-17.95	705.38	786785.47	591061.45	32°37'20.451"N	103°32'10.011"W	1.40	
11514.00	93.000	90.100	10902.25	769.41	-18.23	769.30	786849.39	591061.17	32°37'20.444"N	103°32'09.264"W	0.66	
11578.00	92.000	90.600	10899.46	833.35	-18.62	833.24	786913.32	591060.78	32°37'20.435"N	103°32'08.516"W	1.75	
11642.00	90.300	90.300	10898.18	897.33	-19.12	897.22	786977.30	591060.28	32°37'20.425"N	103°32'07.768"W	2.70	
11737.00	90.200	89.800	10897.76	992.33	-19.20	992.22	787072.30	591060.20	32°37'20.417"N	103°32'06.657"W	0.54	
11832.00	91.200	90.000	10896.60	1087.32	-19.04	1087.21	787167.29	591060.36	32°37'20.412"N	103°32'05.547"W	1.07	
11929.00	89.800	90.200	10895.76	1184.31	-19.21	1184.21	787264.28	591060.19	32°37'20.403"N	103°32'04.413"W	1.46	
12024.00	90.600	89.800	10895.42	1279.31	-19.21	1279.21	787359.28	591060.19	32°37'20.396"N	103°32'03.302"W	0.94	
12118.00	89.500	89.200	10895.34	1373.29	-18.39	1373.20	787453.27	591061.01	32°37'20.397"N	103°32'02.203"W	1.33	
12214.00	89.500	88.300	10896.18	1469.25	-16.29	1469.17	787549.24	591063.11	32°37'20.411"N	103°32'01.081"W	0.94	
12310.00	90.100	87.300	10896.52	1565.15	-12.61	1565.10	787645.16	591066.79	32°37'20.440"N	103°31'59.959"W	1.21	
12404.00	91.200	86.300	10895.45	1658.96	-7.36	1658.95	787739.01	591072.04	32°37'20.485"N	103°31'58.861"W	1.58	
12499.00	90.700	85.600	10893.87	1753.66	-0.65	1753.69	787833.75	591078.75	32°37'20.544"N	103°31'57.753"W	0.91	
12595.00	90.700	85.000	10892.70	1849.27	7.21	1849.36	787929.42	591086.61	32°37'20.615"N	103°31'56.634"W	0.62	
12690.00	91.500	83.900	10890.88	1943.74	-16.40	1943.90	788023.95	591095.80	32°37'20.699"N	103°31'55.528"W	1.43	
12754.00	91.300	83.500	10889.31	2007.29	23.42	2007.49	788087.54	591102.82	32°37'20.764"N	103°31'54.784"W	0.70	
12817.00	90.800	84.200	10888.16	2069.87	30.17	2070.12	788150.17	591109.57	32°37'20.826"N	103°31'54.051"W	1.37	
12881.00	90.700	85.600	10887.32	2133.57	35.86	2133.86	788213.91	591115.25	32°37'20.877"N	103°31'53.305"W	2.19	
12977.00	90.900	86.700	10885.98	2229.29	42.30	2229.63	788309.68	591121.70	32°37'20.934"N	103°31'52.185"W	1.16	
13072.00	91.200	87.400	10884.24	2324.11	47.19	2324.49	788404.53	591126.59	32°37'20.975"N	103°31'51.075"W	0.80	
13136.00	90.800	87.900	10883.12	2388.03	49.81	2388.43	788468.47	591129.21	32°37'20.996"N	103°31'50.327"W	1.00	
13200.00	90.500	88.600	10882.40	2451.98	51.77	2452.39	788532.43	591131.17	32°37'21.011"N	103°31'49.579"W	1.19	
13264.00	90.000	89.100	10882.12	2515.96	53.05	2516.38	788596.42	591132.45	32°37'21.019"N	103°31'48.831"W	1.10	
13327.00	90.100	88.800	10882.06	2578.94	54.21	2579.37	788659.40	591133.60	32°37'21.025"N	103°31'48.095"W	0.50	
13390.00	90.800	88.800	10881.57	2641.91	55.53	2642.35	788722.39	591134.92	32°37'21.034"N	103°31'47.358"W	1.11	
13454.00	90.800	88.700	10880.67	2705.88	56.92	2706.33	788786.36	591136.32	32°37'21.043"N	103°31'46.610"W	0.16	
13518.00	89.400	89.800	10880.56	2769.86	57.76	2770.32	788850.35	591137.16	32°37'21.046"N	103°31'45.862"W	2.78	
13582.00	89.100	91.000	10881.40	2833.86	57.31	2834.31	788914.34	591136.71	32°37'21.037"N	103°31'45.114"W	1.93	
13645.00	90.200	91.500	10881.79	2896.85	55.94	2897.29	788977.32	591135.34	32°37'21.019"N	103°31'44.377"W	1.92	
13709.00	90.000	92.100	10881.67	2960.83	53.93	2961.26	789041.29	591133.33	32°37'20.994"N	103°31'43.630"W	0.99	
13773.00	89.900	92.200	10881.73	3024.80	51.53	3025.22	789105.24	591130.93	32°37'20.966"N	103°31'42.882"W	0.22	
13837.00	90.000	91.800	10881.79	3088.77	49.29	3089.18	789169.20	591128.69	32°37'20.939"N	103°31'42.135"W	0.64	
13899.00	89.900	91.800	10881.84	3150.75	47.35	3151.15	789231.17	591126.74	32°37'20.915"N	103°31'41.410"W	0.16	
13965.00	90.800	91.800	10881.44	3216.73	45.27	3217.11	789297.14	591124.67	32°37'20.889"N	103°31'40.639"W	1.36	
14029.00	90.200	91.900	10880.88	3280.71	43.21	3281.08	789361.10	591122.61	32°37'20.864"N	103°31'39.892"W	0.95	
14124.00	88.500	91.400	10881.96	3375.67	40.47	3376.03	789456.05	591119.87	32°37'20.830"N	103°31'38.782"W	1.87	
14188.00	88.400	90.500	10883.69	3439.65	39.41	3440.00	789520.01	591118.81	32°37'20.815"N	103°31'38.034"W	1.41	
14251.00	88.100	89.800	10885.61	3502.62	39.25	3502.97	789582.98	591118.64	32°37'20.808"N	103°31'37.298"W	1.21	
14316.00	87.500	89.000	10888.11	3567.56	39.93	3567.91	789647.93	591119.33	32°37'20.810"N	103°31'36.538"W	1.54	
14379.00	86.700	89.300	10891.29	3630.46	40.86	3630.82	789710.84	591120.26	32°37'20.815"N	103°31'35.803"W	1.36	
14443.00	87.200	89.400	10894.70	3694.36	41.58	3694.73	789774.74	591120.98	32°37'20.817"N	103°31'35.055"W	0.80	
14506.00	87.100	90.500	10897.83	3757.28	41.64	3757.65	789837.66	591121.04	32°37'20.813"N	103°31'34.320"W	1.75	
14570.00	86.900	92.100	10901.18	3821.18	40.19	3821.54	789901.55	591119.59	32°37'20.794"N	103°31'33.573"W	2.52	
14634.00	87.200	92.000	10904.47	3885.07	37.90	3885.42	789965.42	591117.30	32°37'20.766"N	103°31'32.826"W	0.49	
14698.00	87.800	91.300	10907.27	3948.99	36.06	3949.33	790029.33	591115.46	32°37'20.743"N	103°31'32.079"W	1.44	



Actual Wellpath Report

No. 7H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 7H SHL
Area	Lea County, NM	Well	No. 7H
Field	(Mallon) Sec 35, T19S, R34E	Wellbore	No. 7H AWB
Facility	Mallon 35 Fed No. 7H		

WELLPATH DATA (191 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
14761.00	88.300	92.200	10909.41	4011.94	34.14	4012.26	790092.27	591113.54	32°37'20.719"N	103°31'31.344"W	1.63	
14824.00	89.200	92.700	10910.78	4074.88	31.45	4075.19	790155.19	591110.85	32°37'20.688"N	103°31'30.608"W	1.63	
14888.00	89.300	92.800	10911.62	4138.82	28.38	4139.11	790219.11	591107.78	32°37'20.653"N	103°31'29.861"W	0.22	
14952.00	90.100	92.900	10911.96	4202.76	25.19	4203.03	790283.03	591104.59	32°37'20.617"N	103°31'29.114"W	1.26	
15016.00	90.500	93.200	10911.62	4266.69	21.79	4266.94	790346.94	591101.19	32°37'20.578"N	103°31'28.367"W	0.78	
15079.00	90.700	93.300	10910.96	4329.61	18.22	4329.83	790409.83	591097.62	32°37'20.538"N	103°31'27.632"W	0.35	
15143.00	90.000	92.300	10910.57	4393.55	15.09	4393.76	790473.75	591094.49	32°37'20.502"N	103°31'26.885"W	1.91	
15206.00	89.200	91.400	10911.01	4456.53	13.06	4456.72	790536.71	591092.46	32°37'20.477"N	103°31'26.149"W	1.91	
15270.00	89.200	90.800	10911.90	4520.52	11.83	4520.70	790600.69	591091.23	32°37'20.460"N	103°31'25.401"W	0.94	
15304.00	89.000	90.300	10912.44	4554.51	11.50	4554.70	790634.68	591090.90	32°37'20.455"N	103°31'25.004"W	1.58	
15359.00	89.000	90.300	10913.40	4609.50	11.21	4609.69	790689.67	591090.61	32°37'20.448"N	103°31'24.361"W	0.00	Proj. to Bit

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
No. 7H PBHL		10850.00	-31.50	4621.81	790701.80	591047.90	32°37'20.024"N	103°31'24.223"W	point

WELLPATH COMPOSITION - Ref Wellbore: No. 7H AWB Ref Wellpath: No. 7H AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
18.60	10503.20	Generic gyro - northseeking (Standard)	Gyro	No. 7H AWB
10503.20	15359.00	NaviTrak (Standard)	MWD	No. 7H AWB