

Results of Directional Survey

API number:	30-025-40256		
OGRID:		Operator:	CIMAREX ENERGY CO. OF COLORADO
		Property:	SOUTHEAST LUSK 33 FEDERAL # 3H

surface	ULSTR:	B	33	T 19S	R 32E
				25 FNL	2460 FEL

BH Loc	ULSTR:	O	33	T 19S	R 32E
14241	MD	9459.1	TVD	4928 FNL	1945 FEL
				352 FSL	

Top Perf/OH	ULSTR:	B	33	T 19S	R 32E
9650	MD	9410.5	TVD	363 FNL	2419 FEL

Bot Perf/OH	ULSTR:	O	33	T 19S	R 32E
14186	MD	9459.6	TVD	4873 FNL	1952 FEL
				407 FSL	

	MD	N/S	E/W	VD
	9617	-305.66	39.93	9407.2
TOP PERFS/OH	9650	-338.48	40.62	9410.45
	9651	-339.47	40.64	9410.55
	14185	-4847.39	507.45	9459.63
BOT PERFS/OH	14186	-4848.38	507.58	9459.62
	14241	-4902.90	514.80	9459.09

NEXT TO LAST	14185	-4847.39	507.45	9459.63
LAST READING	14241	-4902.90	514.80	9459.09
TD	14241	-4902.90	514.80	9459.09

Surface Location	25	FN	2460	FE
Projected BHL	4928	FN	1945	FE
Location of				
Top Perfs/OH	363	FN	2419	FE
Bottom Perfs/OH	4873	FN	1952	FE

SUMMARY of Subsurface Locations

Surface Location	B-33-19S-32E	25	FN	2460	FE	Vert. Depth
Top Perfs/OH	B-33-19S-32E	363	FN	2419	FE	9410.45
Bottom Perfs/OH	O-33-19S-32E	4873	FN	1952	FE	9459.62
Projected TD	O-33-19S-32E	4928	FN	1945	FE	9459.09

HOBBS OCD

JUN 04 2012

RECEIVED



INTEQ

HOBBS OCD

JUN 04 2012

RECEIVED

End of Well Report

Cimarex Energy Co.

Lea County, NM

South East Lusk 33 Fed No. 3H

Cactus 115

Well Specifications

Well Name: South East Lusk 33 Fed No. 3H
Start Date: 12/13/2011
Client: Cimarex Energy Co.
Rig Name: Cactus 115
County: Lea County, NM
Field: (SE Lusk) Sec 33, T19S, R32E

Well Location:

NAD83 / TM New Mexico State Planes, Eastern Zone (3001)

Grid Coordinates

Easting: 714596.50'
Northing: 591224.50'

Geographical Coordinates

Latitude: 32°37'26.635"N
Longitude: 103°45'53.920"W

RT: 3,560' above M.S.L.

Date TD Reached: 12/30/2011

Final Depth MD: 14,241.00'

Final Depth TVD: 9,459.09'



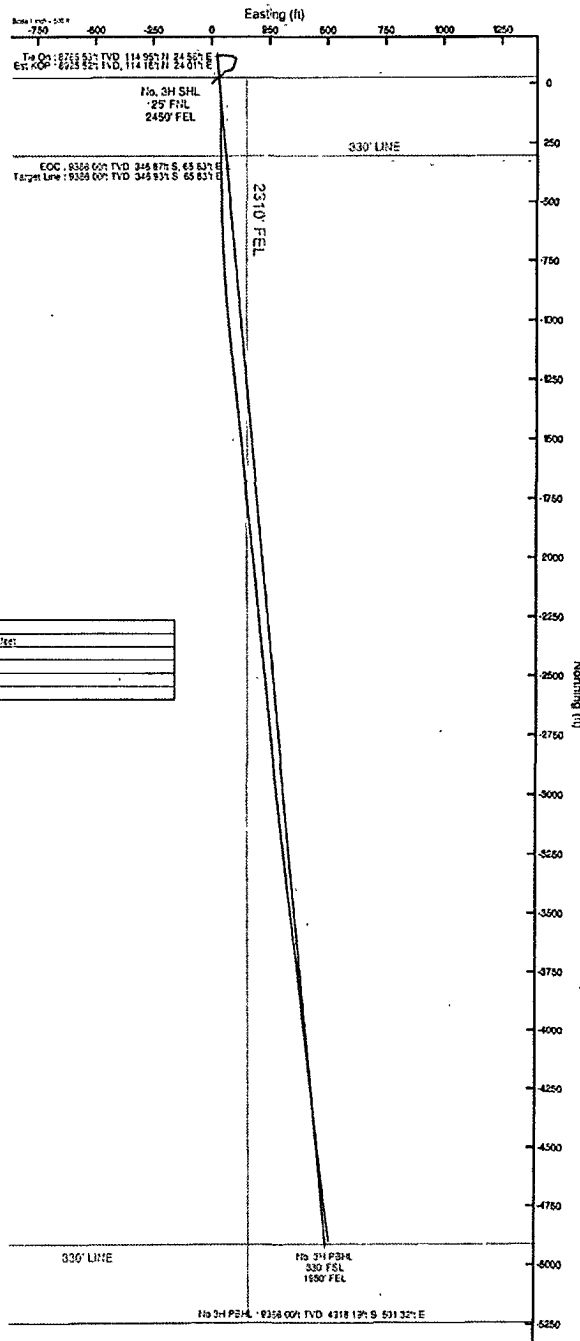
Cimarex Energy Co.

Location: Lea County, NM
Field: (SE Lusk) Sec 33, T19S, R32E
Facility: SE Lusk 33 Fed Com No. 3H

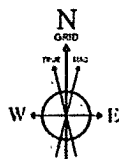
S'ot: No. 3H SHL
Well: No. 3H
Wellbore: No. 3H PWB



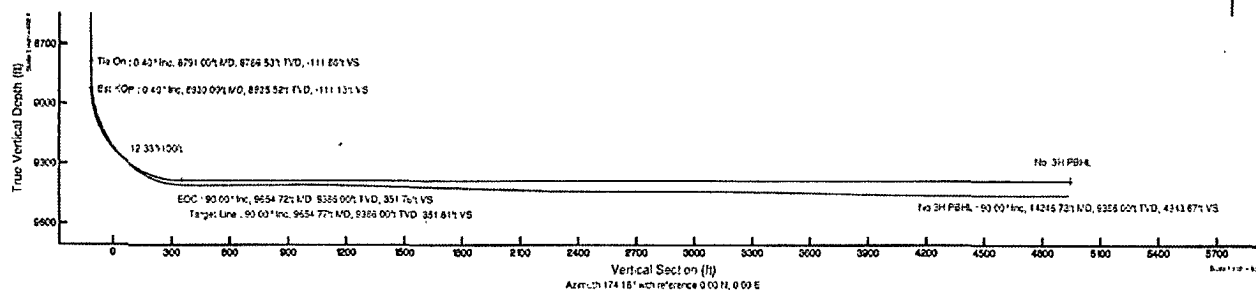
Well Profile Data							
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (1100°)
Trk On	8791.00	0.400	215.500	8789.53	114.65	24.53	0.00
Est KOP	8930.00	0.400	215.500	8925.52	114.16	24.01	0.00
EOC	9554.72	60.000	174.557	9358.00	-348.87	65.83	12.33
Target Line	9554.72	60.000	174.559	9358.00	-348.93	65.83	2.00
No. 3H PWB	14246.73	60.000	174.563	9358.00	-4918.19	501.32	0.00
							VS (°)
							-111.65
							-111.13
							351.76
							351.81
							4943.97



Reference and/or Plan #2	
Transverse Section is referenced to Region No. 3H SHL (RT)	Grid System: NAD83 / TM 82 / UTM / Zone 18N / U.S. Feet
Measured depths are referenced to Region No. 3H SHL (RT)	North Reference Grid North
Region No. 3H SHL (RT) is Mean Sea Level 3560 feet	Scale: True distance
Mean Sea Level is 3560 feet (RT: No. 3H SHL) - 3560 feet	Depths are in feet
Coordinates are in feet (rounded to 5th)	Created by: gcm on 12/18/2011



BGM (1945 to 2012) Op. 60.54° Field, 48891 nT
Magnetic North is 7.79 degrees East of True North (at 3/28/2011)
Grid North is 0.30 degrees East of True North
To correct azimuth from True to Grid subtract 0.30 degrees
To correct azimuth from Magnetic to Grid add 7.49 degrees
For example, if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7.49 = 97.49





Actual Wellpath Report

No.3H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Lea County, NM	Well	No. 3H
Field	(SE Lusk) Sec 33, T19S, R32E	Wellbore	No.3H AWB
Facility	SE Lusk 33 Fed Com No. 3H		

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	0.999943	Report Generated	12/29/2011 at 7:55:09 AM
Convergence at slot	0.30° East	Database/Source file	WA Midland/No.3H_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	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W
Facility Reference Pt			714596.50	591224.50	32°37'26.635"N	103°46'14.054"W
Field Reference Pt			716321.10	590723.40	32°37'21.586"N	103°45'53.920"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 3H SHL (RT) to GL	0.00ft
Horizontal Reference Pt	Slot	Rig on No. 3H SHL (RT) to Mean Sea Level	3560.00ft
Vertical Reference Pt	Rig on No. 3H SHL (RT)	Rig on No. 3H SHL (RT) to Mud Line at Slot (No. 3H SHL)	0.00ft
MD Reference Pt	Rig on No. 3H SHL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	174.18°



Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Lea County, NM	Well	No. 3H
Field	(SE Lusk) Sec 33, T19S, R32E	Wellbore	No.3H AWB
Facility	SE Lusk 33 Fed Com No. 3H		

WELLPATH DATA (175 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
0.00	0.000	126.200	0.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
100.00	0.390	126.200	100.00	0.23	-0.20	0.27	714596.77	591224.30	32°37'26.633"N	103°46'14.051"W	0.39	
200.00	0.580	122.780	200.00	0.77	-0.68	0.97	714597.47	591223.82	32°37'26.628"N	103°46'14.043"W	0.19	
300.00	0.330	100.250	299.99	1.17	-1.00	1.68	714598.18	591223.50	32°37'26.625"N	103°46'14.034"W	0.30	
400.00	0.520	82.760	399.99	1.24	-1.00	2.42	714598.92	591223.50	32°37'26.625"N	103°46'14.026"W	0.23	
500.00	0.560	94.040	499.99	1.31	-0.97	3.35	714599.85	591223.53	32°37'26.625"N	103°46'14.015"W	0.11	
600.00	0.240	111.140	599.98	1.49	-1.08	4.04	714600.54	591223.42	32°37'26.624"N	103°46'14.007"W	0.34	
700.00	0.550	348.850	699.98	1.10	-0.69	4.14	714600.64	591223.81	32°37'26.628"N	103°46'14.006"W	0.71	
800.00	0.830	349.240	799.97	-0.10	0.50	3.91	714600.41	591225.00	32°37'26.640"N	103°46'14.008"W	0.28	
900.00	0.950	342.660	899.96	-1.63	2.00	3.53	714600.03	591226.50	32°37'26.654"N	103°46'14.013"W	0.16	
1000.00	1.060	38.960	999.95	-3.10	3.51	3.86	714600.36	591228.01	32°37'26.669"N	103°46'14.009"W	0.95	
1100.00	1.370	55.460	1099.93	-4.33	4.91	5.43	714601.93	591229.41	32°37'26.683"N	103°46'13.990"W	0.46	
1200.00	1.180	55.230	1199.90	-5.40	6.17	7.26	714603.76	591230.67	32°37'26.696"N	103°46'13.969"W	0.19	
1300.00	1.260	43.550	1299.88	-6.62	7.55	8.86	714605.36	591232.05	32°37'26.709"N	103°46'13.950"W	0.26	
1400.00	1.330	45.670	1399.85	-8.06	9.16	10.45	714606.95	591233.66	32°37'26.725"N	103°46'13.931"W	0.08	
1500.00	1.270	46.550	1499.83	-9.45	10.74	12.09	714608.59	591235.24	32°37'26.740"N	103°46'13.912"W	0.06	
1600.00	1.060	41.590	1599.81	-10.76	12.19	13.51	714610.00	591236.69	32°37'26.755"N	103°46'13.895"W	0.23	
1700.00	1.320	38.450	1699.79	-12.21	13.78	14.84	714611.33	591238.28	32°37'26.771"N	103°46'13.880"W	0.27	
1800.00	1.280	48.810	1799.76	-13.68	15.42	16.39	714612.89	591239.92	32°37'26.787"N	103°46'13.861"W	0.24	
1900.00	1.640	50.220	1899.73	-15.13	17.07	18.33	714614.83	591241.57	32°37'26.803"N	103°46'13.839"W	0.36	
2000.00	2.300	51.600	1999.67	-17.01	19.23	21.01	714617.50	591243.73	32°37'26.824"N	103°46'13.807"W	0.66	
2100.00	2.640	50.340	2099.57	-19.37	21.95	24.35	714620.85	591246.45	32°37'26.851"N	103°46'13.768"W	0.34	
2200.00	2.680	49.830	2199.47	-21.97	24.93	27.91	714624.41	591249.43	32°37'26.880"N	103°46'13.726"W	0.05	
2300.00	2.760	53.600	2299.35	-24.51	27.87	31.63	714628.13	591252.36	32°37'26.909"N	103°46'13.682"W	0.20	
2400.00	2.830	59.380	2399.24	-26.77	30.55	35.70	714632.19	591255.05	32°37'26.935"N	103°46'13.635"W	0.29	
2500.00	2.810	57.890	2499.11	-28.90	33.11	39.90	714636.40	591257.61	32°37'26.960"N	103°46'13.585"W	0.08	
2600.00	2.560	50.590	2599.00	-31.22	35.83	43.70	714640.20	591260.33	32°37'26.987"N	103°46'13.541"W	0.42	
2700.00	2.400	46.090	2698.91	-33.74	38.70	46.93	714643.43	591263.20	32°37'27.015"N	103°46'13.503"W	0.25	
2800.00	2.200	33.620	2798.83	-36.52	41.75	49.50	714646.00	591266.25	32°37'27.045"N	103°46'13.473"W	0.54	
2900.00	2.060	40.710	2898.76	-39.24	44.71	51.74	714648.24	591269.21	32°37'27.075"N	103°46'13.446"W	0.30	
3000.00	1.520	38.660	2998.71	-41.42	47.11	53.74	714650.24	591271.61	32°37'27.098"N	103°46'13.423"W	0.54	
3100.00	1.310	36.580	3098.68	-43.21	49.07	55.25	714651.75	591273.56	32°37'27.117"N	103°46'13.405"W	0.22	
3200.00	2.840	78.920	3198.62	-44.28	50.46	58.36	714654.86	591274.96	32°37'27.131"N	103°46'13.368"W	2.07	
3300.00	3.110	83.080	3298.48	-44.56	51.26	63.49	714659.98	591275.76	32°37'27.139"N	103°46'13.309"W	0.35	
3400.00	3.200	77.380	3398.33	-44.94	52.20	68.90	714665.40	591276.70	32°37'27.148"N	103°46'13.245"W	0.33	
3500.00	3.160	78.150	3498.18	-45.56	53.37	74.32	714670.82	591277.87	32°37'27.159"N	103°46'13.182"W	0.06	
3600.00	3.040	70.540	3598.03	-46.48	54.82	79.52	714676.02	591279.32	32°37'27.173"N	103°46'13.121"W	0.43	
3700.00	3.040	53.850	3697.89	-48.44	57.27	84.16	714680.66	591281.77	32°37'27.197"N	103°46'13.066"W	0.88	
3800.00	3.000	44.680	3797.76	-51.45	60.70	88.14	714684.64	591285.19	32°37'27.231"N	103°46'13.020"W	0.48	
3900.00	2.690	29.960	3897.63	-55.01	64.59	91.16	714687.65	591289.09	32°37'27.269"N	103°46'12.984"W	0.79	
4000.00	2.820	22.010	3997.52	-59.09	68.90	93.25	714689.74	591293.40	32°37'27.312"N	103°46'12.959"W	0.40	
4100.00	2.240	10.270	4097.42	-63.15	73.11	94.52	714691.02	591297.60	32°37'27.353"N	103°46'12.944"W	0.77	
4200.00	2.130	13.090	4197.35	-66.78	76.84	95.29	714691.78	591301.34	32°37'27.390"N	103°46'12.935"W	0.15	
4300.00	2.150	13.890	4297.28	-70.31	80.47	96.16	714692.66	591304.97	32°37'27.426"N	103°46'12.925"W	0.04	
4400.00	1.950	14.980	4397.21	-73.66	83.94	97.05	714693.55	591308.43	32°37'27.460"N	103°46'12.914"W	0.20	



Actual Wellpath Report

No.3H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Lea County, NM	Well	No. 3H
Field	(SE Lusk) Sec 33, T19S, R32E	Wellbore	No.3H AWB
Facility	SE Lusk 33 Fed Com No. 3H		

WELLPATH DATA (175 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
4500.00	1.870	14.220	4497.16	-76.79	87.16	97.89	714694.39	591311.66	32°37'27.492"N	103°46'12.904"W	0.08	
4600.00	1.930	13.840	4597.10	-79.90	90.38	98.70	714695.19	591314.87	32°37'27.524"N	103°46'12.894"W	0.06	
4700.00	1.800	13.840	4697.05	-82.97	93.54	99.47	714695.97	591318.03	32°37'27.555"N	103°46'12.885"W	0.13	
4800.00	1.440	12.840	4797.01	-85.64	96.29	100.13	714696.62	591320.78	32°37'27.582"N	103°46'12.877"W	0.36	
4900.00	1.320	10.910	4896.98	-87.93	98.64	100.63	714697.12	591323.14	32°37'27.606"N	103°46'12.871"W	0.13	
5000.00	0.920	9.460	4996.96	-89.81	100.57	100.98	714697.47	591325.06	32°37'27.625"N	103°46'12.867"W	0.40	
5100.00	0.880	7.240	5096.95	-91.33	102.12	101.20	714697.70	591326.61	32°37'27.640"N	103°46'12.864"W	0.05	
5200.00	0.790	18.120	5196.94	-92.71	103.54	101.52	714698.01	591328.03	32°37'27.654"N	103°46'12.861"W	0.18	
5300.00	0.710	12.700	5296.93	-93.93	104.80	101.87	714698.36	591329.29	32°37'27.666"N	103°46'12.856"W	0.11	
5400.00	0.580	358.010	5396.93	-95.02	105.91	101.99	714698.48	591330.40	32°37'27.677"N	103°46'12.855"W	0.21	
5500.00	0.550	336.940	5496.92	-95.98	106.86	101.78	714698.27	591331.35	32°37'27.687"N	103°46'12.857"W	0.21	
5600.00	0.530	313.360	5596.92	-96.79	107.61	101.26	714697.75	591332.11	32°37'27.694"N	103°46'12.863"W	0.22	
5700.00	0.590	278.740	5696.91	-97.27	108.01	100.41	714696.90	591332.50	32°37'27.698"N	103°46'12.873"W	0.34	
5800.00	0.650	249.690	5796.91	-97.26	107.89	99.37	714695.86	591332.39	32°37'27.697"N	103°46'12.885"W	0.32	
5900.00	0.480	253.770	5896.90	-97.04	107.58	98.44	714694.93	591332.07	32°37'27.694"N	103°46'12.896"W	0.17	
6000.00	0.410	244.660	5996.90	-96.85	107.31	97.71	714694.20	591331.80	32°37'27.692"N	103°46'12.905"W	0.10	
6100.00	0.860	289.230	6096.89	-97.04	107.40	96.68	714693.17	591331.90	32°37'27.693"N	103°46'12.917"W	0.64	
6200.00	1.010	292.070	6196.88	-97.77	107.98	95.15	714691.65	591332.47	32°37'27.698"N	103°46'12.935"W	0.16	
6300.00	1.010	285.150	6296.86	-98.50	108.54	93.48	714689.98	591333.03	32°37'27.704"N	103°46'12.954"W	0.12	
6400.00	0.930	289.600	6396.85	-99.17	109.04	91.87	714688.36	591333.54	32°37'27.709"N	103°46'12.973"W	0.11	
6500.00	0.960	295.920	6496.84	-99.95	109.68	90.35	714686.85	591334.18	32°37'27.715"N	103°46'12.991"W	0.11	
6600.00	0.890	297.710	6596.82	-100.82	110.41	88.91	714685.41	591334.90	32°37'27.723"N	103°46'13.008"W	0.08	
6700.00	0.800	296.180	6696.81	-101.62	111.08	87.60	714684.09	591335.57	32°37'27.729"N	103°46'13.023"W	0.09	
6800.00	0.810	298.130	6796.80	-102.39	111.72	86.35	714682.84	591336.21	32°37'27.736"N	103°46'13.037"W	0.03	
6900.00	0.780	292.210	6896.79	-103.10	112.31	85.09	714681.59	591336.80	32°37'27.742"N	103°46'13.052"W	0.09	
7000.00	0.880	290.200	6996.78	-103.76	112.83	83.74	714680.24	591337.33	32°37'27.747"N	103°46'13.068"W	0.10	
7100.00	1.010	286.390	7096.77	-104.43	113.35	82.18	714678.67	591337.84	32°37'27.752"N	103°46'13.086"W	0.14	
7200.00	0.970	272.940	7196.75	-104.89	113.64	80.49	714676.98	591338.13	32°37'27.755"N	103°46'13.106"W	0.24	
7300.00	1.340	281.120	7296.73	-105.36	113.91	78.49	714674.99	591338.40	32°37'27.758"N	103°46'13.129"W	0.40	
7400.00	1.730	269.700	7396.70	-105.85	114.13	75.84	714672.33	591338.62	32°37'27.760"N	103°46'13.160"W	0.49	
7500.00	2.240	269.930	7496.64	-106.19	114.12	72.37	714668.87	591338.61	32°37'27.760"N	103°46'13.201"W	0.51	
7600.00	2.310	275.240	7596.56	-106.77	114.30	68.41	714664.91	591338.79	32°37'27.762"N	103°46'13.247"W	0.22	
7700.00	2.560	277.330	7696.47	-107.66	114.77	64.19	714660.69	591339.26	32°37'27.767"N	103°46'13.296"W	0.27	
7800.00	2.990	275.670	7796.35	-108.69	115.31	59.38	714655.88	591339.80	32°37'27.773"N	103°46'13.353"W	0.44	
7900.00	3.090	273.990	7896.21	-109.67	115.75	54.09	714650.59	591340.25	32°37'27.777"N	103°46'13.414"W	0.13	
8000.00	3.400	276.080	7996.05	-110.74	116.26	48.46	714644.95	591340.75	32°37'27.783"N	103°46'13.480"W	0.33	
8100.00	3.340	278.060	8095.88	-112.05	116.98	42.62	714639.12	591341.47	32°37'27.790"N	103°46'13.548"W	0.13	
8200.00	3.120	274.020	8195.72	-113.22	117.58	37.03	714633.52	591342.07	32°37'27.796"N	103°46'13.614"W	0.32	
8300.00	2.030	267.700	8295.61	-113.79	117.70	32.54	714629.04	591342.19	32°37'27.798"N	103°46'13.666"W	1.12	
8400.00	1.120	255.960	8395.58	-113.76	117.39	29.82	714626.32	591341.88	32°37'27.795"N	103°46'13.698"W	0.96	
8500.00	1.040	253.010	8495.56	-113.44	116.89	28.01	714624.51	591341.38	32°37'27.790"N	103°46'13.719"W	0.10	
8600.00	1.200	245.790	8595.54	-112.94	116.19	26.18	714622.68	591340.68	32°37'27.783"N	103°46'13.741"W	0.21	
8673.00	0.720	231.750	8668.53	-112.45	115.59	25.13	714621.63	591340.09	32°37'27.777"N	103°46'13.753"W	0.73	
8723.00	0.300	212.500	8718.53	-112.18	115.29	24.81	714621.31	591339.78	32°37'27.774"N	103°46'13.757"W	0.90	
8791.00	0.400	215.500	8786.53	-111.86	114.95	24.58	714621.07	591339.44	32°37'27.771"N	103°46'13.760"W	0.15	



Actual Wellpath Report

No.3H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Lea County, NM	Well	No. 3H
Field	(SE Lusk) Sec 33, T19S, R32E	Wellbore	No.3H AWP
Facility	SE Lusk 33 Fed Com No. 3H		

WELLPATH DATA (175 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
8854.00	0.500	218.400	8849.52	-111.50	114.55	24.28	714620.78	591339.04	32°37'27.767"N	103°46'13.763"W	0.16	
8888.00	2.100	180.000	8883.51	-110.77	113.81	24.19	714620.68	591338.31	32°37'27.760"N	103°46'13.764"W	5.11	
8920.00	4.700	181.800	8915.46	-108.89	111.92	24.14	714620.64	591336.41	32°37'27.741"N	103°46'13.765"W	8.13	
8951.00	7.800	181.900	8946.27	-105.55	108.54	24.03	714620.53	591333.04	32°37'27.708"N	103°46'13.766"W	10.00	
8981.00	10.500	180.800	8975.88	-100.81	103.77	23.93	714620.43	591328.27	32°37'27.660"N	103°46'13.768"W	9.02	
9015.00	13.800	177.900	9009.12	-93.69	96.62	24.03	714620.53	591321.12	32°37'27.590"N	103°46'13.767"W	9.87	
9047.00	16.300	175.500	9040.02	-85.39	88.33	24.53	714621.03	591312.82	32°37'27.508"N	103°46'13.762"W	8.05	
9077.00	18.700	173.900	9068.63	-76.37	79.35	25.37	714621.87	591303.84	32°37'27.419"N	103°46'13.752"W	8.16	
9111.00	22.100	172.500	9100.49	-64.52	67.58	26.78	714623.28	591292.08	32°37'27.302"N	103°46'13.737"W	10.10	
9143.00	25.500	172.800	9129.76	-51.61	54.78	28.43	714624.93	591279.28	32°37'27.175"N	103°46'13.718"W	10.63	
9172.00	28.500	172.800	9155.60	-38.45	41.72	30.08	714626.58	591266.22	32°37'27.046"N	103°46'13.700"W	10.34	
9206.00	32.100	173.500	9184.95	-21.30	24.69	32.12	714628.62	591249.19	32°37'26.878"N	103°46'13.677"W	10.64	
9238.00	35.600	175.000	9211.52	-3.48	6.96	33.90	714630.39	591231.46	32°37'26.702"N	103°46'13.657"W	11.24	
9268.00	39.200	175.900	9235.35	14.73	-11.20	35.34	714631.83	591213.30	32°37'26.522"N	103°46'13.642"W	12.14	
9302.00	43.300	176.600	9260.91	37.13	-33.57	36.80	714633.29	591190.93	32°37'26.301"N	103°46'13.626"W	12.13	
9334.00	46.600	178.100	9283.55	59.69	-56.15	37.83	714634.33	591168.36	32°37'26.077"N	103°46'13.615"W	10.83	
9364.00	50.000	178.800	9303.51	82.03	-78.54	38.44	714634.93	591145.97	32°37'25.856"N	103°46'13.609"W	11.47	
9398.00	53.700	179.400	9324.51	108.66	-105.26	38.85	714635.35	591119.24	32°37'25.591"N	103°46'13.606"W	10.97	
9430.00	57.700	180.000	9342.54	134.97	-131.69	38.99	714635.48	591092.81	32°37'25.330"N	103°46'13.606"W	12.60	
9460.00	61.400	180.300	9357.74	160.69	-157.55	38.92	714635.42	591066.96	32°37'25.074"N	103°46'13.609"W	12.36	
9494.00	65.600	179.800	9372.90	190.95	-187.97	38.89	714635.39	591036.54	32°37'24.773"N	103°46'13.611"W	12.42	
9525.00	69.800	180.000	9384.67	219.48	-216.65	38.94	714635.44	591007.87	32°37'24.489"N	103°46'13.612"W	13.56	
9555.00	73.500	179.300	9394.11	247.82	-245.12	39.12	714635.62	590979.40	32°37'24.208"N	103°46'13.612"W	12.53	
9589.00	78.300	179.300	9402.39	280.65	-278.08	39.52	714636.02	590946.44	32°37'23.881"N	103°46'13.609"W	14.12	
9617.00	81.900	179.000	9407.20	308.13	-305.66	39.93	714636.43	590918.86	32°37'23.609"N	103°46'13.606"W	12.90	
9651.00	86.800	178.600	9410.55	341.84	-339.47	40.64	714637.14	590885.05	32°37'23.274"N	103°46'13.600"W	14.46	
9684.00	89.800	178.700	9411.53	374.72	-372.44	41.42	714637.91	590852.08	32°37'22.948"N	103°46'13.593"W	9.10	
9716.00	89.400	178.600	9411.75	406.63	-404.43	42.17	714638.67	590820.09	32°37'22.631"N	103°46'13.586"W	1.29	
9747.00	89.500	178.700	9412.05	437.53	-435.42	42.90	714639.40	590789.10	32°37'22.324"N	103°46'13.579"W	0.46	
9779.00	90.400	178.400	9412.08	469.44	-467.41	43.71	714640.21	590757.11	32°37'22.008"N	103°46'13.572"W	2.96	
9811.00	90.500	178.000	9411.83	501.36	-499.40	44.72	714641.21	590725.13	32°37'21.691"N	103°46'13.562"W	1.29	
9843.00	90.500	178.200	9411.55	533.28	-531.38	45.78	714642.27	590693.15	32°37'21.375"N	103°46'13.552"W	0.62	
9875.00	90.400	177.800	9411.29	565.21	-563.36	46.89	714643.39	590661.17	32°37'21.058"N	103°46'13.541"W	1.29	
9906.00	90.300	177.900	9411.11	596.15	-594.34	48.06	714644.55	590630.20	32°37'20.752"N	103°46'13.529"W	0.46	
9938.00	90.200	177.400	9410.97	628.09	-626.31	49.37	714645.87	590598.23	32°37'20.435"N	103°46'13.516"W	1.59	
10002.00	90.300	177.300	9410.69	691.99	-690.24	52.33	714648.82	590534.30	32°37'19.803"N	103°46'13.485"W	0.22	
10065.00	90.300	177.100	9410.36	754.90	-753.16	55.40	714651.90	590471.38	32°37'19.180"N	103°46'13.453"W	0.32	
10129.00	90.300	176.700	9410.02	818.83	-817.07	58.87	714655.36	590407.48	32°37'18.547"N	103°46'13.416"W	0.62	
10193.00	91.100	175.500	9409.24	882.78	-880.91	63.22	714659.71	590343.64	32°37'17.915"N	103°46'13.369"W	2.25	
10256.00	90.200	174.900	9408.52	945.77	-943.69	68.49	714664.99	590280.87	32°37'17.294"N	103°46'13.312"W	1.72	
10319.00	89.300	174.000	9408.80	1008.77	-1006.39	74.58	714671.08	590218.17	32°37'16.673"N	103°46'13.244"W	2.02	
10383.00	89.300	174.100	9409.58	1072.76	-1070.04	81.22	714677.71	590154.52	32°37'16.043"N	103°46'13.171"W	0.16	
10446.00	89.300	174.200	9410.35	1135.76	-1132.71	87.64	714684.13	590091.86	32°37'15.423"N	103°46'13.099"W	0.16	
10510.00	88.600	173.300	9411.52	1199.74	-1196.32	94.60	714691.10	590028.25	32°37'14.793"N	103°46'13.022"W	1.78	
10574.00	88.600	173.700	9413.09	1263.72	-1259.89	101.85	714698.34	589964.69	32°37'14.164"N	103°46'12.941"W	0.62	



Actual Wellpath Report

No.3H AWP
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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Lea County, NM	Well	No. 3H
Field	(SE Lusk) Sec 33, T19S, R32E	Wellbore	No.3H AWP
Facility	SE Lusk 33 Fed Com No. 3H		

WELLPATH DATA (175 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
10637.00	88.700	173.400	9414.57	1326.70	-1322.47	108.92	714705.41	589902.11	32°37'13.544"N	103°46'12.862"W	0.50	
10701.00	88.800	173.300	9415.97	1390.68	-1386.02	116.33	714712.82	589838.56	32°37'12.915"N	103°46'12.780"W	0.22	
10795.00	88.700	173.800	9418.02	1484.65	-1479.41	126.89	714723.38	589745.18	32°37'11.990"N	103°46'12.662"W	0.54	
10891.00	88.700	173.900	9420.20	1580.62	-1574.83	137.17	714733.66	589649.76	32°37'11.046"N	103°46'12.548"W	0.10	
10986.00	88.800	174.000	9422.27	1675.60	-1669.28	147.18	714743.67	589555.32	32°37'10.111"N	103°46'12.437"W	0.15	
11082.00	88.600	173.600	9424.45	1771.57	-1764.69	157.55	714754.04	589459.91	32°37'09.166"N	103°46'12.321"W	0.47	
11178.00	88.500	173.400	9426.88	1867.53	-1860.04	168.41	714764.90	589364.57	32°37'08.222"N	103°46'12.200"W	0.23	
11273.00	88.300	173.500	9429.53	1962.49	-1954.39	179.24	714775.73	589270.23	32°37'07.288"N	103°46'12.079"W	0.24	
11368.00	88.400	173.900	9432.26	2057.45	-2048.77	189.66	714786.15	589175.85	32°37'06.354"N	103°46'11.963"W	0.43	
11464.00	88.400	174.800	9434.94	2153.41	-2144.27	199.11	714795.60	589080.36	32°37'05.408"N	103°46'11.859"W	0.94	
11559.00	89.000	174.100	9437.10	2248.38	-2238.80	208.30	714804.78	588985.83	32°37'04.472"N	103°46'11.757"W	0.97	
11655.00	89.400	174.300	9438.44	2344.37	-2334.30	218.00	714814.48	588890.34	32°37'03.527"N	103°46'11.650"W	0.47	
11751.00	89.500	173.700	9439.36	2440.36	-2429.77	228.03	714824.52	588794.88	32°37'02.582"N	103°46'11.538"W	0.63	
11847.00	89.800	174.000	9439.95	2536.36	-2525.21	238.31	714834.80	588699.44	32°37'01.637"N	103°46'11.424"W	0.44	
11943.00	90.100	174.300	9440.03	2632.36	-2620.71	248.10	714844.58	588603.94	32°37'00.692"N	103°46'11.316"W	0.44	
12038.00	90.300	174.400	9439.70	2727.36	-2715.25	257.45	714853.94	588509.41	32°36'59.756"N	103°46'11.212"W	0.24	
12134.00	89.900	173.400	9439.53	2823.36	-2810.70	267.65	714864.14	588413.96	32°36'58.811"N	103°46'11.099"W	1.12	
12229.00	89.900	173.400	9439.70	2918.35	-2905.07	278.57	714875.06	588319.60	32°36'57.876"N	103°46'10.977"W	0.00	
12325.00	90.000	173.600	9439.78	3014.34	-3000.46	289.44	714885.92	588224.22	32°36'56.932"N	103°46'10.856"W	0.23	
12420.00	89.100	173.100	9440.53	3109.33	-3094.81	300.44	714896.92	588129.87	32°36'55.998"N	103°46'10.733"W	1.08	
12516.00	89.200	173.100	9441.95	3205.30	-3190.11	311.97	714908.45	588034.58	32°36'55.054"N	103°46'10.604"W	0.10	
12612.00	89.400	173.100	9443.13	3301.28	-3285.41	323.50	714919.99	587939.29	32°36'54.111"N	103°46'10.475"W	0.21	
12708.00	88.900	173.000	9444.55	3397.25	-3380.69	335.12	714931.60	587844.01	32°36'53.167"N	103°46'10.345"W	0.53	
12804.00	89.300	172.700	9446.06	3493.21	-3475.93	347.07	714943.55	587748.77	32°36'52.224"N	103°46'10.212"W	0.52	
12900.00	88.500	173.200	9447.90	3589.17	-3571.19	358.85	714955.33	587653.52	32°36'51.281"N	103°46'10.080"W	0.98	
12996.00	88.400	173.100	9450.50	3685.12	-3666.47	370.29	714966.77	587558.25	32°36'50.338"N	103°46'09.952"W	0.15	
13091.00	88.800	173.800	9452.82	3780.08	-3760.82	381.13	714977.60	587463.90	32°36'49.404"N	103°46'09.831"W	0.85	
13187.00	88.900	174.000	9454.75	3876.06	-3856.25	391.33	714987.80	587368.47	32°36'48.459"N	103°46'09.718"W	0.23	
13282.00	89.100	174.000	9456.40	3971.04	-3950.72	401.25	714997.73	587274.01	32°36'47.524"N	103°46'09.608"W	0.21	
13378.00	89.000	173.700	9457.99	4067.03	-4046.15	411.54	715008.01	587178.58	32°36'46.579"N	103°46'09.493"W	0.33	
13474.00	89.000	173.500	9459.67	4163.01	-4141.54	422.24	715018.71	587083.20	32°36'45.635"N	103°46'09.374"W	0.21	
13570.00	89.400	173.200	9461.01	4258.99	-4236.89	433.35	715029.83	586987.86	32°36'44.691"N	103°46'09.250"W	0.52	
13665.00	89.900	173.400	9461.59	4353.98	-4331.23	444.44	715040.91	586893.52	32°36'43.757"N	103°46'09.126"W	0.57	
13760.00	89.900	172.700	9461.76	4448.96	-4425.54	455.93	715052.41	586799.22	32°36'42.823"N	103°46'08.998"W	0.74	
13856.00	90.200	173.200	9461.67	4544.93	-4520.81	467.71	715064.19	586703.95	32°36'41.880"N	103°46'08.866"W	0.61	
13952.00	90.500	173.400	9461.09	4640.92	-4616.15	478.91	715075.39	586608.62	32°36'40.936"N	103°46'08.741"W	0.38	
14047.00	90.300	173.400	9460.42	4735.91	-4710.52	489.83	715086.30	586514.26	32°36'40.001"N	103°46'08.619"W	0.21	
14143.00	90.300	172.300	9459.92	4831.88	-4805.77	501.78	715098.25	586419.01	32°36'39.058"N	103°46'08.485"W	1.15	
14185.00	90.500	172.200	9459.63	4873.86	-4847.39	507.45	715103.92	586377.40	32°36'38.646"N	103°46'08.422"W	0.53	
14241.00	90.600	172.700	9459.09	4929.83	-4902.90	514.80	715111.27	586321.89	32°36'38.097"N	103°46'08.339"W	0.91	Proj to Bit



Actual Wellpath Report

No.3H AWP
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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Lea County, NM	Well	No. 3H
Field	(SE Lusk) Sec 33, T19S, R32E	Wellbore	No.3H AWB
Facility	SE Lusk 33 Fed Com No. 3H		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
No. 3H PBHL		9400.00	-4918.19	501.32	715097.79	586306.60	32°36'37.946"N	103°46'08.498"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	8673.00	Generic gyro - northseeking (Standard)			VES Gyro <100-8673>	No.3H AWB
8673.00	14241.00	NaviTrak (Standard)			MWD NaviTrak <8723-XXXX>	No.3H AWB