

Results of Directional Survey

API number:	30-025-40343		
OGRID:		Operator:	CIMAREX ENERGY CO.
		Property:	TRISTE DRAW 36 STATE # 4H

surface	ULSTR:	C	36	T	23S	R	32E
				330	FNL	2280	FWL

BH Loc	ULSTR:	N	36	T	23S	R	32E
15427	MD	10994.5	TVD	340	FSL	2316	FWL
				4940	FNL		

Top Perf/OH	ULSTR:	C	36	T	23S	R	32E
10850	MD	10830.9	TVD	447	FNL	2228	FWL

Bot Perf/OH	ULSTR:	N	36	T	23S	R	32E
15375	MD	10994.5	TVD	392	FSL	2315	FWL
				4888	FNL		

	MD	N/S	E/W	VD
	10846	-114.62	-50.82	10827.61
TOP PERFS/OH	10850	-116.69	-51.84	10830.88
	10877	-130.63	-58.75	10852.93
	15372	-4554.66	34.46	10994.85
BOT PERFS/OH	15375	-4557.66	34.54	10994.83
	15427	-4609.64	35.90	10994.47

NEXT TO LAST	15372	-4554.66	34.46	10994.85
LAST READING	15427	-4609.64	35.90	10994.47
TD	15427	-4609.64	35.90	10994.47

Surface Location	330	FN	2280	FW
Projected BHL	4940	FN	2316	FW
Location of				
Top Perfs/OH	447	FN	2228	FW
Bottom Perfs/OH	4888	FN	2315	FW

SUMMARY of Subsurface Locations

Surface Location	C-36-23S-32E	330	FN	2280	FW	Vert. Depth
Top Perfs/OH	C-36-23S-32E	447	FN	2228	FW	10830.88
Bottom Perfs/OH	N-36-23S-32E	4888	FN	2315	FW	10994.83
Projected TD	N-36-23S-32E	4940	FN	2316	FW	10994.47

JUN 07 2012



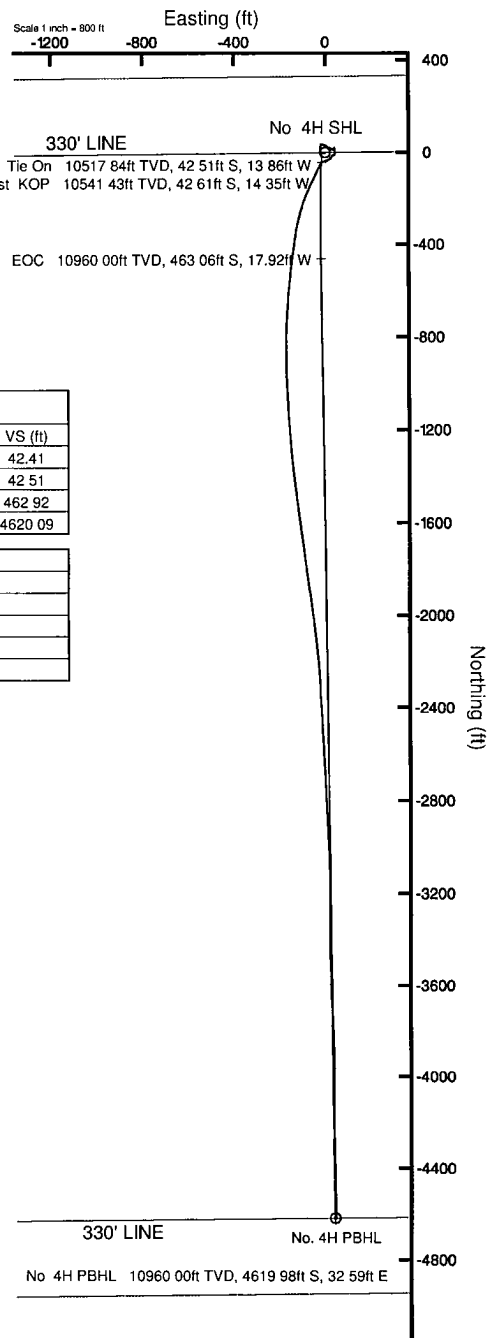
Cimarex Energy Co.

Location Lee County, TX
Field (Triste Draw) Sec 36, T23S, R32E
Facility Triste Draw 36 State

Slot No 4H SHL
Well No 4H
Wellbore No 4H PWB

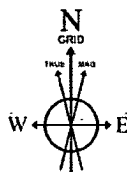


SUR: C-36-23s-32e, 330/N & 2280/W
BHL: N-36-23s-32e, 4940/N & 2316/W
API # 30-025-40343

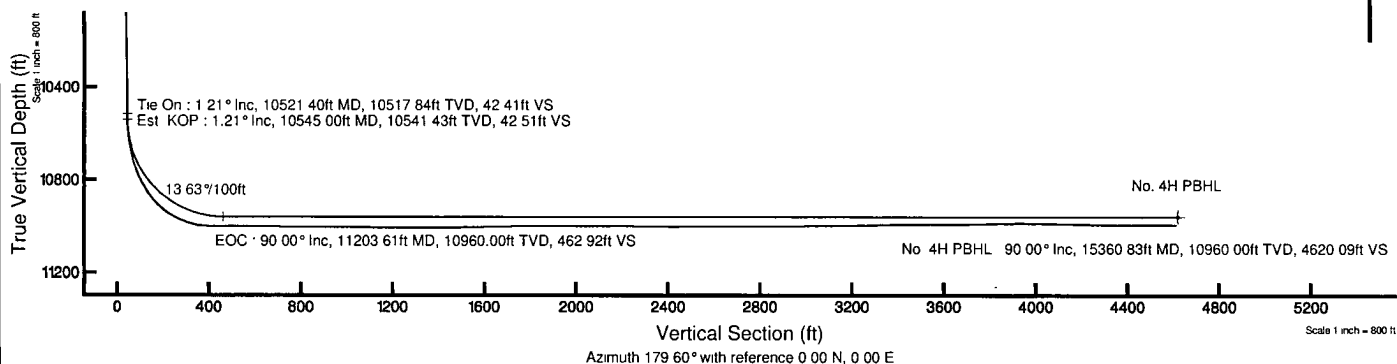


Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	10521 40	1 210	258 090	10517 84	-42 51	-13 86	0 00	42.41
Est KOP	10545 00	1 210	258 090	10541 43	-42 61	-14 35	0 00	42 51
EOC	11203 61	90 000	179 304	10960 00	-463 06	-17.92	13 63	462 92
No 4H PBHL	15360 83	90 000	179 304	10960 00	-4619 98	32 59	0 00	4620 09

Plot reference wellpath is Rev-B 0	
True vertical depths are referenced to Rig on No 4H SHL (KB)	Grid System NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No 4H SHL (KB)	North Reference Grid north
Rig on No 4H SHL (KB) to Mean Sea Level 3704 feet	Scale True distance
Mean Sea Level to Mud line (At Slot No 4H SHL) 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by gentbry on 3/19/2012



BGGM (1945 0 to 2012 0) Dip 60 21° Field 48620 3 nT
Magnetic North is 7 60 degrees East of True North (at 11/16/2011)
Grid North is 0 38 degrees East of True North
To correct azimuth from True to Grid subtract 0 38 degrees
To correct azimuth from Magnetic to Grid add 7 23 degrees
For example if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7 23 = 97 23





Actual Wellpath Report

No.4H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Lea County, NM	Well	No. 4H
Field	(Triste Draw) Sec 36, T23S, R32E	Wellbore	No.4H AWB
Facility	Triste Draw 36 State		

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	Harrkol
Scale	0.999963	Report Generated	4/9/2012 at 7:55:36 AM
Convergence at slot	0.38° East	Database/Source file	WA Midland/No.4H_AWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	19.40	1904.48	758890.80	461791.30	32°16'03.280"N	103°37'46.118"W
Facility Reference Pt			756986.40	461771.90	32°16'03.211"N	103°38'08.299"W
Field Reference Pt			756986.40	461771.90	32°16'03.211"N	103°38'08.299"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 4H SHL (KB) to GL	3704.00ft
Horizontal Reference Pt	Slot	Rig on No. 4H SHL (KB) to Mean Sea Level	3704.00ft
Vertical Reference Pt	Rig on No. 4H SHL (KB)	Rig on No. 4H SHL (KB) to Mud Line at Slot (No. 4H SHL)	3704.00ft
MD Reference Pt	Rig on No. 4H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	179.60°



Actual Wellpath Report

No.4H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Lea County, NM	Well	No. 4H
Field	(Triste Draw) Sec 36, T23S, R32E	Wellbore	No.4H AWB
Facility	Triste Draw 36 State		

WELLPATH DATA (200 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	330.450	0.00	0.00	0.00	0.00	758890.80	461791.30	32°16'03.280"N	103°37'46.118"W	0.00	
19.00	0.000	330.450	19.00	0.00	0.00	0.00	758890.80	461791.30	32°16'03.280"N	103°37'46.118"W	0.00	
85.20	0.320	330.450	85.20	-0.16	0.16	-0.09	758890.71	461791.46	32°16'03.282"N	103°37'46.120"W	0.48	
174.20	0.250	332.110	174.20	-0.55	0.55	-0.30	758890.50	461791.85	32°16'03.286"N	103°37'46.122"W	0.08	
265.60	-0.240	299.060	265.60	-0.82	0.82	-0.57	758890.23	461792.12	32°16'03.288"N	103°37'46.125"W	0.15	
354.50	0.280	261.880	354.50	-0.88	0.88	-0.94	758889.86	461792.18	32°16'03.289"N	103°37'46.129"W	0.19	
445.00	0.400	234.220	445.00	-0.67	0.66	-1.42	758889.38	461791.96	32°16'03.287"N	103°37'46.135"W	0.22	
532.70	0.400	244.890	532.69	-0.37	0.35	-1.94	758888.86	461791.65	32°16'03.284"N	103°37'46.141"W	0.08	
627.80	0.450	235.200	627.79	-0.02	0.00	-2.55	758888.25	461791.30	32°16'03.280"N	103°37'46.148"W	0.09	
723.00	0.520	231.890	722.99	-0.46	-0.48	-3.20	758887.60	461790.82	32°16'03.276"N	103°37'46.156"W	0.08	
818.10	0.560	226.480	818.08	1.04	-1.07	-3.87	758886.93	461790.23	32°16'03.270"N	103°37'46.164"W	0.07	
913.20	0.540	232.010	913.18	1.63	-1.66	-4.56	758886.24	461789.64	32°16'03.264"N	103°37'46.172"W	0.06	
1008.40	0.520	236.480	1008.37	2.14	-2.18	-5.28	758885.52	461789.12	32°16'03.259"N	103°37'46.180"W	0.05	
1103.50	0.630	228.330	1103.47	2.72	-2.76	-6.03	758884.77	461788.54	32°16'03.253"N	103°37'46.189"W	0.14	
1198.60	0.540	238.460	1198.56	3.30	-3.35	-6.80	758884.00	461787.95	32°16'03.248"N	103°37'46.198"W	0.14	
1293.70	0.480	254.550	1293.66	3.63	-3.69	-7.57	758883.23	461787.61	32°16'03.244"N	103°37'46.207"W	0.16	
1388.90	0.700	284.220	1388.86	3.59	-3.65	-8.52	758882.29	461787.65	32°16'03.245"N	103°37'46.218"W	0.39	
1484.00	0.730	291.770	1483.95	3.21	-3.28	-9.64	758881.16	461788.02	32°16'03.248"N	103°37'46.231"W	0.10	
1579.10	0.770	287.870	1579.04	2.79	-2.86	-10.81	758879.99	461788.44	32°16'03.253"N	103°37'46.245"W	0.07	
1674.30	0.780	285.830	1674.23	2.40	-2.49	-12.04	758878.76	461788.81	32°16'03.256"N	103°37'46.259"W	0.03	
1769.40	0.700	279.230	1769.32	2.13	-2.22	-13.24	758877.56	461789.08	32°16'03.259"N	103°37'46.273"W	0.12	
1864.50	0.640	291.860	1864.42	1.83	-1.93	-14.31	758876.49	461789.37	32°16'03.262"N	103°37'46.285"W	0.17	
1959.70	0.630	288.430	1959.61	1.46	-1.56	-15.30	758875.50	461789.74	32°16'03.266"N	103°37'46.297"W	0.04	
2054.80	0.690	301.020	2054.71	0.99	-1.10	-16.28	758874.52	461790.20	32°16'03.270"N	103°37'46.308"W	0.16	
2149.90	0.830	309.820	2149.80	0.25	-0.37	-17.30	758873.50	461790.93	32°16'03.278"N	103°37'46.320"W	0.19	
2245.00	0.720	298.880	2244.89	-0.49	0.36	-18.36	758872.45	461791.66	32°16'03.285"N	103°37'46.332"W	0.19	
2340.20	0.750	315.730	2340.08	-1.23	1.10	-19.31	758871.49	461792.40	32°16'03.292"N	103°37'46.343"W	0.23	
2435.30	0.740	317.870	2435.17	-2.14	2.00	-20.16	758870.64	461793.30	32°16'03.301"N	103°37'46.353"W	0.03	
2530.40	0.790	331.150	2530.26	-3.17	3.03	-20.89	758869.91	461794.33	32°16'03.312"N	103°37'46.362"W	0.19	
2625.60	0.900	331.720	2625.45	-4.41	4.26	-21.56	758869.24	461795.56	32°16'03.324"N	103°37'46.369"W	0.12	
2720.70	1.010	345.770	2720.54	-5.89	5.73	-22.12	758868.68	461797.03	32°16'03.338"N	103°37'46.376"W	0.27	
2815.80	1.200	351.850	2815.62	-7.69	7.53	-22.47	758868.33	461798.83	32°16'03.356"N	103°37'46.380"W	0.23	
2910.90	1.360	357.420	2910.70	-9.80	9.64	-22.66	758868.14	461800.94	32°16'03.377"N	103°37'46.382"W	0.21	
3006.10	1.620	1.110	3005.87	-12.28	12.12	-22.68	758868.12	461803.42	32°16'03.402"N	103°37'46.382"W	0.29	
3101.20	1.370	8.630	3100.93	-14.74	14.58	-22.49	758868.31	461805.88	32°16'03.426"N	103°37'46.379"W	0.33	
3196.30	1.520	11.390	3196.00	-17.10	16.94	-22.07	758868.73	461808.24	32°16'03.449"N	103°37'46.374"W	0.17	
3291.50	1.510	15.960	3291.17	-19.54	19.39	-21.47	758869.33	461810.69	32°16'03.474"N	103°37'46.367"W	0.13	
3386.60	1.600	14.160	3386.24	-22.03	21.88	-20.80	758870.00	461813.18	32°16'03.498"N	103°37'46.359"W	0.11	
3481.70	1.640	12.330	3481.30	-24.64	24.50	-20.19	758870.61	461815.80	32°16'03.524"N	103°37'46.352"W	0.07	
3576.90	1.600	10.570	3576.46	-27.27	27.13	-19.65	758871.15	461818.43	32°16'03.550"N	103°37'46.345"W	0.07	
3672.00	1.560	8.930	3671.52	-29.85	29.72	-19.21	758871.59	461821.02	32°16'03.576"N	103°37'46.340"W	0.06	
3767.10	0.960	37.920	3766.60	-31.76	31.63	-18.52	758872.28	461822.92	32°16'03.594"N	103°37'46.332"W	0.90	
3862.30	0.840	41.470	3861.79	-32.90	32.78	-17.57	758873.23	461824.08	32°16'03.606"N	103°37'46.321"W	0.14	
3957.40	0.750	54.160	3956.88	-33.78	33.66	-16.60	758874.20	461824.96	32°16'03.615"N	103°37'46.309"W	0.21	
4052.50	0.630	40.380	4051.97	-34.54	34.43	-15.76	758875.04	461825.73	32°16'03.622"N	103°37'46.299"W	0.21	



Actual Wellpath Report

No.4H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Lea County, NM	Well	No. 4H
Field	(Triste Draw) Sec 36, T23S, R32E	Wellbore	No.4H AWB
Facility	Triste Draw 36 State		

WELLPATH DATA (200 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
4147.60	0.840	65.150	4147.07	-35.22	35.12	-14.79	758876.02	461826.42	32°16'03.629"N	103°37'46.288"W	0.40	
4242.80	2.100	101.040	4242.23	-35.16	35.08	-12.44	758878.36	461826.38	32°16'03.628"N	103°37'46.261"W	1.58	
4337.90	3.150	109.910	4337.23	-33.91	33.85	-8.27	758882.53	461825.15	32°16'03.616"N	103°37'46.212"W	1.18	
4433.00	2.690	112.420	4432.21	-32.14	32.11	-3.75	758887.05	461823.41	32°16'03.598"N	103°37'46.160"W	0.50	
4528.20	3.350	117.070	4527.28	-29.99	30.00	0.79	758891.59	461821.29	32°16'03.577"N	103°37'46.107"W	0.74	
4623.30	3.600	127.220	4622.20	-26.88	26.93	5.64	758896.44	461818.22	32°16'03.546"N	103°37'46.051"W	0.70	
4718.40	3.880	121.800	4717.10	-23.35	23.42	10.75	758901.55	461814.72	32°16'03.511"N	103°37'45.991"W	0.47	
4813.60	3.330	117.400	4812.11	-20.34	20.45	15.95	758906.74	461811.75	32°16'03.482"N	103°37'45.931"W	0.65	
4908.70	2.560	118.850	4907.09	-18.01	18.16	20.26	758911.06	461809.46	32°16'03.459"N	103°37'45.881"W	0.81	
5003.80	1.790	124.450	5002.12	-16.13	16.29	23.34	758914.14	461807.59	32°16'03.440"N	103°37'45.845"W	0.84	
5098.90	1.700	114.390	5097.17	-14.69	14.87	25.85	758916.65	461806.17	32°16'03.426"N	103°37'45.816"W	0.34	
5194.10	1.440	108.590	5192.34	-13.71	13.91	28.27	758919.07	461805.21	32°16'03.416"N	103°37'45.788"W	0.32	
5289.20	1.340	105.490	5287.41	-13.01	13.23	30.48	758921.27	461804.53	32°16'03.409"N	103°37'45.763"W	0.13	
5384.30	1.080	105.560	5382.49	-12.46	12.69	32.41	758923.21	461803.99	32°16'03.404"N	103°37'45.740"W	0.27	
5479.50	0.830	90.600	5477.68	-12.20	12.44	33.96	758924.76	461803.74	32°16'03.401"N	103°37'45.722"W	0.37	
5574.60	0.680	105.050	5572.77	-12.04	12.29	35.20	758926.00	461803.59	32°16'03.400"N	103°37'45.708"W	0.25	
5669.70	0.620	78.210	5667.86	-11.99	12.25	36.25	758927.05	461803.55	32°16'03.399"N	103°37'45.695"W	0.32	
5764.90	0.470	84.400	5763.06	-12.13	12.39	37.14	758927.94	461803.69	32°16'03.401"N	103°37'45.685"W	0.17	
5860.00	0.250	98.270	5858.15	-12.13	12.40	37.73	758928.53	461803.70	32°16'03.401"N	103°37'45.678"W	0.25	
5955.10	0.190	63.750	5953.25	-12.17	12.44	38.08	758928.88	461803.74	32°16'03.401"N	103°37'45.674"W	0.15	
6050.20	0.380	42.860	6048.35	-12.47	12.74	38.44	758929.23	461804.04	32°16'03.404"N	103°37'45.670"W	0.22	
6145.40	0.530	29.820	6143.55	-13.08	13.35	38.87	758929.67	461804.65	32°16'03.410"N	103°37'45.665"W	0.19	
6240.50	0.660	28.770	6238.64	-13.94	14.21	39.35	758930.15	461805.51	32°16'03.418"N	103°37'45.659"W	0.14	
6335.60	0.770	25.060	6333.74	-14.99	15.27	39.89	758930.69	461806.57	32°16'03.429"N	103°37'45.653"W	0.13	
6430.80	0.990	22.130	6428.93	-16.33	16.62	40.47	758931.27	461807.91	32°16'03.442"N	103°37'45.646"W	0.24	
6525.90	1.010	17.140	6524.01	-17.89	18.18	41.02	758931.82	461809.48	32°16'03.458"N	103°37'45.639"W	0.09	
6621.00	0.800	13.490	6619.10	-19.33	19.62	41.43	758932.22	461810.92	32°16'03.472"N	103°37'45.635"W	0.23	
6716.10	0.490	6.870	6714.19	-20.38	20.67	41.63	758932.43	461811.97	32°16'03.482"N	103°37'45.632"W	0.33	
6811.30	0.230	8.210	6809.39	-20.97	21.27	41.71	758932.50	461812.57	32°16'03.488"N	103°37'45.631"W	0.27	
6906.40	0.180	257.670	6904.49	-21.13	21.42	41.59	758932.88	461812.72	32°16'03.490"N	103°37'45.633"W	0.36	
7001.50	0.490	211.430	6999.59	-20.75	21.04	41.23	758932.03	461812.34	32°16'03.486"N	103°37'45.637"W	0.41	
7096.70	0.630	216.420	7094.79	-19.99	20.28	40.71	758931.50	461811.58	32°16'03.478"N	103°37'45.643"W	0.16	
7191.80	0.610	203.240	7189.88	-19.11	19.39	40.20	758930.99	461810.69	32°16'03.470"N	103°37'45.649"W	0.15	
7286.90	0.800	185.270	7284.97	-17.98	18.26	39.93	758930.73	461809.56	32°16'03.458"N	103°37'45.652"W	0.30	
7382.10	0.930	184.490	7380.16	-16.55	16.83	39.81	758930.61	461808.13	32°16'03.444"N	103°37'45.654"W	0.14	
7477.20	0.860	189.260	7475.25	-15.08	15.36	39.64	758930.44	461806.66	32°16'03.430"N	103°37'45.656"W	0.11	
7572.30	0.880	177.890	7570.34	-13.64	13.92	39.55	758930.35	461805.22	32°16'03.416"N	103°37'45.657"W	0.18	
7667.40	0.570	169.220	7665.43	-12.45	12.73	39.67	758930.46	461804.03	32°16'03.404"N	103°37'45.656"W	0.34	
7762.60	0.720	152.800	7760.63	-11.45	11.73	40.03	758930.83	461803.03	32°16'03.394"N	103°37'45.651"W	0.25	
7857.70	0.980	160.230	7855.71	-10.15	10.44	40.58	758931.37	461801.73	32°16'03.381"N	103°37'45.645"W	0.30	
7952.80	1.040	171.590	7950.80	-8.53	8.82	40.98	758931.78	461800.12	32°16'03.365"N	103°37'45.641"W	0.22	
8048.00	1.110	150.660	8045.98	-6.86	7.16	41.55	758932.35	461798.46	32°16'03.348"N	103°37'45.634"W	0.42	
8143.10	1.210	173.800	8141.06	-5.06	5.36	42.11	758932.91	461796.66	32°16'03.331"N	103°37'45.628"W	0.50	
8238.20	1.470	164.360	8236.14	-2.88	3.18	42.55	758933.35	461794.48	32°16'03.309"N	103°37'45.623"W	0.36	
8333.40	1.390	175.830	8331.31	-0.55	0.86	42.97	758933.76	461792.16	32°16'03.286"N	103°37'45.618"W	0.31	



Actual Wellpath Report

No.4H AWP

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BAKER HUGHES

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Lea County, NM	Well	No. 4H
Field	(Triste Draw) Sec 36, T23S, R32E	Wellbore	No.4H AWP
Facility	Triste Draw 36 State		

WELLPATH DATA (200 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
8428.50	1.380	188.040	8426.38	1.73	-1.43	42.89	758933.69	461789.87	32°16'03.263"N	103°37'45.619"W	0.31	
8523.60	1.280	192.590	8521.46	3.90	-3.60	42.50	758933.30	461787.70	32°16'03.242"N	103°37'45.624"W	0.15	
8618.80	1.290	193.590	8616.63	5.97	-5.68	42.01	758932.81	461785.62	32°16'03.221"N	103°37'45.630"W	0.03	
8713.90	1.130	195.790	8711.71	7.91	-7.62	41.51	758932.31	461783.68	32°16'03.202"N	103°37'45.636"W	0.18	
8809.00	1.240	211.970	8806.79	9.68	-9.40	40.71	758931.51	461781.90	32°16'03.185"N	103°37'45.645"W	0.37	
8904.10	1.200	225.190	8901.87	11.25	-10.97	39.46	758930.25	461780.33	32°16'03.169"N	103°37'45.660"W	0.30	
8999.30	1.380	258.570	8997.05	12.17	-11.90	37.62	758928.42	461779.40	32°16'03.160"N	103°37'45.681"W	0.80	
9094.40	1.500	245.720	9092.12	12.89	-12.64	35.37	758926.17	461778.66	32°16'03.153"N	103°37'45.708"W	0.36	
9189.50	1.710	240.950	9187.18	14.07	-13.84	32.99	758923.79	461777.46	32°16'03.141"N	103°37'45.735"W	0.26	
9284.70	2.440	222.200	9282.32	16.25	-16.03	30.39	758921.19	461775.27	32°16'03.120"N	103°37'45.766"W	1.04	
9379.80	2.610	213.120	9377.33	19.54	-19.34	27.85	758918.65	461771.96	32°16'03.087"N	103°37'45.796"W	0.46	
9474.90	2.470	217.150	9472.33	22.97	-22.79	25.43	758916.23	461768.51	32°16'03.053"N	103°37'45.824"W	0.24	
9570.00	2.070	229.870	9567.36	25.69	-25.53	22.88	758913.67	461765.77	32°16'03.026"N	103°37'45.854"W	0.67	
9665.20	2.260	237.550	9662.49	27.79	-27.65	19.98	758910.78	461763.65	32°16'03.005"N	103°37'45.888"W	0.36	
9760.30	3.040	231.390	9757.49	30.34	-30.23	16.42	758907.22	461761.07	32°16'02.980"N	103°37'45.930"W	0.87	
9855.40	3.240	241.770	9852.45	33.16	-33.07	12.09	758902.89	461758.23	32°16'02.952"N	103°37'45.980"W	0.63	
9950.60	2.870	260.210	9947.51	34.80	-34.75	7.37	758898.17	461756.55	32°16'02.936"N	103°37'46.035"W	1.10	
10045.70	2.940	251.910	10042.49	35.93	-35.91	2.70	758893.50	461755.39	32°16'02.925"N	103°37'46.090"W	0.45	
10140.80	2.780	254.010	10137.47	37.29	-37.30	-1.83	758888.97	461754.00	32°16'02.911"N	103°37'46.143"W	0.20	
10236.00	2.100	248.090	10232.59	38.55	-38.59	-5.67	758885.13	461752.71	32°16'02.899"N	103°37'46.187"W	0.76	
10331.10	1.860	240.640	10327.63	39.94	-40.00	-8.63	758882.17	461751.30	32°16'02.885"N	103°37'46.222"W	0.37	
10426.20	1.980	242.000	10422.68	41.44	-41.53	-11.43	758879.37	461749.78	32°16'02.870"N	103°37'46.255"W	0.13	
10521.40	1.210	258.090	10517.84	42.41	-42.51	-13.86	758876.94	461748.80	32°16'02.861"N	103°37'46.283"W	0.93	
10651.00	9.900	205.400	10646.74	52.73	-52.87	-19.99	758870.81	461738.43	32°16'02.758"N	103°37'46.355"W	7.11	
10688.00	13.500	206.900	10682.96	59.44	-59.60	-23.31	758867.49	461731.70	32°16'02.692"N	103°37'46.395"W	9.76	
10720.00	16.800	208.100	10713.85	66.82	-67.01	-27.18	758863.62	461724.29	32°16'02.619"N	103°37'46.440"W	10.36	
10751.00	20.900	207.400	10743.18	75.65	-75.88	-31.84	758858.96	461715.42	32°16'02.532"N	103°37'46.495"W	13.25	
10783.00	25.000	206.100	10772.64	86.76	-87.02	-37.44	758853.36	461704.28	32°16'02.422"N	103°37'46.561"W	12.91	
10814.00	29.100	205.600	10800.24	99.40	-99.71	-43.59	758847.22	461691.59	32°16'02.297"N	103°37'46.634"W	13.25	
10846.00	33.300	206.100	10827.61	114.26	-114.62	-50.82	758839.99	461676.68	32°16'02.149"N	103°37'46.719"W	13.15	
10877.00	37.100	206.600	10852.93	130.21	-130.63	-58.75	758832.05	461660.67	32°16'01.992"N	103°37'46.813"W	12.29	
10909.00	41.600	205.200	10877.67	148.40	-148.88	-67.60	758823.20	461642.42	32°16'01.812"N	103°37'46.917"W	14.33	
10941.00	46.800	203.200	10900.61	168.68	-169.23	-76.72	758814.08	461622.08	32°16'01.611"N	103°37'47.025"W	16.82	
10972.00	52.000	201.800	10920.78	190.36	-190.97	-85.72	758805.09	461600.34	32°16'01.396"N	103°37'47.131"W	17.12	
11001.00	56.500	199.100	10937.72	212.35	-213.02	-93.92	758796.88	461578.29	32°16'01.179"N	103°37'47.229"W	17.26	
11035.00	61.500	195.900	10955.23	240.08	-240.81	-102.66	758788.14	461550.50	32°16'00.904"N	103°37'47.332"W	16.77	
11066.00	66.000	195.100	10968.93	266.81	-267.59	-110.08	758780.72	461523.72	32°16'00.640"N	103°37'47.421"W	14.70	
11098.00	70.900	193.500	10980.68	295.59	-296.42	-117.43	758773.38	461494.89	32°16'00.355"N	103°37'47.509"W	16.00	
11130.00	75.900	191.800	10989.82	325.45	-326.34	-124.13	758766.67	461464.98	32°16'00.059"N	103°37'47.589"W	16.43	
11161.00	81.200	189.100	10995.98	355.28	-356.20	-129.64	758761.17	461435.11	32°15'59.764"N	103°37'47.655"W	19.11	
11192.00	86.700	187.500	10999.24	385.74	-386.70	-134.08	758756.72	461404.62	32°15'59.463"N	103°37'47.710"W	18.47	
11224.00	90.000	187.100	11000.16	417.43	-418.42	-138.15	758752.66	461372.90	32°15'59.149"N	103°37'47.759"W	10.39	
11255.00	89.900	187.700	11000.19	448.15	-449.16	-142.14	758748.67	461342.16	32°15'58.845"N	103°37'47.808"W	1.96	
11287.00	90.300	187.400	11000.14	479.84	-480.88	-146.34	758744.46	461310.44	32°15'58.532"N	103°37'47.860"W	1.56	
11318.00	89.900	186.200	11000.08	510.59	-511.66	-150.01	758740.79	461279.66	32°15'58.227"N	103°37'47.905"W	4.08	



Actual Wellpath Report

No.4H AWP

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BAKER HUGHES

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Lea County, NM	Well	No. 4H
Field	(Triste Draw) Sec 36, T23S, R32E	Wellbore	No.4H AWB
Facility	Triste Draw 36 State		

WELLPATH DATA (200 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
11381.00	89.300	186.100	11000.52	573.18	-574.30	-156.76	758734.04	461217.02	32°15'57.608"N	103°37'47.988"W	0.97	
11445.00	89.100	184.700	11001.41	636.84	-638.01	-162.78	758728.02	461153.32	32°15'56.978"N	103°37'48.063"W	2.21	
11508.00	89.500	183.500	11002.18	699.64	-700.84	-167.29	758723.52	461090.49	32°15'56.356"N	103°37'48.120"W	2.01	
11571.00	89.600	182.400	11002.68	762.53	-763.75	-170.53	758720.28	461027.58	32°15'55.734"N	103°37'48.163"W	1.75	
11634.00	89.500	180.700	11003.17	825.49	-826.73	-172.23	758718.57	460964.61	32°15'55.111"N	103°37'48.187"W	2.70	
11697.00	89.800	179.100	11003.56	888.49	-889.72	-172.12	758718.68	460901.61	32°15'54.488"N	103°37'48.191"W	2.58	
11760.00	89.700	178.200	11003.83	951.48	-952.70	-170.64	758720.17	460838.63	32°15'53.865"N	103°37'48.178"W	1.44	
11823.00	88.800	177.800	11004.66	1014.45	-1015.66	-168.44	758722.36	460775.68	32°15'53.241"N	103°37'48.158"W	1.56	
11887.00	88.800	177.300	11006.00	1078.39	-1079.59	-165.71	758725.10	460711.75	32°15'52.609"N	103°37'48.131"W	0.78	
11950.00	89.100	176.100	11007.15	1141.30	-1142.47	-162.08	758728.73	460648.87	32°15'51.986"N	103°37'48.093"W	1.96	
12013.00	90.300	175.600	11007.48	1204.16	-1205.30	-157.52	758733.28	460586.04	32°15'51.364"N	103°37'48.045"W	2.06	
12076.00	90.200	174.900	11007.21	1266.98	-1268.09	-152.30	758738.50	460523.26	32°15'50.743"N	103°37'47.989"W	1.12	
12139.00	90.100	174.200	11007.04	1329.74	-1330.80	-146.32	758744.48	460460.55	32°15'50.122"N	103°37'47.924"W	1.12	
12202.00	89.700	173.400	11007.15	1392.41	-1393.43	-139.52	758751.29	460397.92	32°15'49.502"N	103°37'47.850"W	1.42	
12266.00	90.800	173.100	11006.87	1456.02	-1456.99	-132.00	758758.81	460334.37	32°15'48.872"N	103°37'47.767"W	1.78	
12329.00	91.200	172.700	11005.77	1518.58	-1519.49	-124.21	758766.60	460271.87	32°15'48.253"N	103°37'47.681"W	0.90	
12392.00	91.700	172.200	11004.18	1581.07	-1581.93	-115.93	758774.87	460209.43	32°15'47.635"N	103°37'47.589"W	1.12	
12455.00	91.500	171.900	11002.42	1643.50	-1644.30	-107.22	758783.58	460147.07	32°15'47.017"N	103°37'47.493"W	0.57	
12518.00	90.800	172.500	11001.16	1705.96	-1706.70	-98.68	758792.13	460084.67	32°15'46.399"N	103°37'47.398"W	1.46	
12581.00	90.600	172.600	11000.39	1768.48	-1769.16	-90.51	758800.30	460022.20	32°15'45.781"N	103°37'47.308"W	0.35	
12645.00	91.000	171.400	10999.49	1831.91	-1832.53	-81.60	758809.20	459958.84	32°15'45.153"N	103°37'47.209"W	1.98	
12708.00	90.100	171.800	10998.89	1894.30	-1894.85	-72.40	758818.40	459896.52	32°15'44.536"N	103°37'47.106"W	1.56	
12770.00	89.300	171.600	10999.21	1955.71	-1956.20	-63.45	758827.35	459835.17	32°15'43.928"N	103°37'47.007"W	1.33	
12833.00	89.800	172.600	10999.71	2018.17	-2018.60	-54.79	758836.01	459772.78	32°15'43.310"N	103°37'46.911"W	1.77	
12897.00	89.900	173.500	10999.88	2081.75	-2082.13	-47.05	758843.75	459709.25	32°15'42.681"N	103°37'46.825"W	1.41	
12960.00	89.700	173.900	11000.10	2144.41	-2144.75	-40.13	758850.67	459646.63	32°15'42.061"N	103°37'46.750"W	0.71	
13023.00	89.700	175.100	11000.43	2207.16	-2207.46	-34.10	758856.71	459583.93	32°15'41.440"N	103°37'46.684"W	1.90	
13086.00	89.100	176.800	11001.09	2270.03	-2270.30	-29.65	758861.15	459521.09	32°15'40.818"N	103°37'46.637"W	2.86	
13149.00	89.500	177.000	11001.86	2332.95	-2333.20	-26.24	758864.56	459458.19	32°15'40.195"N	103°37'46.602"W	0.71	
13212.00	89.800	176.900	11002.24	2395.89	-2396.11	-22.89	758867.91	459395.28	32°15'39.573"N	103°37'46.568"W	0.50	
13275.00	90.200	176.200	11002.24	2458.80	-2458.99	-19.10	758871.70	459332.40	32°15'38.950"N	103°37'46.529"W	1.28	
13338.00	90.400	176.500	11001.91	2521.70	-2521.86	-15.09	758875.71	459269.53	32°15'38.328"N	103°37'46.487"W	0.57	
13401.00	90.000	177.400	11001.69	2584.63	-2584.77	-11.73	758879.07	459206.63	32°15'37.705"N	103°37'46.453"W	1.56	
13464.00	90.600	176.600	11001.36	2647.56	-2647.69	-8.44	758882.36	459143.72	32°15'37.082"N	103°37'46.419"W	1.59	
13528.00	90.200	177.100	11000.91	2711.49	-2711.59	-4.92	758885.88	459079.82	32°15'36.450"N	103°37'46.383"W	1.00	
13591.00	90.700	177.600	11000.42	2774.43	-2774.52	-2.01	758888.79	459016.89	32°15'35.827"N	103°37'46.354"W	1.12	
13655.00	90.000	177.700	11000.03	2838.40	-2838.46	0.62	758891.42	458952.95	32°15'35.194"N	103°37'46.328"W	1.10	
13713.00	90.100	177.200	10999.98	2896.35	-2896.40	3.20	758894.00	458895.01	32°15'34.621"N	103°37'46.302"W	0.88	
13781.00	90.300	177.600	10999.74	2964.30	-2964.33	6.28	758897.08	458827.08	32°15'33.948"N	103°37'46.272"W	0.66	
13844.00	90.200	178.000	10999.46	3027.27	-3027.29	8.70	758899.50	458764.13	32°15'33.325"N	103°37'46.248"W	0.65	
13907.00	90.700	178.900	10998.97	3090.26	-3090.26	10.40	758901.20	458701.16	32°15'32.702"N	103°37'46.233"W	1.63	
13970.00	90.700	179.700	10998.20	3153.25	-3153.25	11.17	758901.97	458638.17	32°15'32.079"N	103°37'46.229"W	1.27	
14033.00	91.500	180.000	10996.99	3216.24	-3216.24	11.34	758902.14	458575.19	32°15'31.455"N	103°37'46.232"W	1.36	
14096.00	91.700	180.500	10995.23	3279.21	-3279.21	11.06	758901.86	458512.21	32°15'30.832"N	103°37'46.240"W	0.85	
14160.00	91.500	179.800	10993.44	3343.18	-3343.19	10.90	758901.70	458448.24	32°15'30.199"N	103°37'46.247"W	1.14	



Actual Wellpath Report

No.4H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Lea County, NM	Well	No. 4H
Field	(Triste Draw) Sec 36, T23S, R32E	Wellbore	No.4H AWB
Facility	Triste Draw 36 State		

WELLPATH DATA (200 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
14223.00	90.700	179.500	10992.24	3406.17	-3406.17	11.28	758902.08	458385.26	32°15'29.576"N	103°37'46.247"W	1.36	
14286.00	90.200	178.400	10991.74	3469.16	-3469.16	12.44	758903.23	458322.27	32°15'28.953"N	103°37'46.239"W	1.92	
14350.00	89.700	178.100	10991.80	3533.14	-3533.13	14.39	758905.19	458258.31	32°15'28.320"N	103°37'46.221"W	0.91	
14413.00	90.000	177.400	10991.96	3596.11	-3596.08	16.86	758907.66	458195.36	32°15'27.696"N	103°37'46.197"W	1.21	
14482.00	90.200	177.400	10991.84	3665.06	-3665.01	19.99	758910.79	458126.43	32°15'27.014"N	103°37'46.166"W	0.29	
14540.00	90.600	177.600	10991.44	3723.02	-3722.95	22.52	758913.32	458068.49	32°15'26.441"N	103°37'46.141"W	0.77	
14604.00	91.600	177.700	10990.21	3786.97	-3786.89	25.15	758915.95	458004.56	32°15'25.808"N	103°37'46.115"W	1.57	
14667.00	91.500	178.100	10988.50	3849.92	-3849.82	27.45	758918.25	457941.63	32°15'25.185"N	103°37'46.093"W	0.65	
14731.00	90.300	178.900	10987.50	3913.90	-3913.79	29.13	758919.93	457877.66	32°15'24.552"N	103°37'46.078"W	2.25	
14795.00	89.200	180.900	10987.78	3977.89	-3977.78	29.24	758920.04	457813.67	32°15'23.919"N	103°37'46.082"W	3.57	
14858.00	88.700	180.000	10988.93	4040.87	-4040.77	28.75	758919.55	457750.68	32°15'23.296"N	103°37'46.092"W	1.63	
14922.00	88.800	180.100	10990.33	4104.86	-4104.76	28.69	758919.49	457686.70	32°15'22.662"N	103°37'46.098"W	0.22	
14986.00	88.900	180.200	10991.61	4168.84	-4168.74	28.52	758919.32	457622.72	32°15'22.029"N	103°37'46.105"W	0.22	
15050.00	88.800	179.500	10992.90	4232.83	-4232.73	28.69	758919.49	457558.73	32°15'21.396"N	103°37'46.108"W	1.10	
15113.00	89.500	179.100	10993.83	4295.82	-4295.72	29.46	758920.26	457495.75	32°15'20.773"N	103°37'46.103"W	1.28	
15177.00	89.400	179.200	10994.45	4359.81	-4359.71	30.41	758921.21	457431.76	32°15'20.140"N	103°37'46.097"W	0.22	
15240.00	89.600	178.900	10995.00	4422.81	-4422.70	31.45	758922.25	457368.77	32°15'19.516"N	103°37'46.090"W	0.57	
15335.00	90.300	178.600	10995.08	4517.80	-4517.67	33.53	758924.33	457273.80	32°15'18.576"N	103°37'46.073"W	0.80	
15372.00	90.400	178.500	10994.85	4554.79	-4554.66	34.46	758925.26	457236.82	32°15'18.210"N	103°37'46.065"W	0.38	
15427.00	90.400	178.500	10994.47	4609.78	-4609.64	35.90	758926.70	457181.84	32°15'17.666"N	103°37'46.052"W	0.00	Projection to bit

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
No. 4H PBHL		10960.00	-4619.98	32.60	758923.40	457171.50	32°15'17.564"N	103°37'46.092"W	point

WELLPATH COMPOSITION - Ref Wellbore: No.4H AWB Ref Wellpath: No.4H AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
19.00	10521.40	Generic gyro - northseeking (Standard)	GyorData Gyros <85.2-11249.3>	No.4H AWB
10521.40	15372.00	NaviTrak (Standard)	BHI MWD Navitrak (10521.4) <10651-xx>	No.4H AWB
15372.00	15427.00	Blind Drilling (std)	Projection to bit	No.4H AWB