



Cimarex Energy Co.

Location Chaves County, NM
Field (Independence) Sec. 8, T15S, R31E
Facility Independence & Fed Com No. 2H

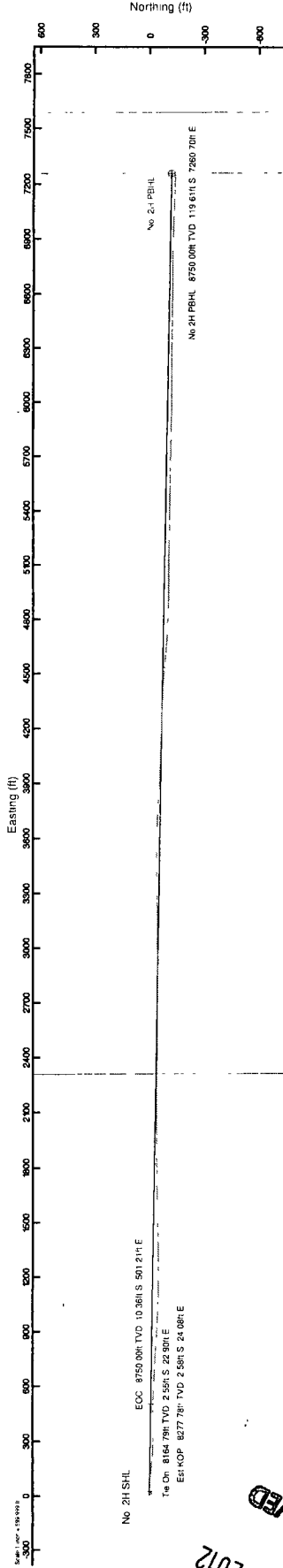
SLOT No. 2H SHL
Well No. 2H
Wellbore No. 2H PWB



Well Profile Data

Design Comment	MD (ft)	Inc. (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (%/100ft)	VS (ft)
Tie On	8165.00	0.600	91.700	8164.79	-2.55	22.90	0.00	22.94
Est KOP	8278.00	0.600	91.700	8277.78	-2.58	24.08	0.00	24.12
EOC	9022.61	90.000	90.926	8750.00	-10.36	501.21	12.01	501.31
No. 2H PBHL	15782.99	90.000	90.926	8750.00	-119.61	7260.70	0.00	7261.69

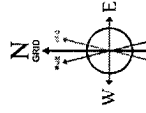
Scale: 1 inch = 100 feet



No. 2H SHL
EOC 8750.00ft TVD 10.36ft S 501.21ft E
Tie On 8164.79ft TVD 2.55ft S 22.90ft E
Est KOP 8277.78ft TVD 2.58ft S 24.08ft E

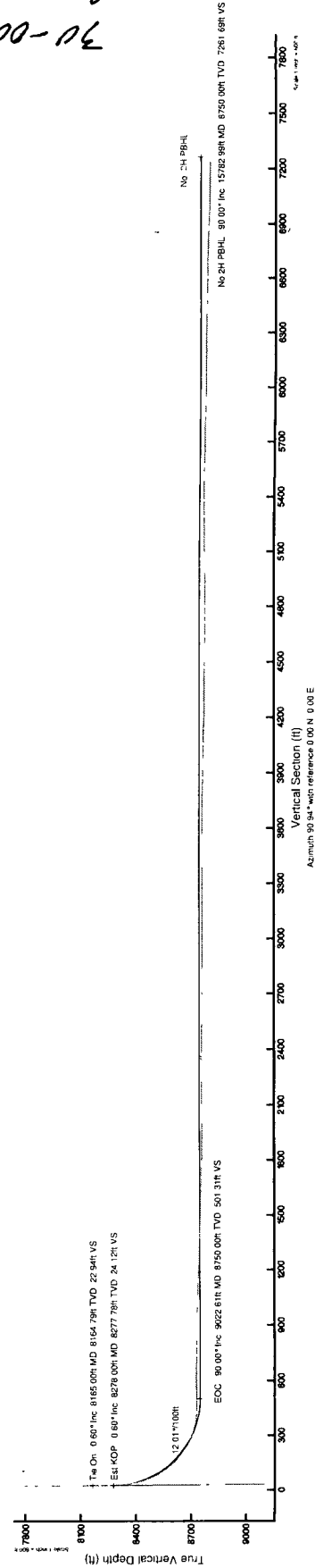
RECEIVED
AUG 03 2012
HOBBS OGD

Plot reference wellpath is 'Plan A'	Grid System: NAD83 / TM New Mexico SP, Eastern Zone (8001) US Feet
True vertical depths are referenced to 'Big Oil' No. 2H SHL (RT)	North Reference: Grid North
Measured depths are referenced to 'Big Oil' No. 2H SHL (RT)	Scale: True depth
Big Oil No. 2H SHL (RT) is 16.54ft S 24.08ft E	Diagram: None
MD 8278.00ft TVD 8277.78ft S 24.08ft E	Created by: gentry on 3/3/2012
Coordinates are in feet referenced to Slot	



BGGM (1945.0 to 2013.0) Dip 80.85° Field 49020.2 mT
Magnetic Declination is 0.22 degrees East of True North
To correct azimuth from True to Grid subtract 0.22 degrees
To correct azimuth from Magnetic to Grid add 7.52 degrees
For example if the Magnetic North Azimuth = 90 - 7.52 = 97.52

30-005-29152
BHL0C H-09-153-31a
1971 FNL 341 FBL



Tie On 0.60° Inc 8165.00ft MD 8164.79ft TVD 22.94ft VS
Est KOP 0.60° Inc 8278.00ft MD 8277.78ft TVD 24.12ft VS

EOC 90.00° Inc 9022.61ft MD 8750.00ft TVD 501.31ft VS



Actual Wellpath Report

No. 2H AWP (ST01)

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Chaves County, NM	Well	No. 2H
Field	(Independence) Sec 8, T15S, R31E	Wellbore	No. 2H AWB (ST01)
Facility	Independence 8 Fed Com No. 2H	Sidetrack from	No.2H AWB (Pilot Hole) at 8165.00 MD

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	0.999935	Report Generated	3/28/2012 at 7:58:42 AM
Convergence at slot	0.27° East	Database/Source file	WA Midland/No._2H_AWB_ST01_.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	691621.00	739754.90	33°01'57.430"N	103°50'34.643"W
Facility Reference Pt			691621.00	739754.90	33°01'57.430"N	103°50'34.643"W
Field Reference Pt			691614.60	741074.70	33°02'10.489"N	103°50'34.646"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 2H SHL (RT) to Facility Vertical Datum	18.00ft
Horizontal Reference Pt	Slot	Rig on No. 2H SHL (RT) to Mean Sea Level	4454.00ft
Vertical Reference Pt	Rig on No. 2H SHL (RT)	Rig on No. 2H SHL (RT) to Mud Line at Slot (No. 2H SHL)	18.00ft
MD Reference Pt	Rig on No. 2H SHL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	90.94°



Actual Wellpath Report

No. 2H AWP (ST01)

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Chaves County, NM	Well	No. 2H
Field	(Independence) Sec 8, T15S, R31E	Wellbore	No. 2H AWP (ST01)
Facility	Independence 8 Fed Com No. 2H	Sidetrack from	No. 2H AWP (Pilot Hole) at 8165.00 MD

WELLPATH DATA (176 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	0.000	0.00	0.00	0.00	0.00	691621.00	739754.90	33°01'57.430"N	103°50'34.643"W	0.00	
241.00	0.100	0.000	241.00	0.00	0.21	0.00	691621.00	739755.11	33°01'57.432"N	103°50'34.643"W	0.04	
354.00	0.600	0.000	354.00	-0.01	0.90	0.00	691621.00	739755.80	33°01'57.439"N	103°50'34.643"W	0.44	
410.00	0.520	145.700	410.00	0.13	0.98	0.14	691621.14	739755.88	33°01'57.440"N	103°50'34.641"W	1.91	
588.00	0.800	150.000	587.98	1.23	-0.76	1.22	691622.22	739754.14	33°01'57.423"N	103°50'34.628"W	-0.16	
798.00	0.700	128.900	797.97	3.00	-2.83	2.95	691623.95	739752.07	33°01'57.402"N	103°50'34.608"W	0.14	
956.00	0.400	143.500	955.96	4.09	-3.88	4.03	691625.03	739751.02	33°01'57.392"N	103°50'34.596"W	0.21	
1146.00	0.500	173.600	1145.95	4.60	-5.24	4.52	691625.52	739749.66	33°01'57.378"N	103°50'34.590"W	0.13	
1335.00	0.700	145.400	1334.94	5.38	-7.01	5.26	691626.26	739747.89	33°01'57.361"N	103°50'34.581"W	0.19	
1525.00	0.500	177.000	1524.93	6.11	-8.79	5.97	691626.97	739746.11	33°01'57.343"N	103°50'34.573"W	0.20	
1715.00	0.400	187.900	1714.93	6.09	-10.28	5.92	691626.92	739744.62	33°01'57.328"N	103°50'34.574"W	0.07	
1905.00	0.500	135.800	1904.92	6.60	-11.53	6.41	691627.41	739743.37	33°01'57.316"N	103°50'34.568"W	0.21	
2096.00	0.500	147.100	2095.92	7.65	-12.83	7.44	691628.44	739742.07	33°01'57.303"N	103°50'34.556"W	0.05	
2286.00	0.400	135.000	2285.91	8.59	-13.99	8.36	691629.36	739740.91	33°01'57.291"N	103°50'34.545"W	0.07	
2476.00	0.400	59.900	2475.91	9.63	-14.13	9.40	691630.40	739740.77	33°01'57.290"N	103°50'34.533"W	0.26	
2665.00	0.400	109.000	2664.90	10.83	-14.01	10.60	691631.60	739740.89	33°01'57.291"N	103°50'34.519"W	0.18	
2856.00	0.600	81.900	2855.89	12.45	-14.09	12.22	691633.22	739740.81	33°01'57.290"N	103°50'34.500"W	0.16	
3045.00	0.500	92.600	3044.89	14.25	-13.99	14.02	691635.02	739740.91	33°01'57.291"N	103°50'34.479"W	0.08	
3236.00	0.300	87.900	3235.88	15.58	-14.01	15.35	691636.35	739740.89	33°01'57.291"N	103°50'34.463"W	0.11	
3426.00	0.500	34.800	3425.88	16.54	-13.31	16.32	691637.32	739741.59	33°01'57.298"N	103°50'34.452"W	0.21	
3615.00	0.500	67.800	3614.87	17.76	-12.32	17.56	691638.56	739742.58	33°01'57.308"N	103°50'34.437"W	0.15	
3805.00	0.400	49.500	3804.86	19.02	-11.57	18.83	691639.83	739743.33	33°01'57.315"N	103°50'34.422"W	0.09	
3995.00	0.400	28.700	3994.86	19.82	-10.56	19.65	691640.65	739744.34	33°01'57.325"N	103°50'34.412"W	0.08	
4185.00	0.300	74.300	4184.86	20.61	-9.85	20.45	691641.45	739745.05	33°01'57.332"N	103°50'34.403"W	0.15	
4374.00	0.300	72.000	4373.85	21.55	-9.56	21.40	691642.39	739745.34	33°01'57.335"N	103°50'34.392"W	0.01	
4564.00	0.500	55.900	4563.85	22.70	-8.94	22.56	691643.55	739745.96	33°01'57.341"N	103°50'34.378"W	0.12	
4753.00	0.500	60.600	4752.84	24.09	-8.07	23.96	691644.96	739746.83	33°01'57.349"N	103°50'34.362"W	0.02	
4943.00	0.600	65.800	4942.83	25.70	-7.26	25.59	691646.58	739747.64	33°01'57.357"N	103°50'34.343"W	0.06	
5133.00	0.200	94.000	5132.83	26.93	-6.87	26.82	691647.82	739748.03	33°01'57.361"N	103°50'34.328"W	0.23	
5322.00	0.100	15.500	5321.83	27.31	-6.74	27.20	691648.20	739748.16	33°01'57.362"N	103°50'34.324"W	0.11	
5512.00	0.200	8.800	5511.83	27.39	-6.25	27.29	691648.29	739748.65	33°01'57.367"N	103°50'34.322"W	0.05	
5701.00	0.100	39.500	5700.83	27.54	-5.80	27.45	691648.45	739749.10	33°01'57.372"N	103°50'34.321"W	0.07	
5890.00	0.200	286.600	5889.83	27.33	-5.58	27.24	691648.24	739749.32	33°01'57.374"N	103°50'34.323"W	0.14	
6080.00	0.400	324.100	6079.82	26.61	-4.94	26.53	691647.53	739749.96	33°01'57.380"N	103°50'34.331"W	0.14	
6269.00	0.300	330.900	6268.82	25.96	-3.98	25.90	691646.90	739750.92	33°01'57.390"N	103°50'34.339"W	0.06	
6459.00	0.400	272.200	6458.82	25.05	-3.52	25.00	691646.00	739751.38	33°01'57.394"N	103°50'34.349"W	0.19	
6648.00	0.500	320.600	6647.81	23.86	-2.85	23.82	691644.81	739752.05	33°01'57.401"N	103°50'34.363"W	0.20	
6838.00	0.400	290.800	6837.81	22.70	-1.98	22.67	691643.67	739752.92	33°01'57.410"N	103°50'34.377"W	0.13	
7027.00	0.200	310.100	7026.80	21.82	-1.53	21.80	691642.80	739753.37	33°01'57.414"N	103°50'34.387"W	0.12	
7217.00	0.200	321.000	7216.80	21.35	-1.06	21.34	691642.34	739753.84	33°01'57.419"N	103°50'34.392"W	0.02	
7407.00	0.300	266.100	7406.80	20.64	-0.84	20.63	691641.63	739754.06	33°01'57.421"N	103°50'34.400"W	0.13	
7596.00	0.300	153.600	7595.80	20.38	-1.31	20.36	691641.36	739753.59	33°01'57.416"N	103°50'34.404"W	0.26	
7786.00	0.100	165.700	7785.80	20.65	-1.92	20.62	691641.62	739752.98	33°01'57.410"N	103°50'34.401"W	0.11	
7976.00	0.400	109.300	7975.80	21.32	-2.30	21.29	691642.29	739752.60	33°01'57.407"N	103°50'34.393"W	0.19	
8165.00	0.600	91.700	8164.79	22.94	-2.55	22.90	691643.90	739752.35	33°01'57.404"N	103°50'34.374"W	0.13	



Actual Wellpath Report

No. 2H AWP (ST01)

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Chaves County, NM	Well	No. 2H
Field	(Independence) Sec 8, T15S, R31E	Wellbore	No. 2H AWP (ST01)
Facility	Independence 8 Fed Com No. 2H	Sidetrack from	No. 2H AWP (Pilot Hole) at 8165.00 MD

WELLPATH DATA (176 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
8278.00	1.400	89.700	8277.77	24.91	-2.56	24.87	691645.87	739752.34	33°01'57.404"N	103°50'34.351"W	0.71	
8309.00	3.800	92.400	8308.74	26.32	-2.60	26.28	691647.28	739752.30	33°01'57.403"N	103°50'34.334"W	7.75	
8341.00	7.200	93.700	8340.59	29.38	-2.77	29.34	691650.34	739752.13	33°01'57.401"N	103°50'34.298"W	10.63	
8372.00	10.400	95.100	8371.22	34.11	-3.15	34.07	691655.06	739751.75	33°01'57.398"N	103°50'34.243"W	10.34	
8404.00	13.600	94.700	8402.51	40.75	-3.71	40.69	691661.69	739751.19	33°01'57.392"N	103°50'34.165"W	10.00	
8436.00	17.000	95.100	8433.37	49.17	-4.44	49.11	691670.10	739750.46	33°01'57.384"N	103°50'34.066"W	10.63	
8467.00	20.700	93.800	8462.71	59.17	-5.20	59.09	691680.09	739749.70	33°01'57.376"N	103°50'33.949"W	12.01	
8499.00	25.200	93.100	8492.17	71.63	-5.95	71.54	691692.54	739748.95	33°01'57.368"N	103°50'33.803"W	14.09	
8531.00	29.300	94.300	8520.61	86.26	-6.90	86.16	691707.15	739748.00	33°01'57.358"N	103°50'33.631"W	12.93	
8562.00	33.700	95.600	8547.03	102.41	-8.31	102.29	691723.28	739746.59	33°01'57.343"N	103°50'33.442"W	14.36	
8594.00	38.000	95.000	8572.97	121.10	-10.04	120.95	691741.94	739744.86	33°01'57.325"N	103°50'33.223"W	13.48	
8625.00	41.500	95.200	8596.80	140.86	-11.80	140.69	691761.68	739743.10	33°01'57.307"N	103°50'32.991"W	11.30	
8657.00	45.600	94.800	8619.98	162.85	-13.72	162.65	691783.64	739741.18	33°01'57.287"N	103°50'32.733"W	12.84	
8689.00	50.500	94.800	8641.37	186.59	-15.71	186.36	691807.34	739739.19	33°01'57.266"N	103°50'32.455"W	15.31	
8720.00	55.200	95.100	8660.09	211.23	-17.84	210.96	691831.95	739737.06	33°01'57.244"N	103°50'32.166"W	15.18	
8752.00	59.600	93.400	8677.32	238.14	-19.83	237.84	691858.83	739735.07	33°01'57.223"N	103°50'31.850"W	14.46	
8783.00	65.100	92.300	8691.70	265.57	-21.19	265.26	691886.24	739733.71	33°01'57.208"N	103°50'31.528"W	18.02	
8815.00	69.400	90.500	8704.08	295.07	-21.90	294.75	691915.73	739733.00	33°01'57.200"N	103°50'31.182"W	14.40	
8847.00	73.700	89.900	8714.20	325.42	-22.00	325.10	691946.08	739732.90	33°01'57.198"N	103°50'30.825"W	13.55	
8878.00	77.900	88.800	8721.80	355.45	-21.66	355.14	691976.12	739733.24	33°01'57.200"N	103°50'30.473"W	13.98	
8910.00	82.300	89.500	8727.30	386.95	-21.19	386.65	692007.63	739733.71	33°01'57.203"N	103°50'30.102"W	13.92	
8942.00	87.400	90.500	8730.18	418.81	-21.20	418.51	692039.49	739733.71	33°01'57.201"N	103°50'29.728"W	16.24	
8973.00	89.800	91.000	8730.93	449.79	-21.60	449.50	692070.47	739733.30	33°01'57.196"N	103°50'29.364"W	7.91	
8986.00	90.100	91.200	8730.95	462.79	-21.85	462.50	692083.47	739733.05	33°01'57.193"N	103°50'29.212"W	2.77	
9095.00	91.200	92.300	8729.71	571.77	-25.18	571.44	692192.40	739729.72	33°01'57.155"N	103°50'27.932"W	1.43	
9158.00	89.600	92.700	8729.27	634.75	-27.93	634.37	692255.33	739726.97	33°01'57.125"N	103°50'27.193"W	2.62	
9222.00	89.600	92.400	8729.72	698.72	-30.77	698.31	692319.26	739724.13	33°01'57.093"N	103°50'26.442"W	0.47	
9285.00	89.300	93.800	8730.32	761.67	-34.18	761.21	692382.16	739720.72	33°01'57.057"N	103°50'25.704"W	2.27	
9349.00	89.300	93.800	8731.10	825.59	-38.42	825.06	692446.01	739716.48	33°01'57.012"N	103°50'24.954"W	0.00	
9412.00	89.100	93.400	8731.98	888.51	-42.38	887.93	692508.87	739712.52	33°01'56.970"N	103°50'24.216"W	0.71	
9475.00	88.100	93.700	8733.52	951.43	-46.28	950.79	692571.73	739708.63	33°01'56.928"N	103°50'23.478"W	1.66	
9539.00	87.800	92.500	8735.81	1015.34	-49.74	1014.66	692635.59	739705.17	33°01'56.891"N	103°50'22.728"W	1.93	
9602.00	88.300	92.000	8737.95	1078.29	-52.21	1077.57	692698.50	739702.70	33°01'56.864"N	103°50'21.989"W	1.12	
9666.00	87.800	91.000	8740.13	1142.25	-53.88	1141.51	692762.44	739701.02	33°01'56.844"N	103°50'21.238"W	1.75	
9729.00	87.200	90.000	8742.88	1205.18	-54.43	1204.45	692825.37	739700.47	33°01'56.836"N	103°50'20.499"W	1.85	
9793.00	88.000	89.200	8745.56	1269.11	-53.99	1268.39	692889.31	739700.92	33°01'56.837"N	103°50'19.748"W	1.77	
9856.00	88.000	89.200	8747.76	1332.04	-53.11	1331.35	692952.26	739701.80	33°01'56.843"N	103°50'19.008"W	0.00	
9919.00	87.800	89.200	8750.07	1394.97	-52.23	1394.30	693015.20	739702.68	33°01'56.849"N	103°50'18.269"W	0.32	
9982.00	88.000	89.000	8752.38	1457.89	-51.24	1457.25	693078.15	739703.66	33°01'56.856"N	103°50'17.529"W	0.45	
10046.00	88.400	89.100	8754.39	1521.83	-50.18	1521.21	693142.10	739704.73	33°01'56.863"N	103°50'16.778"W	0.64	
10109.00	88.600	89.000	8756.04	1584.77	-49.13	1584.18	693205.07	739705.77	33°01'56.871"N	103°50'16.038"W	0.35	
10173.00	89.000	88.300	8757.38	1648.70	-47.63	1648.14	693269.03	739707.28	33°01'56.883"N	103°50'15.287"W	1.26	
10236.00	88.800	88.300	8758.59	1711.63	-45.76	1711.10	693331.99	739709.15	33°01'56.898"N	103°50'14.547"W	0.32	
10300.00	88.700	89.700	8759.98	1775.57	-44.64	1775.08	693395.96	739710.26	33°01'56.906"N	103°50'13.796"W	2.19	
10363.00	88.700	89.200	8761.41	1838.53	-44.04	1838.06	693458.94	739710.87	33°01'56.909"N	103°50'13.056"W	0.79	



Actual Wellpath Report

No. 2H AWP (ST01)

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Chaves County, NM	Well	No. 2H
Field	(Independence) Sec 8, T15S, R31E	Wellbore	No. 2H AWP (ST01)
Facility	Independence 8 Fed Com No. 2H	Sidetrack from	No. 2H AWP (Pilot Hole) at 8165.00 MD

WELLPATH DATA (176 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
10427.00	89.100	90.200	8762.64	1902.51	-43.70	1902.05	693522.92	739711.20	33°01'56.910"N	103°50'12.304"W	1.68	
10490.00	89.100	90.100	8763.63	1965.49	-43.87	1965.04	693585.91	739711.04	33°01'56.905"N	103°50'11.564"W	0.16	
10554.00	90.600	89.900	8763.80	2029.48	-43.87	2029.03	693649.90	739711.04	33°01'56.902"N	103°50'10.813"W	2.36	
10618.00	91.200	89.400	8762.79	2093.46	-43.48	2093.03	693713.89	739711.43	33°01'56.903"N	103°50'10.061"W	1.22	
10681.00	90.700	90.000	8761.75	2156.43	-43.15	2156.02	693776.87	739711.76	33°01'56.903"N	103°50'09.321"W	1.24	
10744.00	91.000	90.200	8760.81	2219.42	-43.26	2219.01	693839.86	739711.65	33°01'56.899"N	103°50'08.581"W	0.57	
10809.00	90.400	91.000	8760.02	2284.41	-43.94	2284.00	693904.85	739710.97	33°01'56.889"N	103°50'07.818"W	1.54	
10872.00	89.100	91.500	8760.29	2347.41	-45.31	2346.98	693967.82	739709.59	33°01'56.873"N	103°50'07.078"W	2.21	
10935.00	89.400	91.000	8761.12	2410.40	-46.68	2409.96	694030.80	739708.22	33°01'56.856"N	103°50'06.339"W	0.93	
10998.00	89.100	90.600	8761.94	2473.40	-47.56	2472.95	694093.78	739707.34	33°01'56.845"N	103°50'05.599"W	0.79	
11062.00	88.700	90.100	8763.17	2537.38	-47.96	2536.94	694157.77	739706.95	33°01'56.838"N	103°50'04.847"W	1.00	
11125.00	89.600	90.300	8764.11	2600.37	-48.17	2599.93	694220.75	739706.73	33°01'56.833"N	103°50'04.107"W	1.46	
11189.00	88.700	90.000	8765.05	2664.36	-48.34	2663.92	694284.74	739706.56	33°01'56.828"N	103°50'03.356"W	1.48	
11252.00	90.100	90.400	8765.71	2727.34	-48.56	2726.91	694347.73	739706.34	33°01'56.823"N	103°50'02.616"W	2.31	
11316.00	90.000	90.000	8765.66	2791.34	-48.79	2790.91	694411.73	739706.12	33°01'56.818"N	103°50'01.864"W	0.64	
11379.00	89.800	90.100	8765.77	2854.33	-48.84	2853.91	694474.72	739706.06	33°01'56.814"N	103°50'01.124"W	0.35	
11443.00	89.600	89.900	8766.10	2918.32	-48.84	2917.91	694538.72	739706.06	33°01'56.811"N	103°50'00.373"W	0.44	
11506.00	89.400	89.500	8766.65	2981.30	-48.51	2980.91	694601.71	739706.39	33°01'56.811"N	103°49'59.633"W	0.71	
11570.00	89.500	89.800	8767.27	3045.28	-48.12	3044.91	694665.70	739706.78	33°01'56.812"N	103°49'58.881"W	0.49	
11633.00	90.300	89.400	8767.38	3108.27	-47.68	3107.90	694728.69	739707.22	33°01'56.814"N	103°49'58.141"W	1.42	
11697.00	90.300	89.300	8767.04	3172.24	-46.95	3171.90	694792.69	739707.95	33°01'56.818"N	103°49'57.389"W	0.16	
11760.00	90.600	89.600	8766.55	3235.22	-46.35	3234.89	694855.68	739708.55	33°01'56.821"N	103°49'56.649"W	0.67	
11823.00	89.800	89.200	8766.33	3298.19	-45.69	3297.89	694918.67	739709.21	33°01'56.824"N	103°49'55.909"W	1.42	
11890.00	90.700	88.700	8766.04	3365.15	-44.46	3364.88	694985.65	739710.44	33°01'56.833"N	103°49'55.122"W	1.54	
11954.00	90.900	89.700	8765.14	3429.11	-43.57	3428.86	695049.63	739711.33	33°01'56.839"N	103°49'54.371"W	1.59	
12017.00	89.700	90.000	8764.81	3492.10	-43.40	3491.86	695112.63	739711.50	33°01'56.838"N	103°49'53.631"W	1.96	
12081.00	88.900	90.600	8765.59	3556.09	-43.74	3555.85	695176.62	739711.16	33°01'56.831"N	103°49'52.879"W	1.56	
12145.00	90.200	92.000	8766.10	3620.09	-45.19	3619.83	695240.59	739709.71	33°01'56.814"N	103°49'52.128"W	2.99	
12208.00	89.700	91.800	8766.15	3683.08	-47.28	3682.80	695303.55	739707.62	33°01'56.790"N	103°49'51.388"W	0.85	
12271.00	88.900	92.400	8766.92	3746.06	-49.59	3745.75	695366.50	739705.32	33°01'56.765"N	103°49'50.649"W	1.59	
12335.00	89.100	93.500	8768.04	3810.01	-52.88	3809.65	695430.40	739702.02	33°01'56.729"N	103°49'49.899"W	1.75	
12398.00	89.000	92.400	8769.08	3872.96	-56.12	3872.56	695493.30	739698.78	33°01'56.694"N	103°49'49.160"W	1.75	
12461.00	89.000	92.500	8770.18	3935.93	-58.82	3935.49	695556.23	739696.09	33°01'56.664"N	103°49'48.421"W	0.16	
12525.00	89.500	92.000	8771.02	3999.91	-61.33	3999.44	695620.17	739693.58	33°01'56.636"N	103°49'47.670"W	1.10	
12588.00	88.600	91.700	8772.06	4062.89	-63.36	4062.40	695683.12	739691.54	33°01'56.613"N	103°49'46.931"W	1.51	
12651.00	89.100	91.700	8773.33	4125.87	-65.23	4125.36	695746.08	739689.67	33°01'56.592"N	103°49'46.191"W	0.79	
12714.00	88.700	92.300	8774.54	4188.85	-67.43	4188.31	695809.02	739687.48	33°01'56.567"N	103°49'45.452"W	1.14	
12778.00	89.800	92.300	8775.38	4252.82	-70.00	4252.25	695872.96	739684.91	33°01'56.539"N	103°49'44.701"W	1.72	
12841.00	89.700	92.800	8775.65	4315.80	-72.80	4315.18	695935.89	739682.11	33°01'56.508"N	103°49'43.962"W	0.81	
12905.00	89.500	93.200	8776.10	4379.75	-76.15	4379.09	695999.80	739678.76	33°01'56.472"N	103°49'43.212"W	0.70	
12968.00	89.300	93.700	8776.76	4442.69	-79.94	4441.98	696062.68	739674.97	33°01'56.431"N	103°49'42.473"W	0.85	
13032.00	89.100	94.200	8777.65	4506.60	-84.35	4505.82	696126.52	739670.56	33°01'56.385"N	103°49'41.724"W	0.84	
13095.00	88.400	94.400	8779.03	4569.47	-89.07	4568.63	696189.32	739665.84	33°01'56.335"N	103°49'40.986"W	1.16	
13159.00	89.000	94.300	8780.48	4633.34	-93.92	4632.42	696253.11	739660.98	33°01'56.284"N	103°49'40.237"W	0.95	
13222.00	90.000	93.900	8781.03	4696.24	-98.43	4695.26	696315.95	739656.48	33°01'56.236"N	103°49'39.499"W	1.71	



Actual Wellpath Report

No. 2H AWP (ST01)

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Chaves County, NM	Well	No. 2H
Field	(Independence) Sec 8, T15S, R31E	Wellbore	No. 2H AWP (ST01)
Facility	Independence 8 Fed Com No. 2H	Sidetrack from	No. 2H AWP (Pilot Hole) at 8165.00 MD

WELLPATH DATA (176 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
13286.00	90.100	92.300	8780.97	4760.20	-101.89	4759.16	696379.85	739653.02	33°01'56.199"N	103°49'38.749"W	2.50	
13349.00	89.400	91.600	8781.25	4823.19	-104.03	4822.13	696442.80	739650.87	33°01'56.175"N	103°49'38.010"W	1.57	
13413.00	90.400	91.900	8781.36	4887.18	-105.99	4886.10	696506.77	739648.92	33°01'56.152"N	103°49'37.258"W	1.63	
13476.00	91.400	90.200	8780.37	4950.17	-107.14	4949.07	696569.74	739647.77	33°01'56.138"N	103°49'36.519"W	3.13	
13540.00	91.600	90.300	8778.69	5014.14	-107.42	5013.05	696633.72	739647.49	33°01'56.132"N	103°49'35.767"W	0.35	
13604.00	90.900	90.500	8777.30	5078.12	-107.87	5077.03	696697.69	739647.04	33°01'56.125"N	103°49'35.016"W	1.14	
13667.00	90.800	90.300	8776.36	5141.11	-108.31	5140.03	696760.68	739646.60	33°01'56.117"N	103°49'34.276"W	0.35	
13730.00	90.800	90.800	8775.48	5204.10	-108.91	5203.02	696823.67	739646.00	33°01'56.108"N	103°49'33.536"W	0.79	
13794.00	90.900	90.800	8774.53	5268.10	-109.80	5267.00	696887.65	739645.10	33°01'56.096"N	103°49'32.784"W	0.16	
13858.00	90.800	90.900	8773.58	5332.09	-110.75	5330.99	696951.63	739644.15	33°01'56.084"N	103°49'32.033"W	0.22	
13921.00	90.500	90.900	8772.87	5395.09	-111.74	5393.98	697014.62	739643.16	33°01'56.071"N	103°49'31.293"W	0.48	
13984.00	90.500	90.900	8772.32	5458.08	-112.73	5456.97	697077.60	739642.17	33°01'56.058"N	103°49'30.553"W	0.00	
14048.00	88.500	91.700	8772.88	5522.08	-114.18	5520.94	697141.57	739640.72	33°01'56.041"N	103°49'29.802"W	3.37	
14111.00	89.300	90.600	8774.09	5585.06	-115.45	5583.92	697204.54	739639.46	33°01'56.025"N	103°49'29.062"W	2.16	
14174.00	89.300	90.500	8774.86	5648.06	-116.05	5646.91	697267.53	739638.85	33°01'56.016"N	103°49'28.323"W	0.16	
14238.00	89.300	90.600	8775.64	5712.05	-116.67	5710.90	697331.52	739638.24	33°01'56.007"N	103°49'27.571"W	0.16	
14301.00	89.000	90.900	8776.57	5775.04	-117.49	5773.89	697394.50	739637.42	33°01'55.996"N	103°49'26.831"W	0.67	
14364.00	89.200	91.100	8777.56	5838.03	-118.59	5836.87	697457.48	739636.32	33°01'55.982"N	103°49'26.092"W	0.45	
14428.00	88.600	91.400	8778.79	5902.02	-119.99	5900.85	697521.45	739634.92	33°01'55.965"N	103°49'25.340"W	1.05	
14492.00	89.500	90.400	8779.85	5966.01	-120.99	5964.83	697585.43	739633.92	33°01'55.952"N	103°49'24.589"W	2.10	
14555.00	90.100	90.100	8780.07	6029.01	-121.27	6027.83	697648.42	739633.64	33°01'55.947"N	103°49'23.849"W	1.06	
14619.00	89.900	90.300	8780.07	6093.00	-121.49	6091.83	697712.42	739633.42	33°01'55.941"N	103°49'23.097"W	0.44	
14682.00	89.500	90.000	8780.40	6155.99	-121.66	6154.82	697775.41	739633.25	33°01'55.937"N	103°49'22.357"W	0.79	
14746.00	89.400	90.000	8781.02	6219.98	-121.66	6218.82	697839.40	739633.25	33°01'55.934"N	103°49'21.605"W	0.16	
14809.00	89.500	90.600	8781.62	6282.97	-121.99	6281.82	697902.40	739632.92	33°01'55.927"N	103°49'20.866"W	0.97	
14872.00	89.500	90.900	8782.17	6345.97	-122.81	6344.81	697965.38	739632.10	33°01'55.916"N	103°49'20.126"W	0.48	
14936.00	89.300	90.500	8782.84	6409.97	-123.59	6408.80	698029.37	739631.32	33°01'55.905"N	103°49'19.374"W	0.70	
14999.00	89.100	90.700	8783.72	6472.96	-124.25	6471.79	698092.36	739630.66	33°01'55.896"N	103°49'18.634"W	0.45	
15062.00	88.600	90.700	8784.99	6535.95	-125.02	6534.77	698155.34	739629.89	33°01'55.885"N	103°49'17.895"W	0.79	
15126.00	89.300	91.000	8786.16	6599.94	-125.97	6598.76	698219.31	739628.94	33°01'55.873"N	103°49'17.143"W	1.19	
15190.00	89.500	90.300	8786.83	6663.93	-126.70	6662.75	698283.30	739628.21	33°01'55.862"N	103°49'16.392"W	1.14	
15252.00	88.500	90.400	8787.91	6725.92	-127.08	6724.74	698345.29	739627.83	33°01'55.856"N	103°49'15.664"W	1.62	
15316.00	88.600	90.500	8789.53	6789.89	-127.58	6788.71	698409.26	739627.33	33°01'55.848"N	103°49'14.912"W	0.22	
15379.00	87.300	90.900	8791.78	6852.85	-128.35	6851.67	698472.21	739626.56	33°01'55.837"N	103°49'14.173"W	2.16	
15442.00	87.400	91.600	8794.70	6915.78	-129.72	6914.58	698535.12	739625.19	33°01'55.820"N	103°49'13.434"W	1.12	
15506.00	88.700	92.000	8796.87	6979.74	-131.73	6978.51	698599.05	739623.18	33°01'55.797"N	103°49'12.683"W	2.13	
15569.00	88.700	92.000	8798.30	7042.71	-133.93	7041.46	698661.99	739620.98	33°01'55.773"N	103°49'11.944"W	0.00	
15632.00	89.400	91.900	8799.35	7105.69	-136.07	7104.41	698724.94	739618.84	33°01'55.748"N	103°49'11.205"W	1.12	
15696.00	89.800	91.900	8799.80	7169.68	-138.19	7168.38	698788.90	739616.72	33°01'55.724"N	103°49'10.453"W	0.62	
15728.00	89.500	91.600	8799.99	7201.68	-139.17	7200.36	698820.88	739615.74	33°01'55.713"N	103°49'10.078"W	1.33	
15777.00	89.500	91.600	8800.42	7250.67	-140.54	7249.34	698869.86	739614.37	33°01'55.697"N	103°49'09.503"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. 2H PBHL		8750.00	-119.61	7260.70	698881.22	739635.30	33°01'55.904"N	103°49'09.368"W	point

WELLPATH COMPOSITION - Ref Wellbore: No. 2H AWB (ST01) Ref Wellpath: No. 2H AWP (ST01)				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	8165.00	NaviTrak (Standard)	MWD NaviTrak <241-9100>	No.2H AWB (Pilot Hole)
8165.00	15777.00	NaviTrak (Standard)	MWD (ST01)	No. 2H AWB (ST01)