

Results of Directional Survey

API number:	30-025-40123		
OGRID:		Operator:	CIMAREX ENERGY CO. OF COLORADO
		Property:	LYNCH 23 FEDERAL COM # 2H

surface	ULSTR:	A	23	T 20S	R 34E
				330 FNL	660 FEL

BH Loc	ULSTR:	P	23	T 20S	R 34E
15446	MD	11044.6	TVD	4940 FNL	532 FEL

340 FSL

Top Perf/OH	ULSTR:	A	23	T 20S	R 34E
9636	MD	9633.6	TVD	338 FNL	613 FEL

Bot Perf/OH	ULSTR:	P	23	T 20S	R 34E
15353	MD	11041.0	TVD	4848 FNL	545 FEL

	MD	N/S	E/W	VD
	9620.5	-8.24	47.11	9618.1
TOP PERFS/OH	9636	-8.48	47.12	9633.60
	9684.5	-9.22	47.17	9682.09
	15320	-4485.88	109.78	11039.64
BOT PERFS/OH	15353	-4518.15	114.60	11041.00
	15384	-4548.46	119.12	11042.27

NEXT TO LAST	15401	-4565.27	121.56	11042.91
LAST READING	15446	-4609.75	128.13	11044.56
TD	15446	-4609.75	128.13	11044.56

Surface Location	330	FN	660	FE
Projected BHL	4940	FN	532	FE
Location of				
Top Perfs/OH	338	FN	613	FE
Bottom Perfs/OH	4848	FN	545	FE

SUMMARY of Subsurface Locations

Surface Location	A-23-20S-34E	330	FN	660	FE	Vert. Depth
Top Perfs/OH	A-23-20S-34E	338	FN	613	FE	9633.60
Bottom Perfs/OH	P-23-20S-34E	4848	FN	545	FE	11041.00
Projected TD	P-23-20S-34E	4940	FN	532	FE	11044.56



Actual Wellpath Report

No.2H AWP

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Operator Cimarex Energy Co.
Area Lea County, NM
Field (Lynch) Sec 23, T20S, R34E
Facility Lynch 23 Fed Com

Slot No. 2H SHL
Well No. 2H
Wellbore No.2H AWP

Projection System NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet Software System WellArchitect® 3.0.0
North Reference Grid User Gentbry
Scale 0.99998 Report Generated 7/26/2011 at 7:41:09 AM
Convergence at slot 0.44° East Database/Source file WA Midland/No.2H_AWP.xml

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	790531.40	570212.70	32°33'53.883"N	103°31'28.068"W
Facility Reference Pt			790531.40	570212.70	32°33'53.883"N	103°31'28.068"W
Field Reference Pt			789361.60	570203.60	32°33'53.881"N	103°31'41.737"W

Calculation method	Minimum curvature	Rig on No. 2H SHL (KB) to Mean Sea level	3675.00ft
Horizontal Reference Pt	Slot	Rig on No. 2H SHL (KB) to Mean Sea Level	3675.00ft
Vertical Reference Pt	Rig on No. 2H SHL (KB)	Rig on No. 2H SHL (KB) to Mud Line at Slot (No. 2H SHL)	3675.00ft
MD Reference Pt	Rig on No. 2H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	179.58°



Actual Wellpath Report

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**BAKER
HUGHES**

Operator Cimarex Energy Co.
Area Lea County, NM
Field (Lynch) Sec 23, T20S, R34E
Facility Lynch 23 Fed Com

Slot No. 2H SHL
Well No. 2H
Wellbore No.2H AWB

WELLPATH DATA (253 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	262.780	0.00	0.00	0.00	0.00	790531.40	570212.70	32°33'53.883"N	103°31'28.068"W	0.00	
18.00	0.000	262.780	18.00	0.00	0.00	0.00	790531.40	570212.70	32°33'53.883"N	103°31'28.068"W	0.00	
39.70	0.560	262.780	39.70	0.01	-0.01	-0.11	790531.29	570212.69	32°33'53.883"N	103°31'28.069"W	2.58	
101.60	0.570	236.280	101.60	0.22	-0.22	-0.66	790530.74	570212.48	32°33'53.881"N	103°31'28.076"W	0.42	
163.90	0.610	217.620	163.89	0.65	-0.66	-1.12	790530.28	570212.04	32°33'53.877"N	103°31'28.081"W	0.31	
225.80	0.590	212.790	225.79	1.17	-1.19	-1.50	790529.90	570211.51	32°33'53.872"N	103°31'28.085"W	0.09	
288.10	0.590	208.100	288.09	1.68	-1.70	-1.80	790529.60	570211.00	32°33'53.867"N	103°31'28.089"W	0.16	
349.90	0.480	213.910	349.89	2.13	-2.15	-2.07	790529.33	570210.55	32°33'53.862"N	103°31'28.092"W	0.09	
412.20	0.400	220.200	412.18	2.51	-2.53	-2.35	790529.05	570210.17	32°33'53.858"N	103°31'28.096"W	0.15	
474.10	0.390	220.610	474.08	2.84	-2.86	-2.63	790528.77	570209.84	32°33'53.855"N	103°31'28.099"W	0.02	
536.40	0.380	225.020	536.38	3.14	-3.16	-2.92	790528.48	570209.54	32°33'53.852"N	103°31'28.102"W	0.05	
598.20	0.350	237.360	598.18	3.39	-3.41	-3.22	790528.18	570209.29	32°33'53.850"N	103°31'28.106"W	0.14	
660.50	0.340	241.830	660.48	3.57	-3.60	-3.54	790527.86	570209.10	32°33'53.848"N	103°31'28.110"W	0.05	
724.50	0.420	242.050	724.48	3.77	-3.80	-3.92	790527.48	570208.90	32°33'53.846"N	103°31'28.114"W	0.13	
788.50	0.480	240.750	788.47	4.01	-4.04	-4.36	790527.04	570208.66	32°33'53.844"N	103°31'28.119"W	0.10	
852.50	0.560	235.930	852.47	4.31	-4.35	-4.85	790526.55	570208.35	32°33'53.841"N	103°31'28.125"W	0.14	
916.50	0.710	222.770	916.47	4.77	-4.81	-5.38	790526.02	570207.89	32°33'53.836"N	103°31'28.131"W	0.33	
980.50	0.700	213.140	980.46	5.39	-5.43	-5.86	790525.54	570207.27	32°33'53.830"N	103°31'28.137"W	0.19	
1044.50	0.500	208.750	1044.46	5.96	-6.00	-6.21	790525.19	570206.70	32°33'53.824"N	103°31'28.141"W	0.32	
1108.50	0.360	217.100	1108.46	6.36	-6.41	-6.47	790524.93	570206.29	32°33'53.820"N	103°31'28.144"W	0.24	
1172.50	0.440	223.870	1172.46	6.70	-6.75	-6.76	790524.64	570205.95	32°33'53.817"N	103°31'28.147"W	0.14	
1236.50	0.540	231.250	1236.45	7.06	-7.11	-7.16	790524.24	570205.59	32°33'53.813"N	103°31'28.152"W	0.18	
1300.50	0.660	217.960	1300.45	7.53	-7.59	-7.62	790523.78	570205.11	32°33'53.809"N	103°31'28.158"W	0.29	
1364.50	0.820	240.880	1364.45	8.04	-8.10	-8.25	790523.15	570204.60	32°33'53.804"N	103°31'28.165"W	0.52	
1428.50	0.840	256.420	1428.44	8.37	-8.44	-9.11	790522.29	570204.26	32°33'53.800"N	103°31'28.175"W	0.35	
1492.50	0.880	247.540	1492.43	8.66	-8.74	-10.02	790521.38	570203.96	32°33'53.797"N	103°31'28.186"W	0.22	
1556.50	0.900	243.330	1556.42	9.07	-9.15	-10.22	790520.48	570203.55	32°33'53.793"N	103°31'28.196"W	0.11	
1620.50	0.710	261.030	1620.42	9.35	-9.44	-11.76	790519.64	570203.26	32°33'53.791"N	103°31'28.206"W	0.49	
1684.50	0.240	346.120	1684.42	9.28	-9.37	-12.19	790519.21	570203.33	32°33'53.791"N	103°31'28.211"W	1.14	
1748.50	0.610	47.750	1748.41	8.92	-9.01	-11.97	790519.43	570203.69	32°33'53.795"N	103°31'28.208"W	0.84	
1812.50	0.480	59.240	1812.41	8.56	-8.64	-11.48	790519.92	570204.06	32°33'53.799"N	103°31'28.203"W	0.26	
1876.50	0.400	43.460	1876.41	8.26	-8.34	-11.10	790520.30	570204.36	32°33'53.801"N	103°31'28.198"W	0.23	
1940.50	0.430	45.950	1940.41	7.93	-8.01	-10.77	790520.63	570204.69	32°33'53.805"N	103°31'28.194"W	0.05	
2004.50	0.400	46.310	2004.41	7.62	-7.69	-10.44	790520.96	570205.01	32°33'53.808"N	103°31'28.190"W	0.05	
2068.50	0.500	35.970	2068.40	7.24	-7.31	-10.11	790521.29	570205.39	32°33'53.812"N	103°31'28.187"W	0.20	
2132.50	0.650	38.280	2132.40	6.69	-6.77	-9.78	790521.62	570205.93	32°33'53.817"N	103°31'28.183"W	0.26	
2196.50	0.680	23.370	2196.40	6.03	-6.10	-9.45	790521.95	570206.60	32°33'53.824"N	103°31'28.179"W	0.10	
2260.50	0.600	19.690	2260.39	5.37	-5.43	-9.19	790522.21	570207.27	32°33'53.830"N	103°31'28.176"W	0.14	
2324.50	0.480	17.210	2324.39	4.80	-4.86	-9.00	790522.40	570207.84	32°33'53.836"N	103°31'28.173"W	0.19	
2388.50	0.400	12.640	2388.39	4.37	-4.39	-8.87	790522.53	570208.31	32°33'53.840"N	103°31'28.172"W	0.14	
2452.50	0.230	0.100	2452.39	3.98	-4.04	-8.82	790522.58	570208.66	32°33'53.844"N	103°31'28.171"W	0.29	
2516.50	0.260	5.210	2516.39	3.70	-3.77	-8.81	790522.59	570208.93	32°33'53.847"N	103°31'28.171"W	0.06	
2580.50	0.440	24.500	2580.38	3.34	-3.40	-8.69	790522.71	570209.30	32°33'53.850"N	103°31'28.170"W	0.33	
2644.50	0.800	31.320	2644.38	2.73	-2.80	-8.36	790523.04	570209.90	32°33'53.856"N	103°31'28.166"W	0.57	
2708.50	1.420	38.750	2708.37	1.74	-1.80	-7.63	790523.77	570210.90	32°33'53.866"N	103°31'28.157"W	0.99	



Actual Wellpath Report

No.2H AWP

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**BAKER
HUGHES**

Operator **Cimarex Energy Co.**
Area **Lea County, NM**
Field **(Lynch) Sec 23, T20S, R34E**
Facility **Lynch 23 Fed Com**

Slot **No. 2H SHL**
Well **No. 2H**
Wellbore **No.2H AWP**

WELLPATH DATA (253 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
2772.50	2.380	45.940	2772.33	0.21	-0.25	-6.18	790525.22	570212.45	32°33'53.881"N	103°31'28.140"W	1.54	
2836.50	3.260	48.740	2836.25	-1.90	1.87	-3.86	790527.54	570214.57	32°33'53.902"N	103°31'28.113"W	1.39	
2900.50	3.770	46.600	2900.13	-4.52	4.52	-0.96	790530.44	570217.22	32°33'53.928"N	103°31'28.079"W	0.82	
2964.50	4.120	49.950	2963.98	7.42	7.44	2.33	790533.73	570220.14	32°33'53.957"N	103°31'28.040"W	0.65	
3028.50	4.350	58.240	3027.81	-10.15	10.20	6.15	790537.55	570222.90	32°33'53.984"N	103°31'27.995"W	1.02	
3092.50	4.410	38.190	3091.63	-13.34	13.41	9.74	790541.14	570226.11	32°33'54.015"N	103°31'27.953"W	2.38	
3156.50	4.410	50.560	3155.44	-16.81	16.91	13.16	790544.56	570229.61	32°33'54.049"N	103°31'27.913"W	1.48	
3220.50	4.480	53.050	3219.24	-19.85	19.97	17.06	790548.46	570232.67	32°33'54.080"N	103°31'27.867"W	0.32	
3284.50	4.590	58.930	3283.04	-22.64	22.80	21.25	790552.65	570235.50	32°33'54.107"N	103°31'27.818"W	0.75	
3348.50	4.400	51.400	3346.85	-25.46	25.65	25.36	790556.76	570238.35	32°33'54.135"N	103°31'27.769"W	0.97	
3412.50	3.490	51.210	3410.70	-28.19	28.40	28.80	790560.20	570241.10	32°33'54.162"N	103°31'27.729"W	1.42	
3476.50	2.440	41.890	3474.61	-30.41	30.64	31.23	790562.63	570243.34	32°33'54.184"N	103°31'27.700"W	1.80	
3540.50	1.860	49.760	3538.56	-32.08	32.32	32.93	790564.33	570245.02	32°33'54.200"N	103°31'27.680"W	1.01	
3604.50	1.100	69.570	3602.54	-32.96	33.21	34.30	790565.70	570245.91	32°33'54.209"N	103°31'27.664"W	1.41	
3668.50	0.490	80.180	3666.54	-33.21	33.47	35.14	790566.54	570246.17	32°33'54.212"N	103°31'27.654"W	0.98	
3732.50	0.090	19.480	3730.54	-33.30	33.56	35.43	790566.83	570246.26	32°33'54.213"N	103°31'27.651"W	0.71	
3796.50	0.270	247.840	3794.54	-33.29	33.55	35.31	790566.70	570246.25	32°33'54.212"N	103°31'27.652"W	0.53	
3860.50	0.310	253.770	3858.53	-33.19	33.45	35.00	790566.40	570246.15	32°33'54.211"N	103°31'27.656"W	0.08	
3924.50	0.300	257.140	3922.53	-33.11	33.36	34.67	790566.07	570246.06	32°33'54.211"N	103°31'27.660"W	0.03	
3988.50	0.480	239.530	3986.53	-32.94	33.19	34.28	790565.68	570245.89	32°33'54.209"N	103°31'27.664"W	0.33	
4052.50	0.290	258.770	4050.53	-32.77	33.02	33.89	790565.29	570245.72	32°33'54.207"N	103°31'27.669"W	0.36	
4116.50	0.340	356.660	4114.53	-32.93	33.18	33.72	790565.12	570245.88	32°33'54.209"N	103°31'27.671"W	0.74	
4180.50	0.370	351.260	4178.53	-33.33	33.57	33.67	790565.07	570246.27	32°33'54.213"N	103°31'27.671"W	0.07	
4244.50	0.310	355.060	4242.53	-33.70	33.95	33.63	790565.03	570246.65	32°33'54.217"N	103°31'27.672"W	0.10	
4308.50	0.280	337.160	4306.53	-34.02	34.27	33.55	790564.95	570246.97	32°33'54.220"N	103°31'27.673"W	0.15	
4372.50	0.400	330.270	4370.53	-34.36	34.61	33.38	790564.78	570247.30	32°33'54.223"N	103°31'27.675"W	0.20	
4436.50	0.410	323.130	4434.52	-34.74	34.98	33.13	790564.53	570247.68	32°33'54.227"N	103°31'27.678"W	0.08	
4500.50	0.520	312.890	4498.52	-35.17	35.36	32.78	790564.18	570248.06	32°33'54.231"N	103°31'27.682"W	0.21	
4564.50	0.430	322.720	4562.52	-35.51	35.75	32.42	790563.82	570248.45	32°33'54.234"N	103°31'27.686"W	0.19	
4628.50	0.270	289.550	4626.52	-35.76	35.99	32.14	790563.54	570248.69	32°33'54.237"N	103°31'27.689"W	0.39	
4692.50	0.430	293.880	4690.52	-35.91	36.14	31.77	790563.17	570248.84	32°33'54.238"N	103°31'27.693"W	0.25	
4756.50	0.620	334.150	4754.52	-36.32	36.55	31.40	790562.80	570249.25	32°33'54.242"N	103°31'27.698"W	0.63	
4820.50	0.750	342.980	4818.51	-37.03	37.26	31.13	790562.53	570249.96	32°33'54.250"N	103°31'27.701"W	0.26	
4884.50	0.580	335.500	4882.51	-37.73	37.96	30.87	790562.27	570250.66	32°33'54.256"N	103°31'27.704"W	0.30	
4948.50	0.180	12.410	4946.50	-38.12	38.35	30.76	790562.16	570251.05	32°33'54.260"N	103°31'27.705"W	0.70	
5012.50	0.170	65.640	5010.50	-38.26	38.49	30.87	790562.27	570251.19	32°33'54.262"N	103°31'27.704"W	0.25	
5076.50	0.170	205.090	5074.50	-38.21	38.44	30.91	790562.31	570251.14	32°33'54.261"N	103°31'27.703"W	0.50	
5140.50	0.270	181.910	5138.50	-37.98	38.20	30.87	790562.27	570250.90	32°33'54.259"N	103°31'27.704"W	0.21	
5204.50	0.410	181.120	5202.50	-37.60	37.82	30.86	790562.26	570250.52	32°33'54.255"N	103°31'27.704"W	0.22	
5268.50	0.370	173.490	5266.50	-37.16	37.39	30.88	790562.28	570250.09	32°33'54.251"N	103°31'27.704"W	0.10	
5332.50	0.350	171.380	5330.50	-36.76	36.99	30.93	790562.33	570249.69	32°33'54.247"N	103°31'27.703"W	0.04	
5396.50	0.280	195.870	5394.50	-36.42	36.65	30.92	790562.32	570249.35	32°33'54.243"N	103°31'27.703"W	0.23	
5460.50	0.290	174.320	5458.50	-36.11	36.34	30.89	790562.29	570249.01	32°33'54.240"N	103°31'27.704"W	0.17	
5524.50	0.340	158.880	5522.50	-35.77	36.00	30.98	790562.38	570248.70	32°33'54.237"N	103°31'27.703"W	0.15	
5588.50	0.400	162.420	5586.50	-35.38	35.61	31.11	790562.51	570248.31	32°33'54.233"N	103°31'27.701"W	0.10	



Actual Wellpath Report

No.2H AWP

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Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Lea County, NM	Well	No. 2H
Field	(Lynch) Sec 23, T20S, R34E	Wellbore	No.2H AWP
Facility	Lynch 23 Fed Com		

WELLPATH DATA (253 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
5652.50	0.440	181.210	5650.49	-34.92	35.15	31.17	790562.57	570247.85	32°33'54.229"N	103°31'27.700"W	0.22	
5716.50	0.420	173.670	5714.49	-34.44	34.67	31.19	790562.59	570247.57	32°33'54.224"N	103°31'27.700"W	0.09	
5780.50	0.570	215.580	5778.49	-33.95	34.18	31.04	790562.43	570246.88	32°33'54.219"N	103°31'27.702"W	0.59	
5844.50	0.890	228.690	5842.19	-33.37	33.59	30.48	790561.88	570246.29	32°33'54.213"N	103°31'27.709"W	0.56	
5908.50	0.870	224.140	5906.48	-32.70	32.91	29.77	790561.16	570245.61	32°33'54.207"N	103°31'27.717"W	0.11	
5972.50	0.850	222.800	5970.47	-32.00	32.22	29.10	790560.50	570244.92	32°33'54.200"N	103°31'27.725"W	0.04	
6036.50	0.790	224.350	6034.46	-31.34	31.55	28.47	790559.87	570244.25	32°33'54.193"N	103°31'27.732"W	0.10	
6100.50	0.740	222.620	6098.46	-30.73	30.93	27.88	790559.28	570243.63	32°33'54.187"N	103°31'27.739"W	0.09	
6164.50	0.690	228.140	6162.45	-30.17	30.37	27.32	790558.72	570243.07	32°33'54.182"N	103°31'27.746"W	0.13	
6228.50	0.710	202.150	6226.45	-29.55	29.75	26.88	790558.28	570242.45	32°33'54.175"N	103°31'27.751"W	0.49	
6292.50	0.650	183.800	6290.44	-28.82	29.02	26.71	790558.11	570241.72	32°33'54.168"N	103°31'27.753"W	0.35	
6356.50	0.620	157.550	6354.44	-28.14	28.34	26.82	790558.22	570241.04	32°33'54.162"N	103°31'27.752"W	0.45	
6420.50	0.650	156.560	6418.44	-27.48	27.68	27.09	790558.49	570240.38	32°33'54.155"N	103°31'27.749"W	0.05	
6484.50	0.700	142.060	6482.43	-26.84	27.04	27.48	790558.88	570239.74	32°33'54.149"N	103°31'27.744"W	0.28	
6548.50	0.740	132.450	6546.43	-26.25	26.46	28.02	790559.42	570239.15	32°33'54.143"N	103°31'27.738"W	0.20	
6612.50	0.660	127.260	6610.42	-25.74	25.95	28.62	790560.02	570238.65	32°33'54.138"N	103°31'27.731"W	0.16	
6676.50	0.550	122.280	6674.42	-25.33	25.57	29.17	790560.57	570238.27	32°33'54.134"N	103°31'27.725"W	0.19	
6740.50	0.520	121.990	6738.42	-25.03	25.25	29.68	790561.08	570237.95	32°33'54.131"N	103°31'27.719"W	0.05	
6804.50	0.540	125.570	6802.41	-24.70	24.92	30.17	790561.57	570237.62	32°33'54.127"N	103°31'27.713"W	0.06	
6868.50	0.510	133.770	6866.41	-24.32	24.55	30.62	790562.02	570237.25	32°33'54.124"N	103°31'27.708"W	0.13	
6932.50	0.430	144.770	6930.41	-23.93	24.15	30.97	790562.37	570236.85	32°33'54.120"N	103°31'27.704"W	0.19	
6996.50	0.450	155.750	6994.41	-23.50	23.73	31.21	790562.61	570236.43	32°33'54.116"N	103°31'27.701"W	0.14	
7060.50	0.410	142.920	7058.40	-23.08	23.32	31.45	790562.85	570236.02	32°33'54.111"N	103°31'27.698"W	0.16	
7124.50	0.410	140.200	7122.40	-22.72	22.96	31.73	790563.13	570235.66	32°33'54.108"N	103°31'27.695"W	0.03	
7188.50	0.430	141.980	7186.40	-22.36	22.59	32.03	790563.43	570235.29	32°33'54.104"N	103°31'27.692"W	0.04	
7252.50	0.480	159.890	7250.40	-21.91	22.15	32.27	790563.67	570234.85	32°33'54.100"N	103°31'27.689"W	0.23	
7316.50	0.500	151.740	7314.40	-21.41	21.65	32.49	790563.89	570234.35	32°33'54.095"N	103°31'27.686"W	0.11	
7380.50	0.490	145.370	7378.39	-20.94	21.18	32.78	790564.18	570233.88	32°33'54.090"N	103°31'27.683"W	0.09	
7444.50	0.470	153.410	7442.39	-20.48	20.72	33.05	790564.45	570233.42	32°33'54.086"N	103°31'27.680"W	0.11	
7508.50	0.480	157.070	7506.39	-20.00	20.24	33.28	790564.68	570232.94	32°33'54.081"N	103°31'27.677"W	0.05	
7572.50	0.470	155.390	7570.39	-19.51	19.76	33.49	790564.89	570232.45	32°33'54.076"N	103°31'27.675"W	0.03	
7636.50	0.460	159.020	7634.39	-19.03	19.28	33.69	790565.09	570231.98	32°33'54.071"N	103°31'27.672"W	0.05	
7700.50	0.450	158.540	7698.38	-18.55	18.80	33.88	790565.27	570231.50	32°33'54.067"N	103°31'27.670"W	0.02	
7764.50	0.470	168.870	7762.38	-18.06	18.31	34.02	790565.42	570231.01	32°33'54.062"N	103°31'27.669"W	0.13	
7828.50	0.570	172.190	7826.38	-17.49	17.74	34.11	790565.51	570230.44	32°33'54.056"N	103°31'27.668"W	0.16	
7892.50	0.620	172.090	7890.38	-16.83	17.08	34.20	790565.60	570229.78	32°33'54.050"N	103°31'27.667"W	0.08	
7956.50	0.680	176.410	7954.37	-16.11	16.36	34.27	790565.67	570229.06	32°33'54.042"N	103°31'27.666"W	0.12	
8020.50	0.720	166.680	8018.37	-15.34	15.59	34.39	790565.79	570228.29	32°33'54.035"N	103°31'27.665"W	0.20	
8084.50	0.780	158.730	8082.36	-14.54	14.79	34.64	790566.04	570227.49	32°33'54.027"N	103°31'27.662"W	0.19	
8148.50	0.880	162.960	8146.35	-13.66	13.91	34.94	790566.34	570226.61	32°33'54.018"N	103°31'27.658"W	0.18	
8212.50	0.890	170.180	8210.35	-12.70	12.96	35.17	790566.57	570225.65	32°33'54.009"N	103°31'27.656"W	0.17	
8276.50	0.920	174.820	8274.34	-11.69	11.95	35.30	790566.70	570224.65	32°33'53.999"N	103°31'27.654"W	0.12	
8340.50	1.000	177.970	8338.33	-10.62	10.88	35.37	790566.77	570223.58	32°33'53.988"N	103°31'27.654"W	0.15	
8404.50	1.080	175.250	8402.32	-9.46	9.72	35.44	790566.84	570222.42	32°33'53.977"N	103°31'27.653"W	0.15	
8468.50	1.110	175.830	8466.31	-8.24	8.51	35.53	790566.93	570221.21	32°33'53.965"N	103°31'27.652"W	0.05	



Actual Wellpath Report

No.2H AWP

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**BAKER
HUGHES**

Operator Cimarex Energy Co.

Area Lea County, NM

Field (Lynch) Sec 23, T20S, R34E

Facility Lynch 23 Fed Com

Slot No. 2H SHL

Well No. 2H

Wellbore No.2H AWP

WELLPATH DATA (253 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
8532.50	1.000	171.340	8530.30	-7.07	7.34	35.66	790567.06	570220.03	32°33'53.953"N	103°31'27.650"W	0.21	
8596.50	0.760	138.020	8594.29	-6.20	6.47	36.03	790567.43	570219.17	32°33'53.944"N	103°31'27.646"W	0.87	
8660.50	0.730	116.980	8658.28	-5.70	5.97	36.68	790568.08	570218.67	32°33'53.939"N	103°31'27.639"W	0.43	
8724.50	0.620	111.230	8722.28	-5.78	5.66	37.36	790568.76	570218.36	32°33'53.936"N	103°31'27.631"W	0.20	
8788.50	0.760	113.810	8786.28	-5.08	5.36	38.08	790569.48	570218.06	32°33'53.933"N	103°31'27.622"W	0.22	
8852.50	1.010	116.510	8850.27	-4.65	4.94	38.97	790570.37	570217.64	32°33'53.929"N	103°31'27.612"W	0.40	
8916.50	0.910	129.700	8914.26	-4.07	4.36	39.86	790571.26	570217.06	32°33'53.923"N	103°31'27.602"W	0.38	
8980.50	0.990	142.250	8978.25	-3.30	3.60	40.59	790571.99	570216.30	32°33'53.916"N	103°31'27.593"W	0.35	
9044.50	1.300	143.180	9042.24	-2.28	2.58	41.37	790572.77	570215.28	32°33'53.906"N	103°31'27.584"W	0.49	
9108.50	1.390	149.620	9106.22	-1.02	1.33	42.20	790573.59	570214.03	32°33'53.893"N	103°31'27.575"W	0.27	
9172.50	1.400	155.550	9170.20	0.37	-0.05	42.91	790574.31	570212.65	32°33'53.879"N	103°31'27.566"W	0.23	
9236.50	1.670	148.620	9234.18	1.88	-1.56	43.72	790575.12	570211.14	32°33'53.864"N	103°31'27.557"W	0.51	
9300.50	1.710	141.930	9298.15	3.44	-3.11	44.80	790576.19	570209.59	32°33'53.849"N	103°31'27.545"W	0.31	
9364.50	1.110	140.120	9362.13	4.67	-4.34	45.78	790577.18	570208.36	32°33'53.837"N	103°31'27.533"W	0.94	
9428.50	0.870	150.460	9426.12	5.57	-5.23	46.42	790577.82	570207.47	32°33'53.828"N	103°31'27.526"W	0.47	
9492.50	0.950	171.340	9490.11	6.52	-6.18	46.74	790578.14	570206.52	32°33'53.818"N	103°31'27.522"W	0.53	
9556.50	0.930	167.690	9554.10	7.56	-7.21	46.93	790578.33	570205.49	32°33'53.808"N	103°31'27.520"W	0.10	
9620.50	0.940	171.740	9618.10	8.58	-8.24	47.11	790578.51	570204.46	32°33'53.798"N	103°31'27.518"W	0.10	
9684.50	0.820	182.050	9682.09	9.56	-9.22	47.17	790578.57	570203.48	32°33'53.788"N	103°31'27.517"W	0.31	
9748.50	0.780	194.730	9746.08	10.44	-10.10	47.05	790578.45	570202.60	32°33'53.780"N	103°31'27.519"W	0.28	
9812.50	0.810	207.870	9810.08	11.26	-10.92	46.72	790578.12	570201.78	32°33'53.772"N	103°31'27.523"W	0.29	
9876.50	0.960	215.990	9874.07	12.09	-11.75	46.20	790577.60	570200.95	32°33'53.763"N	103°31'27.529"W	0.30	
9940.50	1.240	233.710	9938.06	12.93	-12.59	45.32	790576.72	570200.11	32°33'53.755"N	103°31'27.539"W	0.68	
10004.50	1.580	252.460	10002.01	13.59	-13.27	43.93	790575.32	570199.43	32°33'53.749"N	103°31'27.556"W	0.89	
10068.50	1.500	258.990	10066.01	14.01	-13.70	42.26	790573.66	570199.00	32°33'53.744"N	103°31'27.575"W	0.30	
10132.50	1.300	245.550	10130.00	11.46	-14.16	40.78	790572.18	570198.54	32°33'53.740"N	103°31'27.593"W	0.60	
10196.50	1.460	241.630	10193.98	15.13	-14.84	39.40	790570.80	570197.86	32°33'53.733"N	103°31'27.609"W	0.29	
10260.50	1.330	250.520	10257.96	15.76	-15.48	37.98	790569.38	570197.22	32°33'53.727"N	103°31'27.625"W	0.39	
10324.50	1.120	251.070	10321.94	16.20	-15.93	36.69	790568.09	570196.77	32°33'53.723"N	103°31'27.641"W	0.33	
10388.50	0.860	242.810	10385.93	16.61	-16.35	35.67	790567.07	570196.35	32°33'53.719"N	103°31'27.652"W	0.46	
10452.50	0.980	236.770	10449.93	17.13	-16.87	34.79	790566.19	570195.83	32°33'53.714"N	103°31'27.663"W	0.24	
10516.50	0.770	233.670	10513.92	17.68	-17.43	33.98	790565.38	570195.27	32°33'53.708"N	103°31'27.672"W	0.34	
10580.50	0.660	237.940	10577.91	18.12	-17.88	33.32	790564.72	570194.82	32°33'53.704"N	103°31'27.680"W	0.19	
10622.30	0.830	232.140	10619.71	18.43	-18.19	32.88	790564.28	570194.51	32°33'53.701"N	103°31'27.685"W	0.44	
10671.00	0.900	227.300	10668.40	18.90	-18.67	32.32	790563.72	570194.03	32°33'53.696"N	103°31'27.692"W	0.21	
10705.00	4.900	171.900	10702.36	20.52	-20.29	32.33	790563.73	570192.41	32°33'53.680"N	103°31'27.692"W	13.09	
10736.00	10.100	175.500	10733.08	24.55	-24.31	32.73	790564.13	570188.39	32°33'53.640"N	103°31'27.688"W	16.83	
10768.00	16.100	177.500	10764.23	31.79	-31.55	33.14	790564.54	570181.15	32°33'53.569"N	103°31'27.683"W	18.80	
10800.00	21.900	178.100	10794.48	42.20	-41.95	33.54	790564.93	570170.75	32°33'53.466"N	103°31'27.680"W	18.14	
10832.00	28.600	180.000	10823.10	55.84	-55.59	33.73	790565.13	570157.11	32°33'53.331"N	103°31'27.679"W	21.09	
10864.00	35.400	180.200	10850.53	72.78	-72.51	33.70	790565.10	570140.16	32°33'53.163"N	103°31'27.681"W	21.25	
10896.00	42.000	180.400	10875.49	92.78	-92.54	33.59	790564.99	570120.17	32°33'52.965"N	103°31'27.684"W	20.63	
10928.00	47.500	182.200	10898.20	115.29	-115.05	33.07	790564.47	570097.65	32°33'52.742"N	103°31'27.692"W	17.64	
10960.00	54.800	182.000	10918.26	140.17	-139.94	32.16	790563.55	570072.77	32°33'52.496"N	103°31'27.705"W	22.82	
10992.00	61.400	182.000	10935.16	167.30	-167.07	31.21	790562.61	570045.63	32°33'52.228"N	103°31'27.718"W	20.62	



Actual Wellpath Report

No.2H AWP

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**BAKER
HUGHES**

Operator: Cimarex Energy Co.
Area: Lea County, NM
Field: (Lynch) Sec 23, T20S, R34E
Facility: Lynch 23 Fed Com

Slot: No. 2H SHL
Well: No. 2H
Wellbore: No.2H AWP

WELLPATH DATA (253 stations)

MD [ft]	Inclination [°]	Azimuth [°]	FWD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11023.00	67.800	182.100	10948.45	195.26	-195.04	30.21	790561.61	570017.66	32°33'51.951"N	103°31'27.732"W	20.65	
11055.00	73.900	181.500	10958.95	225.45	-225.24	29.26	790560.66	569987.46	32°33'51.652"N	103°31'27.746"W	19.14	
11087.00	81.000	180.700	10965.90	256.65	-256.45	28.66	790560.06	569956.25	32°33'51.341"N	103°31'27.756"W	22.32	
11119.00	83.700	180.700	10970.16	288.36	-288.16	28.28	790559.68	569924.55	32°33'51.030"N	103°31'27.763"W	8.44	
11183.00	84.600	180.000	10976.68	352.02	-351.87	27.89	790559.29	569860.88	32°33'50.400"N	103°31'27.773"W	1.78	
11246.00	87.000	180.000	10981.29	414.84	-414.65	27.89	790559.29	569798.06	32°33'49.778"N	103°31'27.779"W	3.81	
11309.00	88.300	179.400	10983.88	477.79	-477.60	28.22	790559.62	569735.11	32°33'49.156"N	103°31'27.781"W	2.27	
11373.00	88.900	178.700	10985.44	541.77	-541.57	29.28	790560.68	569671.14	32°33'48.523"N	103°31'27.774"W	1.44	
11437.00	89.600	178.000	10986.28	605.75	-605.53	31.12	790562.52	569607.18	32°33'47.889"N	103°31'27.758"W	1.55	
11501.00	89.800	177.900	10986.61	669.72	-669.49	33.41	790564.81	569543.22	32°33'47.256"N	103°31'27.737"W	0.35	
11564.00	89.800	177.400	10986.83	732.68	-732.44	35.99	790567.39	569480.28	32°33'46.633"N	103°31'27.712"W	0.79	
11628.00	90.500	177.400	10986.66	796.64	-796.37	38.90	790570.30	569416.34	32°33'46.001"N	103°31'27.684"W	1.09	
11691.00	90.600	177.900	10986.06	859.60	-859.32	41.48	790572.88	569353.40	32°33'45.378"N	103°31'27.659"W	0.81	
11755.00	90.500	179.100	10985.45	923.58	-923.29	43.15	790574.55	569289.43	32°33'44.745"N	103°31'27.646"W	1.88	
11818.00	90.600	178.800	10984.84	986.58	-986.28	44.31	790575.71	569226.44	32°33'44.121"N	103°31'27.638"W	0.50	
11881.00	90.000	179.700	10984.51	1049.57	-1049.27	45.13	790576.53	569163.45	32°33'43.498"N	103°31'27.634"W	1.72	
11945.00	90.100	180.200	10984.45	1113.57	-1113.27	45.19	790576.59	569099.45	32°33'42.865"N	103°31'27.639"W	0.80	
12009.00	90.300	179.600	10984.23	1177.57	-1177.27	45.30	790576.70	569035.46	32°33'42.231"N	103°31'27.643"W	0.99	
12073.00	89.800	180.200	10984.18	1241.57	-1241.27	45.41	790576.81	568971.46	32°33'41.598"N	103°31'27.647"W	1.22	
12137.00	88.900	179.600	10984.90	1305.56	-1305.26	45.52	790576.92	568907.47	32°33'40.965"N	103°31'27.652"W	1.69	
12200.00	88.100	178.500	10986.55	1368.54	-1368.23	46.57	790577.97	568844.50	32°33'40.342"N	103°31'27.645"W	2.16	
12263.00	88.700	177.800	10988.31	1431.49	-1431.17	48.60	790580.00	568781.56	32°33'39.719"N	103°31'27.627"W	1.46	
12327.00	88.800	178.900	10989.71	1495.46	-1495.13	50.44	790581.84	568717.60	32°33'39.086"N	103°31'27.611"W	1.73	
12391.00	89.300	179.000	10990.77	1559.45	-1559.11	51.62	790583.02	568653.62	32°33'38.453"N	103°31'27.603"W	0.80	
12454.00	89.000	178.600	10991.70	1622.43	-1622.09	52.94	790584.34	568590.65	32°33'37.830"N	103°31'27.593"W	0.79	
12518.00	89.300	178.900	10992.65	1686.42	-1686.07	54.33	790585.73	568526.67	32°33'37.197"N	103°31'27.583"W	0.66	
12581.00	89.100	178.900	10993.53	1749.41	-1749.05	55.54	790586.94	568463.69	32°33'36.573"N	103°31'27.574"W	0.32	
12644.00	88.600	180.000	10994.80	1812.40	-1812.03	56.15	790587.54	568400.71	32°33'35.950"N	103°31'27.573"W	1.92	
12708.00	88.500	180.300	10996.41	1876.37	-1876.01	55.98	790587.38	568336.73	32°33'35.317"N	103°31'27.580"W	0.49	
12771.00	88.000	180.800	10998.34	1939.33	-1938.98	55.37	790586.77	568273.76	32°33'34.694"N	103°31'27.593"W	1.12	
12835.00	88.700	179.500	11000.18	2003.30	-2002.95	55.21	790586.61	568209.79	32°33'34.061"N	103°31'27.601"W	2.31	
12898.00	88.800	178.800	11001.56	2066.28	-2065.93	56.14	790587.54	568146.82	32°33'33.438"N	103°31'27.595"W	1.12	
12962.00	88.700	176.900	11002.95	2130.24	-2129.87	58.54	790589.94	568082.88	32°33'32.805"N	103°31'27.573"W	2.97	
13025.00	89.100	178.300	11004.16	2193.19	-2192.80	61.18	790592.58	568019.95	32°33'32.182"N	103°31'27.548"W	2.31	
13089.00	89.800	179.400	11004.78	2257.18	-2256.78	62.46	790593.86	567955.97	32°33'31.549"N	103°31'27.538"W	2.04	
13152.00	89.900	181.300	11004.94	2320.17	-2319.78	62.08	790593.48	567892.98	32°33'30.926"N	103°31'27.548"W	3.02	
13216.00	89.900	181.900	11005.05	2384.13	-2383.75	60.29	790591.69	567829.00	32°33'30.293"N	103°31'27.575"W	0.94	
13279.00	88.400	180.400	11005.99	2447.09	-2446.73	59.03	790590.43	567766.03	32°33'29.670"N	103°31'27.595"W	3.37	
13343.00	88.000	179.100	11008.00	2511.06	-2510.69	59.31	790590.71	567702.06	32°33'29.037"N	103°31'27.598"W	2.12	
13407.00	88.100	179.100	11010.18	2575.02	-2574.65	60.31	790591.71	567638.11	32°33'28.404"N	103°31'27.592"W	0.16	
13470.00	88.300	178.900	11012.15	2637.99	-2637.61	61.41	790592.81	567575.15	32°33'27.781"N	103°31'27.585"W	0.45	
13534.00	88.500	178.100	11013.94	2701.95	-2701.56	63.08	790594.48	567511.20	32°33'27.148"N	103°31'27.571"W	1.29	
13597.00	89.000	178.800	11015.32	2764.92	-2764.52	64.79	790596.19	567448.24	32°33'26.525"N	103°31'27.556"W	1.37	
13661.00	89.800	180.700	11015.99	2828.91	-2828.51	65.07	790596.47	567384.25	32°33'25.892"N	103°31'27.559"W	3.22	
13725.00	89.100	180.700	11016.60	2892.90	-2892.51	61.29	790595.68	567320.26	32°33'25.259"N	103°31'27.574"W	1.09	



Actual Wellpath Report

No.2H AWP

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**BAKER
HUGHES**

Operator Cimarex Energy Co.

Slot No. 2H SHL

Area Lea County, NM

Well No. 2H

Field (Lynch) Sec 23, T20S, R34E

Wellbore No.2H AWB

Facility Lynch 23 Fed Com

WELLPATH DATA (253 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
13788.00	90.200	181.200	11016.99	2955.88	-2955.49	63.24	790594.64	567257.27	32°33'24.636"N	103°31'27.591"W	1.92	
13852.00	89.800	181.100	11016.99	3019.85	-3019.48	61.96	790593.36	567193.28	32°33'24.003"N	103°31'27.612"W	0.64	
13915.00	89.500	180.400	11017.37	3082.84	-3082.47	61.13	790592.53	567130.29	32°33'23.380"N	103°31'27.627"W	1.21	
13979.00	89.500	180.100	11017.93	3146.83	-3146.47	60.85	790592.25	567066.30	32°33'22.746"N	103°31'27.636"W	0.47	
14043.00	89.700	179.800	11018.38	3210.83	-3210.47	60.91	790592.31	567002.30	32°33'22.113"N	103°31'27.641"W	0.56	
14106.00	87.400	178.700	11019.97	3273.80	-3273.44	61.73	790593.13	566939.33	32°33'21.490"N	103°31'27.637"W	4.05	
14169.00	87.200	178.800	11022.94	3336.73	-3336.35	63.11	790594.50	566876.42	32°33'20.867"N	103°31'27.627"W	0.35	
14231.00	87.900	178.100	11025.72	3401.65	-3401.27	64.86	790596.26	566811.50	32°33'20.225"N	103°31'27.612"W	1.52	
14298.00	88.400	179.100	11027.78	3465.61	-3465.22	66.42	790597.82	566747.56	32°33'19.592"N	103°31'27.599"W	1.75	
14363.00	88.500	178.500	11029.54	3530.58	-3530.18	67.79	790599.18	566682.60	32°33'18.949"N	103°31'27.589"W	0.94	
14427.00	90.000	179.000	11030.38	3594.57	-3594.16	69.18	790600.58	566618.62	32°33'18.316"N	103°31'27.579"W	2.47	
14491.00	90.600	178.800	11030.04	3658.56	-3658.14	70.41	790601.81	566554.64	32°33'17.683"N	103°31'27.570"W	0.99	
14555.00	90.000	180.200	11029.71	3722.56	-3722.14	70.97	790602.37	566490.64	32°33'17.050"N	103°31'27.569"W	2.38	
14619.00	90.300	180.300	11029.54	3786.55	-3786.14	70.69	790602.09	566426.65	32°33'16.417"N	103°31'27.578"W	0.49	
14684.00	88.700	179.100	11030.11	3851.55	-3851.13	71.03	790602.43	566361.65	32°33'15.773"N	103°31'27.580"W	3.08	
14747.00	89.300	178.900	11031.21	3914.53	-3914.11	72.13	790603.53	566298.68	32°33'15.150"N	103°31'27.573"W	1.00	
14811.00	89.300	178.700	11031.99	3978.52	-3978.09	73.47	790604.87	566234.70	32°33'14.517"N	103°31'27.563"W	0.31	
14875.00	89.400	177.600	11032.71	4042.50	-4042.05	75.54	790606.93	566170.74	32°33'13.884"N	103°31'27.544"W	1.73	
14939.00	89.600	177.500	11033.27	4106.46	-4105.99	78.27	790609.67	566106.80	32°33'13.251"N	103°31'27.518"W	0.35	
15002.00	90.100	178.000	11033.44	4169.42	-4168.94	80.74	790612.14	566043.85	32°33'12.628"N	103°31'27.495"W	1.12	
15066.00	90.400	178.400	11033.16	4233.40	-4232.91	82.75	790614.15	565979.88	32°33'11.995"N	103°31'27.477"W	0.78	
15129.00	89.200	175.000	11033.38	4296.31	-4295.80	86.38	790617.78	565917.00	32°33'11.373"N	103°31'27.440"W	5.72	
15193.00	88.600	173.900	11034.61	4360.04	-4359.48	92.57	790623.97	565853.31	32°33'10.742"N	103°31'27.373"W	1.96	
15257.00	87.400	171.800	11036.84	4423.56	-4422.94	100.53	790631.93	565789.86	32°33'10.114"N	103°31'27.286"W	3.78	
15320.00	87.500	171.300	11039.64	4485.88	-4485.20	109.78	790641.17	565727.60	32°33'09.497"N	103°31'27.183"W	0.81	
15384.00	87.800	171.900	11042.27	4549.21	-4548.46	119.12	790650.52	565664.34	32°33'08.870"N	103°31'27.080"W	1.05	
15401.00	87.900	171.600	11042.91	4566.04	-4565.27	121.56	790652.95	565647.53	32°33'08.704"N	103°31'27.053"W	1.86	
15446.00	87.900	171.600	11044.56	4610.57	-4609.75	128.13	790659.52	565603.05	32°33'08.263"N	103°31'26.980"W	0.60 Proj to Bit	



Actual Wellpath Report

No.2H AWP

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**BAKER
HUGHES**

Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Lea County, NM	Well	No. 2H
Field	(Lynch) Sec 23, T20S, R34E	Wellbore	No.2H AWB
Facility	Lynch 23 Fed Com		

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
No. 2H PBHL		11007.00	-4622.03	33.86	790565.26	565590.77	32°33'08.149"N	103°31'28.083"W	point

WELLPATH COMPOSITION - Ref Wellbore: No.2H AWB Ref Wellpath: No.2H AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
18.00	10622.30	!Genetic gyro - northseeking (Standard)	Gyro	No.2H AWB
10622.30	15446.00	!NaviTrak (Standard)	MWD	No.2H AWB