

**STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION**

**IN THE MATTER OF THE HEARING CALLED
BY THE OIL CONSERVATION DIVISION FOR
THE PURPOSE OF CONSIDERING:**

**APPLICATION OF CIMAREX ENERGY CO.
FOR A NON-STANDARD OIL SPACING AND
PRORATION UNIT AND FOR COMPULSORY
POOLING, LEA COUNTY, NEW MEXICO.**

Case No. 14482

AFFIDAVIT OF LEE CATALANO

COUNTY OF SANTA FE)
) ss.
STATE OF NEW MEXICO)

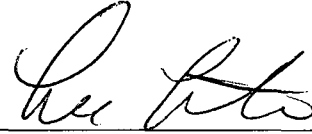
Lee Catalano, being duly sworn upon his oath, deposes and states:

1. I am over the age of 18, and have personal knowledge of the matters stated herein.
2. I am a geologist for Cimarex Energy Co. ("Cimarex").
3. Attached hereto as Exhibit A is a structure map on top of the 2nd Bone Spring Sandstone formation. The formation dips to the south. Exhibit A also contains production data from existing, vertical Bone Spring wells.
4. Attached hereto as Exhibit B is a cross section which shows the productive interval and stratigraphic target for horizontal Bone Spring wells in the area.
5. Attached hereto as Exhibit C is the horizontal drilling plan for the proposed Penny Pincher 21 Federal Com #4H well. A horizontal wellbore will test a greater reservoir length, thereby increasing the chances for an economic completion.

Case No. 14482

**CIMAREX ENERGY
Exhibit # 4**

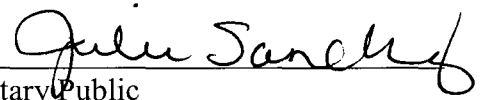
6. All four quarter-quarter sections in the proposed 160-acre project area are prospective in the Bone Spring, and Cimarex anticipates producing reserves from each quarter-quarter section.



Lee Catalano

SUBSCRIBED AND SWORN TO before me this 9th day of June, 2010 by Lee Catalano.

My Commission Expires: 12/5/11



Notary Public

West

ELEV_KB : 3.470
23662

A

ENDURANCE RESOURCES LLC
COMP DATE : 2/17/1982
FEDERAL HANSON COM

T19S R31E S20
1910 FSL 2250 FEL
BONESPRINGS_O : 98 102 BBL
BONESPRINGS_W : 57 111 BBL

ELEV_KB : 3.499
37699

O

CIMAREX ENERGY CO
PENNY PINCHER FED COM

T19S R30E S1
1
860 FNL 990 FWL

East

A'

ELEV_KB : 3.536
34471

S

DEVON ENERGY CORPORATION
COMP DATE : 1/22/2007
ARENOSO 22 FEDERAL COM

T19S R31E S22
1
990 FSL 1650 FWL

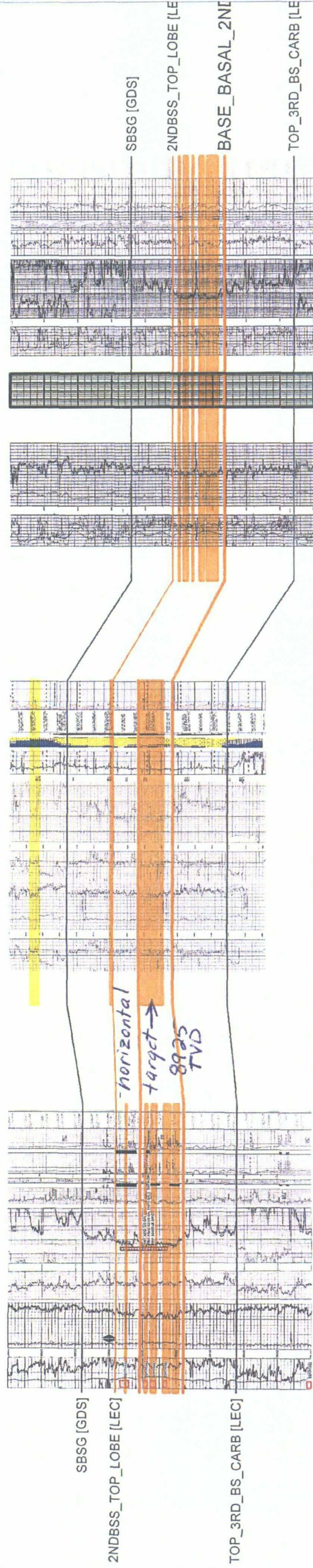


Exhibit
B

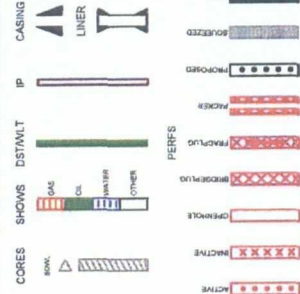
CIMAREX ENERGY

Penny Pincher Area

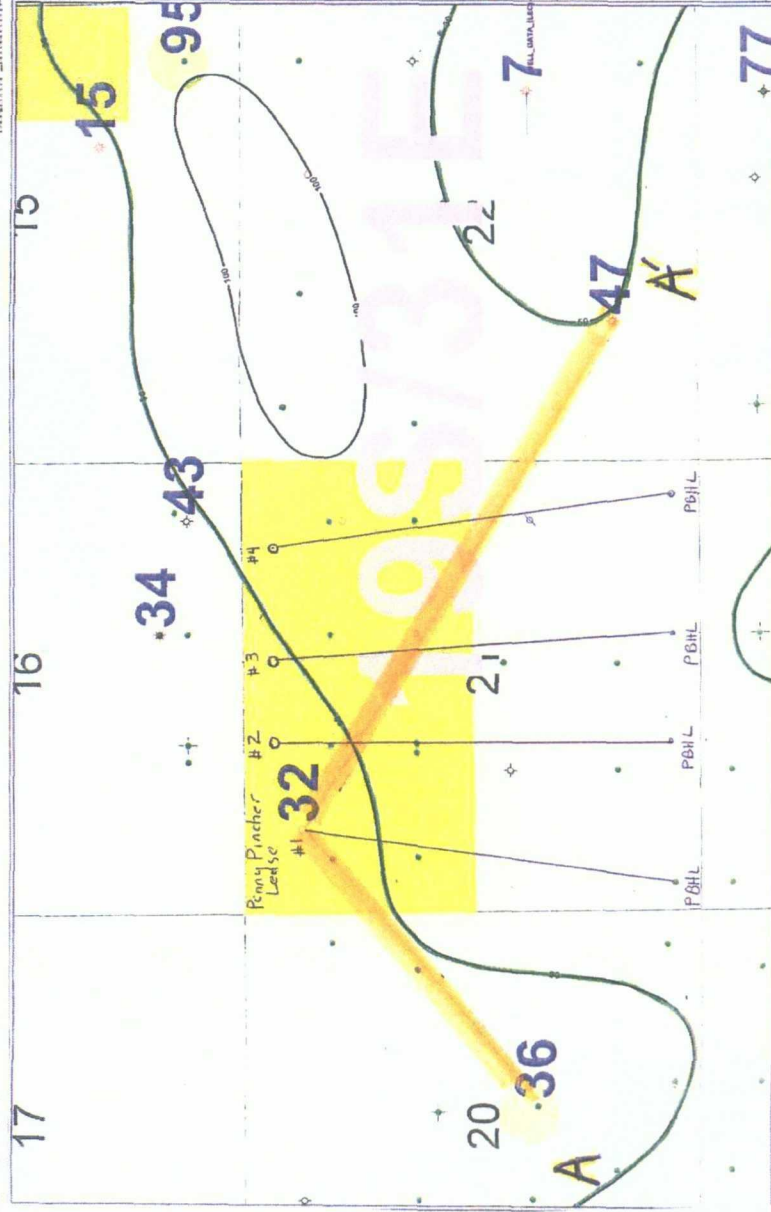
2nd Bone Spring SS

Struc. X-section

Eddy Co., NM



By Lee Catalano
June 4, 2010 1:23 PM





Cimarex Energy Co.

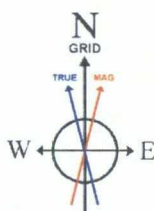
Location: Eddy County, NM
Field: (Penny) Sec 21, T19S, R31E
Facility: Penny Pincher Fed Com No. 4H

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



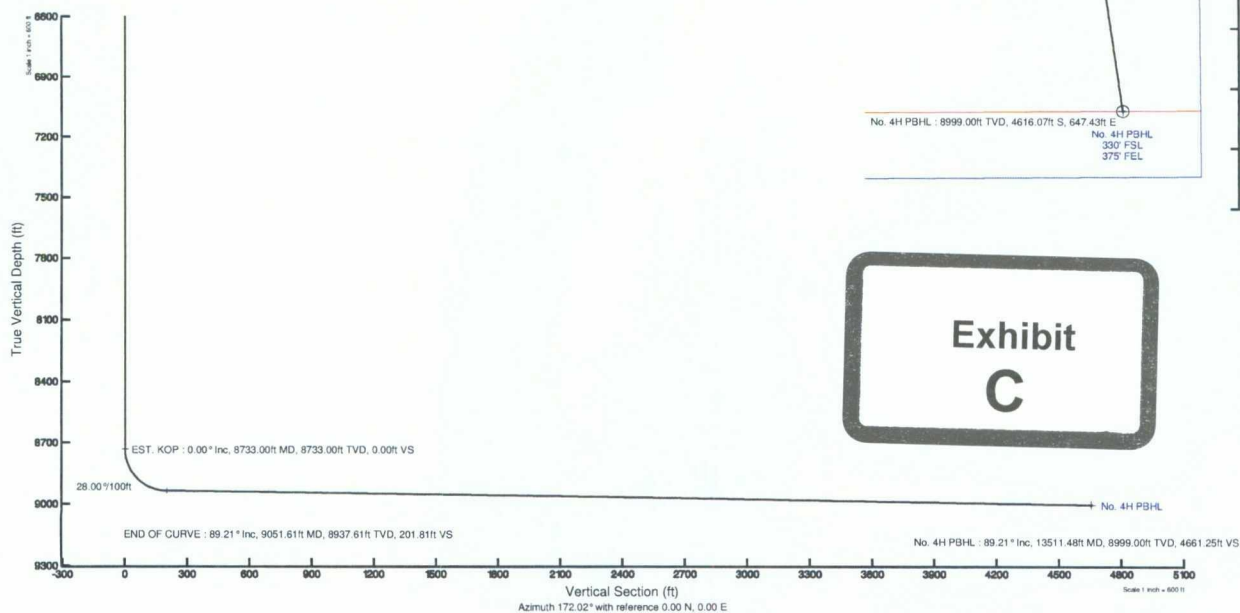
Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	0.00	0.000	172.016	0.00	0.00	0.00	0.00	0.00
EST. KOP	8733.00	0.000	172.016	8733.00	0.00	0.00	0.00	0.00
END OF CURVE	9051.61	89.211	172.016	8937.61	-199.85	28.03	28.00	201.81
No. 4H PBHL	13511.48	89.211	172.016	8999.00	-4616.07	647.43	0.00	4661.25



BGGM (1945.0 to 2011.0) Dip: 60.57° Field: 49008.2 nT
Magnetic North is 7.92 degrees East of True North (at 6/8/2010)
Grid North is 0.25 degrees East of True North
To correct azimuth from True to Grid subtract 0.25 degrees
To correct azimuth from Magnetic to Grid add 7.67 degrees
For example: if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7.67 = 97.67

Plot reference wellpath is Preim 1	
True vertical depths are referenced to Rig on No. 4H SHL (KB)	Grid System: NAD83 / TM New Mexico State Planes, 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: 3499 feet	Scale: True distance
Mean Sea Level to Mud line (Facility: Penny Pincher Fed Com No. 4H): 3499 feet	Depths are in feet
Coordinates are in feet referenced to SL	Created by: Victor Hernandez on 6/8/2010





Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Eddy County, NM	Well	No. 4H
Field	(Penny) Sec 21, T19S, R31E	Wellbore	No. 4H PWB
Facility	Penny Pincher Fed Com No. 4H		

REPORT SETUP INFORMATION			
Projection System	NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet	Software System	WellArchitect® 2.0
North Reference	Grid	User	Victor Hernandez
Scale	0.999932	Report Generated	6/8/2010 at 10:30:27 AM
Convergence at slot	0.25° East	Database/Source file	WA_Midland/No. 4H_PWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[USft]	Northing[USft]	Latitude	Longitude
Slot Location	0.00	0.00	684271.20	601343.70	32°39'08.215"N	103°52'08.124"W
Facility Reference Pt			684271.20	601343.70	32°39'08.215"N	103°52'08.124"W
Field Reference Pt			681958.50	601329.30	32°39'08.172"N	103°52'35.176"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Rig on No. 4H SHL (KB) to GL	0.00ft
Horizontal Reference Pt	SL	Rig on No. 4H SHL (KB) to Mean Sea Level	3499.00ft
Vertical Reference Pt	Rig on No. 4H SHL (KB)	GL to Mud Line (Facility)	0.00ft
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	172.02°



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
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Field	(Penny) Sec 21, T19S, R31E	Wellbore	No. 4H PWB
Facility	Penny Pincher Fed Com No. 4H		

WELLPATH DATA (51 stations) † = interpolated/extrapolated station												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	172.016	0.00	0.00	0.00	0.00	684271.20	601343.70	32°39'08.215"N	103°52'08.124"W	0.00	Tie On
8733.00	0.000	172.016	8733.00	0.00	0.00	0.00	684271.20	601343.70	32°39'08.215"N	103°52'08.124"W	0.00	EST. KOP
8833.00†	28.000	172.016	8829.07	23.95	-23.72	3.33	684274.53	601319.98	32°39'07.980"N	103°52'08.087"W	28.00	
8933.00†	56.000	172.016	8902.64	90.20	-89.33	12.53	684283.73	601254.38	32°39'07.331"N	103°52'07.982"W	28.00	
9033.00†	84.000	172.016	8936.51	183.24	-181.46	25.45	684296.65	601162.25	32°39'06.419"N	103°52'07.836"W	28.00	
9051.61	89.211	172.016	8937.61	201.81	-199.85	28.03	684299.23	601143.86	32°39'06.237"N	103°52'07.807"W	28.00	END OF CURVE
9133.00†	89.211	172.016	8938.73	283.19	-280.45	39.33	684310.53	601063.27	32°39'05.439"N	103°52'07.679"W	0.00	
9233.00†	89.211	172.016	8940.11	383.18	-379.47	53.22	684324.42	600964.26	32°39'04.458"N	103°52'07.521"W	0.00	
9333.00†	89.211	172.016	8941.48	483.17	-478.49	67.11	684338.31	600865.24	32°39'03.478"N	103°52'07.364"W	0.00	
9433.00†	89.211	172.016	8942.86	583.16	-577.51	81.00	684352.19	600766.23	32°39'02.498"N	103°52'07.207"W	0.00	
9533.00†	89.211	172.016	8944.23	683.15	-676.53	94.89	684366.08	600667.22	32°39'01.517"N	103°52'07.049"W	0.00	
9633.00†	89.211	172.016	8945.61	783.14	-775.55	108.78	684379.97	600568.20	32°39'00.537"N	103°52'06.892"W	0.00	
9733.00†	89.211	172.016	8946.99	883.13	-874.57	122.66	684393.86	600469.19	32°38'59.557"N	103°52'06.734"W	0.00	
9833.00†	89.211	172.016	8948.36	983.13	-973.60	136.55	684407.74	600370.17	32°38'58.576"N	103°52'06.577"W	0.00	
9933.00†	89.211	172.016	8949.74	1083.12	-1072.62	150.44	684421.63	600271.16	32°38'57.596"N	103°52'06.420"W	0.00	
10033.00†	89.211	172.016	8951.12	1183.11	-1171.64	164.33	684435.52	600172.14	32°38'56.615"N	103°52'06.262"W	0.00	
10133.00†	89.211	172.016	8952.49	1283.10	-1270.66	178.22	684449.41	600073.13	32°38'55.635"N	103°52'06.105"W	0.00	
10233.00†	89.211	172.016	8953.87	1383.09	-1369.68	192.11	684463.29	599974.11	32°38'54.655"N	103°52'05.948"W	0.00	
10333.00†	89.211	172.016	8955.25	1483.08	-1468.70	206.00	684477.18	599875.10	32°38'53.674"N	103°52'05.790"W	0.00	
10433.00†	89.211	172.016	8956.62	1583.07	-1567.72	219.88	684491.07	599776.09	32°38'52.694"N	103°52'05.633"W	0.00	
10533.00†	89.211	172.016	8958.00	1683.06	-1666.74	233.77	684504.96	599677.07	32°38'51.714"N	103°52'05.476"W	0.00	
10633.00†	89.211	172.016	8959.38	1783.05	-1765.77	247.66	684518.84	599578.06	32°38'50.733"N	103°52'05.318"W	0.00	
10733.00†	89.211	172.016	8960.75	1883.04	-1864.79	261.55	684532.73	599479.04	32°38'49.753"N	103°52'05.161"W	0.00	
10833.00†	89.211	172.016	8962.13	1983.03	-1963.81	275.44	684546.62	599380.03	32°38'48.773"N	103°52'05.004"W	0.00	
10933.00†	89.211	172.016	8963.51	2083.02	-2062.83	289.33	684560.51	599281.01	32°38'47.792"N	103°52'04.846"W	0.00	
11033.00†	89.211	172.016	8964.88	2183.01	-2161.85	303.21	684574.39	599182.00	32°38'46.812"N	103°52'04.689"W	0.00	
11133.00†	89.211	172.016	8966.26	2283.00	-2260.87	317.10	684588.28	599082.98	32°38'45.832"N	103°52'04.531"W	0.00	
11233.00†	89.211	172.016	8967.64	2382.99	-2359.89	330.99	684602.17	598983.97	32°38'44.851"N	103°52'04.374"W	0.00	
11333.00†	89.211	172.016	8969.01	2482.98	-2458.92	344.88	684616.06	598884.96	32°38'43.871"N	103°52'04.217"W	0.00	
11433.00†	89.211	172.016	8970.39	2582.97	-2557.94	358.77	684629.94	598785.94	32°38'42.890"N	103°52'04.059"W	0.00	



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Eddy County, NM	Well	No. 4H
Field	(Penny) Sec 21, T19S, R31E	Wellbore	No. 4H PWB
Facility	Penny Pincher Fed Com No. 4H		

WELLPATH DATA (51 stations) † = interpolated/extrapolated station												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11533.00†	89.211	172.016	8971.77	2682.96	-2656.96	372.66	684643.83	598686.93	32°38'41.910"N	103°52'03.902"W	0.00	
11633.00†	89.211	172.016	8973.14	2782.95	-2755.98	386.54	684657.72	598587.91	32°38'40.930"N	103°52'03.745"W	0.00	
11733.00†	89.211	172.016	8974.52	2882.95	-2855.00	400.43	684671.61	598488.90	32°38'39.949"N	103°52'03.587"W	0.00	
11833.00†	89.211	172.016	8975.90	2982.94	-2954.02	414.32	684685.49	598389.88	32°38'38.969"N	103°52'03.430"W	0.00	
11933.00†	89.211	172.016	8977.27	3082.93	-3053.04	428.21	684699.38	598290.87	32°38'37.989"N	103°52'03.273"W	0.00	
12033.00†	89.211	172.016	8978.65	3182.92	-3152.06	442.10	684713.27	598191.85	32°38'37.008"N	103°52'03.115"W	0.00	
12133.00†	89.211	172.016	8980.02	3282.91	-3251.09	455.99	684727.15	598092.84	32°38'36.028"N	103°52'02.958"W	0.00	
12233.00†	89.211	172.016	8981.40	3382.90	-3350.11	469.88	684741.04	597993.83	32°38'35.048"N	103°52'02.801"W	0.00	
12333.00†	89.211	172.016	8982.78	3482.89	-3449.13	483.76	684754.93	597894.81	32°38'34.067"N	103°52'02.643"W	0.00	
12433.00†	89.211	172.016	8984.15	3582.88	-3548.15	497.65	684768.82	597795.80	32°38'33.087"N	103°52'02.486"W	0.00	
12533.00†	89.211	172.016	8985.53	3682.87	-3647.17	511.54	684782.70	597696.78	32°38'32.107"N	103°52'02.329"W	0.00	
12633.00†	89.211	172.016	8986.91	3782.86	-3746.19	525.43	684796.59	597597.77	32°38'31.126"N	103°52'02.171"W	0.00	
12733.00†	89.211	172.016	8988.28	3882.85	-3845.21	539.32	684810.48	597498.75	32°38'30.146"N	103°52'02.014"W	0.00	
12833.00†	89.211	172.016	8989.66	3982.84	-3944.23	553.21	684824.37	597399.74	32°38'29.165"N	103°52'01.857"W	0.00	
12933.00†	89.211	172.016	8991.04	4082.83	-4043.26	567.09	684838.25	597300.73	32°38'28.185"N	103°52'01.699"W	0.00	
13033.00†	89.211	172.016	8992.41	4182.82	-4142.28	580.98	684852.14	597201.71	32°38'27.205"N	103°52'01.542"W	0.00	
13133.00†	89.211	172.016	8993.79	4282.81	-4241.30	594.87	684866.03	597102.70	32°38'26.224"N	103°52'01.385"W	0.00	
13233.00†	89.211	172.016	8995.17	4382.80	-4340.32	608.76	684879.92	597003.68	32°38'25.244"N	103°52'01.227"W	0.00	
13333.00†	89.211	172.016	8996.54	4482.79	-4439.34	622.65	684893.80	596904.67	32°38'24.264"N	103°52'01.070"W	0.00	
13433.00†	89.211	172.016	8997.92	4582.78	-4538.36	636.54	684907.69	596805.65	32°38'23.283"N	103°52'00.913"W	0.00	
13511.48	89.211	172.016	8999.00	4661.25	-4616.07	647.43	684918.59	596727.95	32°38'22.514"N	103°52'00.789"W	0.00	No. 4H PBHL



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Eddy County, NM	Well	No. 4H
Field	(Penny) Sec 21, T19S, R31E	Wellbore	No. 4H PWB
Facility	Penny Pincher Fed Com No. 4H		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
1) No. 4H PBHL	13511.48	8999.00	-4616.07	647.43	684918.59	596727.95	32°38'22.514"N	103°52'00.789"W	point

SURVEY PROGRAM Ref Wellbore: No. 4H PWB Ref Wellpath: Prelim_1				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	13511.48	NaviTrak (Standard)		No. 4H PWB