

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

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

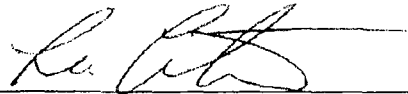
Case No. 14466

AFFIDAVIT OF LEE CATALANO

COUNTY OF MIDLAND            )  
  ) ss.  
STATE OF TEXAS                )

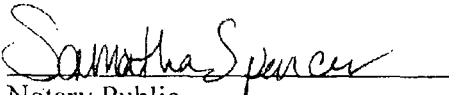
Lee Catalano, being duly sworn upon his oath, deposes and states:

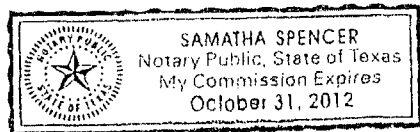
1. I am over the age of 18, and have personal knowledge of the matters stated herein.
2. I am a geologist for Cimarex Energy Co. ("Cimarex").
3. Exhibit A is a structure map on top of the Bone Spring formation. The formation dips to the south. Exhibit A also contains production data from existing, vertical Bone Spring wells.
4. Exhibit B is a cross section which shows the productive interval and stratigraphic target for horizontal Bone Spring wells in the area.
5. Attached as Exhibit C is the horizontal drilling plan for the proposed well. A horizontal wellbore will test a greater reservoir length, increasing the chances for an economic completion.
6. All four quarter-quarter sections in the well unit 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 10<sup>th</sup> day of May, 2010 by Lee Catalano.

My Commission Expires: October 31, 2012

  
\_\_\_\_\_  
Notary Public



Oil Conservation Division  
Case No. 2  
Exhibit No. \_\_\_\_\_

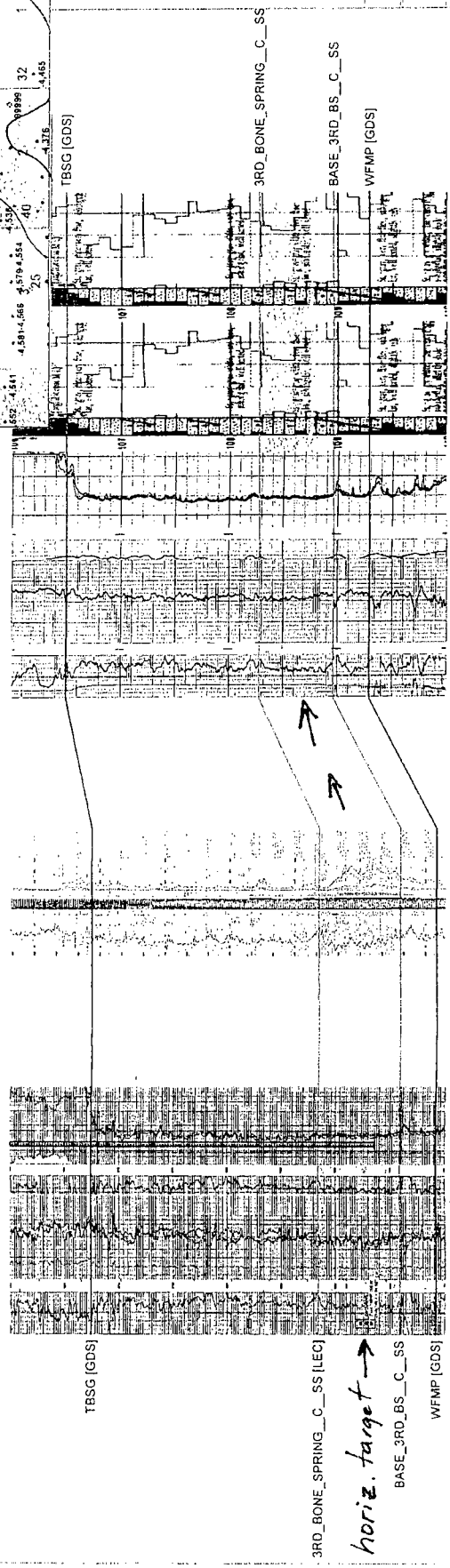
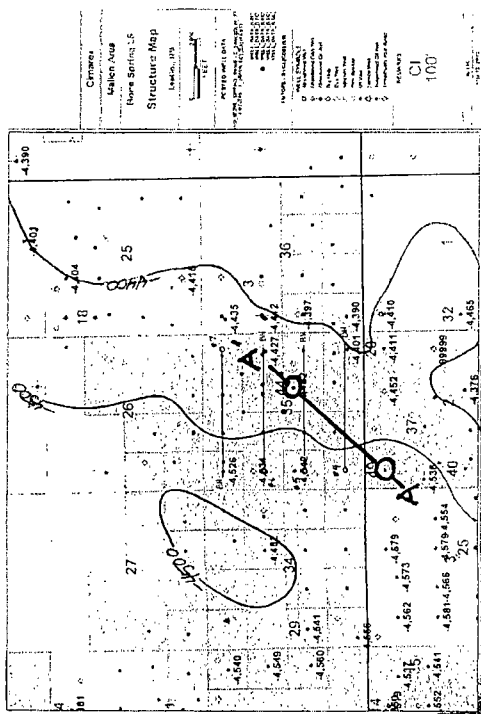


SW  
 A  
 ELEV\_KB : 3.698  
 38622  
 SAMSON RESOURCES COMPANY  
 COMP\_DATE : 6/16/2008  
 EAGLE 2 STATE  
 4

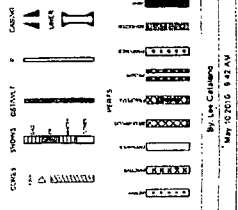
T20S R34E S2  
 660 FNL 660 FWL  
 BONESPRINGS\_O : 23.881 BBL  
 BONESPRINGS\_W : 40.029 BBL

NE  
 A'  
 ELEV\_KB : 3.730  
 23319  
 HONDO OIL & GAS COMPANY  
 COMP\_DATE : 2/5/1970  
 MESCALERO RIDGE UNI  
 2

T19S R34E S3S  
 2310 FSL 1800 FEL  
 BONESPRINGS\_O : 390.664 BBL  
 BONESPRINGS\_W : 11.050 BBL



CIMAREX ENERGY  
 Mallon Area  
 3rd Bone Spring SS  
 Struct. X-section  
 Lea Co., NM



**B**  
 EXHIBIT



# Planned Wellpath Report

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## REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Lea County, NM	Well	No. 4H
Field	(Mallon) Sec 35, T19S, R34E	Wellbore	No. 4H PWB
Facility	Mallon 35 Fed 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	0.999978	Report Generated	12/15/2009 at 1:17:45 PM
Convergence at slot	0.43° 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	786447.20	587045.00	32°36'40.736"N	103°32'14.318"W
Facility Reference Pt			786447.20	587045.00	32°36'40.736"N	103°32'14.318"W
Field Reference Pt			786447.20	587045.00	32°36'40.736"N	103°32'14.318"W

## WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 4H SHL (RT) to Facility Vertical Datum	0.00ft
Horizontal Reference Pt	Facility Center	Rig on No. 4H SHL (RT) to Mean Sea Level	3689.00ft
Vertical Reference Pt	Rig on No. 4H SHL (RT)	Facility Vertical Datum to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No. 4H SHL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	89.46°

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Field	(Mallon) Sec 35, T19S, R34E	Wellbore	No. 4H PWB
Facility	Mallon 35 Fed No. 4H		

## WELLPATH DATA (46 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]	DLS [°/100ft]	Comments
0.00	0.000	89.460	0.00	0.00	0.00	0.00	786447.20	587045.00	0.00	Tie On
10799.00	0.000	89.460	10799.00	0.00	0.00	0.00	786447.20	587045.00	0.00	EST. KOP
10899.00†	29.998	89.460	10894.49	25.59	0.24	25.58	786472.78	587045.24	30.00	
10999.00†	59.996	89.460	10964.40	95.49	0.90	95.48	786542.68	587045.90	30.00	
11099.00†	89.993	89.460	10990.00	190.98	1.80	190.97	786638.16	587046.80	30.00	
11099.02	90.000	89.460	10990.00	191.00	1.80	190.99	786638.19	587046.80	30.00	END OF CURVE
11199.00†	90.000	89.460	10990.00	290.98	2.74	290.96	786738.16	587047.74	0.00	
11299.00†	90.000	89.460	10990.00	390.98	3.69	390.96	786838.15	587048.68	0.00	
11399.00†	90.000	89.460	10990.00	490.98	4.63	490.96	786938.14	587049.63	0.00	
11499.00†	90.000	89.460	10990.00	590.98	5.57	590.95	787038.14	587050.57	0.00	
11599.00†	90.000	89.460	10990.00	690.98	6.51	690.95	787138.13	587051.51	0.00	
11699.00†	90.000	89.460	10990.00	790.98	7.46	790.94	787238.12	587052.45	0.00	
11799.00†	90.000	89.460	10990.00	890.98	8.40	890.94	787338.12	587053.40	0.00	
11899.00†	90.000	89.460	10990.00	990.98	9.34	990.93	787438.11	587054.34	0.00	
11999.00†	90.000	89.460	10990.00	1090.98	10.28	1090.93	787538.10	587055.28	0.00	
12099.00†	90.000	89.460	10990.00	1190.98	11.23	1190.93	787638.10	587056.22	0.00	
12199.00†	90.000	89.460	10990.00	1290.98	12.17	1290.92	787738.09	587057.17	0.00	
12299.00†	90.000	89.460	10990.00	1390.98	13.11	1390.92	787838.08	587058.11	0.00	
12399.00†	90.000	89.460	10990.00	1490.98	14.05	1490.91	787938.08	587059.05	0.00	
12499.00†	90.000	89.460	10990.00	1590.98	15.00	1590.91	788038.07	587059.99	0.00	
12599.00†	90.000	89.460	10990.00	1690.98	15.94	1690.90	788138.06	587060.94	0.00	
12699.00†	90.000	89.460	10990.00	1790.98	16.88	1790.90	788238.06	587061.88	0.00	
12799.00†	90.000	89.460	10990.00	1890.98	17.82	1890.89	788338.05	587062.82	0.00	
12899.00†	90.000	89.460	10990.00	1990.98	18.77	1990.89	788438.04	587063.76	0.00	
12999.00†	90.000	89.460	10990.00	2090.98	19.71	2090.89	788538.03	587064.70	0.00	
13099.00†	90.000	89.460	10990.00	2190.98	20.65	2190.88	788638.03	587065.65	0.00	
13199.00†	90.000	89.460	10990.00	2290.98	21.59	2290.88	788738.02	587066.59	0.00	
13299.00†	90.000	89.460	10990.00	2390.98	22.54	2390.87	788838.01	587067.53	0.00	
13399.00†	90.000	89.460	10990.00	2490.98	23.48	2490.87	788938.01	587068.48	0.00	
13499.00†	90.000	89.460	10990.00	2590.98	24.42	2590.86	789038.00	587069.42	0.00	

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Facility	Mallon 35 Fed No. 4H		

## WELLPATH DATA (46 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]	DLS [°/100ft]	Comments
13599.00†	90.000	89.460	10990.00	2690.98	25.36	2690.86	789137.99	587070.36	0.00	
13699.00†	90.000	89.460	10990.00	2790.98	26.31	2790.85	789237.99	587071.30	0.00	
13799.00†	90.000	89.460	10990.00	2890.98	27.25	2890.85	789337.98	587072.25	0.00	
13899.00†	90.000	89.460	10990.00	2990.98	28.19	2990.85	789437.97	587073.19	0.00	
13999.00†	90.000	89.460	10990.00	3090.98	29.13	3090.84	789537.97	587074.13	0.00	
14099.00†	90.000	89.460	10990.00	3190.98	30.08	3190.84	789637.96	587075.07	0.00	
14199.00†	90.000	89.460	10990.00	3290.98	31.02	3290.83	789737.95	587076.02	0.00	
14299.00†	90.000	89.460	10990.00	3390.98	31.96	3390.83	789837.95	587076.96	0.00	
14399.00†	90.000	89.460	10990.00	3490.98	32.90	3490.82	789937.94	587077.90	0.00	
14499.00†	90.000	89.460	10990.00	3590.98	33.85	3590.82	790037.93	587078.84	0.00	
14599.00†	90.000	89.460	10990.00	3690.98	34.79	3690.81	790137.93	587079.79	0.00	
14699.00†	90.000	89.460	10990.00	3790.98	35.73	3790.81	790237.92	587080.73	0.00	
14799.00†	90.000	89.460	10990.00	3890.98	36.67	3890.81	790337.91	587081.67	0.00	
14899.00†	90.000	89.460	10990.00	3990.98	37.62	3990.80	790437.90	587082.61	0.00	
14999.00†	90.000	89.460	10990.00	4090.98	38.56	4090.80	790537.90	587083.56	0.00	
15017.76	90.000	89.460	10990.00†	4109.73	38.73	4109.55	790556.65	587083.73	0.00	No. 4H PBHL

# Planned Wellpath Report

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Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Lea County, NM	Well	No. 4H
Field	(Mallon) Sec 35, T19S, R34E	Wellbore	No. 4H PWB
Facility	Mallon 35 Fed No. 4H		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Sha <sub>t</sub> point
1) No. 4H PBHL	15017.76	10990.00	58.73	4109.55	790556.65	587083.73	32°36'40.812"N	103°31'26.273"W	

SURVEY PROGRAM Ref Wellbore: No. 4H PWB Ref Wellpath: Prelim_2			
Start MD [ft]	End MD [ft]	Log Name/Comment	Wellbore
0.00	15017.76	Navitrak (Standard) Positional Uncertainty Model	No. 4H PWB