Assessment of the Availability Of Natural Gas in The Northern Rocky Mountain Area of Colorado, Utah and Wyoming

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I. INTRODUCTION

Edward H. Feinstein has prepared this report on conventional natural gas supplies of the Northern Rocky Mountain Area. In this report, specific reviews were made of the history, gas production, estimates of proven reserves and estimates of undiscovered resources.

The principal purpose of this report is to present estimates of the availability or productive capability of natural gas in certain regions of the Rocky Mountain Area. An assessment of the unconventional resource, coal-bed methane is also included in this report. Forecasts of the area-wide natural gas productive capability were based upon estimates of proven reserves, discovery process estimates of reserve additions, pipeline connection parameters, and deliverability profiles. Discovery process is the relationship between the efforts (drilling) and the potential for natural gas discoveries.

II. SUMMARY AND CONCLUSIONS

The gas supply regions of the Northern Rocky Mountain Area are in both an intermediate and mature stage of development. The assessment of gas supply herein is based on three ingredients: remaining reserves, reserves appreciation, and undiscovered resources. Remaining reserves are the proved and economically producible gas discoveries. Reserves appreciation are resources believed to exist that are directly related to reserves already discovered. Undiscovered resources are estimated gas accumulations that are believed to exist, but have not yet been proven by drilling.

The productive capacities of proven gas reserves of each producing region of the Rocky Mountain Area vary considerably. Reserves-to-production

ratios in each area presently are at their lowest level, reflecting only modest surplus pipeline gas.

Estimates of future annual gas discoveries were made employing a discovery - process model as described below. Productive capacity decline rates were applied to determine the availability of gas from new supply sources.

The availability of supplies from future sources was added to the availability of current proven sources to arrive at the overall productive capability of natural gas supplies from the various Rocky Mountain areas. These supply areas are currently reliable, active and viable in providing adequate throughput for the network of pipelines connected to them. In the long-term, however, the current grade of natural gas accumulations will be exhausted, giving way to the discovery of smaller deposits. The result will be a gradual decline in the productive capability from existing and future connected supply sources.

III. BACKGROUND – NORTHERN ROCKY MOUNTAIN AREA

The Northern Rocky Mountain area is made up of the states of Colorado, Utah, Wyoming, Montana and North Dakota. The Rocky Mountain area of Colorado, Utah and Wyoming is one of only two oil and gas provinces in North America that have been growing in gas production over the past 10 years. Although relatively small, productive areas of Montana and North Dakota, while not in a growth stage, presently remain in a constant state of gas discoveries and production. The Rocky Mountain region will continue to grow in gas production for 10 more years. The Rocky Mountain area is a large, gas prone, geologically heterogeneous area that contains numerous gas productive basins. Numerous

oil and gas prone formations and prospective reservoirs are present. Productive reservoirs include carbonates (limestone) and sandstones with all types of porosity and permeability as well as naturally fractured reservoirs and coalbed methane reservoirs. The Potential Gas Committee (PGC) has estimated (2004) potential gas resources of 123 Tcf.

A challenge for certain gas resources in the region is to exploit technically available gas in locations where reserves are characterized by "tight" matrix porosity and permeability, naturally fractured reservoirs and coalbed methane and make them economically recoverable resources.

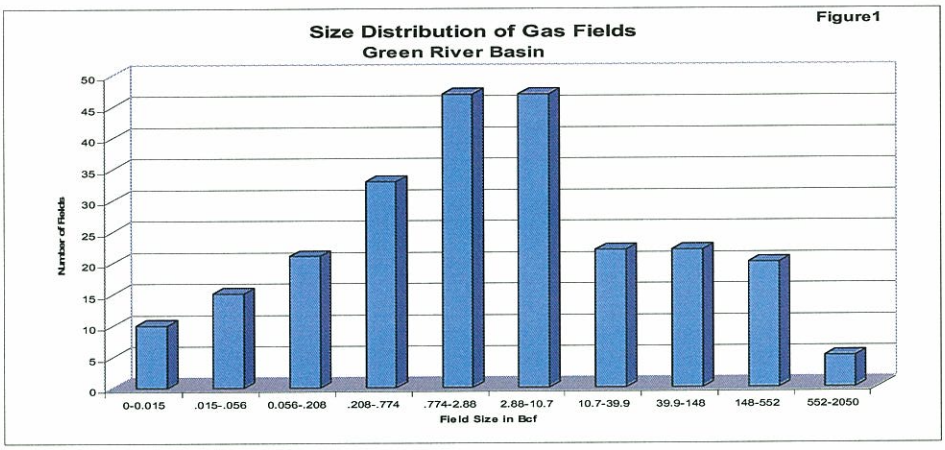
IV. METHODOLOGY

Proven Reserves

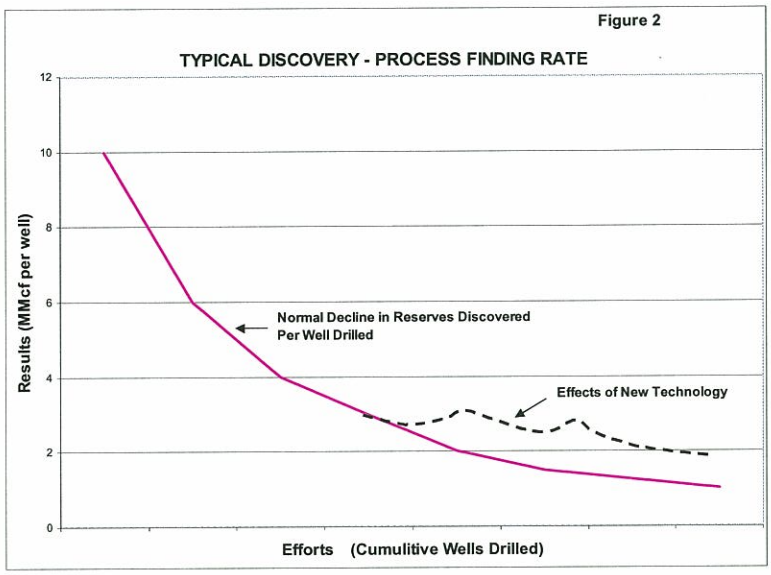
An analysis of the producibility of proven gas reserves was made using information obtained from the Energy Information Administration (EIA) and the Potential Gas Committee (PGC). EIA's proven reserves are as of the end of 2004. The productive availability of those proven reserves was obtained from data assembled by the (PGC) and extrapolated employing a constant percentage decline until the reserves are exhausted. The proven gas reserves were obtained from EIA, which in turn collected the data from producers. The PGC provided the production rate of those reserves.

Future Reserve Additions

A characteristic observed in the petroleum producing areas of the Northern Rocky Mountain Area is a rapid drop off in size from the largest known field to the smaller ones. Hydrocarbon accumulations are the result of complex geological processes. Furthermore, the actual quantities of producible reserves are further defined on the basis of technological and economic considerations. As a consequence of all these independent influences and the multiplicative nature of the factors affecting the size of a gas accumulation, field sizes in producing basins are typically log normally distributed (Figure 1).



That is, a few very large fields contain the bulk of the reserves and many, many small fields contain, in aggregate, a smaller portion of the reserves. Also, another characteristic of gas supply basins is that large fields are discovered early in the exploration process, and subsequent discoveries are smaller and the product of increasingly greater efforts. This is demonstrated in illustrative form in Figure 2, below.



Since some of the basins in the Rocky Mountain Area, unlike other producing regions, contains both mature and intermediate supply regions, perhaps some large field discoveries remain undiscovered and will become available for exploitation and some portion of resource estimates may prove to have been too optimistic.

The Finding Rate Methodology

One measure of the discoverability of resources is the rate at which resources are found. This method compares the drilling footage in a particular year with the related discoveries. This method depicts the normal stage of events that take place when a gas-bearing province graduates past its initial discovery stage and enters its more or less mature stage. The degree of maturity of the producing life of the supply areas can be determined by

comparing the amount of gas resources already discovered with an estimate of the ultimate resources.

The nature of oil and gas accumulations creates a distribution of fields and reservoirs made up of a small number of large fields, a larger number of medium size fields, and a seemingly unending amount of small fields. The Rocky Mountain Area is no exception. An example of the distribution of gas reserves in the a portion of the Rocky Mountain Area referred to as the Greater Green River Basin is shown on Figure 1. This is typical of the exploratory events of an oil and gas province.

The basic concept of this Finding Rate Methodology is shown on Figure 2. At times, the declining rate of effectiveness is mitigated by: better technologies for discovery and resource recovery, greater understanding of the geophysics, and reservoir performance of the field in the province. This mitigation is also shown on Figure 2.

Advances in technology are, however, a double-edged sword with respect to extending the life of gas resources and ultimately the life of associated producing equipment and pipeline facilities. Exploration and production (E&P) technology varies throughout the industry, from increasing the success ratio in exploration to more efficient production techniques. While some advances in technology may allow the commercialization of heretofore unproduceable hydrocarbon deposits, most others relate to the profitability of technically discoverable oil and gas resources. For example, four causes for the accelerated production of a given gas resource in the Rocky Mountain area and

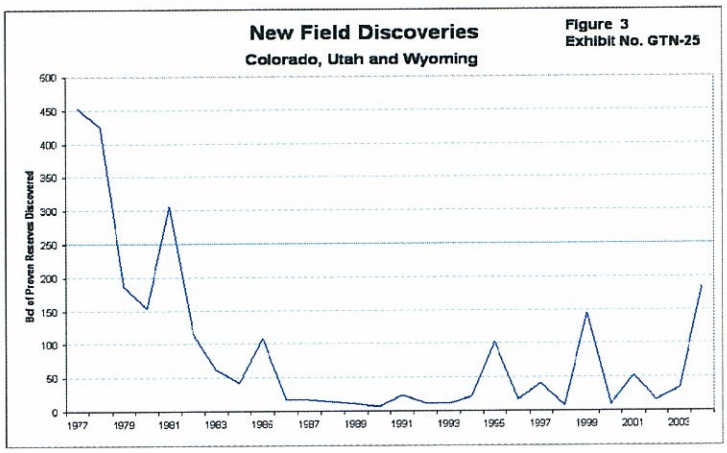
to a certain extent, the accelerating decline rates in various regions, relate to technology. They are:

- 3-D seismic
- Horizontal wells
- Efficient completion techniques
- General miscellaneous technology

An example of the effect of new geophysical technology (*e.g.* 3-D seismic) on E&P is basically an improvement in the exploration success ratio. With advances in geophysical technology, producers are better able to locate oil and gas deposits and also to determine whether they should be explored or bypassed as a viable project.

Technology advances do not come cheap. Its application must be in terms of the potential value of the resource. This assessment takes into account technology, in that the forecasts were based upon the employment of various trends, which included advances in technology.

I first determined if the supply areas paralleled the premise of this model (that large initial field discoveries give way to smaller ones). In addition to the field size facts cited earlier, further analysis confirmed that indeed most of the larger fields have been discovered as well as many of the medium size fields. This can be observed by inspecting the relationship between the new fields discovered and the exploratory efforts as shown on Figure 3, below.



This can also be seen by analysis of the finding rate methodology in terms of exploratory effort. Most of the significant gas discoveries are actually associated with fields previously discovered. *See* the historical data shown on Tables 1 and 2, and Figures 4, 5, 6 and 7. The exploratory effort is the accumulation of wells drilled over time. The above finding rate data is a 5-year snapshot of a long trend from higher levels of how effective exploration and development was in prior years. I observed both exploratory wells and development wells. Development wells do not reflect the effort to find new discoveries. However, they contribute significantly to the reserve base. "Results" (in terms of annual gas discoveries) of the historical drilling effort are also shown on Tables 1 and 2 for the Northern Rocky Mountain areas.

When these "results" or annual gas discoveries are divided by the annual exploratory wells drilled, a more focused relationship develops as to the size of the discovery for the effort expended. This confirms that the large fields have

already been discovered and that new discoveries are going to be generally confined to a considerably more moderate size.

This concept of discoveries per well drilled is referred to by the EIA as the Finding Rate Methodology. The Finding Rate Methodology began in the late 1950s and early 1960s and continues to be used today. The famous oil and gas forecaster, M. King Hubbert developed various aspects of it and used it in his presentations and forecasts. The renowned petroleum engineer and recipient of the C. C. Uren Award from the Society of Petroleum Engineers, J.J Arps also developed the Finding Rate Methodology in the early 1960s, referring to it as the Effectiveness of Exploration. The methodology was, and continues to be, employed widely by those forecasting oil and gas resources. I employed the methodology in 1973 in various proceedings at the FPC and the FERC and continue to do so. The EIA exclusively uses the Finding Rate Methodology to forecast long-range oil and gas discoveries in its state-of-the art Annual Energy Outlook publication.

The model used the relationship between annual reserve additions and both exploratory and development well drilling over time in years and cumulative feet drilled from a base of 1990. For the most likely case, I extrapolated the exploratory finding rate at a constant level using the 5-year mean value developed in Tables 1 and 2 and employed in Tables 3, 4 and 5 until 90 percent of the total endowment is reached. The total endowment is defined as all the gas that will eventually be discovered (past discoveries plus the PGC's estimates of

potential resources). PGC's estimates of potential gas resources are shown on Table 7.

Table 7
Exhibit No. GTN-25

ULTIMATE REMAINING GAS RESOURCES

Volumes in Trillion Cubic Feet

		Rocky Mountain Area Colo, Utah and Wyo
1	Cumulative Production to 12/31/1988	23.96
2	Incremental Production 1989 to 12/31/2004	27.961
3	Remaining Proved Reserves at 12/31/2004	38.55
4	Potential Gas Resources Estimated at 12/31/2004 Wet	114.86
	Potential Gas Resources Estimated at 12/31/2004 Dry Marketable	111.41
5	Ultimate Estimated Resources (12/31/2004)	201.88
6	Gas Discoveries to 12/31/2004	90.47
7	Percent Remaining to be Discovered	55.19

Table 8 shows the total endowment as of 2004 for the gas provinces of Colorado, Utah and Wyoming.

Table 8
Exhibit No. GTN-25

Estimate of Potential Gas Resources
As of End of 2004
Volumes in Bcf

Producing Province	Resource Estimate						Total Resource Estimate
	Growth in Reserves			New Fields			
	0-15,000 Feet	15,000-30,000 Ft	CBM	0-15,000 Feet	15,000-30,000 Ft	CBM	
Powder River Basin	1,435	-	6,672	2,153	-	20,015	30,275
Big Horn Basin	657	170	-	515	616	25	1,983
Wind River Basin	3,457	1,527	-	6,180	3,401	50	14,615
Greater Green River Basin	10,124	822	-	8,701	1,172	375	21,194
Denver Basin and Environs	1,479	-	-	1,070	-	-	2,549
Uinta/Piceance Basin and Environs	19,222		133	17,982	989	4,115	42,441
Thrust Belt	800	-	-	1,000	-	-	1,800
Total Colorado, Utah and Wyoming	37,174	2,519	6,805	37,601	6,178	24,580	114,857
Williston Basin	846			2,058	98		3,002
Sweetgrass Arch	504			1,096			1,600
Montana Folded Belt				4,000			4,000
Total Montana and North Dakota	1,350			7,154	98		8,602

Source: Potential Gas Committee

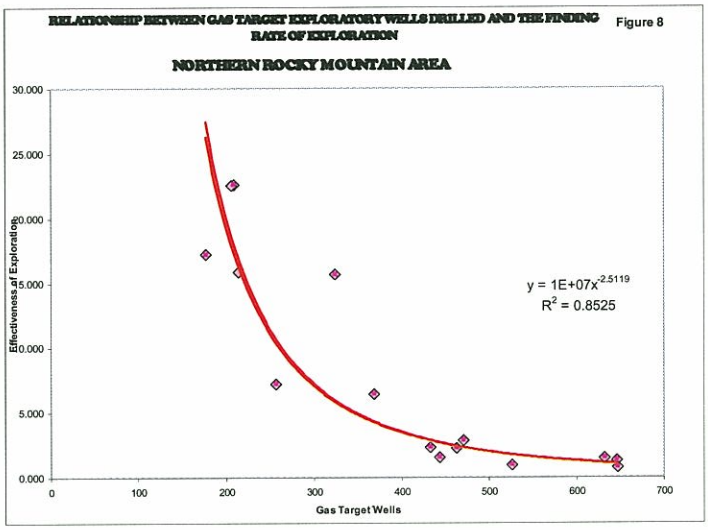
Note: CBM - Coalbed Methane

I used the same procedure for the finding rate of development drilling.

The most likely level represents the mean value of the finding rate from 2000 through 2004.

I employed a constant level of effectiveness until 90 percent of the ultimate resources are discovered as I expect some occasional increases in the finding rate due to forces not directly indicated in the data. As mentioned earlier, any decline in the finding rate curve will be mitigated by technological increases in the exploration and drilling techniques along with an increased awareness of the geophysics and reservoir mechanics. Technological increases are included in the 1990-2004 data. I am assuming that future technological increases will occur at the same rate as in the historical statistics. I found, in some cases unsurprisingly, that as drilling exceeds certain levels, the finding rate declines. This is due most likely to the drilling of lower grade prospects in a particular year. *See* Figures 4 and 5 for the number of wells drilled each year and Figures 8 and

9 for the relationship between the number of wells drilled in a particular year and its corresponding finding rate. The relationship between exploratory gas target wells and the finding rate is shown below in Figure 8.

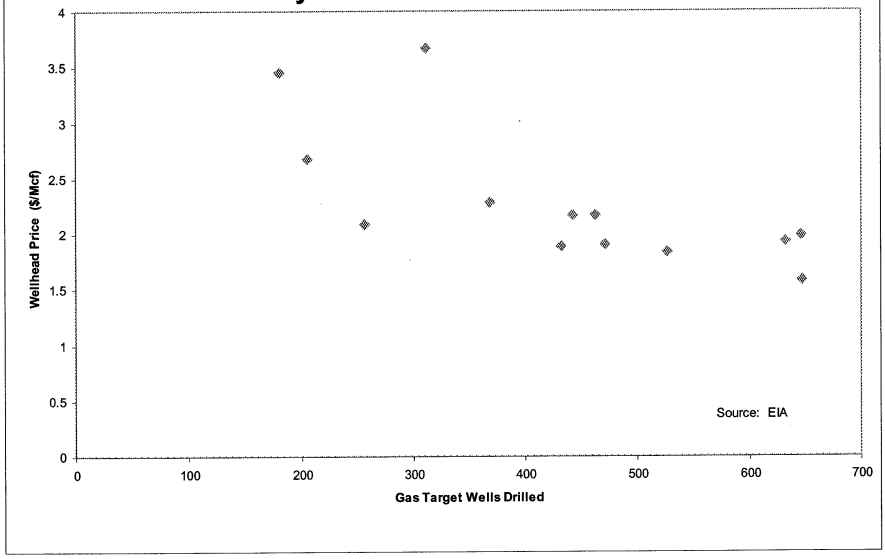


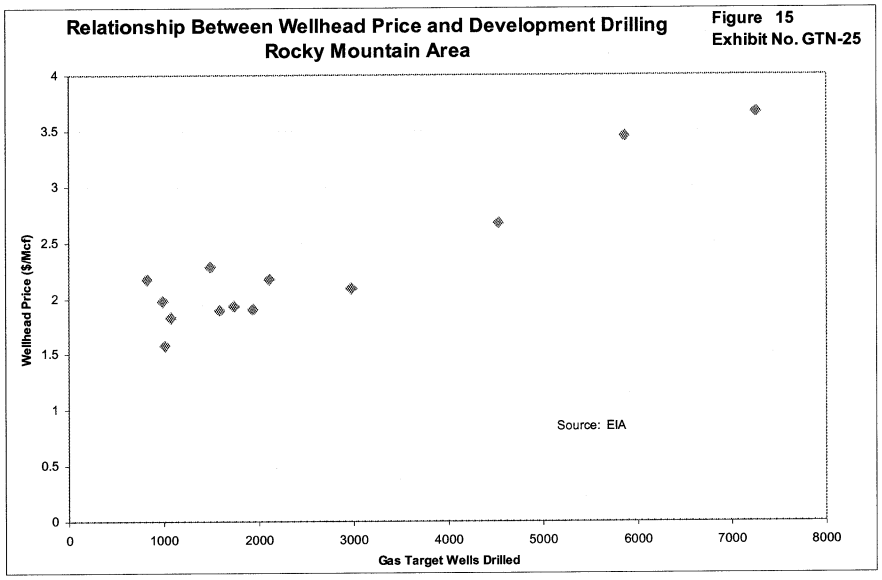
I determined the future discoveries from exploratory drilling by applying a representative constant level of drilling activity to the corresponding finding rate. For my determination of the discoveries from development drilling, I also applied a constant level of annual drilling activity, based upon the most recent 5-year period, to reflect the development drilling activity response to increases in the wellhead price of gas. This period included very significant increases in the price of gas at the wellhead and only one modest decrease. I believe that, in the future, such similar increases and decreases will occur eventually leading to a further overall price increase. My choice of exploratory and development drilling levels fully reflects an overall average price increase over the pertinent period, all the while daily, monthly, and yearly prices will fluctuate both up and down. Specifically, based on my experience and studies, I found a relationship to exist between the price of gas at the wellhead and development drilling effort. No

such clear relationship occurs for exploratory drilling as drilling prospects differ considerably in many respects as well as inherent risk factors. As such, many factors come into play with respect to the exploratory drilling response. While an increase in wellhead gas prices is an inducement to increase exploratory drilling efforts, the fact is that for the producing areas involved in this proceeding, there is no clear and concise relationship between wellhead price and the number of exploratory wells drilled. The graphs shown on Figures 14 and 15, of wellhead gas price and drilling effort, illustrate this point.

Relationship Between Wellhead Price and Exploratory Drilling Rocky Mountain Area

Figure 14
Exhibit No. GTN-25





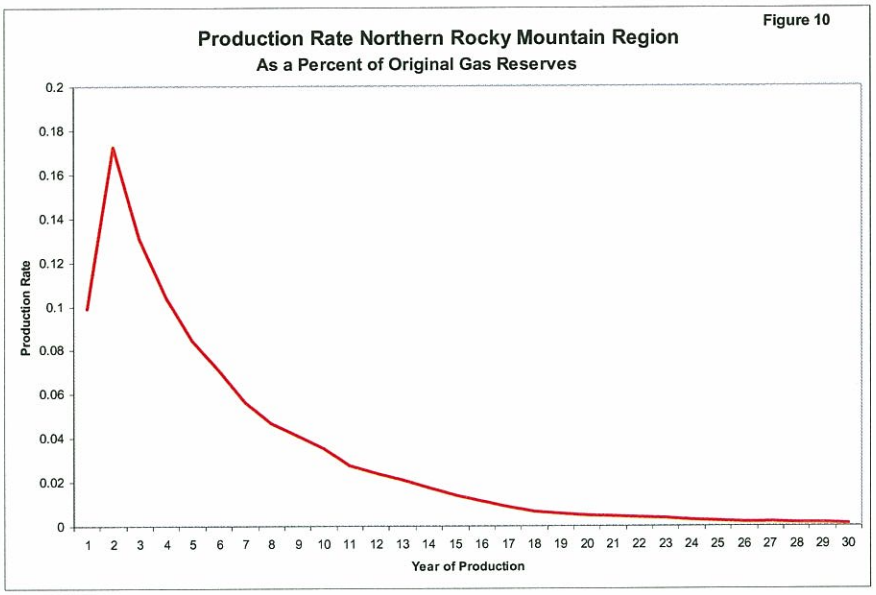
Exploratory wells differ considerably from development wells in the Rocky Mountain area. Exploratory wells are relatively high risk. They are drilled relatively far from existing discoveries. They are high cost. Existing, in-place pipeline facilities may be lacking. They must rely upon financing much different from development wells, *e.g.*, the expenditure of money for geological and geophysical studies. Many factors affect the decision to drill exploratory wells, including, but not exclusively, the prevailing wellhead price.

With respect to development wells and price, the annual relationship between them is not sufficient to forecast future drilling efforts. Instead, I employed high values of such efforts in my calculations. The Most Likely Case level of wells drilled and footage attained was based on an average value for the 2000-2004 period.

The Future Discoveries resulting from the application of the drilling effort to the effectiveness of drilling are shown on Table 3 for exploratory discoveries and Table 4 for development discoveries

To determine the future gas availability, I applied to each determined annual future reserve addition, a productive capacity rate derived by the Potential Gas Committee from data obtained from Petroleum Information/Dwights LLG data base (See Figure 10).

Figure 10

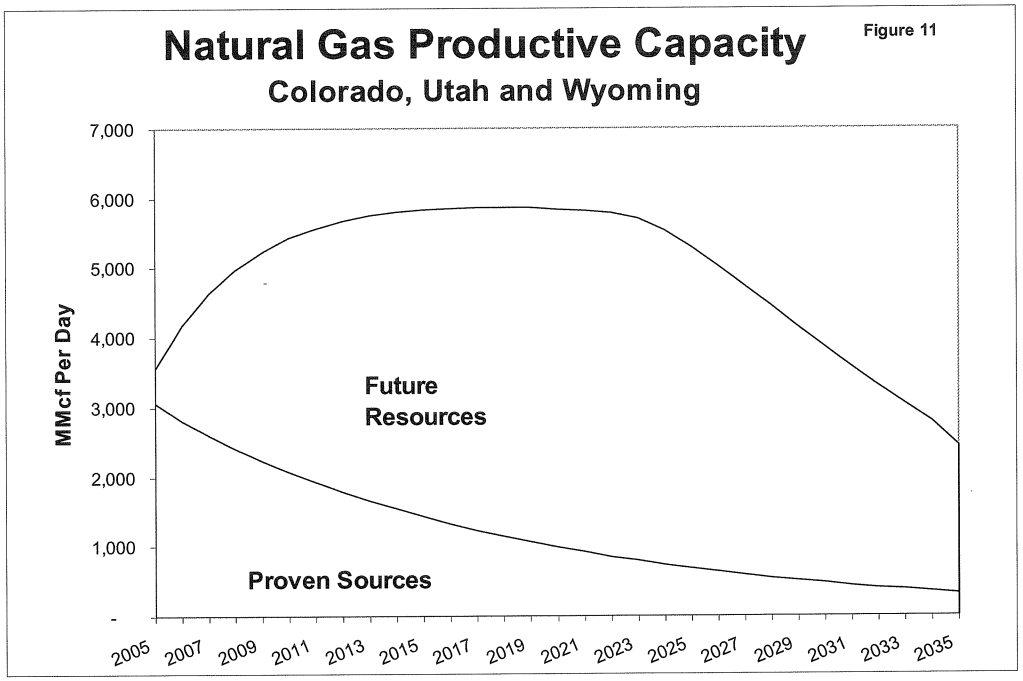


This results in the production capacity from new reserves beginning in 2004.

To the production profile of future reserves, I added the production profile for the beginning of year 2004 proven gas reserves. This is shown on Table 6.

V. DETERMINATION AND RESULTS -- NORTHERN ROCKY MOUNTAIN AREA

The Northern Rocky Mountain area that I analyzed occupies the states of Wyoming, Utah and Colorado. This is one of the major oil and gas producing regions of the United States. Gas production will come from mostly non-associated gas reservoirs and coal-bed methane deposits. New field discoveries are expected to be found in deposits ranging from 1 to 200 Bcf, with most in the 2 to 20 Bcf range. The profile of the future productive capacity from this area is graphically illustrated on Figure 11, shown below.



TABLES
TO THE
ASSESSMENT OF GAS SUPPLY

Success Ratio and Effectiveness of Drilling
Exploratory Wells
Rocky Mountain Area
Colorado, Utah and Wyoming

Year	Wells Drilled				Success Ratio	Gas Target Wells	Gas Target Footage	Gas Target Wells as a % of Total	Discoveries		Finding Rate	Cumulative Exploratory Wells	Finding Rate	Exploratory Wells Drilled	Cumulative Exploratory Footage
	Oil	Gas	Dry	Total					Total Bcf	Per Gas Compl. Bcf/Well					
							1,000 Ft								
1990	112	332	420	864	0.514	646	1,982	74.77	835	2.52	1.292	646	1.292	646	1,982
1991	62	264	324	650	0.502	526	1,642	80.98	513	1.94	0.975	1,172	0.975	526	3,624
1992	47	182	315	544	0.421	432	1,329	79.48	993	5.46	2.297	1,605	2.297	432	4,954
1993	30	224	270	524	0.485	462	1,566	88.19	1,046	4.67	2.264	2,067	2.264	462	6,519
1994	37	437	212	686	0.691	632	1,447	92.19	960	2.20	1.518	2,699	1.518	632	7,966
1995	36	450	213	699	0.695	647	1,545	92.59	508	1.13	0.785	3,347	0.785	647	9,511
1996	38	279	186	503	0.630	443	1,287	88.01	688	2.47	1.554	3,789	1.554	443	10,798
1997	40	195	209	444	0.529	368	1,431	82.98	2,377	12.19	6.452	4,158	6.452	368	12,229
1998	40	294	201	535	0.624	471	1,901	88.02	1,352	4.60	2.871	4,629	2.871	471	14,131
1999	39	156	126	321	0.607	257	1,630	80.00	1,855	11.89	7.224	4,885	7.224	257	15,760
2000	27	84	123	234	0.474	177	1,285	75.68	3,051	36.32	17.229	5,063	17.229	177	17,045
2001	34	164	193	391	0.506	324	2,306	82.83	5,076	30.95	15.674	5,386	15.674	324	19,351
2002	18	128	93	239	0.611	210	1,464	87.67	4,735	36.99	22.598	5,596	22.598	210	20,815
2003	25	123	110	258	0.574	214	1,473	83.11	3402	27.66	15.866	5,810	15.866	214	22,288
2004	13	127	88	228	0.614	207	1,438	90.71	4669	36.76	22.574	6,017	22.574	207	23,727
						226	1670				18.788				

Success Ratio and Effectiveness of Drilling
Development
Rocky Mountain Area
Colorado, Utah and Wyoming

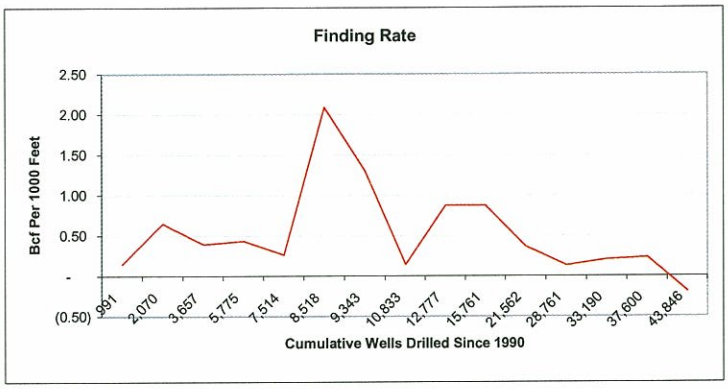
Year	Wells Drilled				Success Ratio	Gas Target Wells	Gas Target Footage	Gas Target Wells as a % of Total	Discoveries		Finding Rate	Finding Rate Per Well Drilled	Cumulative Development Wells	Finding Rate	Gas Target Wells	Cumulative Development Footage
	Oil	Gas	Dry	Total					Total Bcf	Per Gas Compl. Bcf/Well						
							1,000 Ft									
1990	409	866	184	1,459	0.874	991	5,068	67.92	150	0.17	0.151	0.000153	991	0.151	991	5,068
1991	320	943	182	1,445	0.874	1,079	5,654	74.66	701	0.74	0.650	0.000602	2,070	0.650	1,079	10,722
1992	263	1,468	140	1,871	0.925	1,587	8,800	84.81	632	0.43	0.398	0.000251	3,657	0.398	1,587	19,522
1993	324	2,018	117	2,459	0.952	2,119	12,671	86.17	927	0.46	0.438	0.000206	5,775	0.438	2,119	32,193
1994	257	1,619	138	2,014	0.931	1,738	10,933	86.30	459	0.28	0.264	0.000152	7,514	0.264	1,738	43,126
1995	310	909	128	1,347	0.905	1,004	6,314	74.57	2,101	2.31	2.092	0.002082	8,518	2.092	1,004	49,440
1996	325	723	148	1,196	0.876	825	5,112	68.99	1,074	1.49	1.302	0.001578	9,343	1.302	825	54,552
1997	434	1,326	217	1,977	0.890	1,489	9,254	75.34	215	0.16	0.144	0.000097	10,833	0.144	1,489	63,806
1998	335	1,831	134	2,300	0.942	1,944	12,045	84.53	1,699	0.93	0.874	0.005121	12,777	0.874	1,944	75,851
1999	100	2,879	109	3,088	0.965	2,984	14,541	96.64	2,607	0.91	0.874	0.010090	15,761	0.874	2,984	90,393
2000	275	5,670	137	6,082	0.977	5,801	27,817	95.37	2,118	0.37	0.365	0.019578	21,562	0.365	5,801	118,210
2001	169	7,054	149	7,372	0.980	7,200	35,702	97.66	940	0.13	0.131	0.000018	28,761	0.131	7,200	153,912
2002	202	4,308	126	4,636	0.973	4,428	23,891	95.52	918	0.21	0.207	0.000047	33,190	0.207	4,428	177,804
2003	374	4,307	112	4,793	0.977	4,410	25,260	92.01	1017	0.24	0.231	0.000052	37,600	0.231	4,410	203,063
2004	233	6,125	126	6,484	0.981	6,246	38,224	96.34	-1198	-0.20	-0.192	(0.000031)	43,846	-0.192	6,246	241,287
						5,617	30,179				0.148					

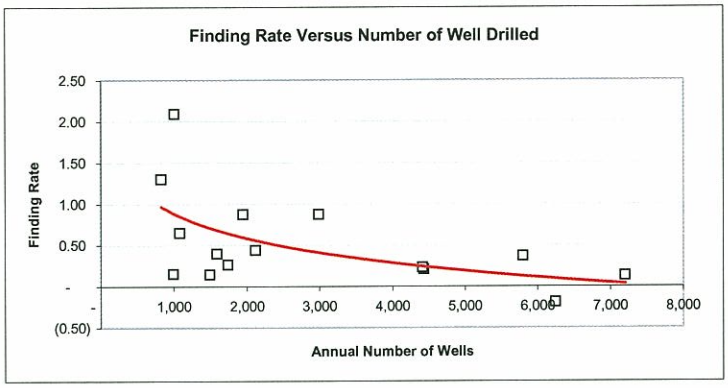
DETERMINATION OF NEW RESERVE ADDITIONS
ROCKY MOUNTAIN AREA
Colorado, Utah and Wyoming
EXPLORATORY

Year	Wells Drilled	Cumulative Wells	Finding Rate	Reserve Additions
	1,000	1,000	Bcf/1,000 Feet	Bcf
1990	646	646	1.29	835
1991	526	1,172	0.97	513
1992	432	1,605	2.30	993
1993	462	2,067	2.26	1,046
1994	632	2,699	1.52	960
1995	647	3,347	0.78	508
1996	443	3,789	1.55	688
1997	368	4,158	6.45	2,377
1998	471	4,629	2.87	1,352
1999	257	4,885	7.22	1,855
2000	177	5,063	17.23	3,051
2001	324	5,386	15.67	5,076
2002	210	5,596	22.60	4,735
2003	214	5,810	15.87	3,402
2004	207	6,017	22.57	4,669
2005	226	6,243	18.79	4,253
2006	226	6,470	18.79	4,253
2007	226	6,696	18.79	4,253
2008	226	6,923	18.79	4,253
2009	226	7,149	18.79	4,253
2010	226	7,375	18.79	4,253
2011	226	7,602	18.79	4,253
2012	226	7,828	18.79	4,253
2013	226	8,054	18.79	4,253
2014	226	8,281	18.79	4,253
2015	226	8,507	18.79	4,253
2016	226	8,733	18.79	4,253
2017	226	8,960	18.79	4,253
2018	226	9,186	18.79	4,253
2019	226	9,412	18.79	4,253
2020	226	9,639	18.79	4,253
2021	226	9,865	18.79	4,253
2022	226	10,091	18.79	4,253
2023	226	10,318	16.91	3,827
2024	226	10,544	15.22	3,445
2025	226	10,770	13.70	3,100
2026	226	10,997	12.33	2,790
2027	226	11,223	11.09	2,511
2028	226	11,449	9.98	2,260
2029	226	11,676	8.99	2,034
2030	226	11,902	8.09	1,831
2031	226	12,128	7.28	1,648
2032	226	12,355	6.55	1,483
2033	226	12,581	5.90	1,335
2034	226	12,807	5.31	1,201
2035	226	13,034	4.78	1,081
				105,092

DETERMINATION OF NEW RESERVE ADDITIONS
ROCKY MOUNTAIN AREA
Colorado, Utah and Wyoming
DEVELOPMENT

Year	Wells Drilled	Cumulative Wells	Finding Rate	Reserve Additions
	1,000	1,000	Bcf/1,000 Feet	Bcf
1990	991	991	0.15	150
1991	1,079	2,070	0.65	701
1992	1,587	3,657	0.40	632
1993	2,119	5,775	0.44	927
1994	1,738	7,514	0.26	459
1995	1,004	8,518	2.09	2,101
1996	825	9,343	1.30	1,074
1997	1,489	10,833	0.14	215
1998	1,944	12,777	0.87	1,699
1999	2,984	15,761	0.87	2,607
2000	5,801	21,562	0.37	2,118
2001	7,200	28,761	0.13	940
2002	4,428	33,190	0.21	918
2003	4,410	37,600	0.23	1,017
2004	6,246	43,846	(0.19)	(1,198)
2005	5,617	49,463	0.15	833
2006	5,617	55,080	0.15	833
2007	5,617	60,697	0.15	833
2008	5,617	66,314	0.15	833
2009	5,617	71,931	0.15	833
2010	5,617	77,548	0.15	833
2011	5,617	83,165	0.15	833
2012	5,617	88,782	0.15	833
2013	5,617	94,399	0.15	833
2014	5,617	100,016	0.15	833
2015	5,617	105,633	0.15	833
2016	5,617	111,250	0.15	833
2017	5,617	116,867	0.15	833
2018	5,617	122,484	0.15	833
2019	5,617	128,101	0.15	833
2020	5,617	133,718	0.15	833
2021	5,617	139,335	0.15	833
2022	5,617	144,952	0.15	833
2023	5,617	150,569	0.13	750
2024	5,617	156,186	0.12	675
2025	5,617	161,803	0.11	608
2026	5,617	167,420	0.10	547
2027	5,617	173,037	0.09	492
2028	5,617	178,654	0.08	443
2029	5,617	184,271	0.07	399
2030	5,617	189,888	0.06	359
2031	5,617	195,505	0.06	323
2032	5,617	201,122	0.05	291
2033	5,617	206,739	0.05	262
2034	5,617	212,356	0.04	235
2035	5,617	217,973	0.04	212
				20,594





DETERMINATION OF NEW RESERVE ADDITIONS
ROCKY MOUNTAIN AREA

Colorado, Utah and Wyoming

Volumes in Bcf

Year	New Exploratory Additions	New Development Additions	New Total Additions	Accumulated Ultimate Reserves	Percent of Ultimate Resources
					-
2000	3,051	2,118	5,169		-
2001	5,076	940	6,016		-
2002	4,735	918	5,653		-
2003	3,402	1,017	4,419		-
2004	4,669	(1,198)	3,471	93,161	44.8
2005	4,253	833	5,086	98,247	47.2
2006	4,253	833	5,086	103,333	49.7
2007	4,253	833	5,086	108,419	52.1
2008	4,253	833	5,086	113,505	54.6
2009	4,253	833	5,086	118,591	57.0
2010	4,253	833	5,086	123,677	59.5
2011	4,253	833	5,086	128,763	61.9
2012	4,253	833	5,086	133,849	64.3
2013	4,253	833	5,086	138,935	66.8
2014	4,253	833	5,086	144,021	69.2
2015	4,253	833	5,086	149,107	71.7
2016	4,253	833	5,086	154,192	74.1
2017	4,253	833	5,086	159,278	76.6
2018	4,253	833	5,086	164,364	79.0
2019	4,253	833	5,086	169,450	81.5
2020	4,253	833	5,086	174,536	83.9
2021	4,253	833	5,086	179,622	86.3
2022	4,253	833	5,086	184,708	88.8
2023	3,827	750	4,577	189,286	91.0
2024	3,445	675	4,120	193,405	93.0
2025	3,100	608	3,708	197,113	94.8
2026	2,790	547	3,337	200,450	96.4
2027	2,511	492	3,003	203,453	97.8
2028	2,260	443	2,703	206,156	99.1
2029	2,034	399	2,433	208,588	100.3
2030	1,831	359	2,189	210,778	101.3
2031	1,648	323	1,970	212,748	102.3
2032	1,483	291	1,773	214,522	103.1
2033	1,335	262	1,596	216,118	103.9
2034	1,201	235	1,436	217,554	104.6
	104,011	20,382	129,251		

Cumulative Prod to 12/31/2002	46,188
Production 2002 - 2004	5,732
Remaining Reserves at 12/31/2004	41,241
Ultimate Reserves at 12/31/2004	93,161
PGC Potential Resources at 2004 Wet	114,857
PGC Potential Resources at 2004 Dry Marketable	110,263
Ultimate Resources at 12/31/2004	208,018

PRODUCTIVE CAPACITY
ROCKY MOUNTAIN AREA

Colorado, Utah and Wyoming

Year	Productive Availability of 2004 Reserves	Productive Availability of Future Reserves	Productive Availability	
			Total	Total
	Bcf/Year	Bcf/Year	Bcf/Year	Bcf / Day
2005	3,056	503	3,559	9.8
2006	2,802	1,380	4,182	11.5
2007	2,597	2,045	4,642	12.7
2008	2,407	2,573	4,980	13.6
2009	2,235	3,001	5,236	14.3
2010	2,075	3,360	5,435	14.9
2011	1,926	3,646	5,573	15.3
2012	1,789	3,884	5,672	15.5
2013	1,661	4,091	5,752	15.8
2014	1,542	4,270	5,811	15.9
2015	1,431	4,409	5,840	16.0
2016	1,329	4,531	5,860	16.1
2017	1,234	4,638	5,872	16.1
2018	1,146	4,727	5,873	16.1
2019	1,064	4,798	5,861	16.1
2020	988	4,855	5,843	16.0
2021	917	4,900	5,817	15.9
2022	852	4,932	5,784	15.8
2023	791	4,911	5,702	15.6
2024	734	4,803	5,538	15.2
2025	682	4,617	5,299	14.5
2026	633	4,397	5,030	13.8
2027	588	4,156	4,743	13.0
2028	546	3,903	4,448	12.2
2029	507	3,646	4,153	11.4
2030	471	3,392	3,863	10.6
2031	437	3,142	3,579	9.8
2032	406	2,900	3,306	9.1
2033	377	2,668	3,044	8.3
2034	350	2,446	2,796	7.7
2035	325	2,109	2,434	6.7

ULTIMATE REMAINING GAS RESOURCES

Volumes in Trillion Cubic Feet

		Rocky Mountain Area Colo, Utah and Wyo
1	Cumulative Production to 12/31/1988	23.96
2	Incremental Production 1989 to 12/31/2004	27.961
3	Remaining Proved Reserves at 12/31/2004	38.55
4	Potential Gas Resources Estimated at 12/31/2004 Wet	114.86
	Potential Gas Resources Estimated at 12/31/2004 Dry Marketable	111.41
5	Ultimate Estimated Resources (12/31/2004)	201.88
6	Gas Discoveries to 12/31/2004	90.47
7	Percent Remaining to be Discovered	55.19

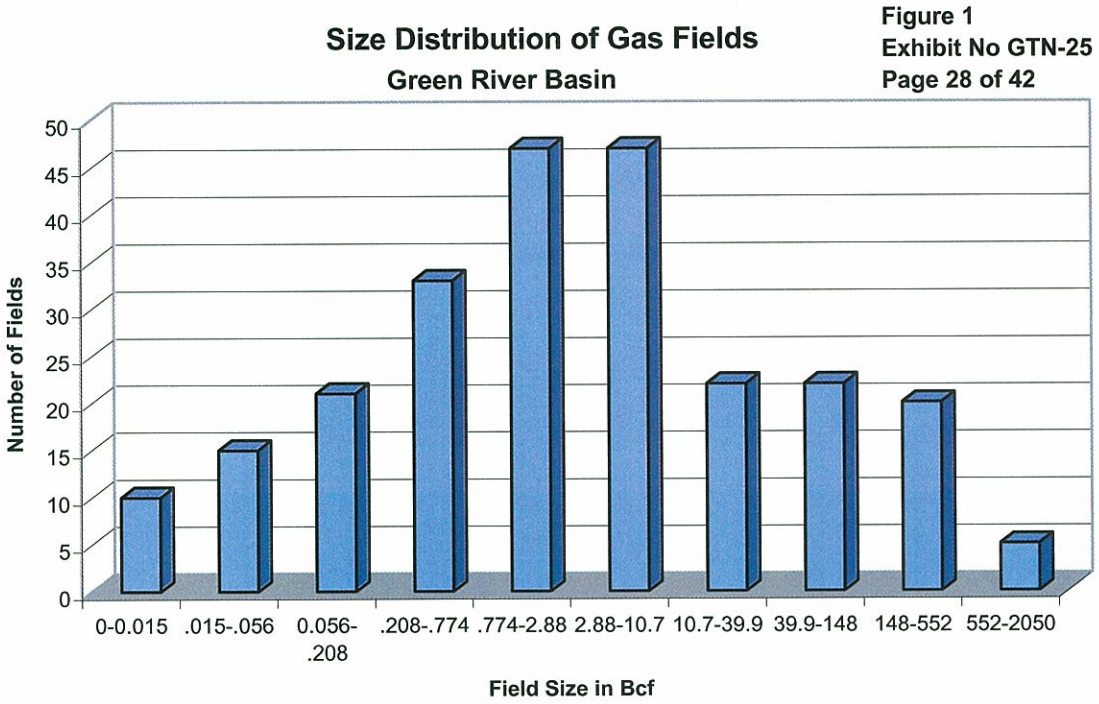
Estimate of Potential Gas Resources
As of End of 2004
Volumes in Bcf

Producing Province	Resource Estimate						Total Resource Estimate
	Growth in Reserves			New Fields			
	0-15,000 Feet	15,000-30,000 Ft	CBM	0-15,000 Feet	15,000-30,000 Ft	CBM	
Powder River Basin	1,435	-	6,672	2,153	-	20,015	30,275
Big Horn Basin	657	170	-	515	616	25	1,983
Wind River Basin	3,457	1,527	-	6,180	3,401	50	14,615
Greater Green River Basin	10,124	822	-	8,701	1,172	375	21,194
Denver Basin and Environs	1,479	-	-	1,070	-	-	2,549
Uinta/Piceance Basin and Environs	19,222		133	17,982	989	4,115	42,441
Thrust Belt	800	-	-	1,000	-	-	1,800
Total Colorado, Utah and Wyoming	37,174	2,519	6,805	37,601	6,178	24,580	114,857
Williston Basin	846			2,058	98		3,002
Sweetgrass Arch	504			1,096			1,600
Montana Folded Belt				4,000			4,000
Total Montana and North Dakota	1,350			7,154	98		8,602

Source: Potential Gas Committee

Note: CBM - Coalbed Methane

FIGURES
TO THE
ASSESSMENT OF GAS SUPPLY


Size Distribution of Gas Fields
Green River Basin
Number of Fields
50
45
40
35
30
25
20
15
10
5
0
0-0.015
.015-.056
0.056-.208
.208-.774
.774-2.88
2.88-10.7
10.7-39.9
39.9-148
148-552
552-2050
Field Size in Bcf

TYPICAL DISCOVERY - PROCESS FINDING RATE

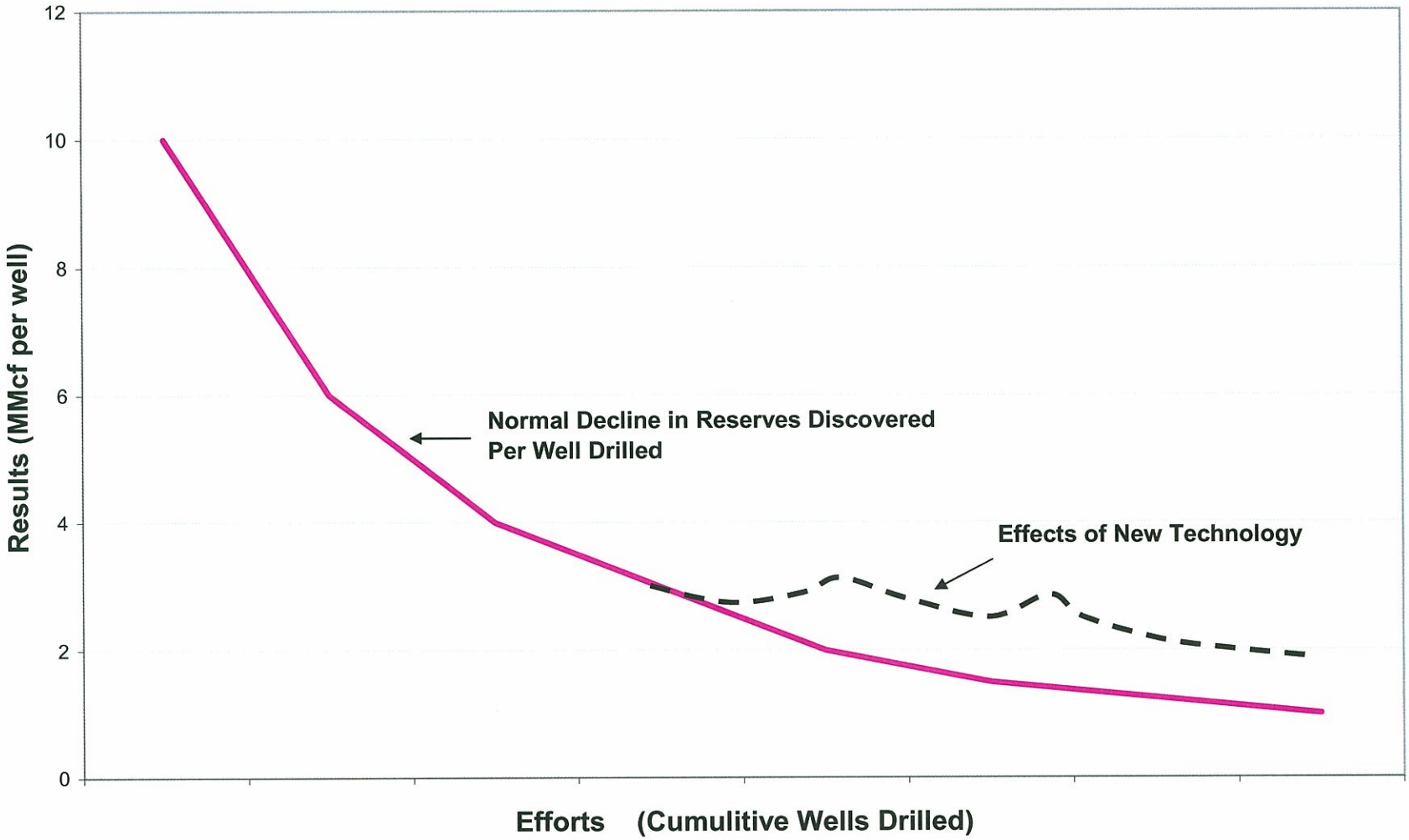


Figure 3
Exhibit No. GTN-25
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New Field Discoveries

Colorado, Utah and Wyoming

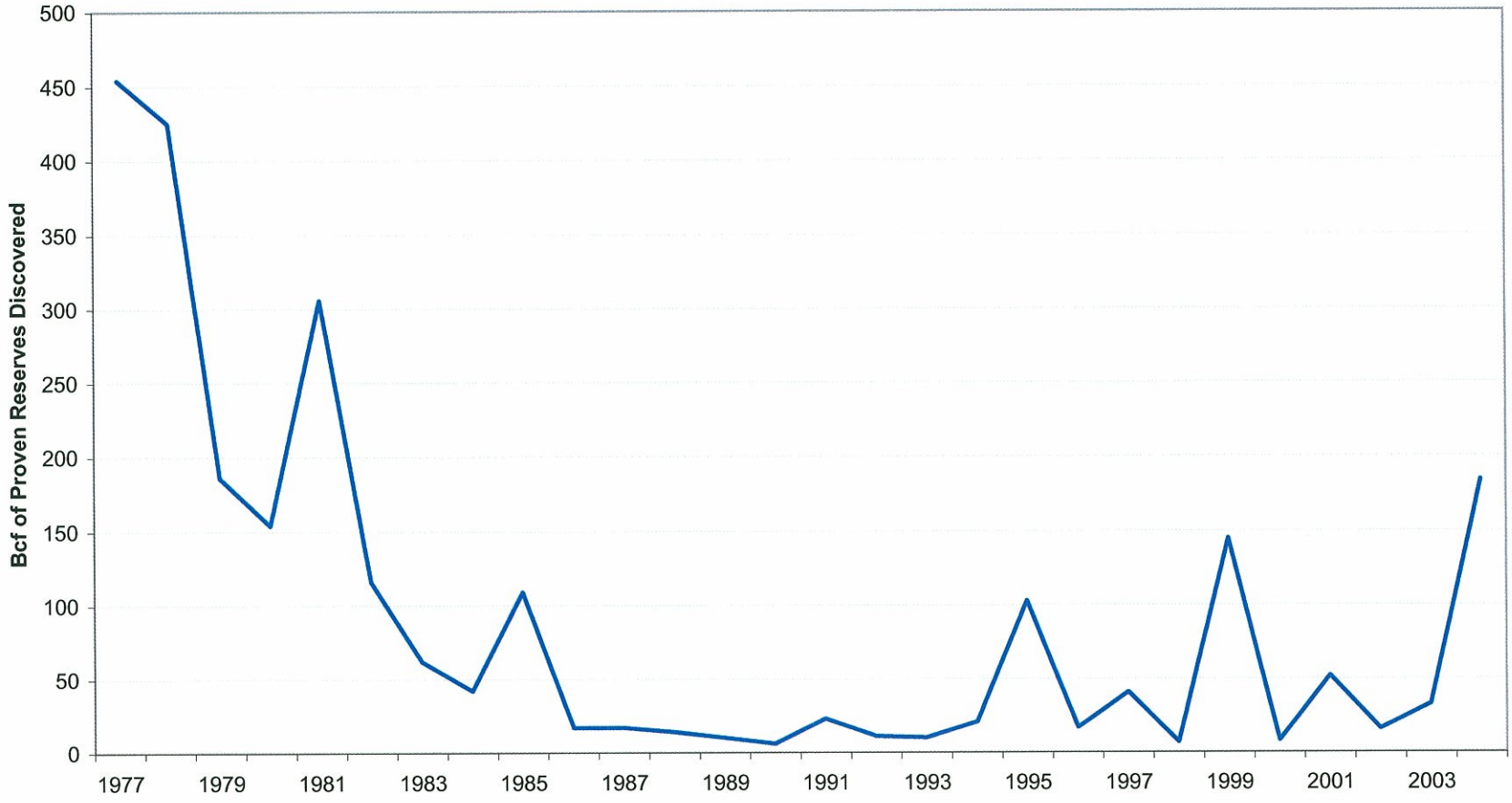

Figure 4
Exhibit No. GTN-25
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GAS TARGET EXPLORATORY WELLS

ROCKY MOUNTAIN

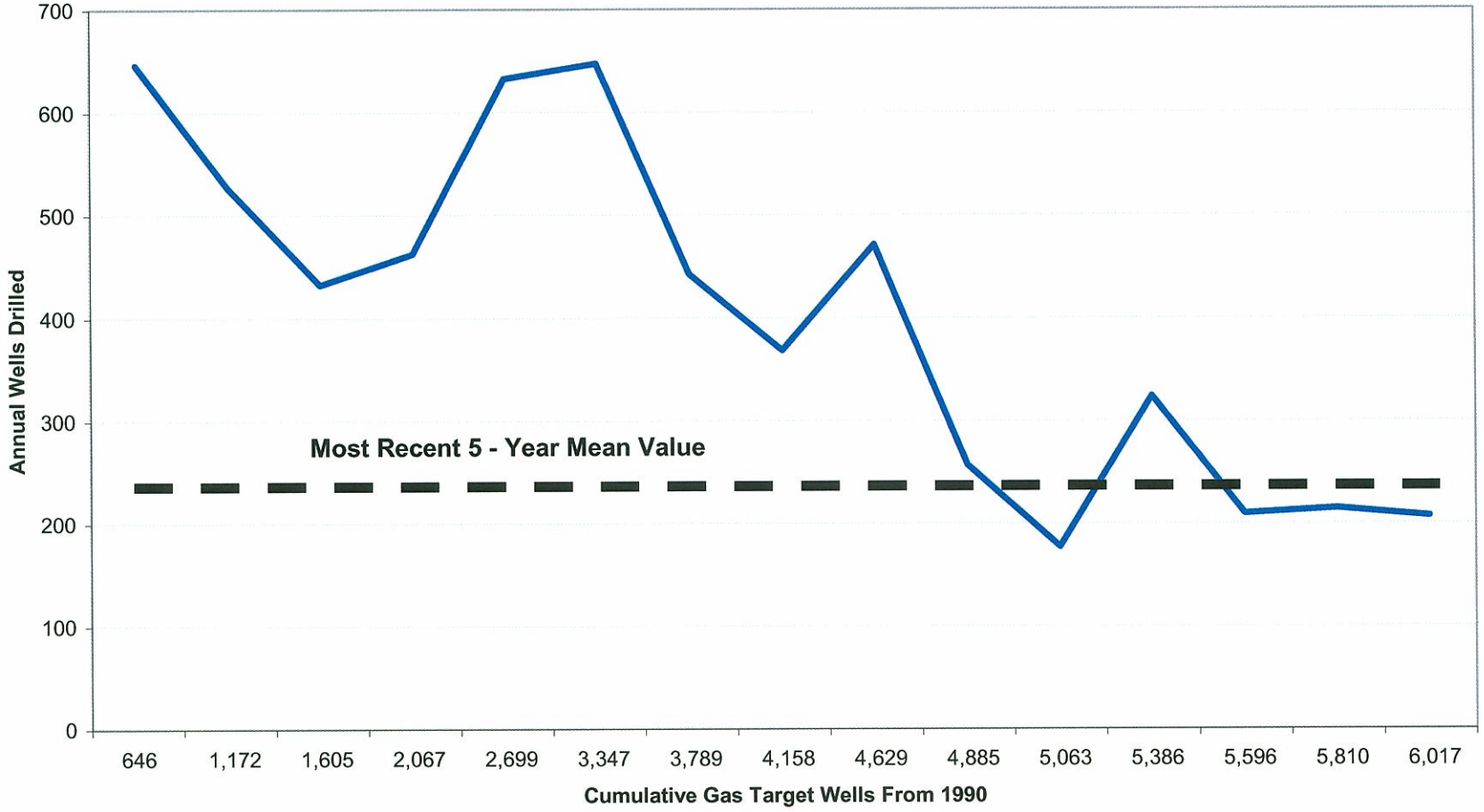

Figure 5
Exhibit No. GTN-25
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GAS TARGET DEVELOPMENT WELLS

ROCKY MOUNTAIN AREA

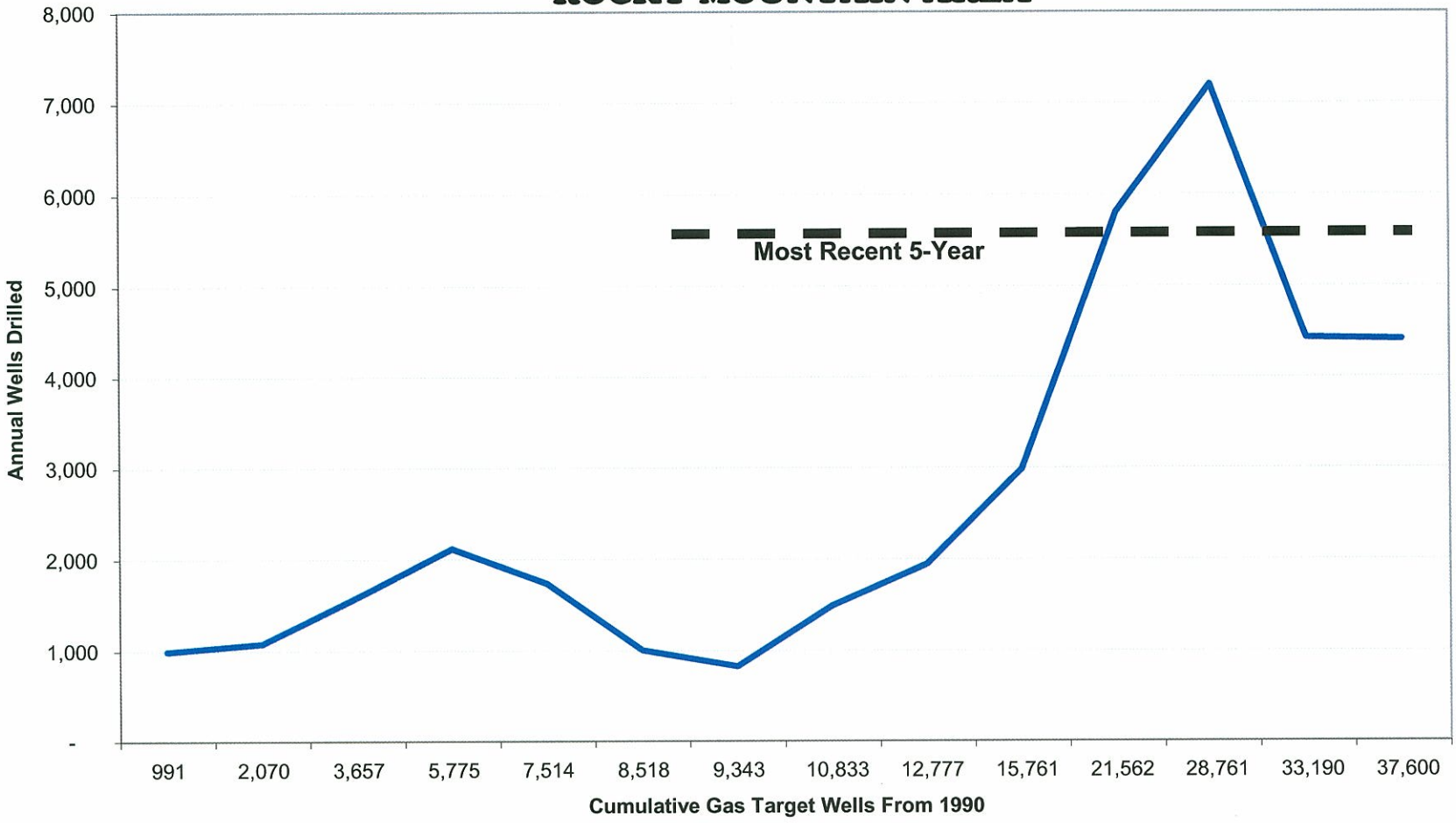

Figure 6
Exhibit No. GTN-25
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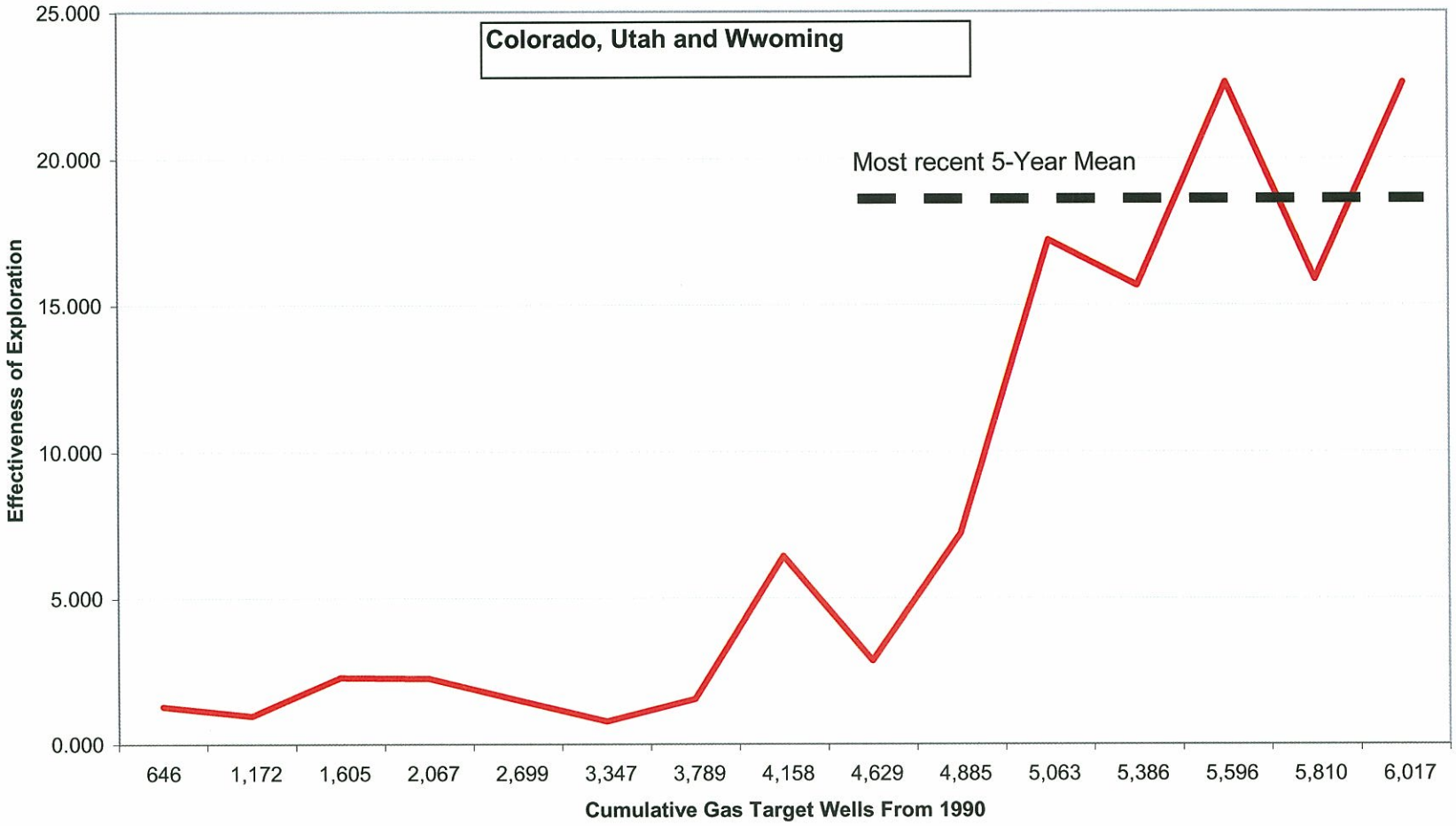
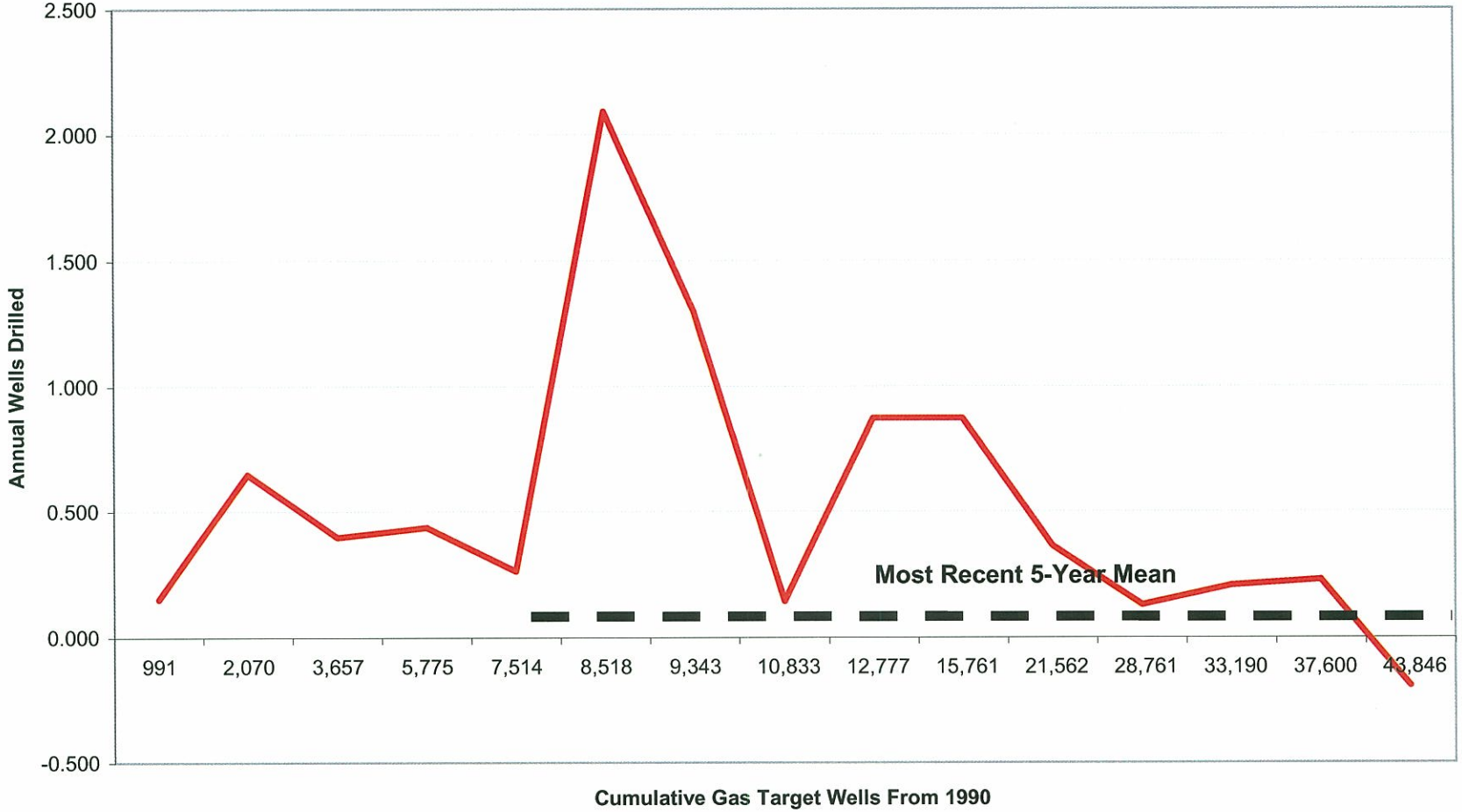
FINDING RATE OF EXPLORATION

NORTHERN ROCKY MOUNTAIN



FINDING RATE OF DEVELOPMENT
NORTHERN ROCKY MOUNTAIN



RELATIONSHIP BETWEEN GAS TARGET EXPLORATORY WELLS DRILLED AND THE FINDING RATE OF EXPLORATION

NORTHERN ROCKY MOUNTAIN AREA

Figure 8
Exhibit No. GTN-25
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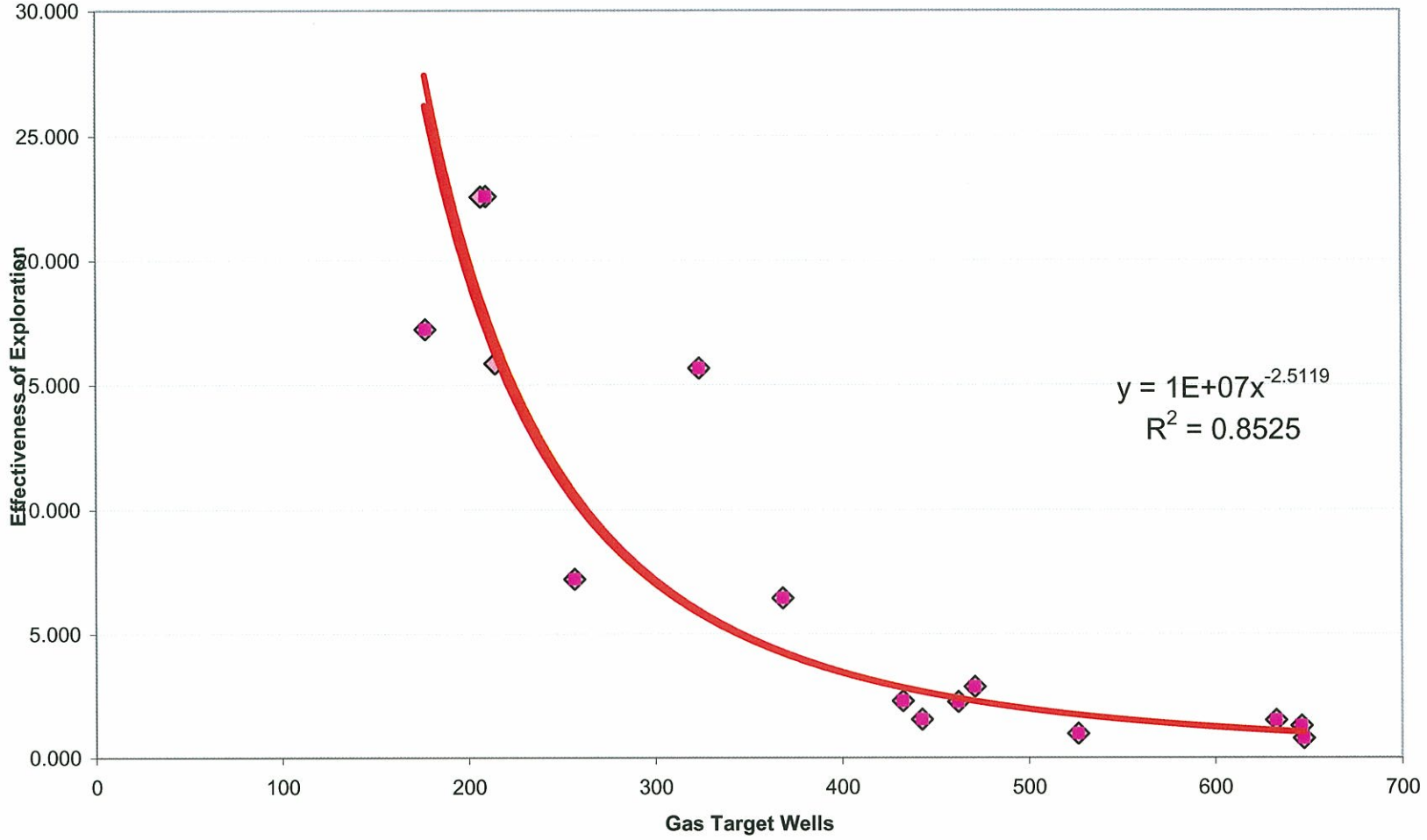

RELATIONSHIP BETWEEN GAS TARGET WELLS DRILLED AND THE FINDING RATE OF DEVELOPMENT

Figure 9
Exhibit No. GTN-25

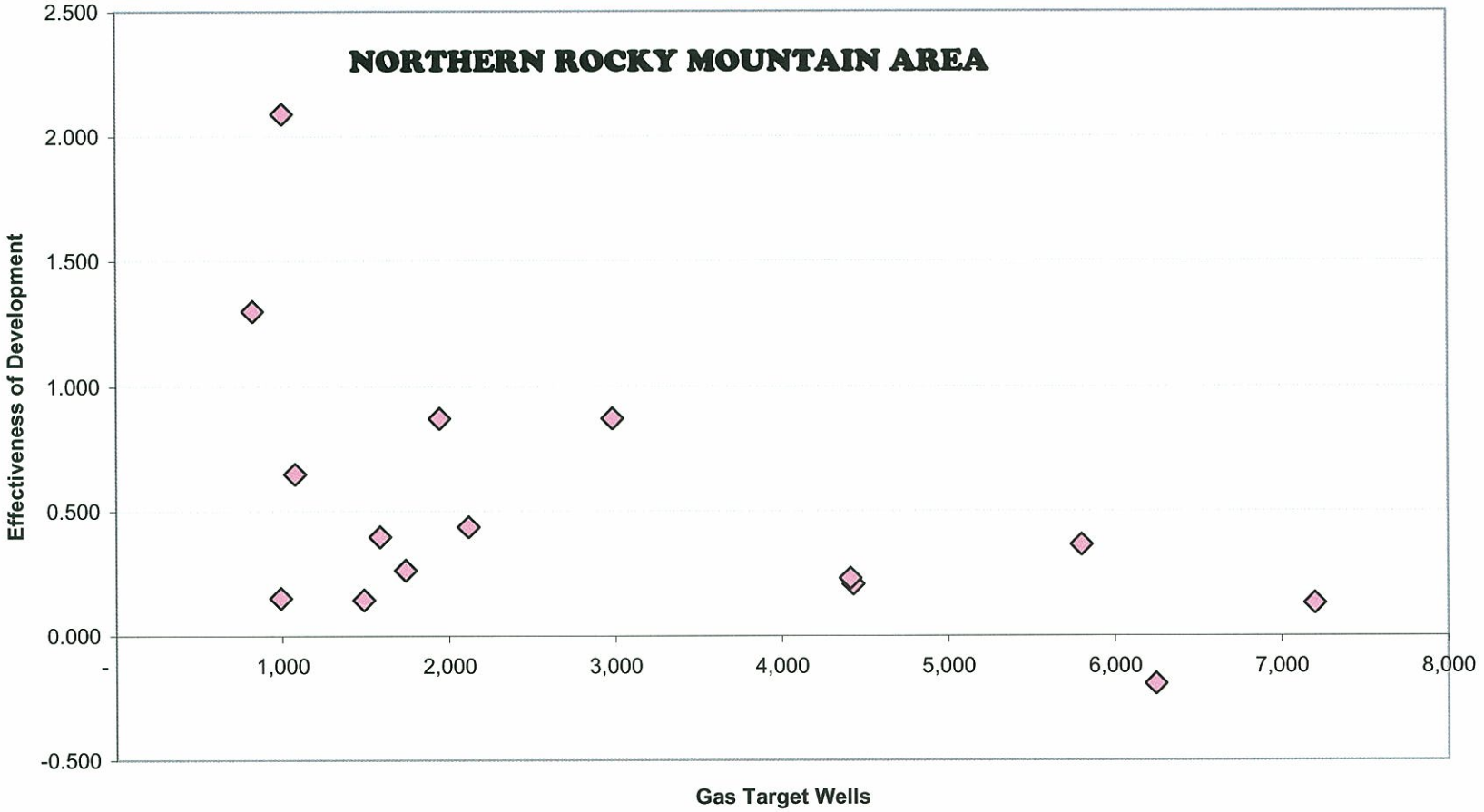

Figure 10
Exhibit No. GTN-25
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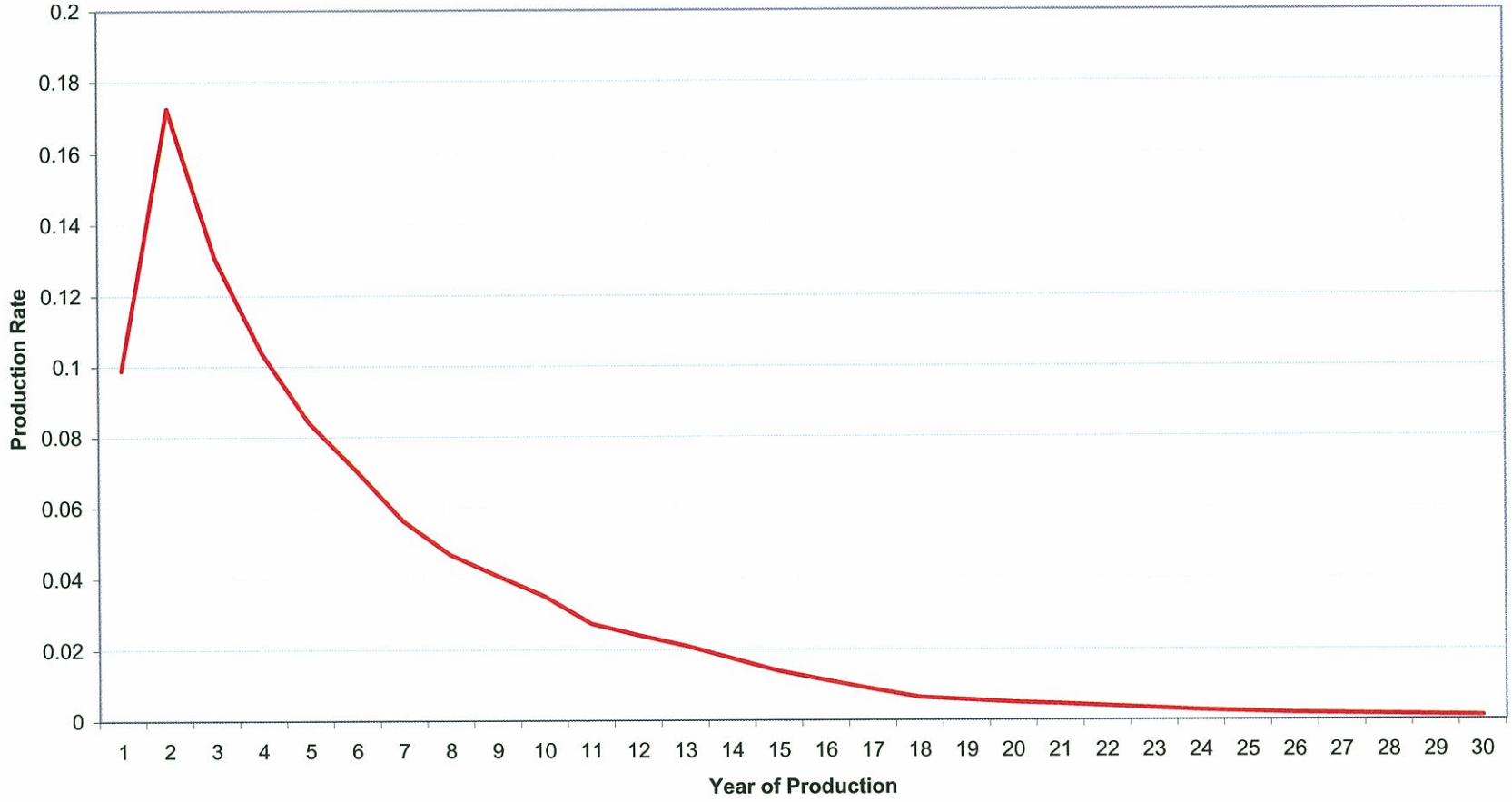
Production Rate Northern Rocky Mountain Region
As a Percent of Original Gas



Natural Gas Productive Capacity

Colorado, Utah and Wyoming

Figure 11
Exhibit No. GTN-25
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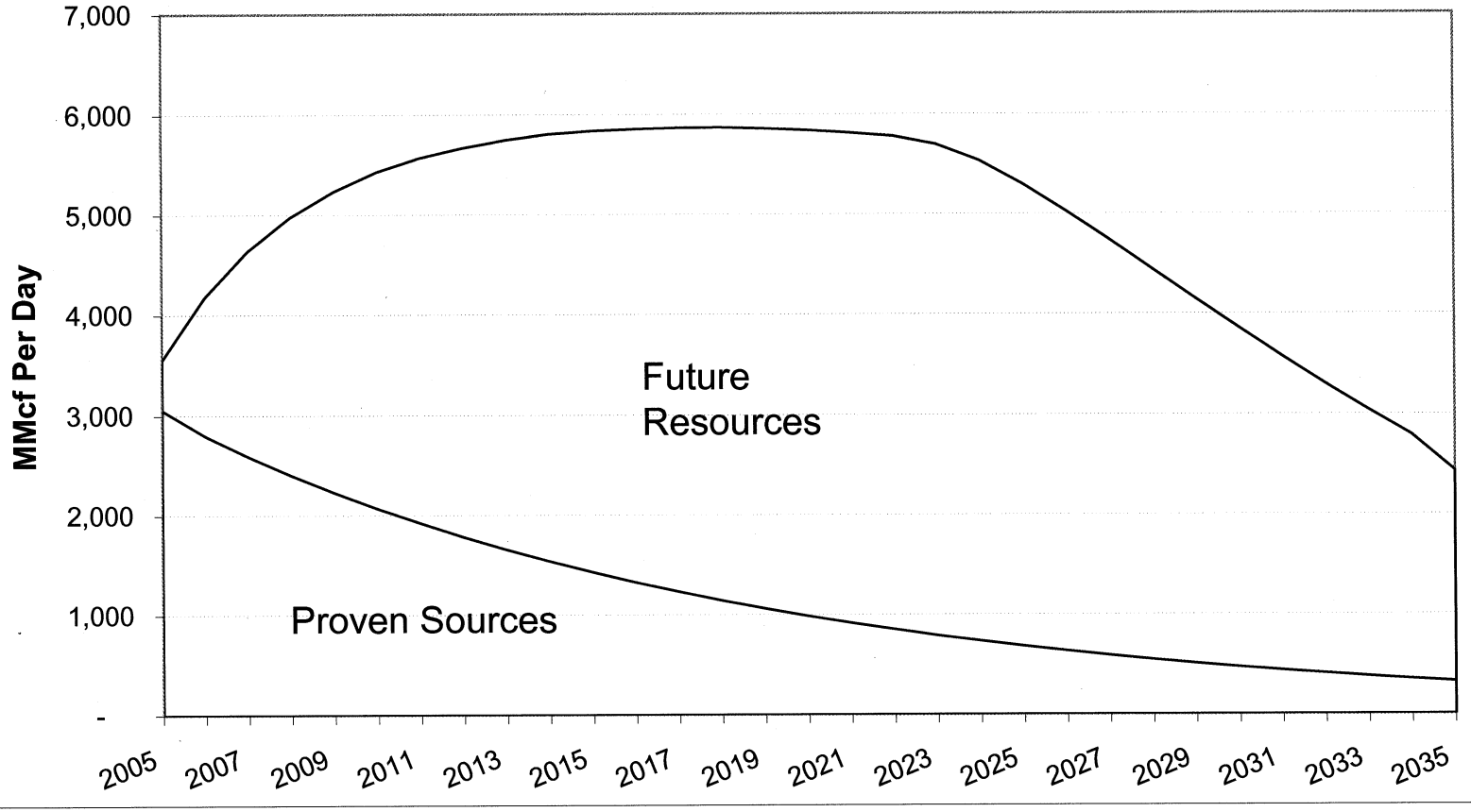

NATURAL GAS PRODUCTION

Rocky Mountain Area

Figure 12
Exhibit No. GTN-25
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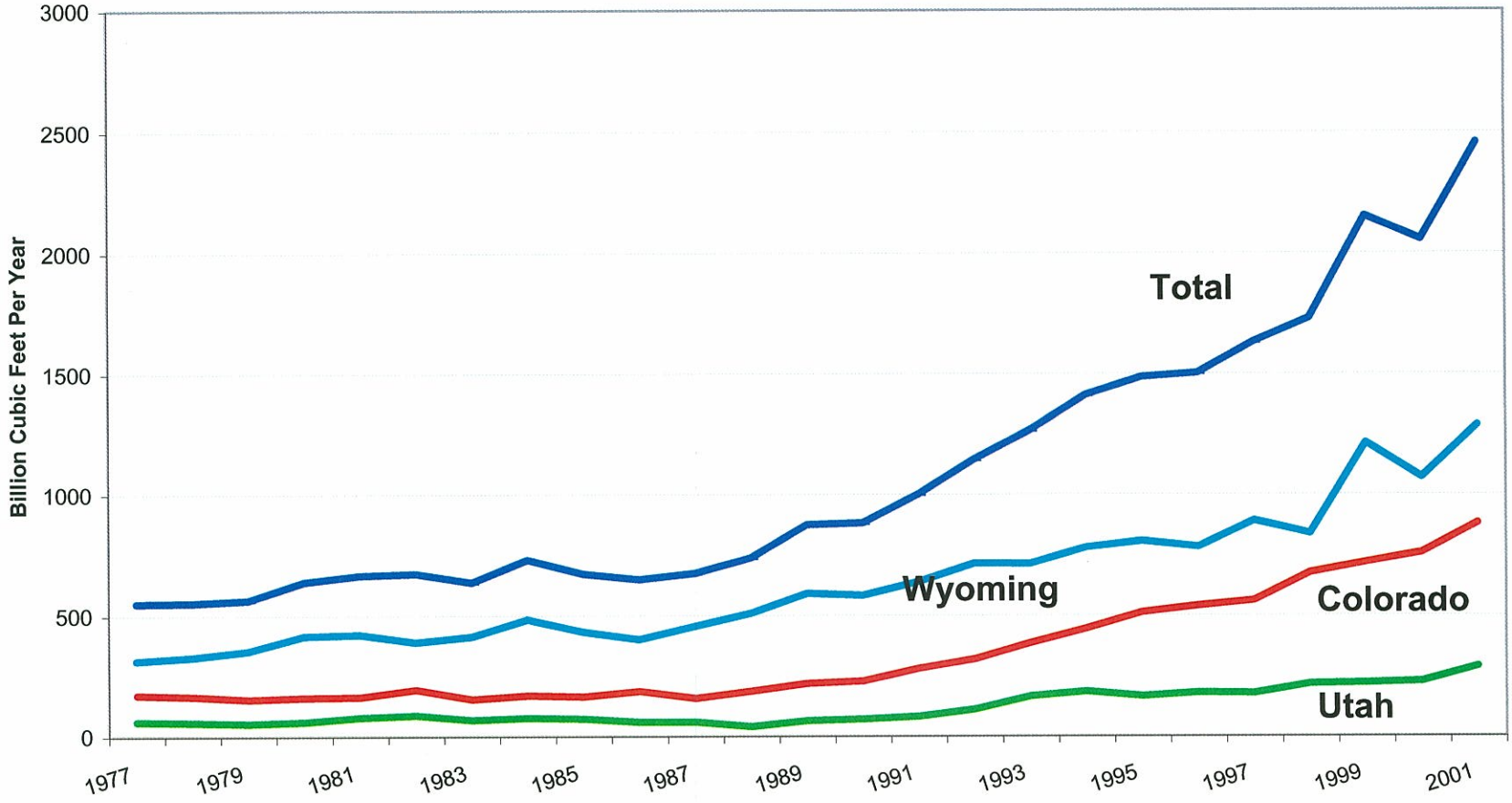
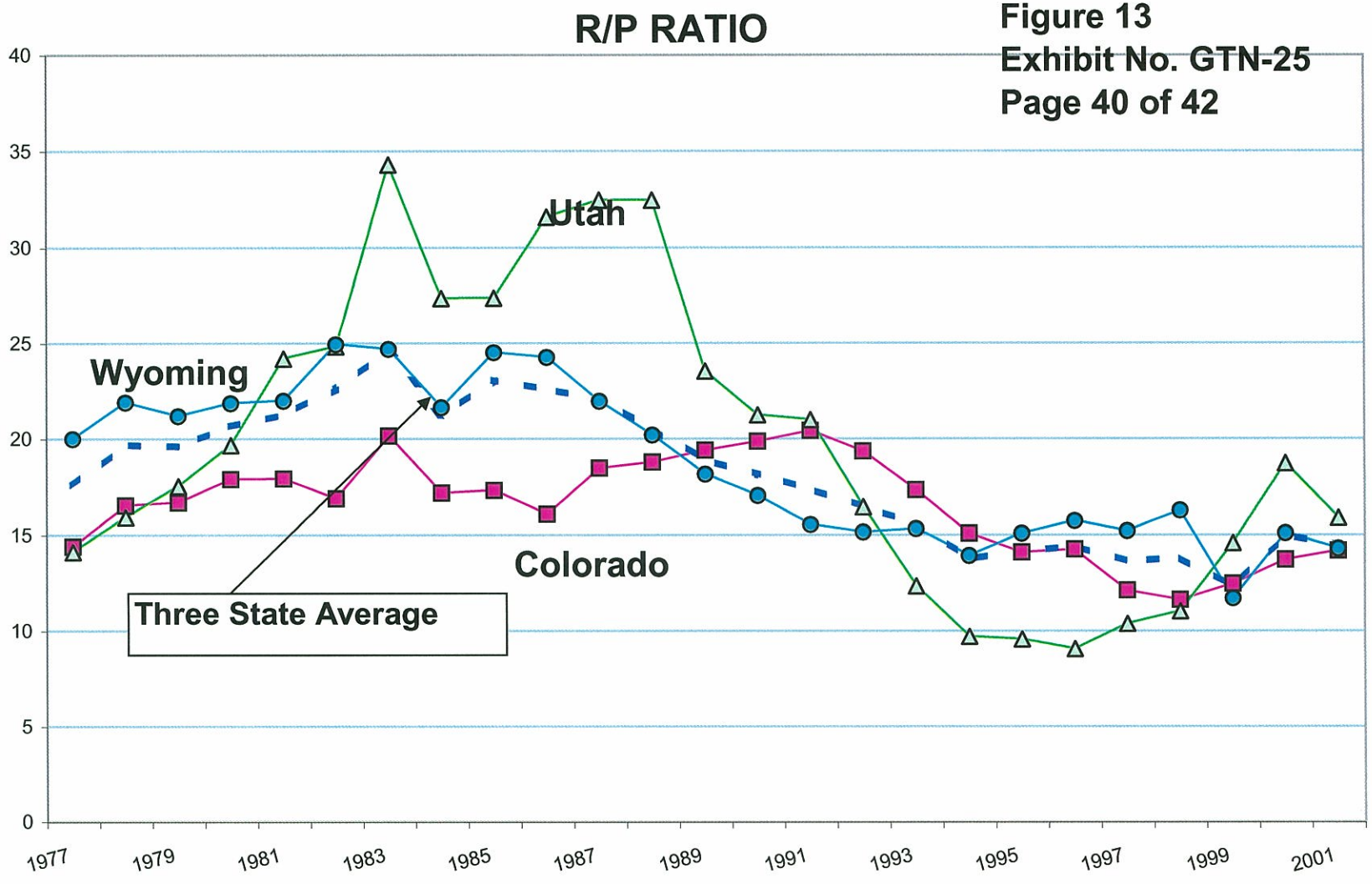
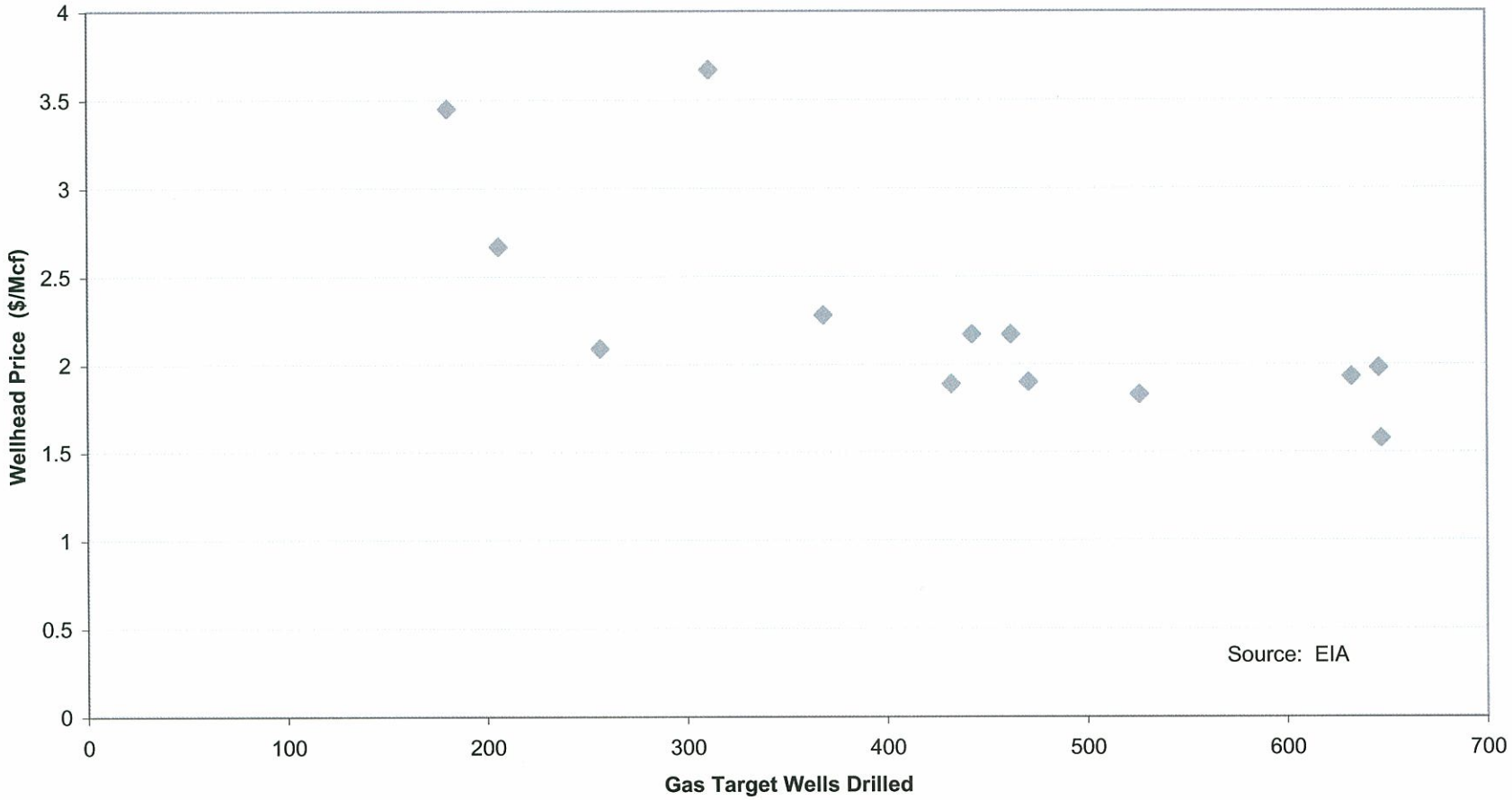



R/P RATIO
40
35
30
25
20
15
10
5
0
1977
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
Utah
Wyoming
Colorado
Three State Average

Relationship Between Wellhead Price and Exploratory Drilling
Rocky Mountain Area



Relationship Between Wellhead Price and Development Drilling
Rocky Mountain Area