

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE NOS. 330 and 330-A

AN ORDER PROMULGATING GAS
PRORATION FORMULA FOR THE
BLANCO-MESAVERDE GAS FIELD

WRITTEN SUMMATION OF TESTIMONY
AND EVIDENCE PRESENTED BY
PUBCO DEVELOPMENT, INC. (NSL)
AN INTERESTED OPERATOR

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TO SAID HONORABLE COMMISSION:

The purpose of the hearing and the general character of the testimony presented by the Commission Staff as well as the interested operators indicated that proration of production from the Blanco-Mesaverde Gas Field is both necessary and desirable in order to enable each well to produce its fair share of the market in proportion to the recoverable reserves under each drill site. The overwhelming preponderance of expert opinion was that a formula based primarily upon deliverability as a factor would through its operation give proper weight and value to the known variables of effective porosity which includes variations in connate water, thickness of pay, and pressure, all of which are ordinarily used in the calculation of recoverable gas reserves.

It is the contention of Pubco Development, Inc., (as demonstrated in the testimony submitted on its behalf at the recent hearing) that the use of acreage as a factor in the proration formula, except as a multiplier of deliverability to correct for minor variations in acreage of drill sites, is unfair, impracticable and undesirable. Only in those instances where development of a field has proven uniform reserves under each drilling site and drainage is proven to exist is there justification for acreage as an additive proration factor. Testimony introduced during the hearing by Pubco Development, Inc., El Paso Natural Gas Company, Delhi Oil Corporation, and others, pointed out the wide variation of reserves in the field. It should be emphasized that no operator introduced actual testimony proving drainage. In fact, the only reference to

drainage in testimony was in the nature of an unsupported theoretical opinion that drainage could exist or might exist. Under the conditions herein outlined, it is evident that use of acreage as an additive factor cannot be justified.

By exhibits and interpretive testimony Pubco Development, Inc., has shown that recoverable gas reserves in the Blanco-Mesaverde Field could vary in ratio as high as 46 to 1 as a result of observed variables of effective net sand thickness, effective porosity and pressure. The very nature of the Mesaverde sand group, both at the outcrop and in subsurface geologic correlations, demonstrates large variations in recoverable gas reserves. Pubco demonstrated at the hearing that sand to sand correlation from well to well in almost all instances is questionable. All companies are forced to use common markers above or below the Mesaverde sand group for correlative purposes in devising structural maps. Exhibits were used by Pubco to demonstrate that in areas of the field the Cliff House and Menefee zones were cased off from the well bore because these sand zones either had no recoverable gas reserves or contained water. At the current stage of field development a total of twenty per cent. (20%) of the wells within the field limits are completed in the basal Mesaverde sand section because of the presence of overlying water or the actual absence of recoverable gas reserves.

Those who indicated a preference to an additive acreage factor contended that correlative rights were not being protected and that a formula entirely based on deliverability would not give them this protection. It cannot be too highly emphasized that none concerned with the problem produced data based upon reservoir performance that indicated that correlative rights were not protected or that drainage was occurring. To the contrary, Pubco Development, Inc., demonstrated that four offset wells in the Blanco-Mesaverde Field have been producing under the same conditions and are producing, simultaneously with the gas, totally dissimilar non-retrograde hydrocarbons or fluids. It can only be concluded that these offset wells are withdrawing gas from an area within their drill sites while the wells are producing into the pipeline in the amount of their ability to produce. In our opinion, however, proration in the field, based primarily on deliverability, is required in order to insure that each well is permitted to produce and thus obtain its fair share of the market.

The relationship of well potential or deliverability to effective net sand or recoverable reserves on a field-wide basis was ably demonstrated by El Paso Natural Gas Company. Their findings demonstrated a direct relationship between effective net sand or recoverable reserves to well potential. Those opposing this contention have only been able to select certain individual offsetting or neighboring wells with relatively wide differences in potential or deliverability. These exceptional cases should be expected in a field where artificial stimulation is the common practice, and in so doing operators in some instances are able to increase their recoverable reserves by permitting gas to flow to the well bore from isolated sands in the drill site which ordinarily would not have had access to the well bore nor which would have contributed to recoverable reserves.

In a single instance one company witness suggested that whatever formula is promulgated by the Commission should include a specific maximum daily allowable. Such a maximum would in effect be a proration formula within a proration formula and would serve only to render ineffective the real purpose of the formula. A specific maximum daily allowable would be unjustified in the absence of positive evidence forcing the conclusion that drainage is at present occurring from well site to well site. The record does not reflect any such evidence. Pubco Development, Inc., respectfully contends that no maximum on daily production should be incorporated in the proposed gas proration formula. A proration formula based upon deliverability will allocate the market in proportion to the underlying recoverable reserves. No evidence based on reservoir performance was introduced to the effect that such a maximum would prevent waste or protect the correlative rights of interested parties. In the absence of such evidence a specific maximum would be arbitrary and confiscatory. Those operators who would ordinarily attempt to obtain greater recoverability through the use of more expensive completion methods would be discouraged from doing so. A specific maximum daily allowable would in effect put a premium on mediocrity.

Any proration formula which included an additive acreage factor would in effect subsidize wells with below average reserves at the expense of those with average or above average reserves, destroying the incentive of

many operators and forcing them to invest their risk capital in other areas.

Testimony introduced showed that an additive acreage factor of 25% and deliverability times acreage factor of 75% would in effect eliminate 31.64% of the wells in the Blanco-Mesaverde Field from proration. A formula which eliminates to all intents and purposes one-third of the wells in the field from the burdens of proration is unjust, discriminatory and unreasonable. Any increase in the additive acreage factor with a decrease in the deliverability times acreage factor increases the number of wells in effect eliminated from proration and thereby adds to the unjust, unfair and unreasonable results caused by the additive acreage factor.

Initial potential and deliverability are the only factors known for every well in the field which are directly related to the recoverable gas reserves and upon which an equitable proration formula can be based with a desirable degree of accuracy.

Pubco Development, Inc., in the interest of avoiding waste and protecting the rights of all interested operators, and to protect the incentive and investment of those who through careful selection and operation have obtained better than average recoverable reserves, submits the following individual well formula for consideration and adoption by the Commission:

Well Allowable = Deliverability X Acreage Factor X Proration Factor.

Where: Deliverability determined under rules promulgated
by the Oil Conservation Commission

Acreage Factor = $\frac{\text{Acres in well site}}{320}$

Proration Factor = $\frac{\text{Market in MCF}}{\text{Sum of deliverability of all wells}}$

Respectfully submitted:

PUBCO DEVELOPMENT, INC.

By: 
D. W. REEVES
President

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