CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

December 22, 1970

Commonwealth Gas Corporation
P. O. Box 1433
Charleston, West Virginia 25325

Attention: Mr. W. G. Whisnand

Subject: Core Analysis
North Ripley Field
Jackson County, West Virginia
Our File Number: SCAL-70181

Gentlemen:

Presented in this report are the results of permeability and porosity measurements and grain density determinations performed on nine samples of Williamsport (Newburg) formation recovered by Tricore procedures from the subject field. As directed, permeabilities for each of the test samples were determined only in a vertical direction. The samples submitted to our Dallas laboratory and used in this study are identified as to well name and depth interval on page one. Visual descriptions of formation lithology for these samples are given on page two.

Results of the laboratory measurements are tabulated on page three. With the exception of samples seven and eight, relatively low porosities and vertical permeabilities were determined by the analysis. The measured grain densities were higher in magnitude than normally observed for sandstones in general. These high grain densities are attributed to the presence of dolomitic cementation, as indicated in the lithological descriptions on page two.

The cores from the two wells were sampled for analysis at one-foot intervals. The selected test samples were thoroughly extracted, leached and dried. Porosities were then measured using a Boyle's Law technique. Grain

volumes were obtained by subtracting the pore volumes from the bulk volumes which were determined for the samples during the porosity measurements. Grain densities were then calculated by dividing the dry weights by the grain volumes.

Due to the irregular shape of the Tricore samples, each test plug was mounted in an epoxy compound in the form of right cylinders in order to render these samples suitable for the air permeability measurements. The samples were mounted in such a way that the flow of air through the samples during the air permeability measurements would be along the longitudinal axis of the cores which is in a vertical direction with respect to the reservoir. The mounted samples were placed in core holders and direct measurements of the air permeabilities were then made.

We appreciate this opportunity to be of service.

Very truly yours,

Core Laboratories, Inc.

Dare K. Keelan

Dare K. Keelan, Manager
Special Core Analysis

DKK:VJP:dl
7 cc. - Addressee

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Company Commonwealth Gas Corporation
Formation Williamsport (Newburg)
Number of Wells Two
County Jackson
Field North Ripley
State West Virginia

Identification of Samples

Sample Number	Company	Well	Depth, Feet
1	Commonwealth Gas Corporation	Cross No. 1 (S-806)	5630'10"-31'0"
2		47-035-01229	5631' 0"-32'0"
3			5632' 0"-33'0"
4			5633' 0"-34'0"
5			5634' 0"-35'0"
6		Stephens No. 1 (S-807)	5536' 0"-37'0"
7		47-035-01235	5537' 0"-38'0"
8			5538' 0"-39'0"
9			5539' 0"-39'-9.5"

Lithological Description

Sample Number	Description
1	Sd, white, v/fn-fn grn w/scattered v/cse sd size chert grns, v/dol, v/well indurated, tr pyr, shy stks
2	Sd, white, v/fn grn w/scattered v/cse sd to granule size chert grns, v/dol, v/well indurated, pyr, shy stks
3	Sd, white, v/fn-fn grn, dol, v/well indurated, tr pyr, thin shy stks
4	Same as above
5	Sd, white, v/fn-fn grn, dol, v/well indurated, sh chips & thin stringers
6	Sd, white, v/fn-fn grn w/scattered v/cse sd size chert grns, dol, v/well indurated, thin sh stringers
7	Sd, white, v/fn grn, dol, v/well indurated, shy stks
8	Sd, white, v/fn-fn grn, dol, v/well indurated
9	Sd, white, v/fn-fn grn w/scattered v/cse sd size chert grns, dol, v/well indurated, tr pyr, thin shy stks

Permeability and Porosity Data

Sample Number	Vertical Permeability, Md. (1)	(2)	Porosity, Per Cent	Grain Density, gm/cc
1	0.097	0.06	7.3	2.71
2	0.063	0.04	6.8	2.80
3	0.108	0.06	13.3	2.69
4	0.065	0.04	9.7	2.71
5	0.070	0.04	5.2	2.72
6	0.064	0.04	10.6	2.74
7	10.6	8.3	17.3	2.77
8	38	32	18.1	2.75
9	0.084	0.05	10.1	2.72

(1) To air
(2) Corrected for Klinkenberg effect