

Pennsylvania House of Representatives
Majority Policy Committee Hearing
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Marcellus Shale – Workforce Development

Chairman Reed, Representative Marshall and members of the Majority Policy Committee, good morning. As most of you know, Range Resources is a leading developer of the Marcellus Shale in Pennsylvania. Since drilling the first Marcellus Shale well about 30 miles south of here in 2004, our company has drilled nearly 300 horizontal Marcellus shale wells in Pennsylvania. We appreciate the opportunity to offer testimony today concerning workforce development and employment opportunities related to shale gas development in Pennsylvania.

Lying beneath us here in Beaver County are several gas-bearing organic shales, including the Marcellus Shale, a group of several upper Devonian Shales and the deeper Utica Shale. While over 3,500 Marcellus Shale wells have been drilled in Pennsylvania, only one of those is located in Beaver County, which lies along the northwestern fringe of what may be the productive fairway for Marcellus.

Important to residents of Beaver County and western Pennsylvania generally is the potential for natural gas from the Utica Shale in western Pennsylvania, Ohio and the West Virginia panhandle. Only two horizontal wells in Pennsylvania have been drilled to test the deeper Utica Shale, both located in Beaver County. Only one of these wells has been completed, a well completed last year by Range Resources in Marion Township, with initial flow rates after frac that were encouraging. According to DEP records, Chesapeake Energy has drilled, but not yet fraced a well in South Beaver Township and holds permits for five additional wells in the County. Range, Chesapeake and others hold significant leasehold positions in Beaver County, and increased drilling activity in 2012 and beyond is likely.

The Marcellus Shale Education and Training Center (a collaborative of Penn State's Pennsylvania College of Technology and its Cooperative Extension Service), with the help of multiple Marcellus developers, performed a state-wide workforce needs assessment for the Marcellus. They found that the potential direct jobs in the shale gas industry fall into the following categories:

- 20% general office
- 20% general labor
- 17% heavy equipment
- 10% trucking
- Remaining 33% are engineers, geologists, landmen, attorneys, supervisors, welders and a variety of other skilled technicians.

(See Exhibit B)

Office jobs - Many companies that are developing the Marcellus Shale, as well as the service and supply companies that support shale development, have opened regional offices in the

Pittsburgh area. About 60 operators, service companies and suppliers to the industry have opened new offices in the Southpointe business park in Washington County. A substantial number of companies have also established offices in southern Butler County. These regional offices will house many of the general office jobs, along with many of the engineers, geologists, landmen, and attorneys. Many other pre-existing Pennsylvania companies such as civil and environmental consulting firms and numerous companies that have serviced Pennsylvania's traditional oil and gas industry are also expanding their staffs to meet the needs of the shale gas industry.

Field offices of the various companies involved in shale gas development will be distributed more in line with the regions of the state where drilling is occurring. Since 2/3 of Marcellus drilling activity is in the north-central / northeast region of Pennsylvania, that is where many of the field jobs will be. About 1/3 of Marcellus drilling activity is in the southwest part of Pennsylvania, so jobs servicing that activity will be located in the southwest. (See Exhibit A) These field jobs would include many of the general labor, heavy equipment and trucking jobs.

Field jobs are generally physically demanding jobs frequently requiring long hours working outside in all kinds of weather. Twelve hour shifts are common. Some jobs require working 14 consecutive days; 84 hours per week, followed by 14 days off. Other jobs work 11 days on and 3 days off. Moving from site to site is required. As shale gas development evolves, many field employees may be able to return home daily, but significant travel and overnight stays will be common. Drug testing is mandatory and there is zero tolerance.

Training for highly skilled jobs such as geoscientists and a variety of petroleum, mechanical, civil and environmental engineers can be obtained at numerous colleges and universities in Pennsylvania under programs that have existed for decades. Training for less skilled jobs is available at vocational technical schools and community colleges.

Range Resources and several of our subcontractors worked with Pennsylvania Training Consultants to develop curriculum for entry level jobs in the shale gas industry. At least seven vocational technical schools in southwestern Pennsylvania currently offer a basic oil and gas primer course, with an option to combine that training with obtaining a commercial drivers license. About 500 students have completed this 4 to 6-week training, with over 90% job placement. These programs can easily be expanded to additional schools.

Community colleges will also play a critical role in providing workforce training for the industry. Marcellus ShaleNET is a coalition between Westmoreland Community College, Pennsylvania College of Technology, West Virginia Northern Community College and Eastern Gateway Community College in Ohio. Funded by a \$4.9 million, 3-year federal grant, the project's mission is to work with industry to design a comprehensive recruitment, training, placement and retention program for high priority occupations in the shale gas industry that can be expanded to community colleges throughout the shale region. This program will also integrate Pennsylvania's regional Workforce Investment Boards and a variety of training providers. The ShaleNET grant is sufficient to train about 850 students. At the end of the grant period, the goal is to have affordable training opportunities established in a number of community colleges throughout the Commonwealth.

So, what does all this mean for employment in Beaver County? Beaver County residents are within commuting distance of most of the regional offices established in northern Washington County or southern Butler County business parks. Training for the variety of entry level jobs is available at existing universities and community colleges.

Residents of Beaver County and other areas of western Pennsylvania are also within commuting distance of many field jobs in areas of the Marcellus that are currently being developed in southwestern Pennsylvania. If development of the Utica Shale expands, additional opportunities will be available in the region.

But there is another story that is just beginning to be told – the impact that the shale gas revolution will have on Pennsylvania’s manufacturing. Already, manufacturing of supplies needed for shale gas development, primarily steel tubular goods for wells and pipelines, have created a surge of activity in southwestern Pennsylvania and eastern Ohio. V&M Star, a tubular manufacturer in Youngstown, is building a \$650 million state-of-the art tubular mill. US Steel has increased its output of steel line pipe at its Mon Valley Works and is expanding its Lorain Ohio plant to produce additional down hole tubular products needed for shale development.

In addition to these supply chain opportunities, Pennsylvania’s abundant, inexpensive and locally sourced natural gas from shale provides an opportunity to attract new manufacturing business. Energy intensive industries such as metal processing, or industries that utilize natural gas as a feedstock for products such as plastics, fertilizer, and many chemicals can thrive in a low gas price environment. Recent media stories report that Shell is considering building a world class ethylene cracking plant in the tri-state region to process the ethane component of shale gas, supplying the plastic industry, and eventually creating as many as 17,000 new jobs in the region. U.S. Steel has initiated plans to substitute natural gas for coke in its base steel-making process due to its long term forecast of abundant and reasonable priced natural gas.

Data from the Energy Information Agency of the U.S. Department of Energy indicates that the average price of natural gas delivered to local utility companies in Pennsylvania during the past five years was about \$3.25 above average U.S. wellhead price. The average price for natural gas delivered to industrial customers during this same period was \$5.25 per million btu higher than average U.S. wellhead price. This differential is due to primarily to long line gas transportation charges to bring gas from the Southwest and Rocky Mountain regions, underground storage fees and charges for local distribution. Having an abundant supply of locally produced natural gas can certainly lower the cost of delivery to the burner tip, creating a clear advantage for Pennsylvania manufacturers.

The race is on to attract new business. Pennsylvania is in direct competition with Ohio and West Virginia to land new business that is either directly or indirectly involved with shale gas development. Pennsylvania must adopt policies on taxation, regulation, litigation and other critical business issues that will foster new business if it wants to win this competition.

References:

<http://www.msetc.org/> - Marcellus Shale Education and Training Center; a link is available to download “Pennsylvania Statewide Marcellus Shale Workforce Needs Assessment”.

<http://www.shalenet.org/> - the ShaleNET website with information explaining the workforce development program.

Marcellus Shale – likely productive fairway

- Marcellus fairway is 40,000 – 50,000 square miles
- Estimates of recoverable reserves up to 500 tcf; current U.S. natural gas demand is 23 tcf per year
- Could be the 2nd largest gas field in the world

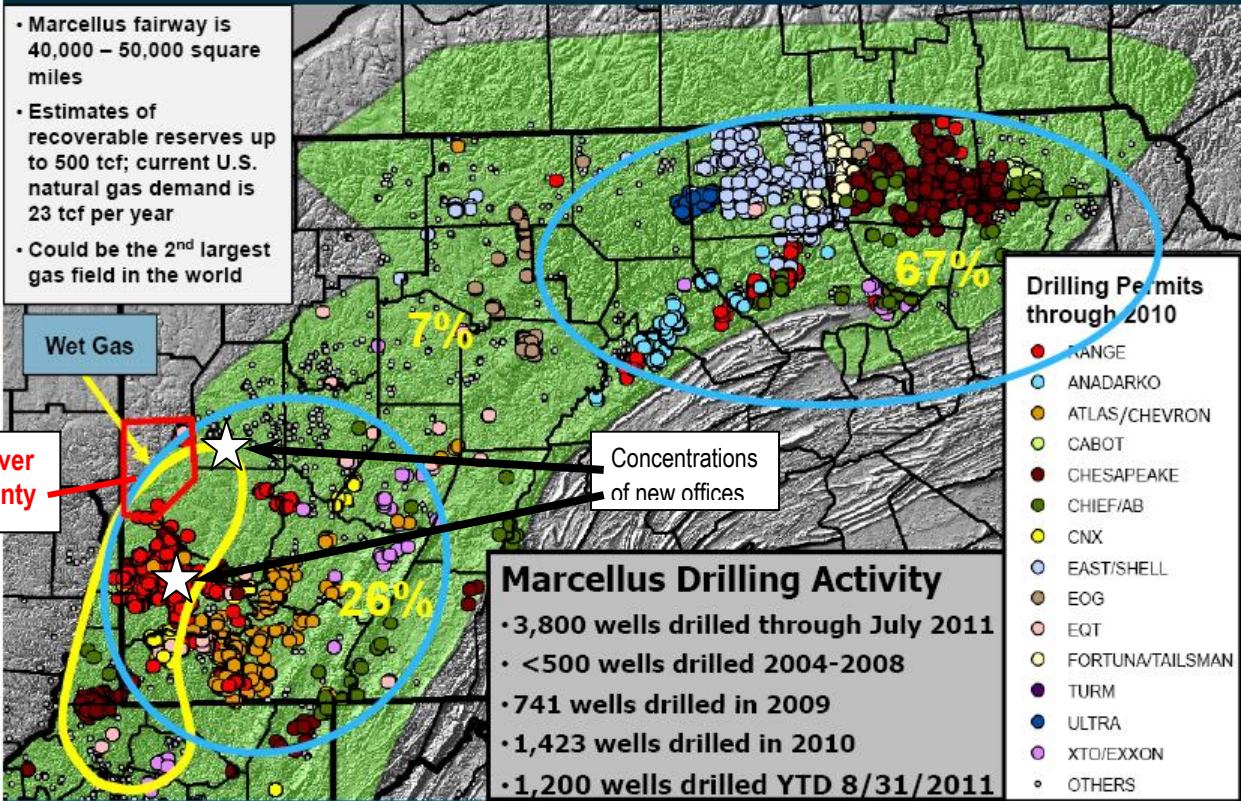
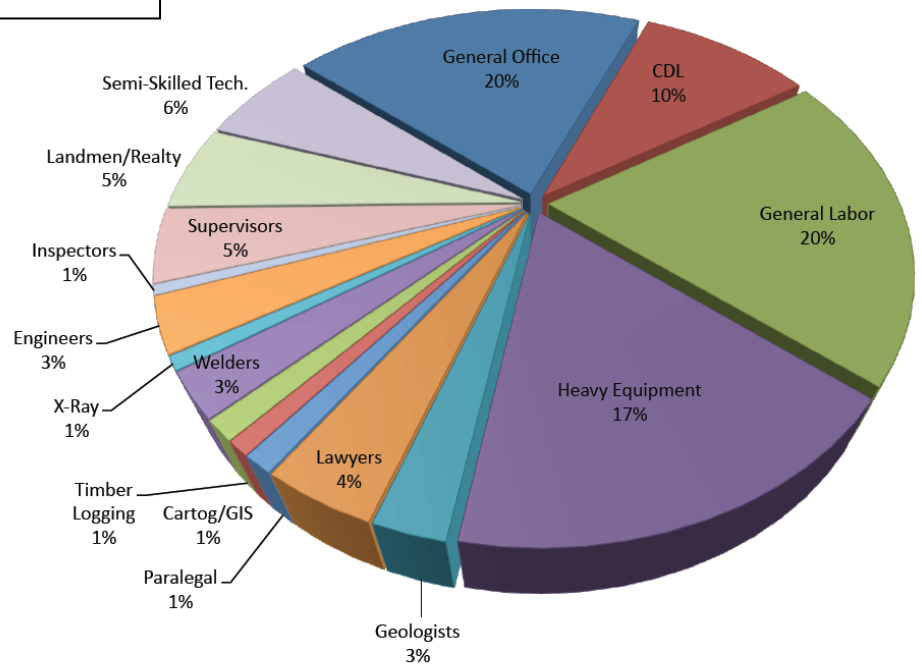


Exhibit B

Natural Gas Workforce Occupations by Category



Source: "Pennsylvania Marcellus Shale Economic Impact Study", Summer, 2011, Marcellus Shale Education and Training Center