**TESTIMONY OF SCOTT ROTRUCK**
**Vice President of Corporate Development for Chesapeake Energy Corporation**
**before**
**The Senate Energy & Natural Resources Committee**
**"To Examine Marcellus Shale Gas Development and Production in West Virginia"**
**November 14, 2011**

Thank you, Senator Manchin, for the opportunity to discuss the enormous economic and environmental potential of natural gas production from the Marcellus Shale in our home state of West Virginia. With the U.S. now considered the "Saudi Arabia of natural gas," as you said in announcing this field hearing, West Virginia is in a "unique position of strength" with this resource, and companies like Chesapeake Energy are excited to be leading the way – staying highly focused and committed to the safety of our employees, our communities and the environment and our natural resources.

I am Scott Rotruck, Vice President for Corporate Development for Chesapeake Energy Corporation. Our company is the second-largest producer and most active driller of clean natural gas in the United States, as well as a top 15 producer of natural gas liquids and oil. No company knows more about producing these domestic resources than Chesapeake, and we are proud of the leadership role we have built and continue to play in developing natural gas and oil from shale plays throughout the country and specifically here in West Virginia.

While Chesapeake is headquartered in Oklahoma City with about 12,000 employees nationwide, I am a native West Virginian and live in Morgantown. As such, I am one of nearly 700 West Virginians employed by Chesapeake. Our offices here in Jane Lew and Charleston (and likely the northern panhandle soon) are focused on the development of what we believe may be one of the world's largest natural gas deposits, underlying parts of West Virginia, Pennsylvania, New York and other Appalachian states, which – as we know well today – is called the Marcellus Shale.

First, let me begin by providing some additional background on Chesapeake Energy. Today, we have about 175 rigs operating across the country of the approximately 2,000 total rigs – with seven of our 175 operating in West Virginia and 28 in the Marcellus Shale.

Chesapeake was one of the early entrants into the major natural gas shale basins, including – in addition to the Marcellus where we hold about 1.8 million acres of leasehold (net) – the Barnett Shale in north-central Texas, the Fayetteville Shale in north-central Arkansas (though we have since sold this), the Haynesville Shale in Louisiana and East Texas and the Bossier Shale in Louisiana. Today, we are also a key player in liquids-rich like the Eagle Ford Shale in south Texas and the Utica Shale in Ohio, Pennsylvania and other eastern states.

We are very proud that our company is America's leader in high-potential deep shale gas exploration and production, and we are excited about what this can mean to West Virginia and America's energy future and security.

As you know, the natural gas industry has and can continue to have a great economic impact on our state. Today, the industry employs 32,000 West Virginians, and more than 19,000 additional jobs could be created by 2015, according to a West Virginia University study. Chesapeake alone has 187 West Virginia vendors on our approved vendor list, hiring locally and having an economic impact on communities where they operate.

Thanks to our industry, areas of the state that have been experiencing higher unemployment are now seeing real success stories. In Wetzel County, Litman Excavating and Construction, a small company owned by New Martinsville resident Bob "Boo" Litman, has seen his company's employment grow more than 400 percent from just 17 employees to about 105 due to Marcellus Shale activity, and as he told New Martinsville's City Council, "we need more."

With this activity comes a great commitment to safe and responsible development, and our industry has evolved significantly over the years and decades with great technological advancements to make natural gas production truly a manufacturing process.

At Chesapeake, we use state-of-the-art technology and resources that enable us to drill more accurately and precisely. Our Reservoir Technology Center allows us to generate on-site core analysis. We also have our own 3-D seismic visualization center where we can display robust and vivid subsurface images, making it possible for our geologists to pinpoint natural gas prospects miles below the surface. Our company has an unparalleled inventory of more than 30 million acres of 3-D seismic data, as well as U.S. onshore leasehold of about 15 million acres. In short, we believe no other entity has more knowledge about America's subsurface as it relates to natural gas than Chesapeake.

West Virginia also has wonderful assets that can help us advance our industry, including the National Energy Technology Lab (NETL), based in Morgantown, as well West Virginia University, which has one of the few petroleum engineering programs west of the Mississippi.

The rest of the energy industry is now investing heavy dollars into shale prospects. Chesapeake, for example, has attracted billions of dollars in our company in recent years, including deals with Statoil, BP, Total, BHP Billiton and others. You see the "major" integrated companies for the first time in many years really investing in the U.S., including ExxonMobil's purchase of XTO in 2010.

To provide some background about this supply revolution, our industry has known about the existence of natural gas in deep shale formations for many years. Unfortunately, we did not know how to economically extract the gas in commercial quantities from this very hard, non-porous and low-permeability sedimentary rock.

Then along came the Barnett Shale in the Dallas-Fort Worth area of Texas. George Mitchell pioneered the Barnett Shale play starting in the 1980s. After combining hydraulic fracturing with horizontal drilling techniques while natural gas prices rose off their lows, the play took off in 2003, and today, is the most prolific producing natural gas field in the country.

Horizontal drilling is the process of drilling vertically and then directionally approaching the target formation on a horizontal plane at an "entry point." In some cases, the horizontal portion of the well bore extends beyond a mile. While not a new process, horizontal drilling has greatly advanced over the years.

Modern horizontal drilling can make a near 90-degree turn with the drillbit, which allows much increased exposure of the drillbit to the "sweet spot" of a geologic formation and the ability to extract much greater quantities of natural gas than a vertical well because the horizontal well bore exponentially increases contact with the target formation. In addition, it can provide a much more environmentally friendly technique because the number of surface locations is dramatically reduced, thus minimizing the surface footprint. It also allows us to safely drill in

urban areas such as Fort Worth, Texas, near Shreveport, Louisiana and in other heavily populated areas where surface locations and surface disturbances need to be minimal.

The second advancement that makes this shale revolution possible is hydraulic fracturing, or "fracking," which has been utilized commercially since the 1940s and is now used on nearly all producing natural gas wells drilled. Performed after a well has been drilled, this process creates fissures in very tight shale formations deep underground, many thousands of feet below the surface and freshwater aquifers. Water and sand, which is a "proppant," are pumped down the wellbore at high pressure to fracture the rock, so natural gas will flow into the wellbore while the proppant serves to prop and keep open those fractures. In addition to these primary elements a very small percentage of other additives is used in the fracturing mixture to protect target formations and increase recoveries.

It is very important to reiterate that these deep shale formations exist thousands of feet below the land surface and are separated from freshwater supplies by layers of steel casing, protected by concrete barriers as well as millions of tons of hard, dense solid rock geologic formations.

One issue that has arisen in recent years is the concern over chemicals used in the process. Like EQT here today, Chesapeake is a proud participant in www.fracfocus.org, a public registry where operators post chemicals used in hydraulic fracturing on a well-by-well basis. In fact, we have been disclosing our chemicals since 2009. Today, Chesapeake is working with the Environmental Protection Agency (EPA) on its hydraulic fracturing study – we have offered a prospective site for this study – which is scheduled to have initial research results by the end of 2012 and a final report released in 2014. Our highest priority is a science-based and balanced report.

Education on all the issues associated with energy development is one of the things our industry has been too slow to do with this supply revolution, not just for local communities and states but policymakers and leaders like yourself. At Chesapeake, we have certainly tried to change that in recent years by leading the way – not just by disclosing hydraulic fracturing chemicals, but also on issues like road use and truck traffic, water use and noise.

For instance, in West Virginia in the past several years, we have hosted meetings with residents most affected by our activities to listen to their concerns and share our plans. Through our experience with these Community Advisory Panels in drilling areas, we have negotiated solutions on issues like school bus travel, noise, and road use. It is no secret that our activity takes a toll on roads, and so we have invested $70 million on rebuilding roads in the state – in many instances returning them to a condition better than we found them.

We are committed to the highest standards of environmental excellence at Chesapeake. While no energy source is without impact, we work every day to improve our industry-leading practices by integrating our core values – protecting the environment and natural resources; striving for operational excellence; continuously seeking ways to improve our practices and minimize our footprint; supporting robust science-based regulation at the appropriate levels of government; community focus and involvement; and a commitment to human, physical and financial capital to achieve and maintain those core values. These values are vital to our operational structure, and we expect the same commitment from our partners, contractors and vendors.

I will conclude with some comments about what all this can mean for our state and our nation. Interestingly, the last time someone from Chesapeake spoke on a related issue before a Congressional panel was in June 2009, when a former Chesapeake colleague, also from West Virginia, testified on the issue of "shale gas potential" before a House Natural Resources subcommittee. Even with all the enormous potential then, it is amazing how much has even changed – just a little more than two years later.

That same year, the U.S. surpassed Russia as the largest producer of natural gas in the world. Moreover, companies like ours have now discovered additional natural gas and oil fields across the country, including, for instance, the Utica Shale in Ohio and other Eastern and Midwestern states.

Today's widely recognized natural gas supply abundance is even more amazing considering that, less than a decade ago, the U.S. was facing difficult energy and economic decisions based on natural gas scarcity.

Then, our manufacturing and chemical facilities were moving offshore – as you know, chemical companies use large amounts of natural gas as a feedstock and a fuel – agriculture was facing steep fertilizer prices due to higher natural gas prices, affected Americans were facing high home heating costs, and we were importing more and more foreign oil for transportation, posing continued national security concerns. The broad effects of this then-natural gas supply scarcity demonstrates the wide variety of uses for natural gas, which represents about 23 percent of our power generation mix, in addition to its industrial, commercial and residential uses.

Fortunately, today shale gas no longer just has "potential." It is real, and it is a game-changer not only for America's natural gas industry but also potentially for our nation, our economy and our environment – and possibly the world. Institutions like the Massachusetts Institute of Technology (MIT), the Potential Gas Committee at the Colorado School of Mines and the U.S. Energy Information Administration (EIA) have all continued to reaffirm in recent years the reality of U.S. natural gas supply abundance.

Finally, according to a recent study by Navigant Consulting released just this month, the boom in natural gas development is saving consumers billions of dollars a year, thanks to a supply that keeps outstripping demand and can do so for many decades. According to the report, in West Virginia alone, consumers in 2010 saved $296 million – or 33 percent of their gas bill – versus what it would have been without the new, abundant supply.

As you can see, shale extraction has changed the economic and energy pictures in states like West Virginia, and we are proud to be leading the way. As I said before, though, we also realize that with leadership comes responsibility. Chesapeake takes this responsibility seriously, as an industry, economic and environmental leader, and we will continue to be committed to the highest standards in all areas. That is what Chesapeake expects of our employees, our partners, and our company.

Thank you, Senator Manchin, and I look forward to answering any questions.