

## Production and Royalties from Shale Gas Wells Rapidly Decrease while their Costs Increase

By definition, for something to be sustainable, it must endure far into the future in essentially the same quantity and with the same quality. Shale gas once again fails the sustainability test.

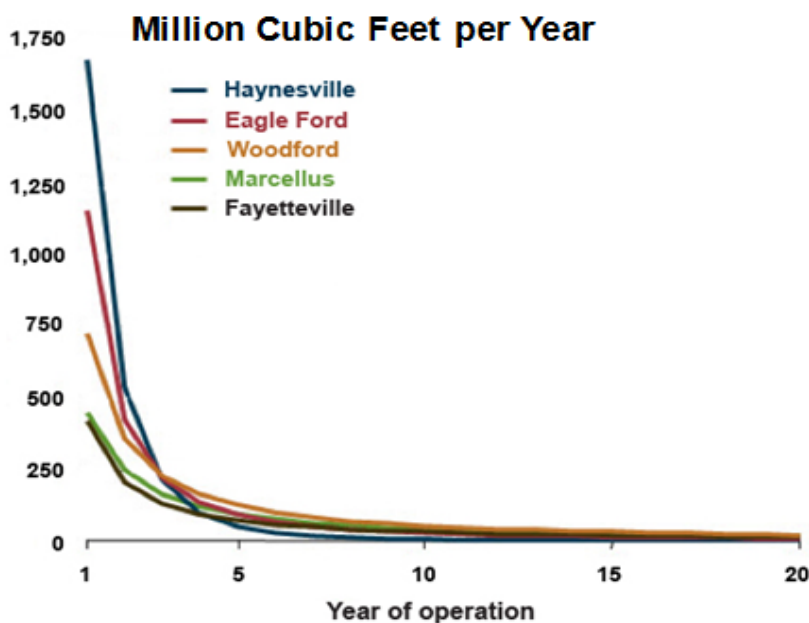


**Gas companies and financial institutions anxious to sell their stock to investors have grossly overstated the potential amount of gas that can be recovered** from shale rock formations. Independent, analysis and review of gas company estimates by geologic surveys, governments, and impartial third parties around the world have contradicted the industry's wildly optimistic forecasts about recoverable shale oil & gas.

Rather than 100 years worth of shale gas in North America, a number of impartial analysts examining the industry's actual shale gas production say that the **actual reserves of shale gas** are closer to 26 years at current usage levels, or **about 25% of gas company estimates**. However, if gas usage increases, as the industry wants, there is only a little more than a decade of gas, or only 10% of the industry's estimate of reserves.

As well, all developed shale gas fields (called 'plays' by the industry) are not equal. Of the 20 or so developed shale areas in the U.S., the top five shale areas provide 80% of the total volume extracted. The other 15 shale gas plays only produce 20% of the total volume. This simply means that **75% of all shale gas plays fail to produce as industry depicts**.

### Production from the top 5 US shale gas plays



Respected Canadian geologist and analyst David Hughes has studied the data from 65,000 U.S. shale gas wells from 30 shale-gas and 21 unconventional oil fields. He found that, **“Wells decline rapidly within a few years. Those in the top five U.S. plays typically produced 80–95% less gas after three years.** Moreover, the majority of these fields had peaked after five years of production and were now in decline.”

**“The production of shale gas and oil is over-hyped.”**



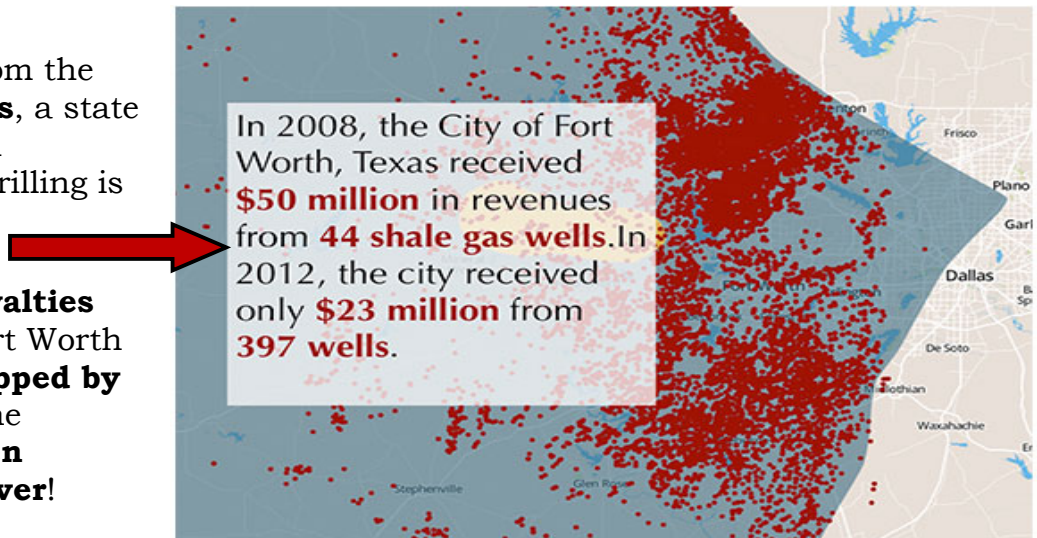
This means that many **new wells have to be drilled continuously just to make up for lost production**. The industry's own experience now demonstrates that the typical shale play reaches peak production in about four or five years and then rapidly declines – regardless of how many new wells are drilled.

Production also declines because the drillers tap the best areas first – the 'sweet spots'. When they become dry, the next wells are of poorer quality. In practical terms this means that the number of wells drilled must increase even more, while the amount of gas decreases. **What does this mean for the jurisdiction hosting the industry?**

**Royalties will increase for the first few years and then decline.** However, because an increasing number of wells must be drilled, all the problems of **pollution, water usage and road damage will quickly get worse, while the amount of money to deal with them will decrease.**

Consider this example from the City of **Fort Worth, Texas**, a state where shale gas has been encouraged, and where drilling is allowed in cities.

**From 2008 to 2012, royalties and revenues** paid to Fort Worth by the industry have **dropped by more than 50%**, while the **number of wells has been multiplied nine times over!**



The \$23 million in **gas revenues** Fort Worth received in 2012 may not even cover the increased costs of repairing serious road damage and skyrocketing health care costs that accompanying 397 wells. As time passes, the **shale gas industry can become a net drain on the taxpayers.**



**Shale gas is a finite, fossil fuel, which by definition means that it is unsustainable, but data shows that even on economic grounds it is not sustainable.**

Sources: *Drill, Baby, Drill: Can Unconventional Fuels Usher in a New Era of Energy Abundance?* Post-Carbon Institute, Feb, 2013, David Hughes  
*Fracking: The next bubble? New research shows that our reliance on cheap, domestic natural gas may not be sustainable*, Apr 1, 2013, Brad Jacobson  
*Shale Truth Interview with, Art Berman, (oil and gas geologist who heads Labyrinth Consulting, a Houston-based geological consulting firm), Delaware River Keeper Network, June 27, 2013*