

## Shale Shock: How to Invest in Hydraulic Fracturing

### Special Report

Within the last few years, one of the most media-vilified aspects of U.S. oil and gas production has been the controversy over hydraulic fracturing.

And believe us when we say there's no shortage of accusations, either.

However, is the negative hype warranted?

While everyone will eventually come to grips with there answer to that question, the prospect of a complete ban on hydraulic fracturing in the United States is unlikely to happen without concrete evidence proving the recent charges against it.

Recently, companies have been able to tap into previously unattainable oil and gas resources by combining the hydraulic fracturing process with new drilling techniques. Together, it's a perfect marriage for these producers to take advantage of these emerging shale plays.

#### Something Old, Something New

Let's start from the beginning.

What is hydraulic fracturing?

Even though the controversy surrounding the hydraulic fracturing procedure has been played out in the media during the last few years, the process has actually been around since the 1940s. Since then, more than 2 million fracture treatments have occurred.

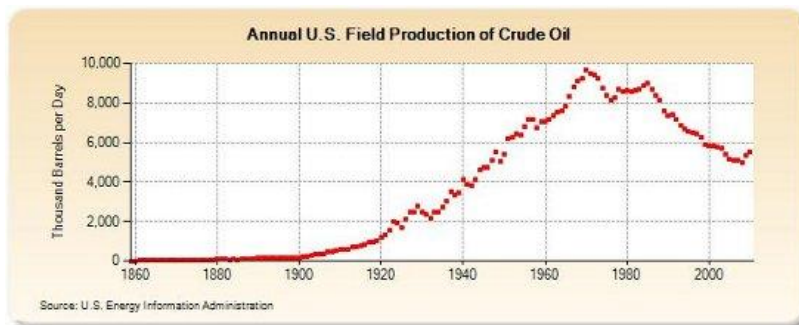
The first well fracture well took place in Kansas in 1947 by Stanolind Oil Company. Two years later, Halliburton was granted a patent to use their 'Hydrafrac process'.

In other words, the process itself isn't new.

For the last two decades companies have used the recent advancements made in horizontal drilling to extract oil and gas from the various shale formations across the United States and Canada...

And they've done so with tremendous success.

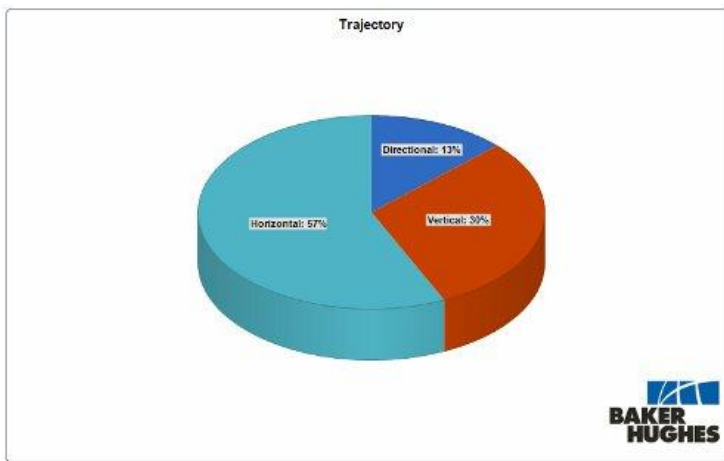
We all know the story of oil production in the United States. After peaking approximately four decades ago, our oil production has declined by more than 42%:



The *only* bit of good news that producers have had is from emerging shale plays. Without the use of coupling horizontal drilling with hydraulic fracturing, that decline would have continued. In North Dakota alone, production has grown 300% since 2004. The nearly 400,000 barrels produced there every day would be completely inaccessible.

That loss alone would erase any production gains made within the last few years.

In fact, according to the latest Baker Hughes rig count, almost 60% of the 1886 active rigs are drilling horizontally:



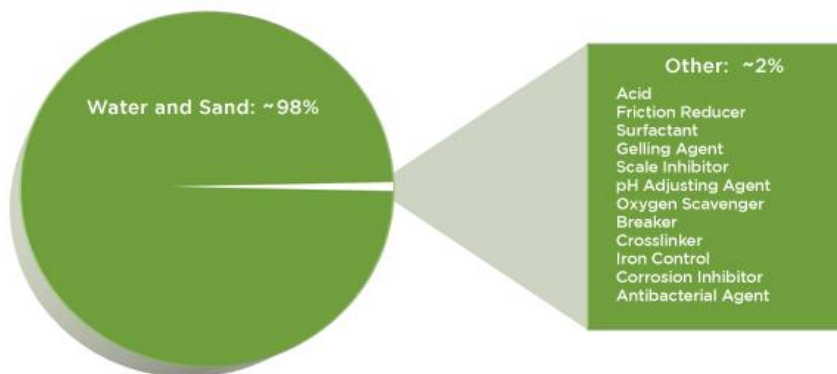
The inconvenient truth here is that without developing these shale formations, not only would the U.S. become more dependent than ever on oil imports, but we would be hard pressed to meet demand. According to the EIA, our consumption is already back over 19 million barrels per day.

Furthermore, do we *really* want to be beholden to more Saudi oil?

### Something Blue

Like everything else, hydraulic fracturing *does* have several drawbacks which companies must adapt to and overcome to progress.

During the process, millions of gallons of fracturing fluid is injected into the well in order to fracture the rock, giving it a higher permeability and allows the oil and gas resources to flow more freely.



Consisting of 99% water and sand and 1% of other additives, the fluid is injected into the well in order to fracture the rock, giving it a higher permeability through which the oil and gas resources can flow more freely to the well.

In the fracturing process, an average of 4.5 million gallons of water is used.

Although the amount of water usage itself is a problem, it's that 1% of chemicals that is drawing the opposition's ire.

The concern is over the potential contamination of drinking water.

Unfortunately, there's no hard proof to validate those speculations. In a House Oversight and Governmental Reform Committee hearing on May 24, 2011, Environmental Protection Agency head Lisa Jackson reiterated that point, saying, "I am not aware of any proven case where the fracking process itself has affected water, although there are investigations ongoing."

The jury will be out for another three years. At least, that is when the EPA's study on hydraulic fracturing is expected to be released.

In a typical well, the rock formation being fractured lies at a depth of more than 7,500 feet. Water aquifers are found at a depth of about 1,000 feet.

In the meantime, drillers will have access to about 85% of New York's portion of the Marcellus shale now that the moratorium on hydraulic fracturing lifted. The only areas where the process is still banned are public lands in the Syracuse and New York City watersheds.

### How to Invest in Hydraulic Fracturing

Interestingly enough, our best hydraulic fracturing investment doesn't even own a single acre of shale property, nor does it physically conduct the hydraulic fracturing operations.

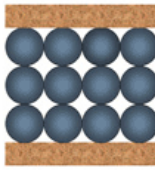
The company is Carbo Ceramics (NYSE: CRR) and is perhaps one of the best companies that mainstream investors still flying beneath the radar of mainstream investors.

What Carbo does, in fact, is *improve* upon the hydraulic fracturing process. Through its various products, the company provides drillers with ceramic proppant.

Typically, a company looking to stimulate the rock formation through hydraulic fracturing will use sand as a proppant. A solid proppant is necessary to keep the fracture after the fluid injection, making the formation more permeable and allowing the oil and gas resources to flow into the well.

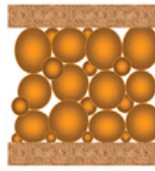
### Ceramic Proppant Benefits

Uniform size and shape ceramic grains provide maximum porosity and allow more oil and gas to flow through the proppant pack.



### Alternative Proppant

Broadly sieved and irregularly shaped proppants such as sand and resin coated sand pack more tightly, resulting in loss of fracture width and reduced conductivity.



As you can see above, companies are much more efficient using Carbo's ceramic proppants. In fact, these drillers are able to increase productivity in the well by up to 30%, as well as tacking on an additional 30% of the estimated ultimate recovery.

And as far as performance goes, we're hard pressed to find a better company:

### Carbo Ceramics, Inc. Common Sto



## Carbo Ceramics

**Market Capitalization: \$3.8 Billion**

**Annual Dividend Yield: 0.49%**

**52-Week Range: \$70-\$169.34**

**Shares Outstanding: 23 Million**

**P/E (ttm): 43.11**

**PEG Ratio: 1.08**

**Total Debt: 0**

Within the last twenty-four months, investors have made a small fortune with Carbo's performance as shares increased more than 500%!

Moreover, every energy investor has felt a sting in the latest market correction – except Carbo shareholders. Since the beginning of March, 2011, Carbo has actually jumped 42%.

Going forward, Carbo Ceramics is one of the safest hydraulic fracturing plays in the market.

Unless a clear smoking gun over the hydraulic fracturing process – however unlikely – suddenly arises, U.S. drillers will continue targeting the oil and gas-rich shale formations, further growing Carbo's customer base.

Until next time,

Keith Kohl

Editor: [Energy and Capital](#)

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