



Drilling on Wall Street

Posted by [Dave Cohen](#) on June 26, 2006 - 4:46pm

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Tags: [anadarko](#), [coal bed methane](#), [exploration](#), [kerr-mcgee](#), [natural gas](#), [production](#), [ultra deepwater](#), [wall street](#), [western gas](#) [[list all tags](#)]

Finding it easier to add new reserves on Wall Street than from E&P in the ground, Anadarko bought both Kerr-McGee and Western Gas on Friday, June 23rd in a [\\$21 Billion Deal in the Oil Patch](#) -- from the Houston Chronicle.

In an unexpectedly bold move Friday, Anadarko Petroleum Corp. announced it would purchase not one but two oil and gas companies for a combined \$21.2 billion, in a ringing endorsement of U.S. energy exploration...

It's buying Kerr-McGee, a storied energy company out of Oklahoma City that is heavily entrenched in the Gulf of Mexico's deep waters and the Rocky Mountains, and the smaller Western Gas Resources of Denver, which also has significant reserves in the Rockies.

The double deal had some analysts doing a double take.

This analyst was also a bit stunned and a little investigation turned up a number of interesting things. Let's check this deal out.

This excellent [summary](#) from Minyanville ("the trusted choice for the Wall Street voice") tells us the pertinent facts.

Kerr-McGee Resources:

- Bid price per share: \$70.50
- Shares outstanding: 227.0MM
- Total debt: \$2.4 Bill
- Total (enterprise) bid value: \$18.40 Billion
- Oil Reserves: 341MM BOE
- Natural gas reserves: 3.34 Tcf
- Total equivalent reserves: 898MM BOE (30% proved undeveloped) Price/reserve in the ground: \$20.5/Boe or \$3.41/Mcfe TEV/2006 EBITDA consensus estimate = 6.81x

Western Gas Resources:

- Bid price per share: \$61.00
- Shares outstanding: 76.0MM
- Total debt: \$515MM

- Total (enterprise) bid value: \$5.15 billion
- Oil Reserves: 0.0
- Natural gas reserves: 921 Bcf
- Total equivalent reserves: 153.5MM BOE (57% Proved undeveloped) Price/reserve in the ground: \$33.55/BOE or \$5.60/Mcfe \$\$ of transaction allocated to midstream assets: \$1.6 Billion Price/Reserve in ground less midstream assets: \$23.12/BOE or \$3.85/Mcfe TEV/2006 EBITDA consensus estimate = 10.16x

I assume these fossil fuel reserve numbers are *proved* reserves as reported to the SEC--see Bubba's [What the hell are oil reserves anyhow?](#) So, this was a natural gas "play", using that term loosely. The total bought is 4.26/tcf (trillion cubic feet). The US uses about 22/tcf annually, so these resources represent somewhere around 70 days of US yearly consumption. We are reminded [here](#) that

Anadarko expects ultimately to recover 3.8 billion barrels of equivalent [BOE] from Kerr-McGee and Western Gas at a price of less than \$12 per barrel. By contrast, crude futures are currently trading north of \$70 a barrel.

"Opportunities to gain access to such large, high-margin resource opportunities at such economic full-cycle costs are rare, and we are excited about the value we expect to create for Anadarko shareholders," Anadarko said.

Apparently, Anadarko doesn't see natural gas prices coming down any time soon. According to Minyanville, the total equivalent proved reserves are only 1.052 billion BOE. Using a standard conversion factor 1 BOE = 5487/cf, the number turns out to be 1.18 billion BOE, which is close. Anadarko must anticipate an additional 2.8 billion BOE of additional probable or possible reserves which, if they've done their due diligence, is entirely possible. No doubt they are also hoping for some *undiscovered resources* -- don't you love that phrase? Kerr-McGee is involved in deepwater GOM projects (see below) and according to the MMS in [Deep Water -- Where the Energy Is](#) :

The Gulf of Mexico has been a major supplier of oil and gas to America for nearly half a century. With declining production from its near-shore, shallow waters, energy companies have focused their attention on oil and gas resources in water depths of 1,000 feet and beyond. Their progress in developing these resources has made the Gulf of Mexico the focal point of deep water oil and gas exploration and production in the world. The Department of the Interior's Minerals Management Service estimates that the deep water regions of **the Gulf of Mexico may contain 56 billion barrels of oil equivalent**, or enough to meet U.S. demand for 7-1/2 years at current rates.

I'll gently remind the reader that *barrels of oil equivalent of natural gas is not the same as* having 3.8 billion barrels of light sweet crude in your hands, so to speak, even if we grant that all the reserves are there. While natural gas prices and oil prices are related in some mysterious way I don't fully understand, the real margins depend on where the natural gas is and what the costs will be to produce it. I wouldn't take that \$12/boe production cost estimate at face value. We must look a little more closely at both acquired companies to find out what the real issues are regarding production.

Kerr-McGee and Ultra Deepwater

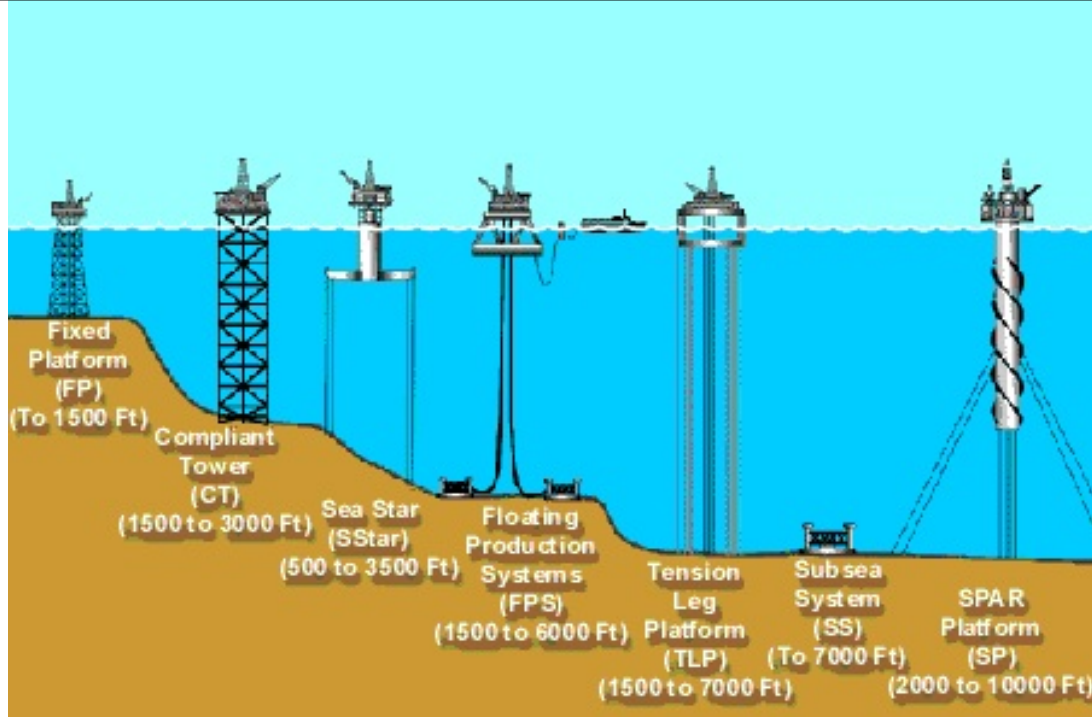
Kerr-McGee is involved in deepwater and *ultra* deepwater drilling in the Gulf of Mexico as you see in [Kerr-McGee makes back-to-back discoveries in deepwater](#) or [Constitution and Hornet Discoveries Continue Kerr-McGee's Deepwater Success](#). The term *deepwater* usually refers to drilling at water depths over 1500 feet or so but *ultra* deepwater drilling involves the same circumstance with the additional requirement that drilling then proceeds as much as 3 miles beneath the sea bottom at total depths greater than 8000 feet. The image below is from Kerr-McGee's [Deepwater Gulf of Mexico](#) information page.

□
*Constitution spar -- the company's
sixth operated deepwater floating
production facility in the Gulf
of Mexico.*

Additionally, Kerr-McGee has a number of onshore projects (follow the link immediately above to the *U.S Onshore* section). Primarily, it appears that Anadarko has purchased their Gulf of Mexico expertise and properties. Needless to say, *ultra* deepwater drilling presents many technical challenges and higher costs, not to mention possible *hurricanes* that could disrupt production in any given season. But as fans of technology would say, *necessity is the mother of invention*. This includes their [spar technology and subsea tiebacks](#) among other things.

As the world's premier independent deepwater exploration and production company, Kerr-McGee has a history of pioneering technological innovations that give it a distinct competitive advantage. Such technologies enable us to tap hard-to-reach natural resources in a cost-effective, safe and environmentally responsible manner. Today, we're producing oil and natural gas from fields in water depths that were considered beyond reach just a few years ago.

Sounds good, doesn't it? However, drilling in such high temperature / high pressure (HTHP) environments is fraught with difficulty. Check out [Deepwater Research](#) from the MMS from which we get this graphic.



Examples of offshore drilling and production platforms and rigs -- Click to Enlarge

This paper lists ongoing investigations of problems in ultra deepwater production with catchy titles like *Blowout Prevention Procedures for Deepwater Drilling* and *Highly Compliant Rigid-Pipe Riser Analysis*. Finally, I can not resist telling you about the late fall [IADC DRILLING GULF of Mexico 2005 Conference & Exhibition](#) with the subtitle **Drilling GOM explores storm prep, mooring, HPHT, operator drivers, market outlook**.

Attendees will learn about industry's preparations for severe weather, deepwater rig mooring issues, the future plans of two operators new to the Gulf, a rig outlook and the latest technology in riser and emergency disconnect procedures. And that's only the first day!

All and all, I'd say ultra deepwater drilling is still a risky business although Kerr-McGee has had some successes. Anadarko is betting that the outstanding technology issues will get solved and the weather will cooperate. It's not just like falling off a log.

Western Gas and Unconventional Natural Gas

Western Gas specializes in the production of natural gas from [unconventional sources](#), particularly Coal Bed Methane (CBM) and to a limited extent tight sandstone formations and shale gas. The company is headed up by Peter Dea, who gave this [presentation](#) (powerpoint) at ASPO-USA back in November of 2005. The Denver Post reported last year in [Western Gas still standing alone -- After a wave of deals, Western Gas may be the most tempting target left](#)

Western Gas has 921 billion cubic feet of proven reserves, mostly in two prolific plays in Wyoming - the Powder River and Green River basins. That's enough gas to supply the entire state of Colorado for more than three years.

Its longer-term reserves - gas potentially recoverable with favorable prices and technologies - total 3 trillion cubic feet....

In the realm of natural gas, most firms either drill and produce it, "upstream" in industry jargon, or gather it from wells and process it, known as "midstream."

Western Gas does both. And does both well, most analysts assert.

Western's cost for finding and developing new gas wells over the past five years has averaged 82 cents per thousand cubic feet of gas, less than half of the average \$1.84 per unit for 48 exploration and production companies tracked by Credit Suisse First Boston.

The cost advantage comes in part from Western's heavy emphasis on production from coal-bed methane wells, which are cheaper to drill than wells in tight sandstone formations that characterize much of the Rocky Mountain West.

Western's gas production grew 13 percent from 2004 to 2005, compared with the peer group increase of 8.4 percent.

So, Western Gas was ripe for takeover and Anadarko jumped on the opportunity. In addition, we learn from this Western Gas [strategic and operational update](#) that

In Canada, the Company has drilled two wells in prospective unconventional gas reservoirs and is progressing on leasing, joint venture discussions and play evaluation in the Western Canadian Sedimentary Basin [WCSB]. The focus is exclusively on finding, developing, gathering and processing unconventional natural gas. The WCSB contains a large, yet immaturely developed resource base offering coal bed methane, shallow tight sands and shale gas opportunities. In coal bed methane alone, resource estimates for gas-in-place in the U.S. Rocky Mountain basins and WCSB are comparable at several hundred trillion cubic feet of gas in each area. However, Western Canada represents only a few percent of the combined areas' current coal bed methane production, hence providing significant opportunities in future years.

This is important due to the fact that developing CBM resources in the Canadian WCSB is projected to be an important source of natural gas for further production of the [tar sands](#). Naturally, producing CBM is not without its attendant problems. The main problem is that the operations are very water-intensive. For example, from my unconventional gas post cited above, we learn that "the volume of water produced by CBM production is staggering. For example, in the Wyoming Powder River Basin alone, over 1.5 billion gallons of water is produced daily".

Acquiring Western Gas would appear to be a good strategic move for Anadarko providing that the natural gas market remains bullish. High prices will continue to fuel CBM production although there are resource problems as I just pointed out.

North American Natural Gas

The most surprising aspect of Anadarko's Wall Street drilling was that both companies acquired work almost exclusively in North America. From the Houston Post article cited at the very top, we learn

One question is, what will Anadarko do with the international properties picked up in this deal?

When [Anadarko's Chairman and CEO] Hackett came on board two and a half years ago, he quickly began an international program that would take Anadarko to far-flung spots such as Tunisia, the Black Sea, Gabon, Nigeria and Sao Tome.

But in that short time frame, the world changed.

International doors are closing on U.S. companies in places such as Ecuador where Occidental Petroleum lost concessions and Russia and Venezuela where shape-shifting tax programs make it hard to plan for future investment.

Hackett would not say what he plans to do with international assets, but he did say **the "international cost of rent is high."**

[Managing director of AIG Financial Products] Russell Sherrill said it's unlikely Anadarko would exit the international scene altogether because Anadarko and Kerr-McGee have some very attractive plays in Algeria and offshore Brazil and China.

This is a startling revelation. "There's no place like home". Apparently, Hackett's cost/benefit analysis concluded that the cost of doing business internationally over the long term was higher than trying to exploit difficult to produce natural gas in North America in a friendly political climate. There are still exceptions like Algeria or Brazil where the geopolitical risks are lower but many other regions of the world are becoming increasingly unpredictable from a business point of view given the long lead times necessary to put new projects online.

To conclude, Anadarko has adopted a strategy that makes two key assumptions.

- Natural gas prices will remain high indefinitely in the future. LNG imports will not affect this situation.
- Ultra deepwater from the Gulf of Mexico and unconventional sources from the North American western provinces will be profitable. Both types of production have a high potential payoff despite the technical and logistic challenges mentioned here. Hurricanes in the GOM will not cause sufficient future disruptions that will affect the bottom line.

Only time will tell if Anadarko's strategy pays off. About prices, I have little doubt. However, the 2nd assumption seems dubious. We shall see.



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