FORMERLY POWELL BARNETT SHALE NEWSLETTER - SINCE 2003

# POWELL SHALE DIGEST

## ISSUE OF MARCH 26, 2012 – VOL. 1

EDITORIALS, RESEARCH, GUEST COLUMNS, RIG COUNTS,
NATIONAL/INDUSTRY/REGULATORY NEWS SYNOPSIS, CALENDAR

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- Editorial: Fourth Generation in Number of Frac Stages Averaged 20 in 2011
- Editorial: Check Before You Agree to Speak at Conferences, Symposiums, & Expos
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- Shell Signs Deal to Produce Chinese Shale Gas
- Natural Gas Glut to Test Limit of Storage Capacity
- 'FrackNation' Filmmakers Post Billboard in NY Challenging 'GasLand' Lies


The *Powell Shale Digest* (formerly the *Powell Barnett Shale Newsletter*) of news and research provides current information on the technology and events in major U.S. shale plays including, but not limited to, the Bakken/Three Forks, Barnett, Eagle Ford, Fayetteville, Haynesville/Bossier, Marcellus, Monterey, Niobrara, Tuscaloosa Marine, and Utica, as well as other issues that impact the oil and gas industry. The information contained in the Powell Shale Digest is for information purposes only. None of the information should be considered as legal, financial, consulting or any other professional advice. Consult your attorney, financial advisor or other professional consultants to determine how various topics may affect your company and/or you individually. The Powell Shale Digest is owned by Shale Ventures, LLC.

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## SHALE SPEAK - EDITORIALS

MARCH 26, 2012

*From the Desk of **Gene Powell**, Publisher/Editor*

### FOURTH GENERATION IN NUMBER OF FRAC STAGES AVERAGED 20 IN 2011

It was reported at the ***IHS CERAWeek* conference** in Houston in early March that **Derek Mathieson, President, Western Hemisphere Operations, *Baker Hughes*** said one can only expect energy technology advances to continue, and the spread of those advances will gather pace as what has been and will be learned in gas shales can quickly spread to oil.

**"The lessons we're learning are very quickly going to apply to new areas,"** Mathieson said. **"No good deed goes unpunished. Technology led us to where we are today."**

The industry is now in its fourth generation in the evolution of well completion technology. That's quite impressive when one realizes the first generation began in 2003. **"The pace of change here is really something that's unprecedented,"** Mathieson said.

Beginning in **2003**, **four** frac stages was the norm in the Barnett Shale.

The industry was using an average of **four - five** frac stages on a well with a maximum of **eight** in **2005,** according to Mathieson. During the second generation of progress (beginning in **2009**), the average number of frac stages was **12** with a maximum of **24**. Last year (**2011)** the average was **20** frac stages with a maximum of **40**.

**"Almost everything that we're doing on the gas side can be translated to the oil side..."** Mathieson said. **"We don't have to wait five years to get to the same place."**

The **lateral lengths** have increased along with the number of frac stages. As previously reported in the ***Powell Shale Digest*©**, an example is **Tarrant County, Texas** which increased in lateral lengths from an average of **2,433 ft.** in **2003** to an average of **3,599 ft.** in **2010**. Combining the growth in lateral length and number of frac stages equals an increase in **Peak Month Daily Average** in natural gas for **Tarrant County, Texas** from **2,207 MCFGPD** in **2003** to **2,717 MCFGPD** in **2010**. The lateral lengths and number of frac stages is greater in other areas such as the **Bakken Shale in North Dakota** and other shales.

### CHECK BEFORE YOU AGREE TO SPEAK AT CONFERENCES, SYMPOSIUMS, & EXPOS

The successes of many conferences, symposiums, and expos on shale and unconventional gas and oil have brought out promoters from as far away as England and from New York to California. A couple



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have been successful but have 'soaked' the attendees and the many companies paying the bills as they are purely for profit and have no experience in the oil and gas industry. Most don't have a clue as to whether $2.50 MMBtu for natural gas is low or high - they are just in it for the bucks.

These promoters are easy to spot. They charge very high attendance fees usually in the range of $1,500 to $3,500 per person for a two-day conference, which is 200% to 400% or higher than legitimate conferences. The cost to be an exhibitor is usually proportionally higher.

The most successful conferences in the shales have been the **DUG** (Developing Unconventional Gas) and now **DUO** (Developing Unconventional Oil) conferences being presented by ***Hart Energy Publishing / Oil & Gas Investor Magazine*** during the past six years. Their speaker quality, current subjects, venues, and low costs to attend have been rated the highest. Right on their heels in quality and cost are the conferences, symposiums and/or expo put on by ***NAPE; PennWell (Oil & Gas Journal); Gulf Publishing (World Oil Magazine); Texas Alliance of Energy Producers (TAEP); TIPRO (Texas Independent Producers & Royalty Owners Association***; universities (such as ***Penn State***); and cities among others.

One such promoter sent their agenda to me this past week announcing six conferences from May 22 to July 12, all across the country in shale developing areas. When I clicked on the first two links on their announcement, I found the cost to be **$1,695** per person and only a few speakers/subjects listed for the Pennsylvania meeting. The 2nd conference was also $1,695 per person and all the speakers were from one law firm described as their "highly experienced faculty." Each link for their next four conferences was a dead link, so there was no more information available.

I suggest that those of us who do speak at conferences, symposiums, and/or expos ask how much the attendees are being charged, and if you have never heard of the organization presenting the meeting, check them out before you agree to speak.



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*From the Desk of **Will Brackett**, Managing Editor*

## NY COUNTY LOOKS TO MAKE STATEMENT ON PROPOSED DRILLING BAN

**It was reported recently** that **Delaware County, New York** passed a resolution demanding that New York State and New York City pay mineral owners **$81.3 billion over 60 years** if a proposed ban on gas drilling in the city's watershed is implemented. The $81.3 billion is the estimated value of the mineral rights that won't be developed because of the ban.

Now, if you're thinking that $81.3 billion is crazy, let me make two points here. First, according to news reports, Delaware County officials don't really ever expect the state or New York City to pay anything. They're just trying to make a point of the extent to what amounts to a taking without compensation.

Second, there is precedent for this that we've told you about in the past. Back in 2003, the town of **Reno, Texas** (pop. 2,550) denied **Devon Energy** a drilling permit to develop a five-acre tract. A few weeks later in early 2004, **Devon filed suit**, seeking compensation equal to the market value of the minerals that Reno was preventing from being developed. A few months later, Reno gave in and granted Devon a permit to drill.

## RANDOM OBSERVATIONS ON A FEW NEWS ITEMS

**A Common Misperception about Energy and Gasoline Prices:** I keep hearing politicians, the media, members of the public, etc. mentioning wind and solar as some sort of answer in discussions about high gasoline prices. What this says to me is that few realize that wind and solar are used for an entirely different purpose than crude oil. Wind and solar can generate electricity. That's it. That's all they do.

By contrast, over 70% of the crude oil consumed is used for transportation – in other words it is refined into gasoline, diesel, jet fuel, etc. and eventually ends up in something's gas tank. In layman's terms, crude oil does one thing while wind and solar do another. It's about time to educate everyone that you could have all the wind and solar the greenies want and it wouldn't impact gasoline prices one cent.

**Encana is testing the use of liquefied natural gas to power drilling rigs in the Haynesville Shale.** Encana says so far, the use of LNG instead of diesel is lowering fuel costs while having the added bonus of reducing airborne emissions. Sounds like a winner.

**"Pipelines used in fracking": Say what?** I myself noticed, as did others that the *Associated Press* this past week seemed to go out of its way to **insert the term "fracking" into the headline** and first sentence of an article that was actually about **gathering lines**. No doubt whoever wrote the headline believed the



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article would get more notice and would be picked up by search engines if the magic term "fracking" was in there even if the story was about pipelines and not hydraulic fracturing.

One defender of the headline on the Internet argued that there would be no growth in pipelines without "fracking." Essentially that's true, but the headline was still misleading and inaccurate.

I know, "fracking" is now a term that apparently means a whole lot more than just fracture stimulation to complete an oil or gas well. To fossil fuel opponents and NIMBY activists, it's an epithet or a slur of everything they hate about the oil and gas industry. To the media, it is the entire process of producing oil or gas from certain wells. I can't get used to that, but alas, it does seem to be the way things are going these days.

**Pennsylvania environmentalists get caught again trying to use a misleading photo. The *Patriot-News* of Harrisburg reported** that for the second time in recent months, the environmental group **PennEnvironment** got caught with its pants down in a flap about a misleading photo. The group recently published a report claiming Pennsylvania's rivers are at risk from toxic industrial pollution with a cover photo that claimed to show toxic sludge being discharged from a pipe into a waterway in the state.

However, it turned out the photo came from a stock photo collection and merely showed a pipe in a water treatment plant. What's more, research found the photo likely came from South Africa.

While PennEnvironment claimed it wasn't to blame and childishly pointed the finger at the contractor that produced the report, it was not the first time PennEnvironment has been caught using a misleading photo. Last September, the group published a photo purporting to show a Marcellus Shale drilling rig flooded in Northeast Pennsylvania (see the Sept. 12, 2011 *Powell Shale Digest*). The only problem was it didn't take long for it to be discovered that the photo wasn't taken in Pennsylvania, but in Pakistan.

It truly is amazing that PennEnvironment is so stupid as to think that it can fool everyone with misleading photos. How anyone could regard PennEnvironment to have the slightest shred of credibility anymore is beyond me. These episodes demonstrate that as the saying goes, for PennEnvironment, "the emperor has no clothes" – or a truthful photo for that matter.



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## GUEST EDITORIALS

*The opinions expressed in the Guest Columns are solely of the author and do not necessarily represent the opinions of the Powell Shale Digest.*

### FULBRIGHT: U.S. SUPREME COURT RULES EPA ORDERS SUBJECT TO JUDICIAL REVIEW

**Supreme Court Holds that EPA Administrative Orders are Subject to Judicial Review**

**By Bob Greenslade and Patricia Finn Braddock**
*Fulbright & Jaworski L.L.P.*

March 23, 2012

In an unanimous decision, the U.S. Supreme Court ruled on March 21, 2012, in *Sackett v. Environmental Protection Agency, et al.*,[1] that the EPA may not use administrative compliance orders (ACOs) issued under the Clean Water Act (CWA) to (in the words of the court) "strong-arm" regulated entities into "voluntary compliance" without the opportunity for judicial review—including judicial review of whether the regulated party is within the EPA's jurisdiction. More specifically, the Supreme Court held that an ACO constitutes a final agency action which may be challenged in federal court pursuant to the Administrative Procedure Act (APA).[2]

The *Sackett* decision applies only to Section 309(a)(3) of the CWA and did not address the Sacketts' argument that their Fifth Amendment right to due process had been denied by the lack of a mechanism to challenge the ACO in court before the Sacketts were subjected to legal obligations and "ruinous" penalties. However, the Court's dismissal of the EPA's interpretation that administrative orders should be considered immune from judicial review even without an express exemption from the APA was relatively broad and will likely be applied in challenges to administrative orders issued by EPA under other environmental statutes.

An interesting case in point would be the emergency administrative order (EAO) that EPA Region 6 issued to Range Resources Corp. (Range) under the Safe Drinking Water Act (SDWA) in December 2010, that was based on a conclusion that two fracture-stimulated gas wells operated by Range in the Barnett Shale in northeast Texas had caused or contributed to contamination in nearby water wells. In subsequent litigation, Range deposed the head of Enforcement for Region 6, who acknowledged that the agency had not conducted a full investigation and characterized the EAO as giving Range an opportunity to present additional data and to conduct a study to determine if a causal pathway could be identified. Perhaps *Sackett* will encourage EPA to gather more facts before issuing future orders. The Range Resources case is further discussed below in the section regarding the SDWA.

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[1] *Sackett v. EPA*, No. 10-1062, slip op. at 9–10 (Mar. 21, 2012).

[2] *Id.* at 10.



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**Administrative and Emergency Orders Under Other Environmental Statutes**

A brief assessment of several notable statutes follows. Each statute has its own peculiarities as to finality, exhaustion of administrative remedies, and timing, exclusivity, and forum for judicial review. A complete discussion of these issues is beyond the scope of this article. Recipients of administrative and emergency orders should consult the relevant statute and case law as well as their attorneys to ensure that any rights to judicial review are preserved.

*CAA*. Section 113(a) of the CAA[3] states that EPA may issue ACOs "on the basis of any information available," provided the agency waits 30 days after issuing a notice of violation and provides the recipient with an "opportunity to confer." Failure to comply with an ACO can itself result in civil and criminal liability, separate and apart from the allegation underlying the ACO.

In 2003, the U.S. Court of Appeals for the Eleventh Circuit held in *Tennessee Valley Authority v. Whitman* that the CAA's ACO provisions are unconstitutional.[4] The case involved an ACO issued based on EPA's conclusion that the Tennessee Valley Authority had triggered New Source Review permitting requirements by replacing boiler components at its power plants. The court founded its opinion on EPA's power to enforce noncompliance with the ACO as a violation distinct from the allegations underlying the ACO. Because EPA could seek penalties without ever having to prove the underlying violations before a neutral tribunal, the court held that the ACO provisions violate the Due Process Clause and separation of powers.

*Tennessee Valley Authority* was not adopted by other circuits and currently applies only in the Eleventh Circuit. With *Sackett* failing to reach due process issues, *Tennessee Valley Authority* may continue to be unique among the circuits. However, it appears that ACOs under the CAA are sufficiently similar to those under the CWA that *Sackett* could be used to seek pre-enforcement judicial review of the substantive issues underlying a CAA ACO even without an appeal to Fifth Amendment due process concerns.

*SDWA*. EPA may issue administrative orders under Section 1423 of the SDWA[5] to "any person who is subject to a requirement of an applicable underground injection control program" that EPA "finds" to be in violation. Section 1423 allows order recipients an opportunity to request a public hearing to present evidence prior to the order taking effect, and to appeal the order to federal district court.

In contrast, *emergency* administrative orders (EAOs) under Section 1431 of the SDWA[6] may be issued "upon receipt of information" that a drinking water contaminant may present an imminent and

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[3] 42 U.S.C. § 7413(a).

[4] *Tennessee Valley Authority v. Whitman*, 336 F.3d 1236 (11th Cir. 2003).

[5] 42 U.S.C. § 300h-2.

[6] 42 U.S.C. § 300i.



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substantial endangerment to the health of people and are not subject to the pre-enforcement, administrative hearing provisions of Section 1423. Under Section 1448 of the SDWA, "any other final agency action" may be appealed to the U.S. Court of Appeals for the circuit in which the alleged violation occurred. Thus, if after *Sackett*, an EAO is considered a "final agency action," it would be appealable to the Court of Appeals under Section 1448. In contrast, under the CWA judicial review provisions at issue in *Sackett*, appeal of final agency actions—other than those specifically enumerated in Section 509(b) of the CWA,[7] which do not include compliance orders—would be to the district court under the APA.

Fracture-stimulated oil and gas production wells are generally exempt from the SDWA's underground injection control program.[8] Thus, Section 1423 does not give EPA authority to issue ordinary administrative orders to operators of such wells. In contrast, Section 1431, giving EPA authority to issue EAOs, is not expressly limited to wells subject to underground injection control requirements and, therefore, EPA believes that it has authority under the SDWA to issue EAOs to operators of fracture-stimulated production wells.

As mentioned above, in December 2010, EPA issued an EAO to Range Resources, which concluded that two fracture-stimulated gas wells operated by Range in the Barnett Shale in northeast Texas had caused or contributed to contamination in two nearby water wells. The EAO did not describe how the contamination had occurred. Range maintains, consistent with a determination by the Texas Railroad Commission, that the contamination is from the very shallow Strawn formation and is unrelated to the company's activities in the much deeper Barnett Shale. EPA's EAO nevertheless required Range, among other actions, to replace water supplies and address natural gas contamination in the two shallow drinking water wells, and to submit a plan to investigate and eliminate natural gas flow pathways and remediate the Trinity Aquifer, which apparently would not be limited to the area of the two allegedly impacted wells.

The Range matter has quickly become a test case regarding whether the EPA can use the SDWA to limit hydraulic fracturing operations. EPA initiated a civil action to enforce the EAO in federal district court for the Northern District of Texas, seeking penalties for alleged violations of the EAO; Range responded to the EAO with an appeal to the U.S. Court of Appeals for the Fifth Circuit. Range makes both jurisdictional and substantive arguments in its brief. On the jurisdictional issue, it argues that the EAO is not a final agency action, because if it were, EPA's attempt to enforce the EAO and impose penalties for violation of the order, without proving that Range caused or contributed to drinking water contamination, would violate due process. Range's briefs rely in part on the Ninth Circuit's decision in *Sackett*, now overruled by the Supreme Court with respect to CWA administrative compliance orders, and in part on the Eleventh Circuit's decision in *Tennessee Valley Authority*, as well as other due process authorities independent of these cases. EPA argues that the EAO is a final agency action appealable to

[7] 42 U.S.C. § 1369.

[8] 42 U.S.C. § 300h(d) (excluding from the definition of "underground injection" the injection of fluids or propping agents (other than diesel fuels)).



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the Fifth Circuit under Section 1448 of the SDWA, and that this right of appeal, combined with Range's right to ask the Fifth Circuit to stay the EAO, satisfies due process. EPA further argues that due process considerations must be flexible because the order was an emergency action.

In June 2011, the district court issued an order staying EPA's attempt to enforce the EAO in the district court until the Fifth Circuit issues its decision on Range's appeal of the EAO. The district court's order also stated that it would not impose penalties during the stay. The Fifth Circuit held oral argument in Range's appeal of the EAO in October 2011.

On March 22, 2012, EPA filed the Supreme Court's opinion in *Sackett* with the Fifth Circuit as supplemental authority. The Fifth Circuit's response to *Sackett* on the question of whether an EAO is "final agency action" is, however, difficult to predict. As noted above, the Supreme Court did not reach the due process issues argued by the parties in *Sackett,* and also argued by Range in the Fifth Circuit appeal. The Supreme Court in *Sackett* instead grounded its decision on an interpretation of the language of the CWA. It is not clear whether the Fifth Circuit would find an EAO issued under the SDWA to be a "final agency action," as well. Although there are similarities between the district court review of a CWA compliance order under the APA, at issue under *Sackett*, and circuit court review of a "final agency action," if the EAO is one, under the SDWA, there are also differences—such as timing, preclusion if not appealed, potential for competing proceedings in different courts, and cost—and these differences make the Fifth Circuit's response to *Sackett* difficult to predict.

*RCRA*. Section 3008 of RCRA[9] allows EPA to issue compliance orders "on the basis of any information" that a person has violated or is in violation of a RCRA requirement and provides for civil penalties for each day of noncompliance with an order. Like the CWA ACOs discussed in *Sackett*, the EPA maintains that there is no opportunity for pre-enforcement judicial review for RCRA compliance orders.

However, it is possible that federal courts could distinguish *Sackett* and deny pre-enforcement judicial review of a RCRA compliance order because RCRA imposes some public participation requirements that are not present in the CWA. Specifically, the party named in a RCRA compliance order may prevent the order from becoming final by requesting a public hearing, to be held before EPA's Environmental Appeals Board, within 30 days of issuance.

*CERCLA*. Section 106 of CERCLA[10] allows the EPA to issue unilateral administrative orders (UAO) to compel potentially responsible parties (PRP) to perform remedial actions at a Superfund site. Like the CWA ACOs discussed in *Sackett*, the recipient of a UAO may not seek pre-enforcement review of the UAO. Further, if the recipient chooses not to comply with the ACO, it risks more than just the normal penalties because CERCLA allows EPA to undertake the cleanup and to then seek punitive damages of up to three times the amount of the remediation costs incurred.

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[9] 42 U.S.C. § 6928.

[10] 42 U.S.C. § 9606.



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Although the UAO regime seems similar to the CWA, there are three reasons that courts may be reluctant to use *Sackett* to allow pre-enforcement review of UAOs issued under CERCLA. First, EPA cannot issue a UAO based on "any available information." Instead, CERCLA requires EPA to: (1) determine that there may be an imminent or substantial endangerment; (2) compile an administrative record in accordance with public participation requirements; and (3) select a response action. On the other hand, the above steps relate only to the need for remediation and do not require EPA to prove that the eventual recipient of a UAO is a liable PRP.

Second, after completing a response action under a UAO, CERCLA allows the recipient to seek reimbursement from EPA on grounds that the recipient was not actually liable for the cleanup or that the response action selected by the EPA was arbitrary and capricious or otherwise not in accordance with the law. Section 113(h) of CERCLA, however, bars PRPs from obtaining judicial review of the UAO until the PRP performs the order and seeks reimbursement or EPA enforces the order.[11] Courts have viewed this procedure as evidence of congressional intent that such orders are not subject to pre-enforcement judicial review under the APA. However, many remediation projects take years to implement and cost millions of dollars, giving the courts good reason to view post-hoc challenges as too little, too late.

Third, just three weeks before granting review of *Sackett*, the Supreme Court denied review of *General Electric Company v. Jackson*, 610 F.3d 110 (D.C. Cir. 2010), a case holding that CERCLA's UAO provisions do not violate the Due Process Clause. Rightly or wrongly, lower federal courts may view the Supreme Court's denial of this case as evidence that orders under CERCLA are distinct from orders under the CWA.

**Conclusion**

In conclusion, the Supreme Court's decision in *Sackett* allows an important recourse for recipients of ACOs under the CWA. Although the decision was based on the language of the CWA, rather than directly on a due process rationale, many environmental statutes have similar language to the CWA. The Court's rationale is not, therefore, necessarily limited to the CWA, and recipients of compliance orders are likely to raise similar statutory interpretation arguments under other environmental laws.

[11] 42 U.S.C. § 9613(h).



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***Alex Mills**, President - Texas Alliance of Energy Producers*

## OIL & GAS HELPS FUEL TEXAS ECONOMIC GROWTH

March 22, 2012

Just about everybody knows that the oil and gas industry is a major component of the economy of the State of Texas, but very few know that the economy of Texas is the second largest in the nation and 15th largest in the world.

The gross state product of Texas is $1.332 trillion.

Texas is the largest exporter of goods in the U.S., grossing more than $100 billion in trade with other nations.

All of this economic activity obviously creates a lot of jobs. The Texas civilian labor force has increased from 6 million jobs in 1976 to 13 million today.

Since 2000, employment in the oil and gas exploration and production sector has increased dramatically. Employment in 2011 increased 17 percent compared to 2010.

Crude oil production has been declining since the 1970s, but during the last three years oil production in Texas has increased. In 2011, oil production rose 6 percent over 2010.

Even though natural gas production declined 17 percent last year because of low prices, it is still near historic highs.

Natural gas and oil production taxes are up 73 percent and 49 percent, respectively, for the same period in 2011.

All of this increase in economic activity has a positive impact on the state's sales tax, its primary source of revenue. Sales tax revenues are up 14.8 percent over February 2011.

The oil and gas industry in Texas may not be as big of a contributor to the overall economy as it once was, but with the resurgence of drilling for hydrocarbons in shale through new drilling and completion technology, the industry is once again a major player.

***Alex Mills** is President of the Texas Alliance of Energy Producers. The opinions expressed are solely of the author.*



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## BIGGEST BARNETT SHALE PEAK MONTH DAILY AVERAGES TO JANUARY 2012

Below are the **Peak Month Daily Averages** of the **35** wells over **7.5 million cubic feet gas day average**.

| County Name | Peak Month Daily Ave. MCFGPD | Age Mo. | Gas Daily Ave. Jan 2012 MCFGPD | Cum Gas to 2-1-2012 MCF | API No. | Gas Well I.D. No. | Current Operator | Well Name | Well No. | First Prod. Date | Last Prod. Date |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Tarrant | 17,823 | 18 | 1,215 | 2,753,240 | 42-439-34543 | 257342 | CHESAPEAKE OPERATING, INC. | WHITE SOUTH | 1H | Aug-10 | Jan-12 |
| Tarrant | 12,970 | 31 | 1,519 | 2,610,360 | 42-439-33058 | 253531 | CHESAPEAKE OPERATING, INC. | DAY KIMBALL HILL | A1 | Jul-09 | Jan-12 |
| Tarrant | 10,465 | 26 | | 1,358,894 | 42-439-34636 | 257887 | CHESAPEAKE OPERATING, INC. | JAMMER A | 1H | Aug-10 | Sep-11 |
| Johnson | 12,193 | 11 | 5,998 | 2,619,172 | 42-251-33720 | 259231 | CHESAPEAKE OPERATING, INC. | HOG A | 4H | Mar-11 | Jan-12 |
| Johnson | 10,087 | 11 | 4,389 | 2,000,358 | 42-251-34109 | 259391 | CHESAPEAKE OPERATING, INC. | HOG B | 2H | Mar-11 | Jan-12 |
| Tarrant | 9,665 | 19 | 2,167 | 1,738,243 | 42-439-34312 | 255023 | CHESAPEAKE OPERATING, INC. | DUKE B | 3H | Jul-10 | Jan-12 |
| Johnson | 9,564 | 35 | 1,585 | 2,754,354 | 42-251-33238 | 252166 | CHESAPEAKE OPERATING, INC. | DONNA RAY | 1H | Mar-09 | Jan-12 |
| Johnson | 9,231 | 11 | 4,354 | 2,087,002 | 42-251-34001 | 257809 | CHESAPEAKE OPERATING, INC. | OLD TOWN | 3H | Mar-11 | Jan-12 |
| Johnson | 8,877 | 11 | 4,193 | 2,047,986 | 42-251-34076 | 259183 | CHESAPEAKE OPERATING, INC. | COWBOY | 1H | Mar-11 | Jan-12 |
| Johnson | 8,827 | 35 | 603 | 2,133,166 | 42-251-33237 | 252171 | CHESAPEAKE OPERATING, INC. | DONNA RAY EAST | 1H | Mar-09 | Jan-12 |
| Tarrant | 8,683 | 32 | 292 | 3,101,216 | 42-439-33130 | 252000 | QUICKSILVER RESOURCES INC. | EXELON NORTH UNIT | 21H | Jun-09 | Jan-12 |
| Tarrant | 8,676 | 32 | 1,120 | 3,374,434 | 42-439-33128 | 253115 | QUICKSILVER RESOURCES INC. | EXELON NORTH UNIT | 19H | Jun-09 | Jan-12 |
| Johnson | 8,635 | 55 | 972 | 3,780,247 | 42-251-31461 | 236797 | EOG RESOURCES, INC. | FOWLER | 4H | Jul-07 | Jan-12 |
| Tarrant | 8,611 | 14 | | 1,105,191 | 42-439-34015 | 257459 | BARNETT SHALE OPERATING LLC | BLAIR EAST UNIT | 3H | Dec-10 | Jan-12 |
| Johnson | 8,508 | 11 | 3,889 | 1,897,974 | 42-251-33417 | 260011 | CHESAPEAKE OPERATING, INC. | KING B | 4H | Mar-11 | Jan-12 |
| Johnson | 8,487 | 11 | 4,142 | 1,947,418 | 42-251-33416 | 257546 | CHESAPEAKE OPERATING, INC. | KING B | 1H | Mar-11 | Jan-12 |
| Tarrant | 8,461 | 20 | 1,872 | 1,474,831 | 42-439-32702 | 245265 | CHESAPEAKE OPERATING, INC. | DUKE UNIT A | 5H | Jun-10 | Jan-12 |
| Tarrant | 8,455 | 72 | 965 | 4,111,195 | 42-439-31344 | 217163 | CHESAPEAKE OPERATING, INC. | GATEWAY PARK | 3H | Feb-06 | Jan-12 |
| Johnson | 8,370 | 11 | 3,121 | 1,731,262 | 42-251-33420 | 256398 | CHESAPEAKE OPERATING, INC. | KING B | 3H | Mar-11 | Jan-12 |
| Tarrant | 8,339 | 27 | 2,207 | 2,458,434 | 42-439-34109 | 254980 | CHESAPEAKE OPERATING, INC. | CROWLEY EAGLES | 4H | Nov-09 | Jan-12 |
| Tarrant | 8,212 | 35 | | 1,942,051 | 42-439-31766 | 249805 | LEGEND NATURAL GAS IV, LP | CARTER FOUNDATION | 3H | Feb-09 | Dec-11 |
| Tarrant | 8,211 | 85 | 898 | 5,058,228 | 42-439-31064 | 206940 | XTO ENERGY INC. | COPELAND | L1H | Jan-05 | Jan-12 |
| Johnson | 8,069 | 11 | 3,722 | 1,780,490 | 42-251-33419 | 257634 | CHESAPEAKE OPERATING, INC. | KING B | 2H | Mar-11 | Jan-12 |
| Tarrant | 8,007 | 15 | | 1,805,388 | 42-439-35045 | 259075 | LEGEND NATURAL GAS IV, LP | EVERMAN UNIT | 3H | Oct-10 | Dec-11 |
| Johnson | 7,983 | 24 | 1,259 | 1,887,823 | 42-251-33665 | 255649 | CHESAPEAKE OPERATING, INC. | DONNA RAY EAST | 3H | Feb-10 | Jan-12 |
| Tarrant | 7,978 | 14 | | 1,083,748 | 42-439-34017 | 257374 | BARNETT SHALE OPERATING LLC | BLAIR EAST UNIT | 2H | Dec-10 | Jan-12 |
| Johnson | 7,962 | 45 | 843 | 2,422,790 | 42-251-32688 | 239888 | CHESAPEAKE OPERATING, INC. | KENAH | 1H | May-08 | Jan-12 |
| Tarrant | 7,927 | 32 | 830 | 2,790,743 | 42-439-33112 | 253487 | QUICKSILVER RESOURCES INC. | EXELON NORTH UNIT | 17H | Jun-09 | Jan-12 |
| Johnson | 7,816 | 25 | 1,619 | 1,888,029 | 42-251-33664 | 255205 | CHESAPEAKE OPERATING, INC. | DONNA RAY EAST | 2H | Jan-10 | Jan-12 |
| Johnson | 7,798 | 18 | 3,612 | 1,836,800 | 4225133771 | 255426 | CHESAPEAKE OPERATING, INC. | HOG B | 3H | Aug-10 | Jan-12 |
| Tarrant | 7,783 | 19 | 1,924 | 1,553,953 | 42-439-34296 | 255028 | CHESAPEAKE OPERATING, INC. | DUKE B | 2H | Jul-10 | Jan-12 |
| Tarrant | 7,782 | 59 | | 3,527,728 | 42-439-31136 | 232323 | LEGEND NATURAL GAS IV, LP | STEVENSON UNIT | '1-H | Feb-07 | Dec-11 |
| Tarrant | 7,782 | 51 | | 1,140,010 | 42-439-30792 | 232075 | XTO ENERGY INC. | MARINE CREEK A | A1H | Feb-07 | Apr-11 |
| Tarrant | 7,639 | 17 | 3,011 | 2,257,236 | 42-439-34053 | 254441 | QUICKSILVER RESOURCES INC. | LAWHON SOUTH UNIT | 12H | Sep-10 | Jan-12 |
| Tarrant | 7,627 | 11 | | 1,336,148 | 42-439-35295 | 260549 | TEXAS I'NTL. OPER., LLC | WOODLAND EST.W.UNIT | 11H | Feb-11 | Dec-11 |



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## NATIONAL REGULATORY/LEGISLATIVE NEWS

### FERC STAFF TO RECOMMEND APPROVAL FOR SPECTRA PIPELINE SERVING NYC

The *New York Times* reported Mar. 17 that staff members at the Federal Energy Regulatory Commission will recommend approval for Spectra Energy's proposed pipeline that will run from Staten Island through New Jersey to deliver natural gas to Manhattan. While the project has drawn opposition from environmentalists in both New Jersey and New York, New York City Mayor Michael Bloomberg supports the project which would be the first major natural gas transmission line in the city in 40 years.

Source: New York Times 3/17/2012 Regulatory Staff Endorses Gas Pipeline for New York City and New Jersey by Mireya Navarro http://green.blogs.nytimes.com/2012/03/17/regulatory-staff-endorses-gas-pipeline-for-new-york-city-and-new-jersey/

### BLM SAYS NO DECISION YET ON RAISING ROYALTY RATE FOR PUBLIC LANDS

*Fuel Fix* reported Mar. 20 that the Bureau of Land Management said that the Interior Department has not made a final decision on whether to raise the royalty rate on public lands from 12.5% to 18.75%. Additionally, the BLM said the Interior Department hopes to unveil its draft rules for hydraulic fracturing on public lands sometime in April.

Source: Fuel Fix 3/20/2012 Feds: Fracking rules in April; no decision on onshore royalties by Puneet Kollipara http://fuelfix.com/blog/2012/03/20/feds-fracking-rules-in-april-no-decision-on-onshore-royalties/

### ANTI-DRILLING ACTIVISTS CRY FOUL, BLAST EPA FOR SAYING DIMOCK WATER IS SAFE

*Truthout* reported Mar. 20 that anti-drilling groups blasted the EPA for announcing the previous week that preliminary test results showed some Dimock Township, Pennsylvania residents' well water was safe. Activists said the water is still contaminated and accused the EPA of bowing to political pressure and making a premature announcement that played into the natural gas industry's "spin machine."

Source: Truthout 3/20/2012 Fracking Fight: Activists Cry Foul on the EPA's Dimock Water Test Announcement by Mike Ludwig http://www.truth-out.org/fracking-fight-activists-cry-fowl-epas-dimock-water-test-announcement/1332263627

### OKLAHOMA TO JOIN STATES REQUIRING FRAC FLUID DISCLOSURE

The *Oklahoman* reported Mar. 21 that the Oklahoma Corporation Commission approved rules requiring the state's oil and gas producers to disclose the chemical contents of their hydraulic fracturing fluids. The Oklahoma rules, which still must be approved by the state legislature, give energy companies the



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option of reporting the frac fluid contents to either the FracFocus.org online database or to the Corporation Commission itself.

Source: The Oklahoman 3/21/2012 New rules approved by Oklahoma Corporation Commission will require disclosure of hydraulic fracturing chemicals in state by Paul Monies http://newsok.com/new-rules-approved-by-oklahoma-corporation-commission-will-require-disclosure-of-hydraulic-fracturing-chemicals-in-state/article/3659437?custom_click=pod_headline_financial-news

## BLM SAYS INTERIOR TO USE API CEMENT STANDARD IN FRAC RULES

*Bloomberg News* reported Mar. 20 that the Bureau of Land Management said the Interior Department will use the oil and gas industry's standards for cementing well casings in its upcoming rules for hydraulic fracturing on federal lands. The BLM said Interior will use the American Petroleum Institute standards for cementing and will require operators to prove the cement job was consistent with engineers' plans before the work was performed.

Source: Bloomberg News 3/20/2012 Fracking Rule for Federal Land to Use Industry's Cement Standard by Katarzyna Kilmasinska http://www.bloomberg.com/news/2012-03-20/fracking-rule-for-federal-land-to-use-industry-s-cement-standard.html

## USDA TO KEEP EXCLUDING RURAL HOUSING LOANS FROM ENVIRONMENTAL REVIEWS

*Bloomberg News* reported Mar. 20 that the U.S. Department of Agriculture said it will continue to exclude rural housing loans from being subjected to environmental reviews that could slow oil and gas development. Agriculture Secretary Tom Vilsack said he will authorize a notice affirming that rural housing loans are excluded from the National Environmental Policy Act's requirements, a move which drew sharp criticism from environmental activists.

Source: Bloomberg News 3/20/2012 USDA excluding rural housing loans from environmental reviews http://fuelfix.com/blog/2012/03/20/usda-excluding-rural-housing-loans-from-environmental-reviews/

## GAO SAYS REGULATORS LACK INFO ON GATHERING LINE SAFETY

*Bloomberg News* reported Mar. 22 that the U.S. Government Accountability Office (GAO) said in a report that federal and state regulators lack sufficient information to determine the safety of gathering pipelines. As a result, the Transportation Department's Pipeline and Hazardous Materials Safety Administration may start collecting data on gathering lines.

Source: Bloomberg News 3/22/2012 Obama Officials May Study Safety Risks in Fracking Pipelines by William McQuillen http://www.bloomberg.com/news/2012-03-23/pipelines-at-fracking-wells-seen-subject-to-further-u-s-reports.html



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## NATIONAL/WORLD INDUSTRY NEWS

### RISING NATURAL GAS PRODUCTION RAISES QUESTIONS ABOUT GLOBAL WARMING IMPACT

*McClatchy Newspapers* reported Mar. 19 that rising natural gas production in the U.S. is raising questions about the impact on global warming since methane is a key greenhouse gas. While the U.S. government moves to study the matter further, the natural gas industry says the concerns are unnecessary since it is already widely using technology to capture and control methane emissions.

Source: McClatchy Newspapers 3/19/2012 Rise in natural gas production raises greenhouse effect concern by Renee Schoof http://www.star-telegram.com/2012/03/18/3818822/rise-in-natural-gas-production.html

### TEXAS TASK FORCE TO EXAMINE ROAD DAMAGE ISSUE

*StateImpact Texas* reported Mar. 19 that the Texas Department of Transportation has established a task force to deal with road damage in areas with extensive oil and gas activity. The state has already set aside $40 million to repair roads in the Barnett Shale and Eagle Ford Shale areas.

Source: StateImpact Texas 3/19/2012 Roads Killed: Texas Adds Up Damages from Drilling by Dave Fehling http://stateimpact.npr.org/texas/2012/03/19/roads-killed-texas-adds-up-damages-from-drilling/

### POLL FINDS FOSSIL FUELS GAIN SUPPORT WHILE ALTERNATIVE ENERGY SLIPS

*Fuel Fix* reported Mar. 19 that a new Pew Research Center poll found more Americans believe it is important to boost fossil fuel production than they did a year ago. As gasoline prices rise, the poll found alternative energy still garners more support than fossil fuels, but by a smaller margin than last year.

Source: Fuel Fix 3/19/2012 Poll: Oil, gas and coal gain favor as alternatives slip by Puneet Kollipara http://fuelfix.com/blog/2012/03/19/poll-oil-gas-and-coal-gain-favor-as-alternatives-slip/

### DESPITE LOW PRICES, REGULATORY ISSUES, PRODUCERS STILL BULLISH ON NATURAL GAS

The *Washington Times* reported Mar. 19 that despite depressed prices and the threat of more federal regulation, producers remain bullish on the long-term future of natural gas. The industry believes the economic boost coupled with increasing demand for natural gas over the long-term will be too much for elected officials to allow regulations to get too burdensome and will spur another boom.

Source: Washington Times 3/19/2012 Natural gas industry high on future, despite current low prices by Ben Wolfgang http://www.washingtontimes.com/news/2012/mar/19/natural-gas-industry-high-on-future-despite-curren/



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## COLORADO STUDY SAYS FRAC'ING RESPONSIBLE FOR UNHEALTHY AIR EMISSIONS

*Bloomberg News* reported Mar. 20 that a study by the Colorado School of Public Health concluded that hydraulic fracturing of gas wells is responsible for airborne emissions that may pose a threat to public health. The school said its researchers found potentially toxic emissions of chemicals near gas wells in Garfield County, Colorado over a period of three years.

Source: Bloomberg News 3/20/2012 Fracking wells' air emissions pose health risks, study finds
http://fuelfix.com/blog/2012/03/20/fracking-wells%E2%80%99-air-emissions-pose-health-risks-study-finds/

## INDUSTRY SAYS COLORADO FRAC HEALTH STUDY BADLY FLAWED

The *State Journal* reported Mar. 20 that natural gas industry advocacy organization Energy In Depth said a study by the Colorado School of Public Health which asserted there are health risks from airborne emissions from gas wells is badly flawed. Energy In Depth said the inputs used in the study are very unrealistic and vastly overstate the possible airborne emissions from gas wells.

Source: State Journal 3/20/2012 Industry pokes holes in Colorado gas study by Taylor Kuykendall
http://www.statejournal.com/story/17203791/industry-pokes-holes-in-colorado-gas-study

## ENTERPRISE TO ADD MORE FRACTIONATING CAPACITY AT MONT BELVIEU

*Fuel Fix* reported Mar. 20 that Enterprise Products Partners plans to add two additional natural gas liquid fractionators at its complex in Mont Belvieu, Texas near Houston. The two new 75,000-barrel-per-day units are aimed at growing NGLs production from the Rocky Mountains and Eagle Ford Shale.

Source: Fuel Fix 320//2012 Enterprise to add new fractionating capacity at Mont Belvieu complex by Don Mason http://fuelfix.com/blog/2012/03/20/enterprise-to-add-new-fractionating-capacity-at-mont-belvieu-complex/

## SHELL SIGNS DEAL TO PRODUCE CHINESE SHALE GAS

The *Wall Street Journal* reported Mar. 21 that Royal Dutch Shell has signed the first production-sharing deal for Chinese shale gas. The deal calls for Shell to jointly develop shale gas with state-owned China National Petroleum in a 3,500-square-kilometer area in the Fushun-Yongchuan block in the Sichuan Basin.

Source: Wall Street Journal 3/21/2012 Shell Reaches Chinese Shale-Gas Deal by Wayne Ma
http://online.wsj.com/article/SB10001424052702304724404577294613154232818.html



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## INSUFFICIENT DELIVERY INFRASTRUCTURE PREVENTING WIDER USE OF NATURAL GAS

The *Washington Times* reported Mar. 20 that speakers at the Marcellus Midstream Conference in Pittsburgh said that the wider use of natural gas is being held up by an insufficient delivery infrastructure. Speakers pointed to the lack of refueling stations for vehicles and the lack of pipelines to deliver natural gas to metropolitan areas as examples of the hurdles that must be overcome.

Source: Washington Times 3/20/2012 Lack of infrastructure stalls natural gas use by Ben Wolfgang http://www.washingtontimes.com/news/2012/mar/20/lack-of-infrastructure-stalls-natural-gas-use/

## APPALACHIAN COAL INDUSTRY STRUGGLES AS UTILITIES SWITCH TO NATURAL GAS

*Bloomberg News* reported Mar. 21 that the coal industry in Appalachia is fighting for survival as electric utilities increasingly switch to cheaper, cleaner, and abundant natural gas. Coal producers are struggling as production of the fuel falls, with the EIA forecasting that coal consumption for power generation this year will decline 5% to the lowest level in 16 years.

Source: Bloomberg News 3/21/2012 Appalachian Coal Fights for Survival on Shale Boom: Commodities by Sonja Elmquist http://www.bloomberg.com/news/2012-03-21/appalachian-coal-fights-for-survival-on-shale-boom-commodities.html

## CENTERPOINT APPLIES TO TRADE NATURAL GAS AT PERRYVILLE HUB IN LA

*Reuters* reported Mar. 21 that CenterPoint Energy applied for a federal permit to trade natural gas at the Perryville Hub in northern Louisiana. The Perryville Hub connects with supplies of natural gas from shale plays in the region, including the Barnett, Haynesville, Fayetteville, and Woodford.

Source: Reuters 3/21/2012 CenterPoint applies to trade natgas at La. hub by Eileen Houlihan http://uk.reuters.com/article/2012/03/21/energy-centerpoint-perryville-idUKL1E8ELZMO20120321

## KNOC SAYS APOLLO-LED CONSORTIUM BUYING EL PASO E&P UNIT FOR $7.15 BILLION

*Reuters* reported Mar. 21 that South Korea's state-owned Korea National Oil Corp. (KNOC) said it is part of a consortium led by private equity firm Apollo Global Management that will buy El Paso's exploration and production business for $7.15 billion. Kinder Morgan is selling the exploration and production unit as a part of its $21 billion acquisition of El Paso.

Source: Reuters 3/21/2012 KNOC says consortium buys El Paso assets for $7.15 billion by Cho Mee-young and Krishna N. Das http://in.reuters.com/article/2012/03/21/us-elpaso-knoc-idINBRE82K0P420120321



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## NATURAL GAS GLUT TO TEST LIMIT OF STORAGE CAPACITY

The *Wall Street Journal* reported Mar. 21 that the mild winter and robust production has left natural gas stockpiles at levels far exceeding the norm for this time of year. With a mild summer forecast and robust production continuing, many experts are concerned the U.S. may run out of storage space by October.

Source: Wall Street Journal 3/21/2012 Gas Set to Test Capacity Limits by Dan Stumpf
http://online.wsj.com/article/SB10001424052702303812904577295873283143892.html#articleTabs%3Darticle

## ENBRIDGE CEO SEES FUTURE IN NATURAL GAS DESPITE LOW PRICES

The *Wall Street Journal* reported Mar. 21 that Enbridge CEO Pat Daniel said he believes the future of his company lies in natural gas despite the depressed prices for the fuel at present. While Enbridge has been expanding its crude oil network with an eye to relieving bottlenecks, the company has also been working to build up a natural gas infrastructure in the U.S. and Canada.

Source: Wall Street Journal 3/21/2012 Departing Enbridge CEO Sees Firm's Future in Natural Gas by Edward Welsch http://online.wsj.com/article/SB10001424052702304724404577295701715995894.html

## POLAND SAYS SHALE GAS RESERVES LOWER THAN INITIALLY FORECAST

The *Wall Street Journal* reported Mar. 21 that Poland's Geological Institute said its new study lowered the estimate of the country's shale gas reserves to between 346 billion and 768 billion cubic meters from initial projections as high as 5.3 trillion cubic meters. However, the Geological Institute said even the smaller figure would be more than enough to reduce Poland's dependence on Russia and possibly turn the country into a natural gas exporter.

Source: Wall Street Journal 3/21/2012 Poland Cuts Estimate of Shale Gas Reserves by Marynia Kruk
http://online.wsj.com/article/SB10001424052702303812904577295790442844470.html?mod=googlenews_wsj

## USGS SAYS WASTEWATER DISCLOSURES CAN REDUCE DISPOSAL EARTHQUAKE RISK

*Bloomberg News* reported Mar. 23 that the head of the USGS said if oil and gas producers were required to report their wastewater volumes, it would help to reduce the risk of earthquakes related to underground disposal in injection wells. USGS Director Marcia McNutt told a Congressional panel that the earthquake risk could be eliminated by locating injection wells away from faults or lowering the volumes of wastewater pumped down into them.

Source: Bloomberg News 3/23/2012 Quake risk from fracking seen cut with disclosures
http://fuelfix.com/blog/2012/03/23/quake-risk-from-fracking-seen-cut-with-disclosures/



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## WSJ CONFERENCE EXCHANGES HIGHLIGHT WIDE GAP BETWEEN INDUSTRY, ENVIROS

The *Wall Street Journal* reported Mar. 22 that exchanges at the Journal's ECO:nomics conference highlighted the wide gap between the natural gas industry and environmentalists and other critics. In one exchange Chesapeake Energy CEO Aubrey McClendon dismissed charges from an environmentalist that shale gas was a scam, while tycoon T. Boone Pickens disagreed with former Pennsylvania Gov. Ed Rendell's assertion that the development of the Marcellus Shale had been too fast and wasn't safe.

Source: Wall Street Journal 3/22/2012 (ECO:nomics) 'Snake Oil' Vs. 'Environmental Nonsense' by Yuliya Chernova http://blogs.wsj.com/venturecapital/2012/03/22/economics-snake-oil-vs-environmental-nonsense/?mod=google_news_blog

## BAKKEN PIONEER HAMM SAYS ENERGY INDEPENDENCE IS POSSIBLE

The *Billings Gazette* reported Mar. 22 that Bakken pioneer Harold Hamm, chief executive of Continental Resources, said in Montana that energy independence for the U.S. is now no longer unrealistic. With the right energy policies, Hamm said, the U.S. could attain energy independence in the next few years, reducing the need for U.S. involvement in volatile Middle East conflicts.

Source: Billings Gazette 3/22/2012 Bakken oilman says energy independence is possible by Tom Howard http://billingsgazette.com/news/local/bakken-oilman-says-energy-independence-is-possible/article_6a024d04-225b-594d-bc43-c85d5d2a5254.html

## 'FRACKNATION' FILMMAKERS POST BILLBOARD IN NY CHALLENGING 'GASLAND' LIES

*The Blaze* reported Mar. 23 that the filmmakers behind the pro-drilling documentary "FrackNation" have posted a billboard on Route 17 in Rock Hill, New York challenging the lies in the anti-drilling "GasLand." Specifically, the billboard pokes at "GasLand's" most famous scene with the message "The water was on fire in 1669" in reference to the fact that it was documented that Seneca Indians in the area lit the water on fire from a naturally-occurring natural gas seep.

Source: The Blaze 3/23/2012 'FrackNation' Filmmakers Post Pro-Fracking Billboard Negating 'GasLand' Misconceptions by Liz Klimas http://www.theblaze.com/stories/fracknation-filmmakers-post-pro-fracking-billboard-negating-gasland-misconceptions/

## FRAC'ING A GROWING PART OF BALCHEM CORP.'S BUSINESS

The *Times Herald-Record* reported Mar. 25 that hydraulic fracturing is a growing part of the business for New Hampton, New York-based Balchem Corp., which makes clay stabilizers. The stabilizers prevent clay from swelling and impeding the flow of natural gas.

Source: Times Herald-Record 3/25/2012 Fracking helps boost Balchem Corp. by Jessica Dinapoli http://www.recordonline.com/apps/pbcs.dll/article?AID=/20120325/BIZ/203250321/-1/SITEMAP



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## NATURAL GAS VEHICLES NEWS

### NATURAL GAS VEHICLE LEGISLATION PROVING TRICKY TO GET THROUGH CONGRESS

*Forbes* reported Mar. 18 that legislation backed by T. Boone Pickens to offer government subsidies to greatly increase the use of natural gas for transportation is proving tricky to gain Congressional approval. Despite bipartisan support and pressure due to rising gasoline prices, the legislation has stalled in the face of opposition by conservatives who want government to stay out of the energy market and industrial users, who fear transportation demand will drive up the price of natural gas.

Source: Forbes 3/18/2012 Natural Gas Vehicles Driven to Outpace Oil by Ken Silverstein
http://www.forbes.com/sites/kensilverstein/2012/03/18/natural-gas-vehicles-driven-to-outpace-oil/

### VALERO, CHESAPEAKE MAY TEAM UP TO ADD CNG PUMPS ON TEXAS INTERSTATES

The *San Antonio Express-News* reported Mar. 23 that Valero Energy and Chesapeake Energy are considering teaming up to add natural gas fueling stations along interstate highways in Texas. The Texas Legislature passed legislation last year to make grants available to build natural gas fueling stations, so Valero and Chesapeake are hoping to get some help from the state in the effort.

Source: San Antonio Express-News 3/23/2012 Natural gas fueling stations considered for Texas interstates by Vicki Vaughan http://fuelfix.com/blog/2012/03/23/natural-gas-fueling-stations-considered-for-texas-interstates/

### NGV GROWTH HINGES ON INFRASTRUCTURE

The *Central Penn Business Journal* reported Mar. 23 that the number of natural gas vehicles is slowly growing as more companies with truck fleets make the switch. Supporters say NGV growth hinges on the infrastructure of fueling stations and the pipelines needed to deliver the natural gas to them.

Source: Central Penn Business Journal 3/23/2012 Fueling optimism by Jim T. Ryan
http://www.centralpennbusiness.com/article/20120323/FRONTPAGE/120329930/Fueling-optimism



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## WEEKLY RIG COUNTS

### BAKER HUGHES U.S. WEEKLY RIG COUNT, MARCH 23, 2012

| Breakdown | This Week | Change from Previous Week | Last Week | Change from a Year Ago | A Year Ago |
|---|---|---|---|---|---|
| **Total** | 1,968 | -16 | 1,984 | +230 | 1,738 |
| **Oil** | 1,313 | -4 | 1,317 | +462 | 851 |
| **Gas** | 652 | -11 | 663 | -228 | 880 |
| **Miscellaneous** | 3 | -1 | 4 | -4 | 7 |

### BAKER HUGHES MAJOR U.S. STATE RIG COUNTS, MARCH 23, 2012

| Breakdown | This Week | Change from Previous Week | Last Week | Change from a Year Ago | A Year Ago |
|---|---|---|---|---|---|
| **Alaska** | 6 | -1 | 7 | 0 | 6 |
| **Arkansas** | 27 | 0 | 27 | -7 | 34 |
| **California** | 45 | +1 | 44 | +3 | 42 |
| **Colorado** | 67 | 0 | 67 | -4 | 71 |
| **Louisiana** | 140 | +9 | 131 | -36 | 176 |
| **New Mexico** | 83 | +2 | 81 | +6 | 77 |
| **North Dakota** | 196 | -1 | 197 | +41 | 155 |
| **Oklahoma** | 197 | -10 | 207 | +41 | 156 |
| **Pennsylvania** | 98 | -3 | 101 | -6 | 104 |
| **Texas** | 915 | -11 | 926 | +149 | 766 |
| **W Virginia** | 28 | 0 | 28 | +12 | 16 |
| **Wyoming** | 43 | -1 | 44 | +5 | 38 |

*The counts above include 46 offshore rigs, of which 42 were in Louisiana and 4 in Texas; the rest are onshore.



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## BAKER HUGHES U.S. STATE RIG COUNTS COUNTY BREAKDOWN, MARCH 23, 2012

*A Month Ago is Feb. 24, 2012

| ARKANSAS | | | |
|---|---|---|---|
| County | This Week | Last Week | A Month Ago |
| Cleburne | 7 | 7 | 6 |
| Columbia | 2 | 2 | 2 |
| Conway | 3 | 2 | 2 |
| Faulkner | 4 | 4 | 4 |
| Van Buren | 7 | 8 | 6 |
| White | 4 | 4 | 9 |
| **Total** | **27** | **27** | **29** |

| NEW MEXICO | | | |
|---|---|---|---|
| County | This Week | Last Week | A Month Ago |
| Chaves | 2 | 1 | 4 |
| Eddy | 59 | 56 | 49 |
| Harding | 1 | 0 | 0 |
| Lea | 16 | 17 | 21 |
| Quay | 1 | 1 | 1 |
| Rio Arriba | 3 | 3 | 3 |
| San Juan | 1 | 3 | 2 |
| Sandoval | 0 | 0 | 1 |
| **Total** | **83** | **81** | **81** |

| COLORADO | | | |
|---|---|---|---|
| County | This Week | Last Week | A Month Ago |
| Archuleta | 1 | 1 | 1 |
| El Paso | 1 | 0 | 0 |
| Garfield | 19 | 19 | 20 |
| Kiowa | 1 | 1 | 1 |
| La Plata | 1 | 1 | 1 |
| Larimer | 1 | 1 | 1 |
| Lincoln | 0 | 1 | 1 |
| Mesa | 0 | 1 | 1 |
| Montezuma | 2 | 2 | 2 |
| Rio Blanco | 3 | 2 | 2 |
| Weld | 38 | 38 | 39 |
| **Total** | **67** | **67** | **69** |

| WEST VIRGINIA | | | |
|---|---|---|---|
| County | This Week | Last Week | A Month Ago |
| Brooke | 2 | 2 | 1 |
| Doddridge | 2 | 2 | 2 |
| Harrison | 5 | 5 | 5 |
| Marion | 2 | 2 | 2 |
| Marshall | 4 | 4 | 4 |
| Ohio | 2 | 2 | 3 |
| Randolph | 0 | 0 | 1 |
| Ritchie | 2 | 2 | 2 |
| Taylor | 2 | 2 | 1 |
| Tyler | 0 | 0 | 2 |
| Upshur | 2 | 2 | 2 |
| Wetzel | 5 | 5 | 4 |
| **Total** | **28** | **28** | **29** |



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| NORTH DAKOTA | | | |
|---|---|---|---|
| County | This Week | Last Week | A Month Ago |
| Billings | 4 | 5 | 8 |
| Bottineau | 1 | 1 | 1 |
| Burke | 10 | 9 | 11 |
| Divide | 5 | 6 | 7 |
| Dunn | 36 | 35 | 32 |
| Golden Valley | 2 | 2 | 1 |
| McKenzie | 56 | 58 | 52 |
| McLean | 2 | 2 | 2 |
| Mountrail | 30 | 30 | 29 |
| Renville | 0 | 0 | 1 |
| Stark | 7 | 7 | 6 |
| Ward | 1 | 1 | 0 |
| Williams | 42 | 41 | 37 |
| **Total** | **196** | **197** | **187** |

| OHIO | | | |
|---|---|---|---|
| County | This Week | Last Week | A Month Ago |
| Ashland | 0 | 0 | 1 |
| Carroll | 3 | 3 | 4 |
| Columbiana | 1 | 1 | 1 |
| Harrison | 1 | 1 | 0 |
| Jefferson | 2 | 2 | 3 |
| Medina | 1 | 1 | 0 |
| Monroe | 0 | 0 | 1 |
| Muskingum | 0 | 0 | 1 |
| Noble | 1 | 1 | 0 |
| Stark | 2 | 1 | 2 |
| **Total** | **11** | **10** | **13** |

| WYOMING | | | |
|---|---|---|---|
| County | This Week | Last Week | A Month Ago |
| Campbell | 6 | 7 | 6 |
| Carbon | 3 | 2 | 2 |
| Converse | 11 | 10 | 9 |
| Crook | 1 | 1 | 1 |
| Fremont | 1 | 1 | 1 |
| Johnson | 0 | 0 | 2 |
| Laramie | 2 | 1 | 1 |
| Sublette | 14 | 13 | 13 |
| Sweetwater | 4 | 8 | 10 |
| Weston | 1 | 1 | 0 |
| **Total** | **43** | **44** | **45** |

| CALIFORNIA | | | |
|---|---|---|---|
| County | This Week | Last Week | A Month Ago |
| Colusa | 0 | 1 | 0 |
| Glenn | 0 | 0 | 1 |
| Kern | 32 | 31 | 28 |
| Kings | 2 | 1 | 1 |
| Lake | 1 | 1 | 1 |
| Los Angeles | 6 | 6 | 6 |
| Sacramento | 1 | 1 | 1 |
| San Benito | 1 | 1 | 1 |
| San Joaquin | 0 | 0 | 1 |
| Ventura | 2 | 2 | 3 |
| **Total** | **45** | **44** | **43** |



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| PENNSYLVANIA | | | |
|---|---|---|---|
| County | This Week | Last Week | A Month Ago |
| Armstrong | 2 | 2 | 2 |
| Beaver | 1 | 1 | 0 |
| Bradford | 15 | 15 | 20 |
| Butler | 3 | 3 | 2 |
| Cameron | 0 | 0 | 1 |
| Clearfield | 5 | 6 | 5 |
| Clinton | 1 | 1 | 3 |
| Fayette | 5 | 5 | 3 |
| Greene | 8 | 9 | 9 |
| Jefferson | 0 | 0 | 2 |
| Lawrence | 1 | 0 | 0 |
| Lackawanna | 0 | 0 | 1 |
| Lycoming | 17 | 17 | 17 |
| McKean | 1 | 1 | 1 |
| Sullivan | 1 | 1 | 0 |
| Susquehanna | 13 | 14 | 10 |
| Tioga | 9 | 10 | 12 |
| Washington | 6 | 6 | 7 |
| Westmoreland | 5 | 5 | 4 |
| Wyoming | 5 | 5 | 6 |
| **Total** | **98** | **101** | **105** |

| TEXAS - EAGLE FORD SHALE COUNTIES | | | |
|---|---|---|---|
| County | This Week | Last Week | A Month Ago |
| Atascosa | 7 | 7 | 8 |
| Bee | 1 | 2 | 2 |
| Brazos | 1 | 1 | 1 |
| Burleson | 1 | 1 | 2 |
| De Witt | 29 | 28 | 24 |
| Dimmit | 24 | 24 | 18 |
| Frio | 7 | 9 | 14 |
| Gonzales | 22 | 22 | 17 |
| Karnes | 42 | 42 | 40 |
| La Salle | 35 | 35 | 34 |
| Lavaca | 6 | 5 | 5 |
| Lee | 1 | 1 | 0 |
| Leon | 5 | 7 | 6 |
| Live Oak | 11 | 12 | 12 |
| Maverick | 2 | 2 | 1 |
| McMullen | 25 | 20 | 24 |
| Webb | 31 | 31 | 29 |
| Wilson | 3 | 3 | 5 |
| Zavala | 6 | 6 | 4 |
| **Total** | **259** | **258** | **246** |

*Includes counties which PSD research shows have at least one producing Eagle Ford Shale well as of August 1, 2011.

| TEXAS - HAYNESVILLE SHALE COUNTIES | | | |
|---|---|---|---|
| County | This Week | Last Week | A Month Ago |
| Harrison | 6 | 6 | 4 |
| Nacogdoches | 6 | 6 | 7 |
| Panola | 11 | 10 | 10 |
| Sabine | 0 | 0 | 1 |
| San Augustine | 3 | 3 | 4 |
| Shelby | 3 | 4 | 4 |
| **Total** | **29** | **29** | **30** |



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| LOUISIANA | | | |
|---|---|---|---|
| Parish | This Week | Last Week | A Month Ago |
| Acadia | 0 | 0 | 2 |
| Allen | 0 | 0 | 2 |
| Beauregard | 5 | 5 | 3 |
| Bienville | 0 | 0 | 1 |
| Bossier | 1 | 1 | 0 |
| Caddo | 5 | 5 | 5 |
| Calcasieu | 3 | 2 | 0 |
| Cameron | 6 | 6 | 5 |
| Claiborne | 3 | 2 | 4 |
| De Soto | 19 | 19 | 23 |
| East Baton Rouge | 1 | 1 | 1 |
| East Feliciana | 1 | 1 | 1 |
| Evangeline | 1 | 2 | 2 |
| Iberia | 2 | 1 | 1 |
| Iberville | 0 | 0 | 1 |
| Jefferson | 3 | 4 | 2 |
| Jefferson Davis | 2 | 1 | 1 |
| Lafayette | 1 | 0 | 0 |
| Lafourche | 1 | 2 | 1 |
| Lincoln | 1 | 1 | 2 |
| Ouachita | 1 | 0 | 0 |
| Plaquemines | 4 | 3 | 3 |
| Pointe Coupee | 1 | 1 | 2 |
| Rapides | 1 | 1 | 0 |
| Red River | 10 | 10 | 13 |
| Sabine | 7 | 7 | 10 |
| St. Charles | 0 | 0 | 1 |
| St. Martin | 1 | 1 | 1 |
| St. Mary | 5 | 4 | 2 |
| Terrebonne | 2 | 2 | 2 |
| Union | 1 | 1 | 0 |
| Vermilion | 8 | 7 | 7 |
| Vernon | 1 | 1 | 2 |
| Webster | 1 | 1 | 2 |
| *Offshore/Water* | 42 | 39 | 37 |
| **Total** | **140** | **131** | **139** |

| OKLAHOMA | | | |
|---|---|---|---|
| County | This Week | Last Week | A Month Ago |
| Alfalfa | 17 | 14 | 11 |
| Beaver | 3 | 3 | 5 |
| Beckham | 3 | 6 | 7 |
| Blaine | 3 | 6 | 11 |
| Bryan | 1 | 1 | 2 |
| Caddo | 0 | 1 | 1 |
| Canadian | 30 | 28 | 26 |
| Carter | 4 | 4 | 4 |
| Coal | 3 | 3 | 4 |
| Custer | 3 | 2 | 1 |
| Dewey | 11 | 14 | 14 |
| Ellis | 7 | 9 | 10 |
| Garfield | 7 | 7 | 5 |
| Garvin | 2 | 3 | 3 |
| Grady | 9 | 8 | 5 |
| Grant | 9 | 11 | 7 |
| Harper | 2 | 2 | 1 |
| Hughes | 1 | 1 | 1 |
| Johnston | 1 | 1 | 1 |
| Kay | 2 | 2 | 2 |
| Kingfisher | 3 | 3 | 3 |
| Lincoln | 1 | 1 | 3 |
| Logan | 1 | 1 | 0 |
| Love | 0 | 1 | 1 |
| Marshall | 2 | 2 | 2 |
| McLain | 2 | 2 | 3 |
| Noble | 3 | 3 | 0 |
| Oklahoma | 3 | 3 | 1 |
| Osage | 1 | 1 | 2 |
| Pawnee | 1 | 1 | 1 |
| Payne | 1 | 2 | 3 |
| Pittsburg | 9 | 9 | 10 |
| Roger Mills | 21 | 20 | 17 |
| Seminole | 1 | 1 | 1 |
| Stephens | 2 | 1 | 1 |
| Texas | 1 | 1 | 1 |
| Washita | 9 | 10 | 12 |
| Woods | 18 | 19 | 16 |
| **Total** | **197** | **207** | **198** |



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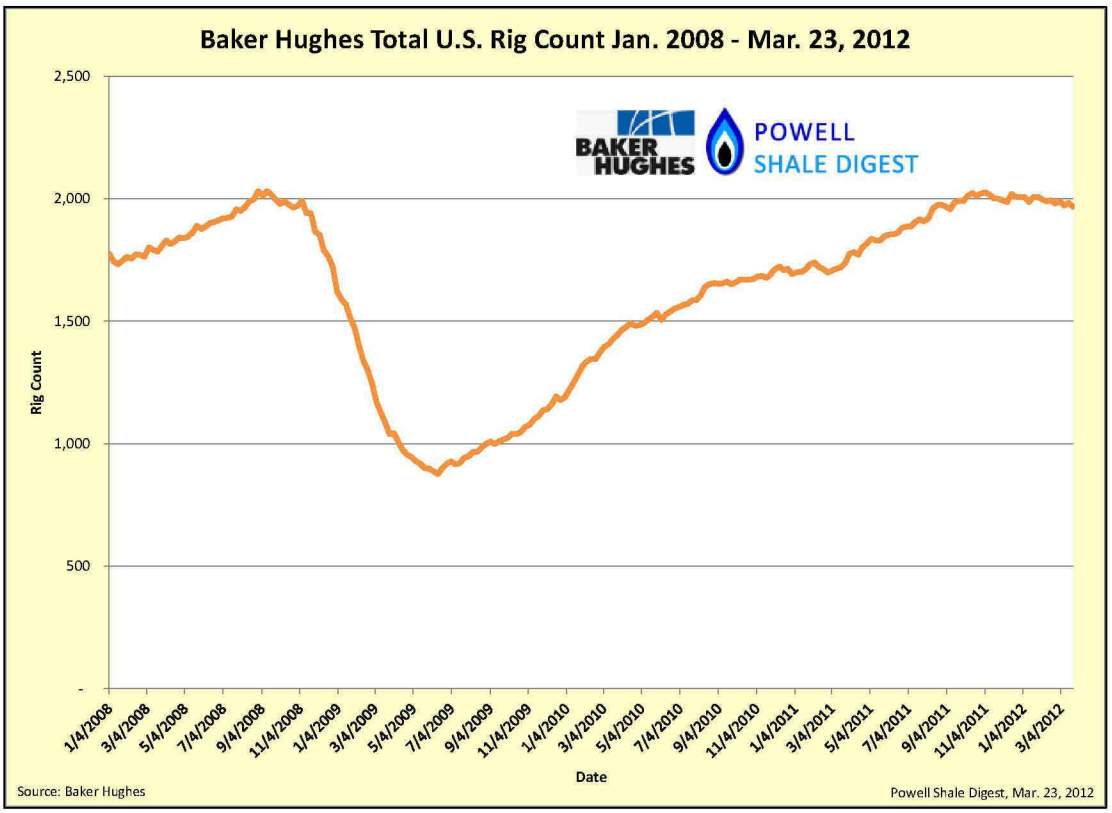
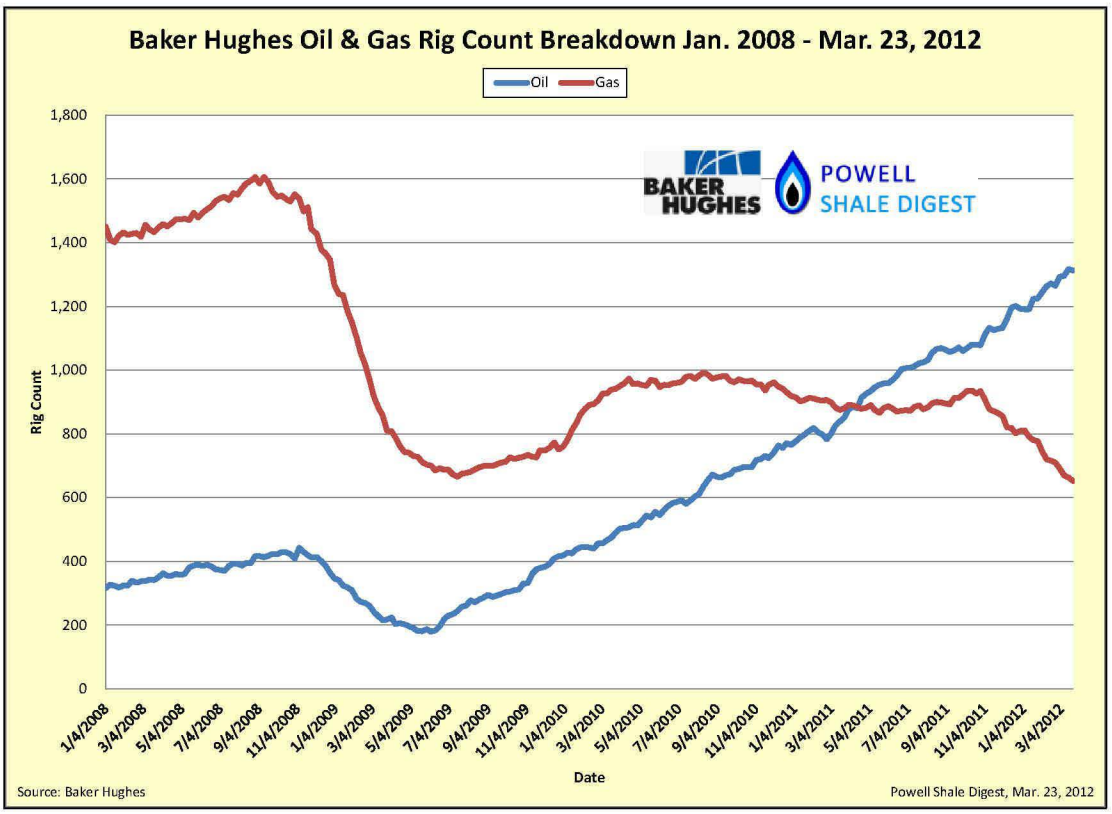

Baker Hughes Total U.S. Rig Count Jan. 2008 - Mar. 23, 2012
BAKER HUGHES
POWELL SHALE DIGEST
Rig Count
2,500
2,000
1,500
1,000
500
-
1/4/2008
3/4/2008
5/4/2008
7/4/2008
9/4/2008
11/4/2008
1/4/2009
3/4/2009
5/4/2009
7/4/2009
9/4/2009
11/4/2009
1/4/2010
3/4/2010
5/4/2010
7/4/2010
9/4/2010
11/4/2010
1/4/2011
3/4/2011
5/4/2011
7/4/2011
9/4/2011
11/4/2011
1/4/2012
3/4/2012
Date
Source: Baker Hughes
Powell Shale Digest, Mar. 23, 2012


Baker Hughes Oil & Gas Rig Count Breakdown Jan. 2008 - Mar. 23, 2012
Oil
Gas
BAKER HUGHES
POWELL SHALE DIGEST
Rig Count
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
1/4/2008
3/4/2008
5/4/2008
7/4/2008
9/4/2008
11/4/2008
1/4/2009
3/4/2009
5/4/2009
7/4/2009
9/4/2009
11/4/2009
1/4/2010
3/4/2010
5/4/2010
7/4/2010
9/4/2010
11/4/2010
1/4/2011
3/4/2011
5/4/2011
7/4/2011
9/4/2011
11/4/2011
1/4/2012
3/4/2012
Date
Source: Baker Hughes
Powell Shale Digest, Mar. 23, 2012

## RIGDATA BARNETT SHALE RIG COUNT, MARCH 23, 2012

### Overview

| This Week | Change from Previous Week | A Year Ago | 12-Month High | 12-Month Low |
|---|---|---|---|---|
| 49 | -7 | 75 | 85 | 49 |

### County Detail

| Texas - Barnett Shale Counties | | | | | |
|---|---|---|---|---|---|
| RRC District | County | This Week | Last Week | A Month Ago | A Year Ago |
| 5 | Dallas | 0 | 0 | 0 | 0 |
| 5 | Ellis | 0 | 0 | 0 | 1 |
| 5 | Hill | 0 | 0 | 0 | 0 |
| 5 | Johnson | 6 | 5 | 8 | 10 |
| 5 | Tarrant | 11 | 12 | 12 | 25 |
| 7B | Comanche | 0 | 0 | 0 | 0 |
| 7B | Erath | 0 | 0 | 0 | 0 |
| 7B | Hood | 1 | 1 | 0 | 1 |
| 7B | Palo Pinto | 2 | 3 | 2 | 0 |
| 7B | Parker | 7 | 5 | 6 | 3 |
| 7B | Somervell | 0 | 0 | 0 | 0 |
| 7B | Stephens | 1 | 1 | 1 | 1 |
| 9 | Clay | 1 | 1 | 1 | 1 |
| 9 | Cooke | 2 | 4 | 5 | 8 |
| 9 | Denton | 3 | 4 | 3 | 4 |
| 9 | Jack | 5 | 7 | 5 | 3 |
| 9 | Montague | 3 | 5 | 7 | 9 |
| 9 | Wise | 7 | 8 | 9 | 9 |
| **Total** | | **49** | **56** | **59** | **75** |

*A Month Ago is February 24, 2012; A Year Ago is March 25, 2011.

### Operator Detail

| Operator | This Week | Last Week | Counties this Week |
|---|---|---|---|
| Aruba Petroleum | 2 | 2 | Wise |
| Burlington Resources Oil & Gas | 1 | 2 | Wise |
| Chesapeake Operating | 5 | 4 | Tarrant, Johnson |
| Delta Oil & Gas | 1 | 1 | Stephens |
| Devon Energy Production | 11 | 10 | Denton, Parker, Johnson, Wise |
| DTE Gas Resources | 2 | 3 | Jack |
| Eagleridge Operating | 1 | 1 | Wise |
| EnerVest Operating | 4 | 4 | Parker, Wise |



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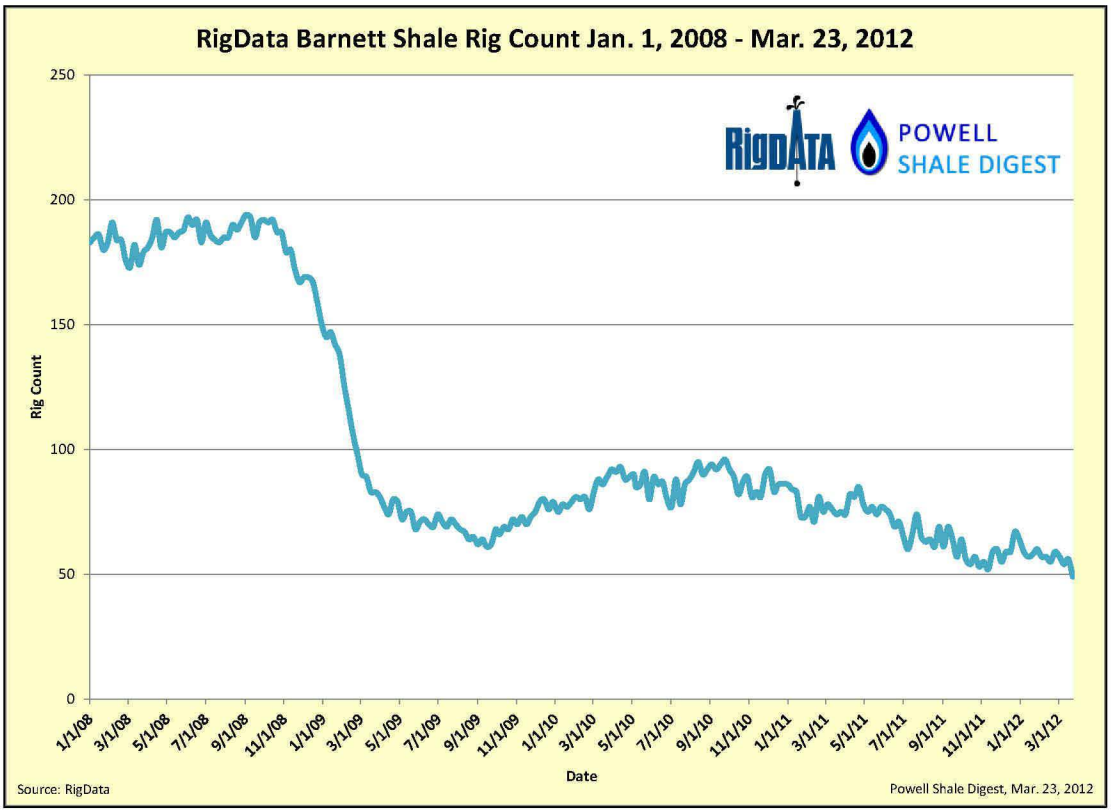
| | | | |
|---|---|---|---|
| EOG Resources | 5 | 7 | Cooke, Montague, Parker |
| Legend Natural Gas IV | 2 | 2 | Tarrant |
| Newark E&P Operating | 2 | 2 | Tarrant, Jack |
| Pioneer Natural Resources | 1 | 1 | Montague |
| Pro Oil & Gas | 1 | 1 | Jack |
| Quicksilver Resources | 2 | 2 | Tarrant, Hood |
| Southlake Operating | 1 | 1 | Jack |
| Swan PC | 1 | 1 | Palo Pinto |
| Trio Consulting & Management | 1 | 1 | Clay |
| Veritas Energy | 1 | 1 | Palo Pinto |
| XTO Energy | 5 | 6 | Tarrant |



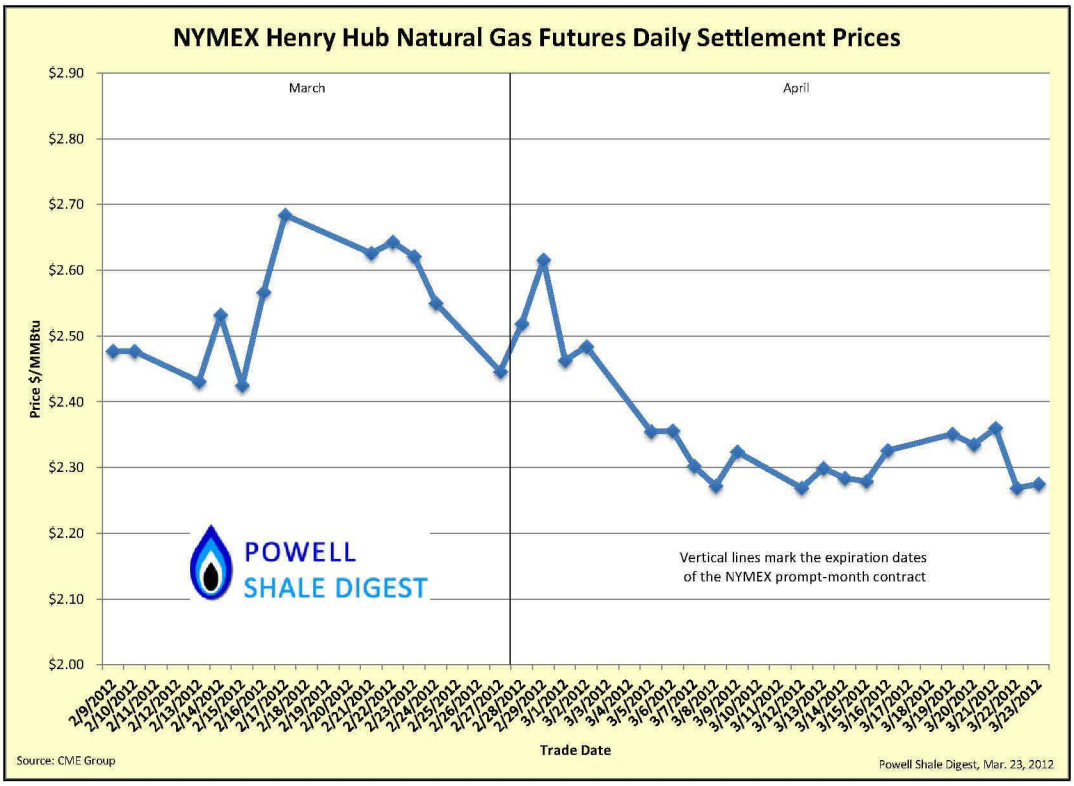
## NATURAL GAS DELIVERY & NYMEX FUTURES PRICES RECENT HISTORY

**Natural Gas Daily Delivery Prices**

| Weighted Average Index for the Week Ended Friday, March 23, 2012<br>Price $/MMBtu | | | |
|---|---|---|---|
| **Delivery Location** | **Week's End** | **High for the Week** | **Low for the Week** |
| Dominion-South | $2.04 | $2.18 | $2.04 |
| TCO | $2.03 | $2.18 | $2.03 |
| TETCO-M3 | $2.13 | $2.31 | $2.13 |
| CG-Mainline | $1.99 | $2.12 | $1.99 |
| Henry Hub | $2.07 | $2.21 | $2.07 |
| Houston Ship Channel | $2.00 | $2.12 | $2.00 |
| Chicago Citygates | $2.12 | $2.21 | $2.12 |
| PG&E Citygate | $2.51 | $2.63 | $2.51 |
| Waha | $1.98 | $2.11 | $1.98 |

**NYMEX Henry Hub Natural Gas Futures Daily Settlement Prices**

| For the Week Ended Friday, March 23, 2012<br>Price $/MMBtu | | | |
|---|---|---|---|
| **Delivery Month** | **Week's End** | **High for the Week** | **Low for the Week** |
| April | $2.28 | $2.36 | $2.27 |

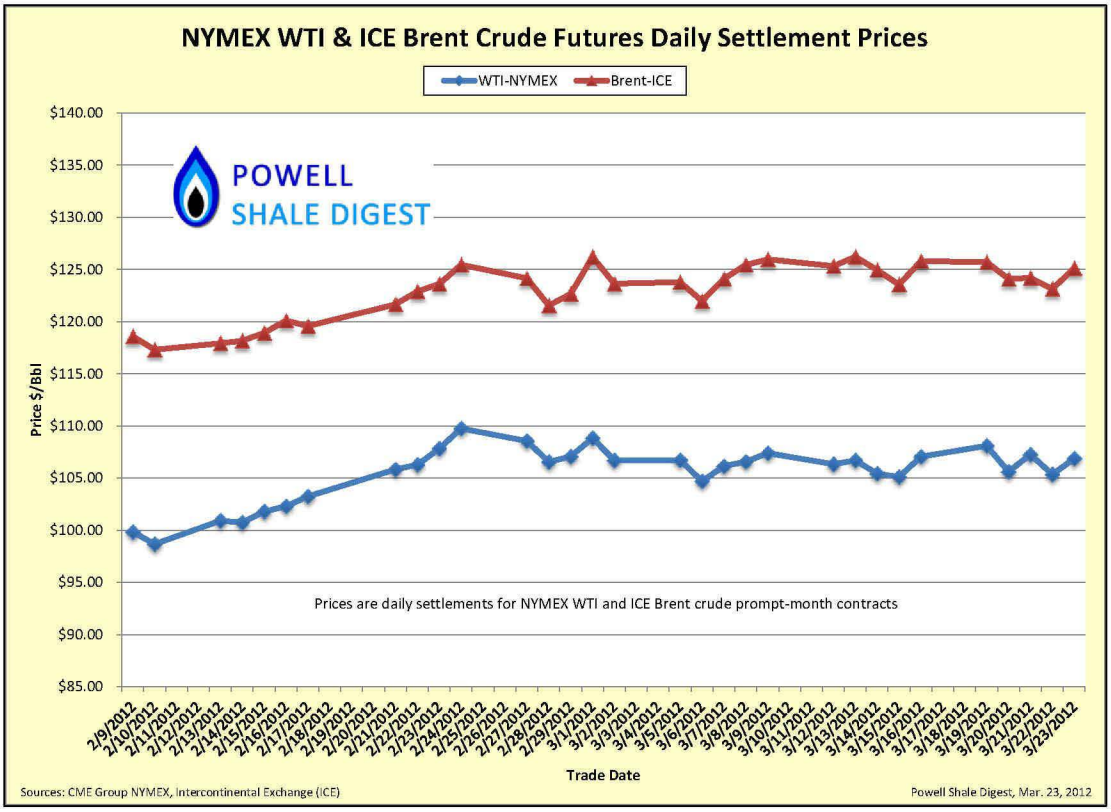


## CRUDE OIL FUTURES PRICES RECENT HISTORY

**NYMEX Light Sweet Crude Oil (WTI) & ICE Brent Crude Oil Futures Daily Settlement Prices**

| | For the Week Ended Friday, March 23, 2012 Price $/Bbl | | | |
|---|---|---|---|---|
| **Contract** | **Delivery Month** | **Week's End** | **High for the Week** | **Low for the Week** |
| NYMEX WTI | April-May* | $107.06 | $107.06 | $105.11 |
| ICE Brent | May | $125.13 | $125.71 | $123.14 |

- The NYMEX WTI April contract expired Mar. 20 at $105.61



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## EVENTS CALENDAR

MARCH 26-28, 2012, PITTSBURGH, PENNSYLVANIA:
4th Marcellus Shale Summit: Drilling and Completions

MARCH 27-28, 2012 – DALLAS, TEXAS:
TIPRO's 66th Annual Convention

APRIL 1-3, 2012 – WHITE SULPHUR SPRINGS, WEST VIRGINIA:
Marcellus and Utica Shale Conference and Expo 2012

APRIL 2-4, 2012 – MINOT, NORTH DAKOTA:
2nd Annual Bakken Investor Conference

APRIL 23-25, 2012 – FORT WORTH, TEXAS:
Hart Energy Publishing's DUG the Original 2012 Conference & Exhibition

APRIL 24-25, 2012 – WICHITA FALLS, TEXAS:
Texas Alliance of Energy Producers 2012 Expo & Annual Meeting

APRIL 27, 2012 – FORT WORTH, TEXAS:
7th Annual North Texas Oil & Gas Crawfish Boil

MAY 14-16, 2012 – DENVER, COLORADO:
Hart Energy Publishing's 3rd Annual DUO Conference & Exhibition

MAY 16-17, 2012 – WILLISTON, NORTH DAKOTA:
Bakken Housing Summit

JUNE 18-20, 2012 – CALGARY, ALBERTA, CANADA:
Hart Energy Publishing's DUG Canada Conference & Exhibition

AUGUST 22-23, 2012 – HOUSTON, TEXAS:
Gulf Publishing – World Oil Shale Energy Technology Conference

AUGUST 22-24, 2012 – HOUSTON, TEXAS:
Summer NAPE Expo

OCTOBER 14-16, 2012 – SAN ANTONIO, TEXAS:
Hart Energy Publishing's 3rd Annual DUG Eagle Ford Conference & Exhibition

NOVEMBER 13-15, 2012 – PITTSBURGH, PENNSYLVANIA:
Hart Energy Publishing's 4th Annual DUG East Conference & Exhibition



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