

Premier Issue

BASIN BITS

The Official Publication of the North Dakota Association of Oil & Gas Producing Counties

The Boom Goes Tsunamic

An update from the
Department of Mineral
Resources

Burke County's Pilot Test Takes Off

The progression of a potash mine

A Coal Mine for South Heart

An update on the mine and the
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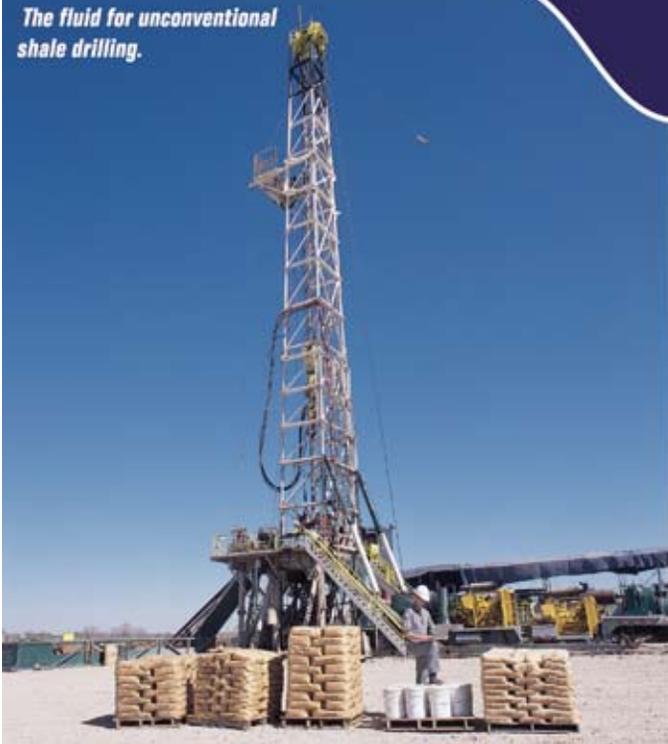
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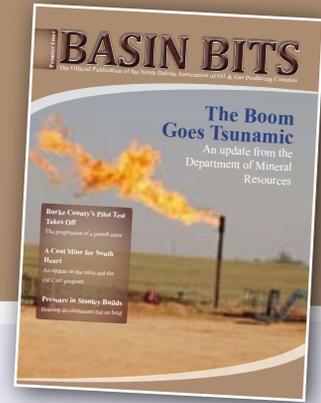
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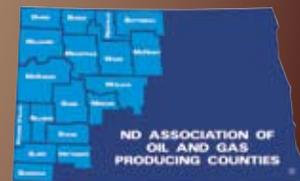
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From the Desk of the North Dakota Association of Oil and Gas Producing Counties' President



Greg Boschee
 President
 North Dakota Association of Oil and Gas Producing Counties
 Mountrail County Commissioner

Welcome to our premier issue of Basin Bits.

With over 170 oil rigs drilling in March 2011, there is a lot of excitement (and traffic!) in the oil and gas counties of western North Dakota. As I write this, counties and oil companies are using dozers to move snow to keep roads open and oil moving. We are all looking forward to sunshine, dry roads and warmer weather.

The North Dakota state legislature looked at ways to address road, housing and water is-

sues. If everything goes as planned, it is going to be a very busy spring and summertime in the oil counties!

If you are looking for a job, western North Dakota is looking for you! There are many, many jobs available—anything from the service industry, to truck driving, to management.

In addition to coal, oil and gas, we are now looking at adding potash and uranium to the mix. What lies beyond that? Who knows? But you will probably read about it in Basin Bits!

Happy Reading!

BASIN BITS

MISSION STATEMENT

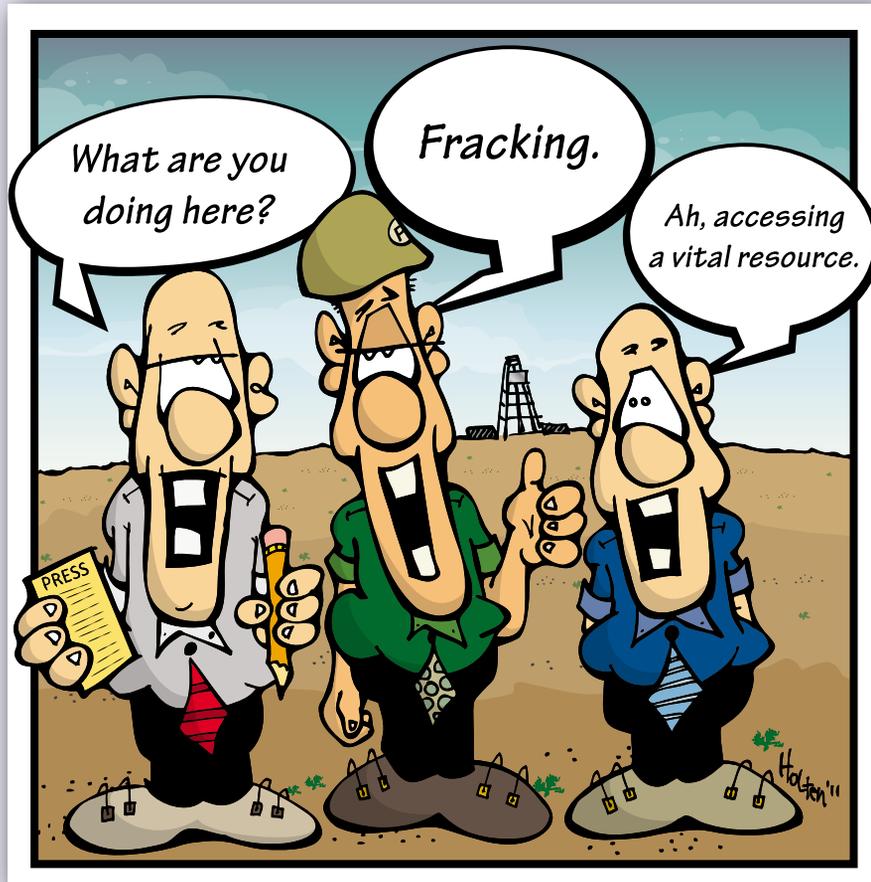
The North Dakota Association of Oil and Gas Producing Counties is the trusted and unified voice for the betterment of the citizens of North Dakota and the membership of the North Dakota Association of Oil and Gas Producing Counties.

THE 17 OIL COUNTIES

Billings, Bottineau, Bowman, Burke, Divide, Dunn, Golden Valley, McHenry, McKenzie, Mclean, Mercer, Mountrail, Renville, Slope, Stark, Ward, Williams. Members must have oil, gas or leasing development in the county boundaries. The board meets a minimum of ten times per year. Associate memberships are also available.

COAL COUNTIES

The three-county member organization is led by Chairman John Phillips. Members must have a power plant in their county that converts lignite coal to electricity. The board meets at the call of the chair.



Cartoonist Kevin Holten, holten24@gmail.com

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From the Desk of the North Dakota Association of Oil and Gas Producing Counties' Executive Director



Vicky Steiner
Executive Director
North Dakota Association of Oil
and Gas Producing Counties
North Dakota House Representative
for District 37, Dickinson, ND

Big decisions lie in North Dakota's future. Because of the abundance of resources...lawmakers will be busy crafting policy decisions and state agencies will be writing regulations for the new industries.

Welcome to our first issue of Basin Bits. This magazine will have bits and more bits about the energy opportunities in the state and how it impacts North Dakota and the oil and gas producing counties. As the North Dakota Association of Oil & Gas Producing Counties mission statement reads, it will be “to the benefit of the state and the oil counties.”

Energy tops the list of buzz words when people discuss this region's future.

North Dakota is blessed with resources—thousands of years ago, an ancient sea left valuable resources that are currently being mined or will be mined by future generations. For example, not only does oil tax revenue fix western county roads, it also is used to fix roads in non-oil producing counties. The state extraction tax feeds the Resources Trust Fund, which is used for water projects across North Dakota. The royalties from state school lands fattens the Common Schools Trust Fund for school districts state-wide, not just in the county where the oil is produced.

These resources bring both opportunity and challenge. Given North Dakota's “can-do” attitude and stable business climate, there is no doubt that the challenges will be met with solutions. Some of those solutions can be found the advertising section of this magazine, so take a look at the information offered by our business partners.

Let me introduce myself and this association. My name is Vicky Steiner and I have managed this association as its executive director since 1986. My office is located in Dickinson, N.D. The association receives policy direction from its executive committee, with Greg Boschee as its president. Greg is also a Mountrail County Commissioner and farmer from the Parshall, N.D. area. There are nine executive committee members—three county commission representatives, three school district representatives and three city council/commission representatives. Once a year, all the counties, cities and school districts in western North Dakota gather in the Fall for an annual meeting, which is open to all members and associate members.

A new associate membership is now available on our association website, www.ndenergy.org. The membership, which is valid from July 1 to June 30 each year, costs \$500. While associate members may not vote, they are invited to the annual meeting and are able to form their own committee to make recommendations to the executive committee on policy questions.

The association's 2011 annual meeting will be held on Thursday, October 6 in Medora, N.D. The meeting boasts speakers on all types of energy projects as well as updates on oil activity and coal mining projects. For example, if uranium will again be mined in North Dakota, should

the state support a nuclear power plant or should it ship the uranium product of “yellow cake” to Canada or other areas of the United States for processing?

Big decisions lie in North Dakota's future. Because of the abundance of resources like oil, coal, gas, wind, bio-fuels, uranium, solar energy and potash—not to mention the rare germanium and molybdenum—lawmakers will be busy crafting policy decisions and state agencies will be writing regulations for the new industries.

North Dakota's population had been on the decline but the energy advancements have meant more people, many of whom are younger, have been filling the communities. Younger families mean busier schools and retail shops. Opportunities are here for not only North Dakota's youth but this entire region. As North Dakota's oil production rises, it means the United States may rely less on the unfriendly country sources.

With so much going on in 2011, we thought to ourselves, “Let's showcase the opportunities in this state with a magazine.” Let us know what you think. We welcome your feedback and story ideas for future Basin Bits editions. You can always contact us at www.ndenergy.org or by sending me an e-mail at vsteiner@ndsunet.com.

After such an icy, cold winter, be sure to spend some time in the great outdoors this summer!

God Bless!



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From the Desk of the Governor of North Dakota



Jack Dalrymple
Governor
North Dakota

In North Dakota, unlike most other states, we are setting our own course and reaping the rewards of our hard work, our careful fiscal management, our pro-business climate and our diversified economy.

The remarkable growth of oil and gas development in western North Dakota has created great opportunities and significant challenges. While jobs and population growth have been a significant benefit to this region and our state as a whole, the extreme wear and tear on roads and the need for housing and water require essential, quality-of-life investments.

To address these challenges, I proposed investing nearly \$1 billion in state funding for infrastructure projects in North Dakota's 17 oil and gas producing counties. Setting aside the necessary funding is the first step. It's equally important we implement the right strategy to ensure we make the best use of our tax dollars, that local voices are heard and that projects are not held up by funding delays. Our funding and implementation strategy, which has been endorsed by the North Dakota Association of Oil and Gas Producing Counties, takes these important considerations into account. Residents in oil country can expect the funding will be made available quickly, with oversight by both the North Dakota Land Board and the Department of Transportation.

From the Permanent Oil Tax Trust Fund, we have set aside \$229 million solely for state road construction and maintenance in our oil and gas region. The Department of Transportation will set priorities for its expenditures according to the Statewide Transportation Improvement Program, which was drafted in cooperation with local officials and engineers. These funds will be distributed to counties

based on road conditions identified through a comprehensive study by the Upper Great Plains Transportation Institute and based on the Transportation Department's observed road conditions.

We recommend the legislature approve these funds with an emergency clause to enable the affected communities to commence projects immediately. In addition, we propose an increase in funding for the Oil and Gas Impact Grant Fund to \$100 million. All entities experiencing impacts from oil and gas development can apply for funding to help mitigate those effects.

Of this \$100 million, we would like a large share—\$35 million—reserved for the largest and fastest growing cities. The balance of \$65 million would be available to smaller cities, counties, townships and other entities in the oil and gas producing areas of the state. It's important to note this funding is also available to address the pressing need for housing infrastructure, including municipal water lines and sewer lines.

Additionally, the Oil and Gas Gross Production Tax formula will generate another \$80 million for the affected counties over the next biennium, for a total of about \$247 million. This funding is allocated to counties, cities, schools and townships.

Finally, in addition to the special projects I have outlined, an additional \$240 million in regular state and federal highway funding will be dedicated to projects in the Williston, Minot and Dickinson DOT districts to address construction and extraordinary repairs. This includes "super-two" construction on

U.S. 85 and other projects in these western districts.

Counting the regular highway funding committed to these western districts, we are providing \$958 million for infrastructure in oil country. Most of this funding comes from revenues generated by oil and gas development in the western part of our state.

Western North Dakota is doing its share to build the state's economy and we need to do our share to help with the challenges that come with growth.

At the same time, the state is committed to doing its share to meet infrastructure needs.

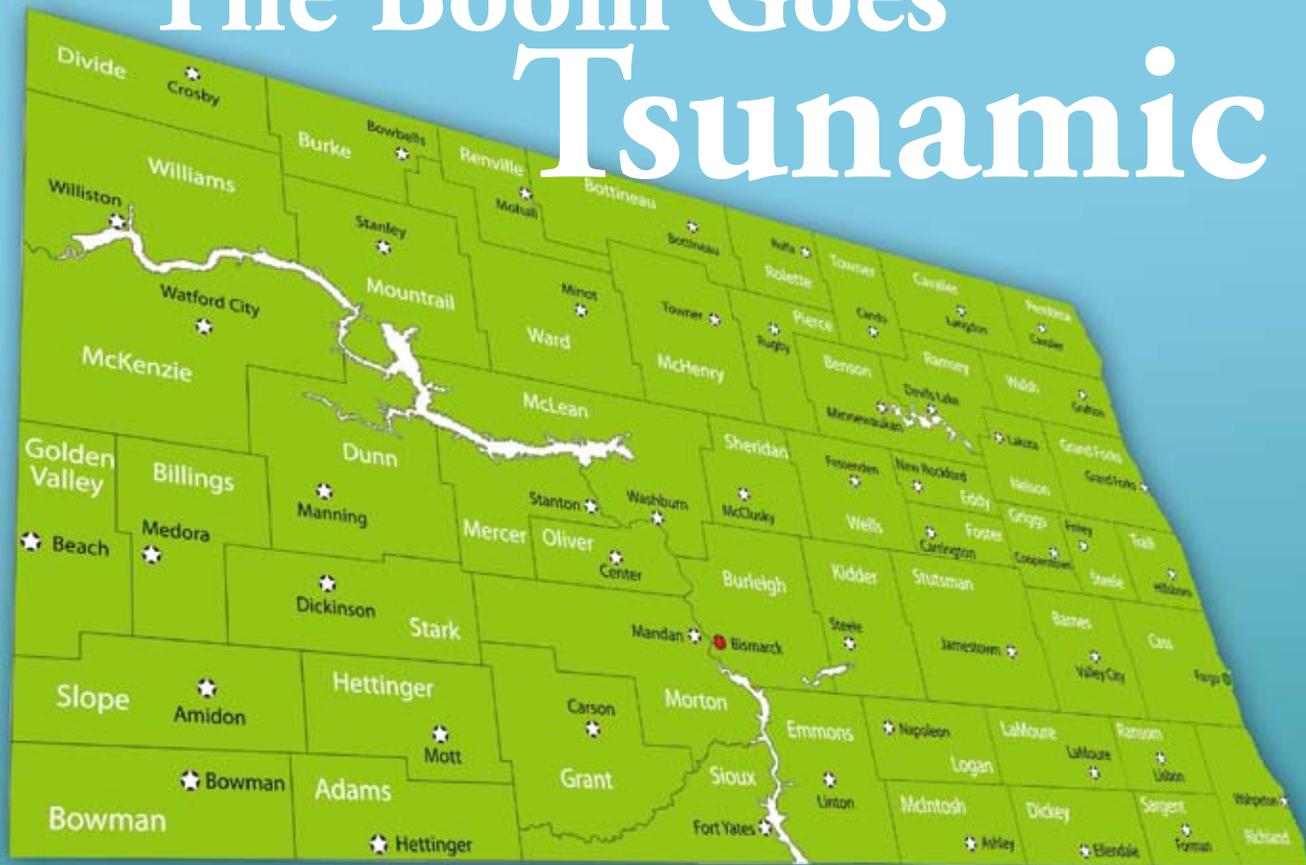
Investments are needed from Fargo and Valley City to Williston and Watford City. These investments, whether they are roads, bridges, flood prevention structures or water treatment plants, will pay dividends back to our citizens for decades to come.

In North Dakota, unlike most other states, we are setting our own course and reaping the rewards of our hard work, careful fiscal management, pro-business climate and diversified economy.

North Dakota's strong financial position allows for unprecedented investments in infrastructure and funding of other priorities, including economic development, education and quality-of-life services. All the while, we can still provide additional tax relief and continue to build the state's reserves.

We have much to be thankful for in North Dakota, but this is not the time to be satisfied with our success. We shoulder a great responsibility to build on our growth for generations to come.

The Boom Goes Tsunamic



The oil and gas boom in North Dakota is only getting bigger. Find out what's expected this summer and what potential roadblocks lay ahead.

By Alexandra Walld

The recent oil and gas boom that shot North Dakota to very well near the top of the list for industry production and potential in the United States isn't going away anytime soon. In fact, industry professionals say the sector's growth is only getting bigger and is expected to expand exponentially for some time to come.

Since the boom began, over 20,000 workers have migrated into North Dakota, generating a large amount of economic activity—tax revenues, sales taxes, jobs—says Lynn Helms, director of the Department of Mineral Resources, who says he anticipates the trend will continue to grow over the course of 2011 and will stay steady for the next half-decade.

"I think the number one barometer to look at for the growth of the boom would be to look at what happened with the drilling rig count. If we go back to a year ago, we were at 100 drilling rigs; we ended February 2010 at 93 drilling rigs, and we're going to end February 2011 with

167 rigs, so that's almost a 70 percent growth in drilling rig count," says Helms.

"And I think on top of that, towards the end of 2010 and in the first part of 2011, we've seen some major drilling in Stark, Billings and Golden Valley counties, so we're not only increasing the drilling rig count by 63 to 70 percent, but we've also expanded into three counties that didn't have much going on until about 6 months ago.

In 2010, 1,213 wells were drilled and Helms believes the amount of activity in the state will increase to about 2,000 wells drilled in 2011, followed by 2,000 each year after this for the next five years. (See Figure 1)

NEW IN THE SECTOR

This winter—one of the harshest North Dakota has seen in some time—has caused problems with moving oil and with hydraulic fracturing, which means there has been a growing inventory of wells that have not been hydraulically-fractured and are not yet producing.

In addition, there has been a lot of interest in the Tyler formation, south of the Bakken and Three Forks, resulting in a lot of leasing activity in the southwestern portion of the state. (See Figure 2)

By mid-summer, Helms predicts the rig count will have increased from 167 to about 200. He also thinks there will be about a 50 percent or more increase in hydraulic fracturing activity and says the focus for the next five years or so will be on developing all the un-drilled spacing units.

"It's more of the same of what we've been doing. We've talked a lot about increased density drilling, a point at which they're going to start drilling additional wells in spacing units, but they're really going to use all of the industry and infrastructure for the next five years or so—it's going to take everything we've got to get the initial well drilled in all of those un-drilled spacing units," says Helms.

"Based on our estimates, we've got to drill about 6,000 wells to get that first phase

Figure 1

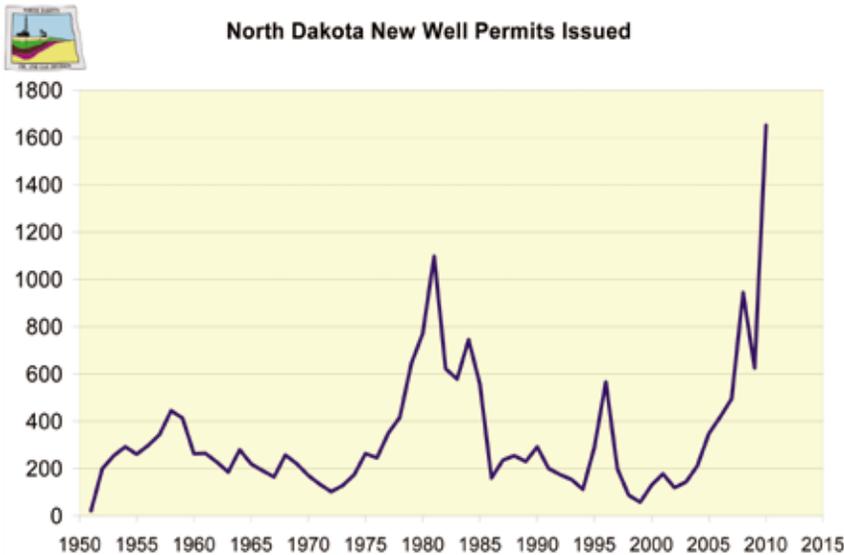
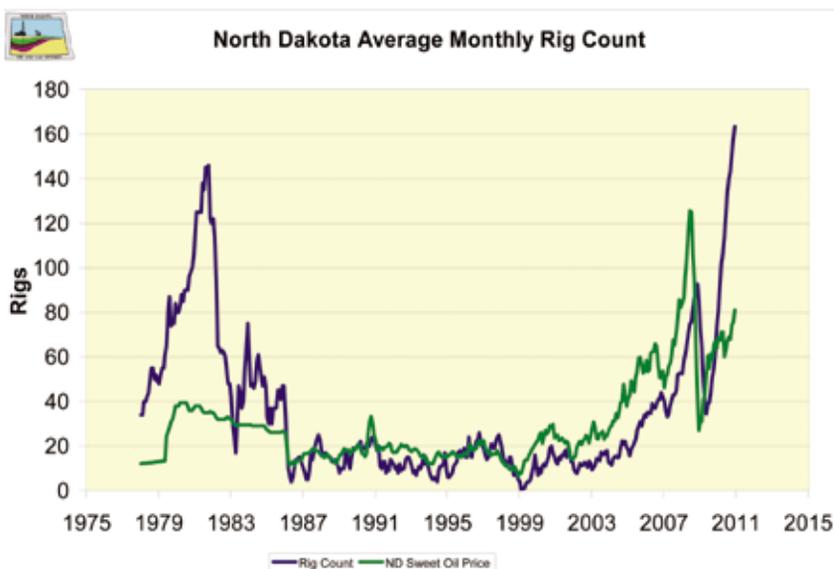


Figure 2



All graphs courtesy of the Department of Mineral Resources, North Dakota Industrial Commission.

completed. We've drilled 2,000 in Bakken and Three Forks—300 of those are Three Forks wells, 1,600 are Bakken and 100 of them are in both formations, so it's mostly Bakken, but Three Forks is really starting to pick up and that's the formation of interest for the new counties."

With the advancement in technology used for hydraulic fracturing, the wells keep improving, which means that recovery keeps getting better. Right now, they are at about a three to five percent recovery rate. Helms says every one percent the recovery factor is improved is another 1.7 billion barrels of oil that will be produced.

ROADBLOCKS

While the boom has brought the industry a wealth of benefits, there are a few challenges or roadblocks to be overcome this year. First and

foremost, Helms believes a labor shortage will pose some real problems for both the industry and the communities in western North Dakota. He says the state has never brought in as many drilling rigs in such a short time period as it will this year—the highest prior to this was 148 rigs for about two weeks and that was back in 1981.

"It's becoming increasingly difficult to find the workforce and housing for that workforce, so one of the biggest roadblocks in going to be finding workers and a place for them to live. The second roadblock is going to be the road, bridge and transportation infrastructures—they're going to be stressed very heavily. And then looking a little further out, if our projections hold true, we will have filled all of our pipeline export capacity by 2015, so we need to already be looking at what kind of projects need to be put into place to increase that capacity beyond 2015," says Helms.

Another issue the industry is trying to come to terms with, Helms adds, is gathering and processing the natural gas. There are plans to build several large gas gathering and processing plants in the 17 oil and gas producing counties. The total investment for the project over the next couple of years, according to Helms, is around \$2.5 billion, which will add further strain on the workforce, housing and transportation issues as all of that construction will take place on top of the impact and footprint of the drilling and hydraulic fracturing.

"For now, I think we're going to see a lot more temporary housing and as time goes on I hope there will be more and more recognition that this is not a quick boom and bust type of oil development. Then there will be a lot more building of rental housing and permanent housing, more or less in that order. The immediate solution is going to be crew camps for temporary housing, but I think another year or two down the road, as we work our way into this, there will be widespread recognition that this is sustainable for a long time."

WORKFORCE



There are well over 1,500 positions available in the oilfield through Job Service North Dakota and that does not include jobs in other fields like dining, education or maintenance that have been made available throughout counties as a result of the extreme growth. Those seeking work can do a search to find out what is available at www.findjobsnd.com and can try searching for jobs in a specific county or anywhere within the 17 oil and gas producing counties.

The positions related directly to the oilfield range in skill-set and specialty and request people in many areas, some of which include drillers, electricians, machinists, frac hands, rig hands and wireline operators. With the sector seeing as much activity as it is this year, it is likely that number will continue to grow with the industry.

"One of the questions the legislative council always has is, 'There are 1,200 jobs posted, but are they all in oil producing counties?' The last time I checked, 30 percent of the jobs available were in oil and gas producing counties and

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ENERGY ON THE MOVE

the balance were throughout the state. The oil patch has excellent paying jobs—in the industry, it represents about 1.5 percent of employment, but it's 3.5 percent of the payroll,” says Michael Zeisch with Job Service North Dakota. He adds that while, numerically, the oil patch pays quite well it doesn't capture those in areas like transportation, equipment leasing or wholesale trade, which are readily available.

“When it comes to out-of-state job seekers, the Department of Commerce can help answer their questions and attempt to keep track of families they have helped move in,” says Zeisch. “I probably field 10 to 15 calls a week from people rolling the dice and seeing what's out there.”



TRIVIA TIME

1. Of 152 oil rigs, how many were drilling in Mountrail county on October 25, 2010?
2. What was the average discount rate in June 2010 for North Dakota sweet crude?
3. North Dakota has two oil taxes—the five percent oil and gas gross production tax and the 6.5 percent extraction tax on crude oil. When did the voters approve the initiated measure to create the 6.5 percent extraction tax on crude oil?
4. What was the North Dakota severance tax on potash in 2010?

Answers on page 18

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Burke County's Pilot Test Takes Off

An update on Dakota Salts' progress for a potash mine in Burke County.

By Basin Bits Staff

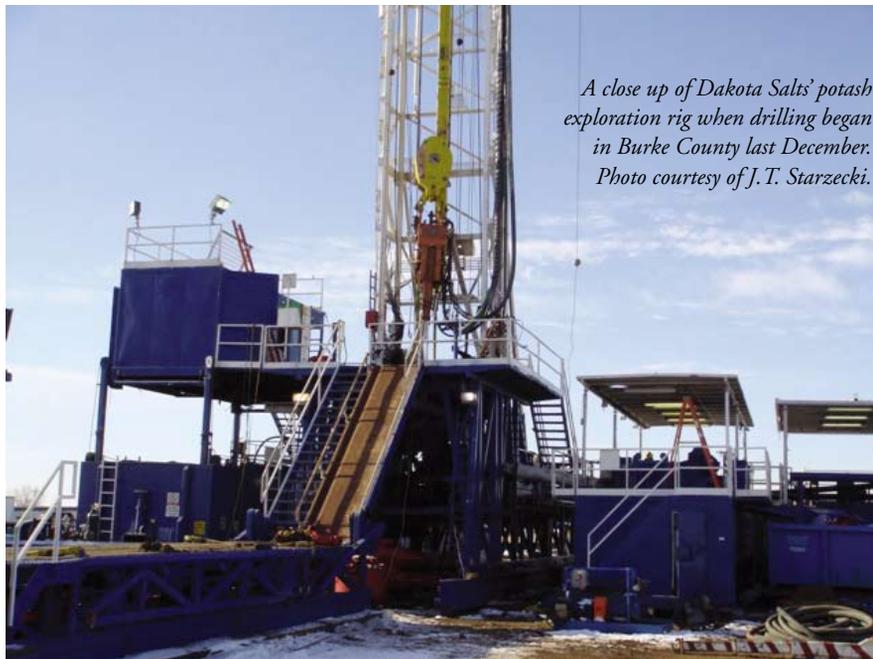
It has been known for quite some time that there is potash available in the Williston Basin, which originated about 500 million years ago. Because there are few wells that have penetrated that part of the Devonian, industry professionals have relied on those wells for information. In Burke County, only half a dozen wells have gone through the Prairie Formation. A report from the late 1970s states there were 60 billion tons of potash in the Williston Basin, 50 billion tons in North Dakota and 10 billion tons in Montana at that time. While it has been said that North Dakota has the potential to be the top-third potash producer in the world, Dakota Salts, LLC believes it is still too early to tell how much and what grade of material is in the ground. Either way, the industry has taken off and an exploration project has begun in North Dakota.

In November 2010, Dakota Salts drilled a test well more than 8,000 feet deep in central Burke County which was then plugged in January of this year. According to J.T. Starzecki, senior director of North American Operations at Dakota Salts, the project's goal is to find a site for a solution mine and processing facility in Burke County that would produce two million tons of potash per year, which he says is similar to other mines around the world today. If Dakota Salts can get to that point, they plan on keeping the work local and bringing jobs to the area, which is why they'd like to have the processing plant in the Burke area.

"We are still entrenched in our exploration program—the next six months will bring a regional analysis, additional seismic and geophysical work, resource estimate and grading, and potentially additional exploratory holes," says Starzecki.

"Because the depths in North Dakota are much deeper than in other areas of the world, conventional mining isn't possible; our analysis tells us that the salt basin goes down to 9,600 feet in Burke County. At this point, it would be a solution mine, which will help to minimize the surface and environmental impact."

The exploration phase of the project is still underway and will continue through 2011. Once that phase is complete, Starzecki says there will be environmental work, site



A close up of Dakota Salts' potash exploration rig when drilling began in Burke County last December. Photo courtesy of J. T. Starzecki.

selection, plant specifications and many other planning initiatives to take care of before they can consider building a pilot plant. So far, there is no set timeline for that portion of the project, nor is there a definite outline for when full-scale mining will begin.

"We still have a way to go in proving a commercial grade resource and getting an economically-friendly environment set up in the state of North Dakota," says Starzecki. "Like any new industry coming to a state, if we get to a point where we prove out a resource and can get all the environmental issues satisfied as well as buy-in from the local and state government officials, it would mean an increase of jobs, tax and royalty revenue to the state and county."

RESULTS

Ed Murphy, state geologist with the North Dakota Geological Survey under the Department of Mineral Resources, says the subsurface mineral permit for potash exploration was issued to Dakota Salts for the purpose of compiling and analyzing data, which, along with the three-inch core they cut from the upper half of the Prairie Formation, will be stored in Grand Forks. In a couple of years, when Dakota Salts fills out an application for the next phase—a solution mine and processing facility—it will specify items such as the



We need to prove that North Dakota holds a commercially-viable, economically-feasible resource to mine. If we get that far, we would need continued buy-in from the state and local governing bodies to create a structure that would allow us to build this project and bring jobs to the area.

—J.T. Starzecki, Dakota Salts, LLC

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size of the facility and how it will operate and its request will be reviewed by the Department of Mineral Resources, the Department of Health and, if it calls for it, the State Water Commission.

Because the project is still in its early stages, it is difficult to know exactly what the mine will be like or how it will operate. Murphy has toured and is familiar with the facility at Belle Plaine, Saskatchewan, which is the largest potash solution mine in the world. Operated by the Mosaic Company, it employs 500 full-time employees and has a sustainable production capacity of 2.5 million tons per year.

“In Canada right now, I believe there are nine operational potash mines, two of which are solution mines; the others are underground mines. Of the two solution mines, only the Belle Plaine mine was originally designed as a solution mine—the other is a flooded underground mine that has been converted to a solution mine,” says Murphy.

Starzecki says it is difficult to say at this time how similar in size their facility might be

NORTH DAKOTA ASSAY RESULTS

- The total intersection is interpreted to include the White Bear marker bed (1.57m) followed by 15.05m of interbedded halite with 8.69m of Esterhazy Member mineralization at the base;
- The total Esterhazy Member intersection was 27.9 ft (8.5 m) with an average grade of 11.8 percent K₂O (potassium oxide);
- The potash mineralization is in the form of both sylvite and carnallite, which is similar to Esterhazy Member type mineralisation seen in the Saskatchewan Prairie Evaporite Formation.
- More in-depth results can be found at www.siriusminerals.com/north-dakota-assay-results.

to the one at Belle Plaine, but the results from the first phase of exploration seem promising. According to Chris Fraser, managing director of Sirius Minerals, which owns Dakota Salts, the “first hole has confirmed the continuity of the Saskatchewan potash beds into North Dakota and, more importantly, in our Dakota Salts Project. Sirius is now working with its technical team to properly analyze and interpret these results to plan the next phase of our ongoing exploration activities in North Dakota.”

Full results of the Prairie Formation exploration won't be released to the public until at least August 2012, says Murphy, after the year of automatic confidentiality has expired.

“It's much different than oil and gas where things are confidential for six months,” he says. “Here we're looking at establishing a plant and there's a lot that goes into that—coal exploration rules are much like that and confidentiality for that data may extend up to 10 years.”

CHALLENGES

As it is with any project, the proposed potash mine for Burke County hasn't come without its challenges, even though it's still

in its exploration phase. Murphy says his office has received phone calls from people with questions about leasing or who are concerned about potential environmental impacts, but he reminds people that the department's rules and regulations are set up to minimize the impacts that may be brought on by a project such as this one.

Other issues Dakota Salts has to face are whether the resource is of a commercial grade, if it will be economically feasible to make a profit and if there is a politically and economically friendly environment to support the project.

“We need to prove that North Dakota holds a commercially-viable, economically-

feasible resource to mine. If we get that far, we would need continued buy-in from the state and local governing bodies to create a structure that would allow us to build this project and bring jobs to the area,” says Starzecki. “One of the things we continue to battle is the concept of ‘misinformation’ on environmental and infrastructural impact and this can jeopardize the perception of our project,” says Starzecki.

“We need to get the correct information out to the public. If all of these items come together, then it becomes more and more possible to look at a pilot program in North Dakota and all the benefits that will bring to the state.”

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TRIVIA TIME

1. The federal government keeps all the oil tax revenues from the federal oil leases in western North Dakota. True or False?
2. By 2013, how many additional barrels per day (bpd) will the Enbridge Bakken Expansion Program increase the pipeline takeaway capacity from North Dakota by?
3. Under all the economic sectors, including energy and agriculture, how many jobs are created by the trade between North Dakota and Canada?
4. The United States will need additional energy in the coming years; why aren't more lignite power plants in the building phase so that power will be there when it's needed?

Answers on page 22

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A Coal Mine for South Heart

Concerns from the public could potentially stop this project in its tracks.

By Basin Bits Staff



Three mule deer nesting on a dirt pile north of Beulah this March. The animals seem unconcerned the Coteau dragline operation is moving back and forth searching for lignite coal seams.

South Heart Coal, LLC has completed its application to develop a 4,581-acre coal mine in South Heart, North Dakota that is expected to produce 2.4 million tons of coal per year. It is expected to have about a 30-year life span and will supply lignite to a \$2.2 billion electric power plant. The

plant will convert lignite to synthetic gas and then to hydrogen, which will power electric turbines and generate up to 175 megawatts of power. According to South Heart Energy Development's letter of intent filed with the Public Service Commission (PSC), the process will recapture 90 percent or more of the project's carbon

dioxide emissions, which could be used to increase oil production if it's sold and pumped underground.

The mining permit application is now in its second phase and the application is under technical review, during which the PSC will ensure all regulations have been met, verifying design plans for haul roads and sedimentation ponds, plans for re-contouring the land after mining and assessing the surface and ground water impacts on the proposed site. Following a month's worth of advertisements, the public had the opportunity to voice its concerns.

"In this case, the PSC has received about 150 letters, postcards and e-mail messages from people that are in opposition to the proposed mine. They commented most often about concerns with the closeness to Theodore Roosevelt National Park—it's only 10 to 12 miles from the southeast corner of the park," says Jim Deutsch, director of the reclamation division for the PSC.

"Other concerns are possible impacts to surface and ground water, dust particles that may contain uranium and the possibility of there being uranium in the coal or other earthen materials that will be mined or disturbed. The company did take samples of the coal and materials above the coal to see if it's abnormally high in that area and that's something we'll be evaluating."

Going back to the 1950s and 1960s, Deutsch adds, there were other mining



TRIVIA ANSWERS

(answers to questions from page 14)

1. Of 152 oil rigs, how many were drilling in Mountrail county on October 25, 2010?
Answer: 38 out of 152 total rigs.
2. What was the average discount rate in June 2010 for North Dakota sweet crude?
Answer: A little over \$3, which was down from the \$11 per barrel discount in 2008; evidence of more take away capacity in the infrastructure.
3. North Dakota has two oil taxes—the five percent oil and gas gross production tax and the 6.5 percent extraction tax on crude oil. When did the voters approve the initiated measure to create the 6.5 percent extraction tax on crude oil?
Answer: It was approved by voters in 1980 and the bulk of the projected oil tax dollars were dedicated to the state's school funding.
4. What was the North Dakota severance tax on potash in 2010?
Answer: None. Prior to 2010, there wasn't a tax for potash on the North Dakota tax books. The 2011 legislature began fashioning a new tax modeled after the five percent oil and gas gross production tax that returns the bulk of the tax revenue to the state coffers after impacts diminish to the county with potash mining.

areas near South Heart Coal's proposed site that uncovered coal enriched in uranium; the uranium levels were higher than what you would normally find in coal from other areas. The coal was burned and the uranium was then extracted from its ash.

Throughout this phase of the project, South Heart Coal has held meetings for the public to ask questions. Rich Voss, vice-president of project development with the company, says they have responded to all of the major questions and feel they have done a good job of satisfying the regulations for the project.

"Environmental groups out there continue to object to any type of coal development and there will be some people out there you can never please no matter what you do. Surface mines have been in operation in the state for 30 or 40 years now without any

significant impacts, so people should consider that," says Voss.

The mine will supply good, high-paying jobs, adds Voss, and with the reclamation program the state has, the land is improved after it has been mined to get rid of any erosion problems.

One of the biggest hurdles South Heart Coal has faced throughout the process is the state of the economy and the lack of a national energy policy, which, according to Voss, has been needed for years. With a project as big as the proposed coal mine near South Heart, there has been difficulty in finding customers to commit to it.

"With low natural gas prices and high construction prices, it's a challenge getting companies to commit to a project this large. The economy has to turn around, commodity prices have to change and financing availability needs to improve in

order for the entire project to move along," says Voss. "You can't expect a business to invest without knowing what's out there and companies won't invest until there is a national energy policy; it's been needed for years now and it's just not happening. We're hoping that once we get the mine permit potential customers will be more likely to express serious interest in the power side of the project."

The proposed mine is still in its early stages and any further public concerns need to be addressed and satisfied before things can move forward and Voss expects that stage will likely take the remainder of 2011. Development for the mine probably will not begin until at least 2012 and, if things move forward to develop the power side of the project, actual plant operations will likely not commence until sometime in 2017.

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Pressure on Stanley's Water & Sewer System Builds



How continued growth can put strain on infrastructure.

By Basin Bits Staff

While business is booming in Stanley, North Dakota and bringing plenty of jobs and job seekers to the county seat, the city's infrastructure has been trying to keep up with the expansion, taking all that it can handle. The pressure continued to build on Stanley's water and sewer system until it reached the point that future housing developments had to be put on hold until the city could expand its sewage treatment system. Now, it looks like business in Stanley isn't the only thing that's booming.

Since things picked up in Stanley, the city has grown geographically, essentially doubling in size due to annexations and going hand-in-hand with that expansion, the city's population has increased dramatically. Classrooms are full, businesses are doing great, the pay scale has gone up and unemployment is non-existent. There are two workers camps within city limits and another less than one mile outside the boundary—at any given time, there are about 700 workers living in those camps and Mayor Mike Hynek says the city has to provide infrastructure for those camps.

"We had some serious infrastructure problems being addressed and now we know our water treatment system will double in size this summer. The lagoon was at capacity, but that's going to be taken care of; we're adding a third cell to our sewage lagoon. The cost is \$1.2 million and the state is going to help with about 50 percent of the cost," says Mayor Hynek.

"On top of that, we've spent a lot of money—the tiny town of Stanley has spent just over \$9 million in the last year, so we've done everything we can to try and keep this energy development going as smoothly as we can."

Some of the challenges the city currently faces are filling positions for the service industry, picking up additional police officers and finding an affordable place for people in the city to live. Mayor Hynek says with two-bedroom apartments going for about \$1,500 per month, the

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city has been looking at duplexes and four-plexes to help address the situation.

Because all of Stanley's housing is full, a short supply of housing is going to be developed as soon as spring arrives. Following that, between 30 and 40 houses are expected to be going up in Stanley this summer, along with a group of 18 townhouses. There are also plans for a development west of the city to put up between 200 and 300 houses this summer, but those numbers may change by the time summer rolls around.

Now that the infrastructural challenges Stanley was facing are being addressed, it seems the city will be well-prepared for the continued growth expected in the area over the next few years.

"To be honest, I'm expecting the state has realized that because we've spent \$9 million on infrastructure in the past year that we've been doing more than our fair share in keeping the energy industry supplied with what they need and that the state will send dollars back to help the industry keep growing," says Mayor Hynek.

"Obviously, the industry's going to be here for a long time. I expect the exploration end of it to be here for many years and anticipate things to keep rolling like they have been for the past few years. The energy industry is giving us a shot in the arm and we're doing the best we can—Stanley always did hold its own." 



TRIVIA TIME

1. In 1854, the invention of the kerosene lamp led to the formation of the first American Oil Company. A barrel of oil sold for \$20.
2. In 1907, in Bottineau County, near Westhope, eight wells were drilled 210 ft deep for shallow gas. It was sold to townspeople for heating and lights.
3. In 1911, the North Dakota Legislature passed an oil and gas conservation law that prohibited production of gas unless it was tied to a distribution system.
4. In 1912, W. Taylor Thom Jr. from the U.S. Geological Survey concluded western North Dakota had at one time been at the bottom of a sea. He declared that the state had good potential for oil and gas after he discovered marine fossils along the Cannonball River.
5. In 1915, gasoline became a desirable fuel. It was once considered an unwelcome by-product of the kerosene refining process.
6. The first attempt to drill for oil in North Dakota was near Williston in 1916. They drilled for four years and got to 2,107 ft but did not find oil at that depth. The average North Dakota producing well is now 16,332 feet deep and takes 35 days to drill.
7. In 1937, the California Company drilled a well in Williams County to a depth of 10,281 ft. There is now a producing well 500 ft away and 1,000 ft deeper that was drilled in 1984 and is expected to produce one million barrels of oil.

Trivia courtesy of the Department of Mineral Resources, North Dakota Industrial Commission.

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Williston State College Expands Offerings in the Oilfield

Preparing the workforce through hands-on training.

By Basin Bits Staff

The oil and gas boom that has hit North Dakota is only getting bigger with time and as the industry continues to grow, so does the need for a workforce. With all of the action the Bakken has seen and will see over the next few years, there is an absolute need for workers in the oilfield. Nowadays, employers are looking for applicants who are certified and will be ready for any situation if and when it should arise. In order to ensure you are properly trained and prepared, Williston State College—through the TrainND Division—offers professional classroom and hands-on training through the Petroleum Safety and Technology Center of Excellence and its variety of programs related to the oilfield.

Some of the programs offered through the Petroleum Safety and Technology Center are:

1. Well Control for Drillers and Workover Rigs;
2. Commercial Driver's License Training;
3. Lease Operator Training;
4. Incipient Fire Training;
5. Aerial Lift Training; and
6. Service Rig Floorhand Training.

The Petroleum Safety and Technology Center, located just half a mile east of the city limits at 421 22nd Avenue, has three classrooms for training, along with a high-bay area for large equipment training. Service Rig Floorhand Training is a two-week program that covers petroleum technology and its principles of operation and control. The first week of the program consists of orientation, vocabulary and 40 hours of Occupational Safety and Health Administration training, which students are required to complete before they can get their certification. During the second week, students receive hands-on training that will ensure they are prepared for when they head out to the oilfield.

"We do the hands-on part of the program right here at the Petroleum Safety and Technology Center. We have a full-scale workover rig



Hands-on training on a full-scale workover rig takes place at the Petroleum Safety and Technology Center. Photo courtesy of TrainND.

and it's rigged up on a 1,000-foot well. We have tubing we pick up and the sucker rods as well to simulate all the phases a floorhand would be expected to go through and operate out on the rig," says Dennis Knudson, the Center's director.

While they do their best not to turn any interested applicants away, there are requirements that must be fulfilled to qualify for the program—you must be at least 18 years of age, able to lift 100 pounds repeatedly and pass a drug test before you can start training. Right now, the two-week session is offered once per month to anywhere between three and six students, but if more people are interested in the training, the program can be available more often. The waiting period for the course is about one month, which gives people who are interested, especially those from out-of-town, time to wrap up their affairs before training begins.

With today's recruiting efforts, Knudson says the training offered through the Petroleum Safety and Technology Center is very helpful; because the program gives you hands-on experience with what it takes to produce an oil well, what can go wrong and what

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you need to do to get it back up and running, it makes those who get their certification more valuable to the industry.

“The program is geared to get them hired. In the second week, we also contact the area rigs’ supervisors and let them know we have new hires out on our training rig that week and the supervisors will come out to meet and essentially do a job interview right then and there,” says Knudson.



TRIVIA ANSWERS

(answers to questions from page 17)

1. The federal government keeps all the oil tax revenues from the federal oil leases in western North Dakota. True or False?
Answer: False. The federal government shares about 50-50 with the states that have federal minerals.
2. By 2013, how many additional barrels per day (bpd) will the Enbridge Bakken Expansion Program increase the pipeline take-away capacity from North Dakota by?
Answer: 145,000 bpd per day and could be readily expanded to 325,000 bpd.
3. Under all the economic sectors, including energy and agriculture, how many jobs are created by the trade between North Dakota and Canada?
Answer: 21,000 North Dakota jobs are related to the trade with Canada.
4. The United States will need additional energy in the coming years; why aren't more lignite power plants in the building phase so that power will be there when it's needed?
Answer: The uncertainty of government policies for the long-term commitment that would be needed for a new power plant.

“They get to see them in action and watch them work and I give them time to visit for little while before they get back to work and that allows them to put a face with the applications. Usually by the end of that second week, everyone’s hired and that’s the goal.”

The college continues to expand its offerings in the oilfield and for companies that require specific training standards, the college can work to develop a curriculum to suit the company’s specific needs. For more information about the training offered or to register for a program, contact Knudson by e-mailing dennis.knudson@willistonstate.edu or calling (701) 572-2835.



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It's a competitive world. Train for it!

Oil Can! Program Focuses on Education and Outreach

By Ron Ness, President, North Dakota Petroleum Council

Listen first. Respect others. Develop partnerships.

Sounds like the makings of a cooperative, successful relationship. These principles are at the heart of the North Dakota Petroleum Council's Oil Can! program. Oil Can! is an outreach and education effort on behalf of the oil and gas industry members operating in North Dakota. Created in 2008, the program serves as a means to open the lines of communication and encourage cooperative efforts between the petroleum industry of North Dakota and key stakeholder groups such as property owners, policy makers, community leaders, media and the general public.

The oil and gas industry is here for the long haul. We're invested in North Dakota and committed to working with community and state leaders to ensure sustained growth with minimal impacts.

Components of Oil Can! include Town Hall Meetings, Bakken Rocks CookFest events, safety education and campaigns, an interactive website and development of survey tools to measure the industry's economic impact on the state and North Dakotans' perceptions of industry activity.

Additionally, 15 ad hoc committees charged with addressing important industry issues such as land/royalty owner rights, environmental impacts, safety, infrastructure, etc., have been formed by Petroleum Council members who are engaged in helping identify solutions and ensuring the industry is having a positive impact in North Dakota.

Oil Can! is all about connecting people—industry members, community leaders,

policy makers, land owners and others in the general public. This is done through events like the Bakken Rocks CookFest and Town Hall Meetings.

CookFest brings together industry employees and North Dakotans for an evening of food, fun and learning. The 2011 CookFest events are tentatively scheduled for July 26, location TBA, and July 28 in Watford City. We encourage local citizens



CookFest attendees enjoy some of the best BBQ in the Bakken during the 2010 CookFest in Tioga, ND. Photo courtesy of the North Dakota Petroleum Council.



TRIVIA TIME

1. On April 4, 1951, the first North Dakota oil well came in just south of Tioga in Williams County. The famous picture of the first well by Bill Shemorry and the story were published in Life, U.S. News, World Report, and many other national publications. That oil well, the Clarence Iverson #1, produced more than 585,000 barrels of oil over 28 years.
2. The Clarence Iverson #1 well is less than 10 miles from the 1937 well. They were so close in 1937!
3. Prior to the 1951 discovery, 64 wells had been drilled in the state dating back to 1910. Since 1951, over 18,000 more wells have been drilled in North Dakota.
4. North Dakota's first oil refinery was built in 1954.
5. Traill County is the only county in North Dakota that has never had a well drilled for oil or natural gas. Nineteen North Dakota counties have produced oil.
6. Counties and school districts in western North Dakota rely heavily on oil production taxes for revenue. Schools, roads, and other services are paid for with oil tax revenue.
7. The all-time leading North Dakota oil producing county is McKenzie. The county has produced over 397 million barrels since oil was discovered there in 1952.
8. In 1994, the Cedar Hills Red River 'B' oil field was discovered in Bowman County, North Dakota.
9. In 2001, the Elm Coulee Bakken oil field was discovered in Richland County, Montana.
10. In 2006, the Parshall and Sanish Bakken oil fields were discovered in Mountrail County, North Dakota.
11. In 2008 the USGS announced that the Williston Basin Bakken formation is the largest continuous oil accumulation they have evaluated. It contains 300-500 billion barrels of oil with 4-8 billion barrels recoverable.
12. North Dakota's oil production ranks fourth-highest throughout the United States.

Trivia courtesy of the Department of Mineral Resources, North Dakota Industrial Commission.

and community leaders to join us for great food, lots of fun and to learn more about the oil and gas activity taking place in North Dakota through our Bakken Basics session. More information will be available on the Petroleum Council website, www.ndoil.org, as the date approaches.

The Town Hall Meetings are designed to give an overview of industry activity from all perspectives—exploration, production, transportation, regulation and community/landowner/mineral-owner issues. They are an opportunity for North Dakota citizens and community leaders to visit with industry professionals from a variety of sectors including surface/mineral rights, geology, pipelines, regulation and county issues.

Because education is such a large component of the Oil Can! program, the Petroleum Council also offers online informational resources aimed at answering questions commonly asked by people with mineral rights or those with industry activity taking place on their property. These resources—the FAQ section, Surface Owner Information Center and Royalty Owner Information Center—were developed by Petroleum Council members who are experts in their respective fields. Operator contact information for surface owner and royalty issues is also available on the Petroleum Council's website.

Another area of great importance is safety, both on and off the job. This includes issues such as well site safety, road and traffic safety, ground disturbance (e.g. pipelines) and infrastructure improvements. To help improve industry safety efforts, the Petroleum Council recently held a Safety Committee meeting to discuss what is working well and what areas need improvement. More than 100 industry safety professionals and company managers took part in the discussion. Also present were representatives from the ND Safety Council, Workforce Safety & Insurance, ND One Call, ND Department of Transportation and BNSF Railway. These individuals shared industry-related data and offered their expert opinions for improving safety. The Petroleum Council is also working to form partnerships with several state agencies to improve safety standards, training and outreach statewide.

The future is bright in North Dakota and we know maintaining an active oil industry that is viewed as a benefit to communities is critical to our state's continued success. Our commitment is to sustain that activity in the safest way possible.

For more information about Oil Can!, visit www.ndoil.org. 



Local residents learn more about oil and gas activity taking place in North Dakota during the 2010 CookFest in Tioga, ND. Photo courtesy of the North Dakota Petroleum Council.

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The Energy & Environmental Research Center (EERC) at the University of North Dakota (UND) has a multitude of established programs dedicated to the advancement of commercially viable technologies for the energy and environmental industries in North Dakota. This year alone, the EERC's regional economic impact is more than \$130 million. This level of activity is supporting more than 1800 jobs throughout the region.

For more information about the EERC's expertise, visit www.undeerc.org.



EERC... The International Center for Applied Energy Technology®

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NORTH DAKOTA'S OIL & GAS INDUSTRY

**COMMITTED TO
SUSTAINING GROWTH
AND
MINIMIZING IMPACTS**

13,000 new jobs were created in ND by the oil and gas industry between 2005 and 2009*

87% of ND citizens feel the oil industry provides positive benefits to the people of ND*

72% of ND citizens feel the oil industry takes appropriate steps to protect the environment*

\$12.7 billion in economic activity was generated by the industry in 2009*

*According to two studies released in January 2011 - View these studies online at www.ndoil.org.

Visit the North Dakota Petroleum Council's website for:

- surface owner info
- mineral owner info
- industry FAQs
- informative videos
- safety messages



WWW.NDOIL.ORG



**WHO ARE THE
9.2 MILLION
AMERICANS WHOSE
JOBS
ARE SUPPORTED
BY THE OIL &
NATURAL GAS
INDUSTRY?**

i'm one

**Adam C.
Field Engineer**

Adam is a field engineer for an oil and natural gas company. He is one of 2.1 million Americans working directly in a job that brings you the oil and natural gas you depend on. But that's only part of the story. The industry's \$1 trillion lift to the U.S. economy each year actually supports another 7.1 million jobs in other sectors, from logistics to manufacturing to research to retail. All in all, that's real fuel for America's recovery.



Let's discuss the state of American energy at EnergyTomorrow.org

Source: The Economic Impacts of the Oil and Natural Gas Industry on the U.S. Economy, PricewaterhouseCoopers LLP, September 2009 (Sponsored by API)

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THE *people* OF AMERICA'S OIL AND NATURAL GAS INDUSTRY