



page 9 Alaska gas pipelines compete in Calgary IOGCC presentations



ANATOLY ZOLOTUKHIN

The photo of the Orlan platform (above) in the May 4 issue of Petroleum News used to be called the Glomar Beaufort Sea I CIDS.

## Embarrassing but true, the Orlan platform used to be called the Glomar Beaufort Sea I CIDS

Slap-dab on page 1 of last week's Petroleum News there was a photo of the Orlan production platform being used offshore Sakhalin Island. Although the Russian professor who was the subject of three Arctic articles in that issue (and two in this issue) did NOT say the Orlan platform was of Russian or Norwegian make, one might have assumed that because "Orlan" is a Russian word that means "eagle."

In fact, the Orlan used to be called the Glomar Beaufort Sea I CIDS. Before it was purchased by ExxonMobil and towed to Sakhalin by Crowley to be converted into a production platform, it was used offshore Alaska's North Slope for exploration drilling (but mostly it sat idle.)

To add salt to the wound, it was Don Ingraham from Offshore Divers, not someone at Petroleum News, who recognized the Orlan as the CIDS.

Offshore Divers has been involved in numerous diving projects in Alaska during the last 28 years, everything from the installation of the Steelhead and Osprey platforms in Cook Inlet, to the CIDS, SDC and Kulluk units on the North Slope.

Thank you, Don.

—PETROLEUM NEWS

## Imperial 'excited' about Mac

A change at the helm of Imperial Oil hasn't changed the company's view of the Mackenzie Gas Project.

If anything, newly installed Chief Executive Officer Bruce March sounds more enthusiastic than his predecessor Tim Hearn about plans to develop Canada's Arctic natural gas resources, despite the pile of unresolved issues facing the C\$16.2 billion project.

Taking the stage for the first time at Imperial's annual meeting May 1, March said his company is "excited" about the MGP, regardless of assumptions that the cost estimates will get hiked again when all of the agreements are in place.

The MGP has also been hit with a delay in the startup date of three years to 2014, a slow-moving regulatory process, stalled decision making by the Canadian government on fiscal

see IMPERIAL page 21

### EXPLORATION & PRODUCTION

# Future uncertain

Anadarko finds 'no commercial hydrocarbons' at Jacob's Ladder well

By ERIC LIDJI  
Petroleum News

After reviewing logs and finding "no commercial hydrocarbons," Anadarko Petroleum plugged its Jacob's Ladder well this winter, according to a first quarter operations report released on May 6.

The oil prospect sits 10 miles southeast of Prudhoe Bay on Alaska's eastern North Slope and for years geologists have considered the unique structure of Jacob's Ladder to be a sign of potentially large reserves.

But with the disappointing news, Anadarko and its partners of the project

now plan to use the rest of spring to decide the future of Jacob's Ladder.

"We're having meetings trying to decide what we're doing next year," said company spokesman Mark Hanley.

### Unique geography piqued interest

The interest in Jacob's Ladder stems from the Wahoo formation of the Lisburne Group, a prospect believed to hold between 20 million and 660 million barrels of oil equivalent.

While knowledge of the Lisburne field dates back to the discovery of Prudhoe Bay, the geology at Jacob's

see JACOB'S LADDER page 21



FORREST CRANE

Anadarko suspended the Chandler No. 1 well to the south of Gubik No. 3, and left Nabors rig 105 at the ice pad. Spokesman Mark Hanley said the expectation is to return to next year to finish the deep gas well.

### NATURAL GAS

# Canada to fast-track Alaska

Learned from Mackenzie gas line mistakes, will speed Alaska line passage

By GARY PARK  
For Petroleum News

The Canadian government is promising not to repeat the plodding process that has been a drag on the Mackenzie Gas Project if it is asked to regulate an Alaska gas pipeline across Canadian territory.

A senior federal official told a conference of U.S. and Canadian energy officials in Calgary May 5 that Ottawa is confident it can match U.S. timelines if an application is submitted.

At the federal level, Canada is making preparations for "an effective, efficient screening process,"



Prime Minister Stephen Harper

A major projects office established in 2007 by Prime Minister Stephen Harper's government will make a "big difference" once Alaska awards a project license to set the ball rolling on the massive undertaking, a senior federal official said.

said Sue Kirby, an assistant deputy minister with Natural Resources Canada.

Delays in handling the Mackenzie gas pipeline file have been identified by the consortium partners as a major factor putting the project at risk.

see FAST-TRACK page 19

### EXPLORATION & PRODUCTION

# Learning from Norway

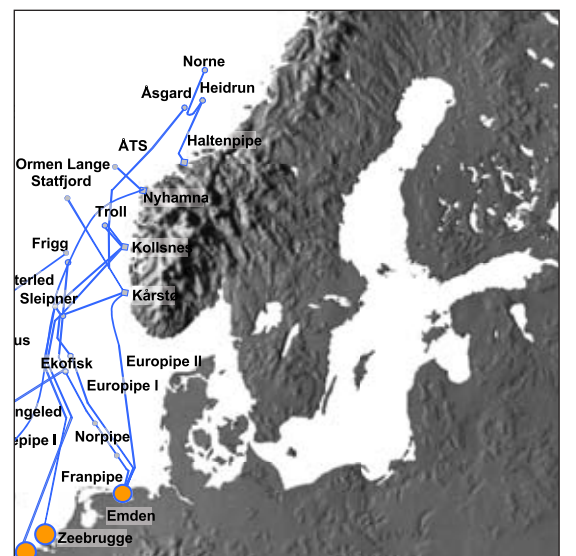
Zolotukhin: Three decades of technical innovation in Arctic oil, gas projects

By ALAN BAILEY  
Petroleum News

In three decades Norway's offshore oil and gas industry has mushroomed from a zero base to the forefront of technical achievement. And the country's example of learning through practical experience and using cutting edge technology can point the way on how to move forward in exploring new frontiers in the Arctic continental shelf, Professor Anatoly Zolotukhin, deputy rector on international affairs at Gubkin Russian State University of Oil and Gas, told a meeting in the University of Alaska Anchorage Institute of Social and Economic Research on April 29.

Following the initial discovery in 1969 of the

see NORWAY page 22



## BREAKING NEWS

**3 Talisman answers imminent:** Revealing new strategy soon; no clues on Alaska, but strongly points to unconventional shift

**8 State denies Corsair unit expansion:** Two of Pacific Energy's first 3 wells were planned for leases state to offer in 2009 sale

**14 Prudhoe discovery debate:** Finding Alaska's largest oil field involved 15 months of drilling milestones; discovery date contested

# contents

Petroleum News

A weekly oil & gas newspaper based in Anchorage, Alaska

## ON THE COVER

### Future uncertain

Anadarko finds 'no commercial hydrocarbons' at Jacob's Ladder well



### Canada to fast-track Alaska

Learned from Mac line mistakes, will speed Alaska gas line passage, match U.S. timelines



### Learning from Norway

Zolotukhin: Three decades of technical innovation point to future of Arctic development

### Embarrassing but true, Orlan platform used to be called the Glomar Beaufort Sea I CIDS

### Imperial 'excited' about Mac

## EXPLORATION & PRODUCTION

**4** Lawsuit filed to block Arctic seismic

### **7 One the oil sands can't 'duck'**

Dead birds in Syncrude Canada tailings pond stirs international condemnation, industry contrition

**10** North Slope production down 3% from March

### **13 Anadarko plugs and abandons Altamura**

The spring project in NPR-A will close the books on the first Alaska exploration well drilled by the busy Houston independent

**18** Study: Only 1% of Bakken recoverable

**21** Pacific Energy to drill Escopeta's onshore gas prospect

## FINANCE & ECONOMY

### **3 Talisman answers imminent**

Revealing new strategy soon; no clues on Alaska, but strongly points to unconventional shift

**6** Gasoline prices jump to record, oil pauses

**16** Oil company earnings chart

## GOVERNMENT

**17** Sentencings for former executives delayed

## HISTORY

### **14 Prudhoe discovery debate still rages**

Finding Alaska's largest oil field involved two exploration wells, drilling milestones spanning 15 months; actual discovery date contested

## LAND & LEASING

**3** British Columbia: Come one, come all

**8** State denies Corsair unit expansion

**19** Potential Alaska state and federal oil and gas lease sales

## NATURAL GAS

**5** Issues: Jobs, steel, taxes, TransCanada

**5** Tanana Chiefs Conference first of contracts

**9** Alaska gas lines compete in Calgary

**11** Enbridge wants a piece of the pipeline

**16** Natural gas price heralds Arctic boon

**17** ANGDA contracting for natural gas supply coordinator

**21** Anadarko plans return for foothills gas



## OUR ARCTIC NEIGHBORS



OUR ARCTIC NEIGHBORS

**12** Gazprom invests big bucks in gas line

**12** International research crucial for Russia

**12** Study reports on LNG carrier designs for the Arctic

**12** Snøhvit to use new CO2 capture technology

**12** Russia regrets leasing out ship, drill rig

## PIPELINES & DOWNSTREAM

**19** BP gets to work on refinery expansion, will be top processor of heavy Canadian crude oil

## SAFETY & ENVIRONMENT

**18** BLM pushed to consider climate change concerns



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# Talisman answers imminent

Revealing new strategy soon; no clues on Alaska, but strongly points to unconventional shift

By GARY PARK

For Petroleum News

Talisman Energy may answer the pressing question about its subsidiary FEX's future in Alaska in the third week of May when it completes the biggest shake-up in its history.

Under new Chief Executive Officer John Manzoni, who ended the 16-year reign at the top by Jim Buckee last September, the once globally minded independent seems headed for a more narrowly focused role.

"What has been successful for the last decade may not prove to be successful for the future," Manzoni told Talisman's annual meeting.

Then and in a conference call May 1 he laid out some broad perspectives on where the company is headed — with a heavy emphasis on unconventional gas in North America, the Norwegian North Sea, North Africa, South America and Indonesia, with the British North Sea facing a lower profile.

But Manzoni offered nothing more specific on where FEX and its National Petroleum Reserve-Alaska prospects will fit into the grand scheme of things beyond his promise in March to tie future operations to this year's seismic survey results.

Other than writing off the costs of an NPR-A dry hole, he said then that Talisman always intended to shoot seismic in an attempt to pinpoint "bigger anchor fields" and the exploration write-off did not alter its plans for 2008 activity.

## Portfolio balance a goal

But the latest remarks reinforce his determination to bring Talisman's guidance numbers under tighter control and fix a portfolio imbalance that he said means 70 percent of Talisman assets are "relatively short life," despite forecasts for production of 435,000-460,000 barrels of oil equivalent per day in 2008 and reserves of 2.6 billion boe.

He noted that Talisman's past wildcatting has been "characterized by exploring very close to our existing infrastructure. ... That limits the size of the pools that you can go and look for."

"We are running faster and faster and faster on a treadmill — so the bigger we get the tougher it gets," he said. "We're looking for more running room."

Manzoni said the strategy that brought Talisman to its current position is not capable of generating meaningful growth in production and reserves.

Although the company will continue to invest in the British North Sea, he indicated the region is no longer viewed as a growth area, but did not approve of one analyst's suggestion that the North Sea will become a "cash cow" to feed other plays.

"This is a company that can move fast when pointed in the right direction," he told reporters.

## Tight gas acreage

He noted that Talisman has the acreage in tight gas regions of North America and has already positioned the infrastructure



Talisman Energy CEO John Manzoni said the "most immediately visible and possibly the most material" of Talisman's new growth pursuits will be the "testing and development of our North American resources."

## British Columbia: Come one, come all

The big and the little are joining British Columbia's latest resource rush into the province's northeastern shale gas region.

Imperial Oil, Canada's largest all-purpose oil and gas company, disclosed in late April that it, in a joint partnership with sister company ExxonMobil Canada, has rounded up 115,000 contiguous acres of license holdings in the Horn River basin, about 40 miles northeast of Fort Nelson.

In an effort to rebuild depleting gas reserves, that saw its first-quarter gas production slide to 325 million cubic feet per day from 525 million cubic feet per day a year earlier following the premature end of one Alberta play, Imperial said drilling rigs are being lined up and the first exploration well is scheduled for the 2008-09 winter.

"We're not concerned at all about being late to the game," Chief Executive Officer Bruce March told reporters. "We're very happy about the acreage we got and where it's related." At the other end of the pecking order, Calgary-based junior Result Energy is turning C\$11.8 million from the sale of southwest Saskatchewan shallow gas assets to boost its Horn River holdings.

It so far has about 25,000 acres and hopes to add another 38,000 acres this year, with plans to drill two vertical wells in the first quarter of 2009 and conduct "some extensive 2-D seismic," said Chief Executive Officer Bill Matheson.

He said Result is about 60 miles south of an EOG Resources discovery and 15 miles south of a recent Nexen announcement, both pointing to possible resources of 6 trillion cubic feet. But given the need for deep pockets to tackle the play, Matheson did not rule out adding a partner at some point.

The company said its Horn River lands are prospective for both the Middle Devonian shale gas play and the underlying Keg River platform gas play.

—GARY PARK

because of the work it has been doing in deeper gas horizons."

"The bit that we don't have is that we haven't been at it for two, three, four or five years in the way that others have," he said, with an indirect nod toward peer companies such as EnCana, Devon Energy, Chesapeake, Apache and EOG Resources.

Manzoni said Talisman's place as the leading deep-gas driller in the conventional plays of Western Canada is headed for change as the company seeks to "lengthen its stride" as it chases shallow gas deposits trapped in shales and sand that EnCana describes as requiring large-scale repeatable programs — in effect a manufacturing operation.

Talisman starts out from a position of strength, with 2.5 million net acres of prospects in the Outer Foothills and Montney areas of Alberta and British Columbia, Saskatchewan's Bakken formation, Quebec's Utica and Lorraine shales and the Marcellus shales in the U.S.

Appalachian basin, and will look "to some degree" for new acreage.

Manzoni said "those are the big names and we've got them. ... We have the technical skills at least, I believe, as good as others who are doing it (and) we're looking at ways to get ourselves up the learning curve quickly. We're hiring new people, partnering with people."

He said the "most immediately visible and possibly the most material" of Talisman's new growth pursuits will be the "testing and development of our North American resources."

Bolstered by success in the Outer Foothills tight gas play and the sudden emergence of the Quebec shale play, where Talisman is the largest landholder, the company will start pilot-testing programs this year to weigh the potential of all areas for future investment.

But Manzoni echoed one refrain from the Buckee era, suggesting a move into the Alberta oil sands is not in the cards. ●



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• EXPLORATION & PRODUCTION

# Lawsuit filed to block Arctic seismic

Earthjustice represents environmental, Alaska Native groups in litigation challenging federal permits issued to Shell and BP

By ROSE RAGSDALE  
For Petroleum News

A coalition of environmentalists and Alaska Natives filed a lawsuit May 5 in federal district court in Anchorage aimed at blocking seismic surveys planned by Shell and BP for this summer and fall in the Chukchi and Beaufort Seas.

Earthjustice, a public interest law firm, filed the suit on behalf of Alaska Wilderness League, Center for

Biological Diversity, Natural Resources Defense Council, Pacific Environment, Native Village of Point Hope and REDOIL.

The group claims the U.S. Minerals Management Service violated provisions of the National Environmental Policy Act by prematurely issuing federal permits for the surveys before completing environmental impact statements for the work.

In a 20-page complaint coupled with a motion to halt the work until a court rul-

ing, the plaintiffs further allege that the National Marine Fisheries Service violated the Marine Mammal Protection Act by allowing Shell to "take" by harassment several species of seals and whales during the seismic surveys.

They also claimed that the fisheries service will likely issue more permits to allow Shell, BP, and several other companies to harass seals and whales throughout this summer and fall.

## Noise carries underwater

"Seismic work involves the use of underwater air guns that generate extremely loud noise — a single blast is 10 times louder than a rocket launch, and the blasts occur every 10 to 15 seconds for days, weeks and even months at a time," Earthjustice said May 5 in a statement.

The group contends that these sounds carry through the water for hundreds of miles and have been known to cause permanent hearing loss in marine mammals and disruptions in feeding, migration, social bonding, and predator avoidance behavior and are linked to stranded whales.

"They also can interfere with Native Alaskans' ability to hunt for these subsistence food sources, particularly the bowhead whale," the law firm said.

Charles Clusen, director of the Alaska project for the Natural Resources Defense Council, called the oil and gas exploration activity "devastating."

"You end up killing animals that Americans care deeply about, while not doing a thing to lower the price of gas at the pump. Shell and BP say they're investing in renewable energy, yet here they are exploiting what we will show are illegally granted permits to reinvest billions in the dirty fuels of the past to ensure Americans stay addicted to oil," Clusen said in the statement.

## No proof of harm

But MMS and NFMS have received no documented instances of the seismic surveys conducted by Shell and BP causing harm to any marine mammals, according to Robin Cacy, an MMS spokeswoman in Alaska.

Cacy said MMS reviewed permit applications for the seismic work from Shell and BP last fall and issued permits for the surveys in February and March.

"Our leasing office evaluated the applications and prepared environmental assessments" for the projects, she told Petroleum News May 7. "We found no significant impact on the environment and issued the permits."

Cacy said MMS has worked very closely with the National Marine Fisheries Service to carefully evaluate the effects of seismic exploration activities in the Alaska Arctic. "We have fully complied with the provisions of the National Environmental Policy Act in

**Shell spokesman Curtis Smith said the company was successful in conducting seismic programs in the Beaufort and Chukchi seas in 2006 and 2007 without any ... known negative impact. ... "We will continue to do so in 2008, while meeting or exceeding all regulatory requirements. Shell will once again employ Native Marine Mammals Observers on all seismic and support vessels. We also will rely on aerial (surveillance) to detect marine mammals should they enter the safety zone. When spotted, we will ramp down our operations until they move on."**

permitting seismic exploration in the Alaska Arctic. We are therefore confident that our permitting actions will be upheld upon review," she said.

## Native observers, aerial surveillance

Shell spokesman Curtis Smith said the company was successful in conducting seismic programs in the Beaufort and Chukchi seas in 2006 and 2007 without any recordable safety incidents or known negative impact to the environment or local communities.

"We will continue to do so in 2008, while meeting or exceeding all regulatory requirements," Smith said May 7. "Shell will once again employ Native Marine Mammals Observers on all seismic and support vessels. We also will rely on aerial (surveillance) to detect marine mammals should they enter the safety zone. When spotted, we will ramp down our operations until they move on."

BP declined to comment on the lawsuit. But spokesman Steve Rinehart said the company plans to conduct one seismic survey this year for its 100-million-barrel Liberty project over an area inside the barrier islands of the Beaufort Sea and well south of annual migratory paths of whales. Also, the work is planned for July, well before the start of the whales' migratory season, he added.

Cacy said the oil companies must maintain observers on their seismic survey vessels to ensure that they comply with federal requirements that they shut down operations whenever a marine mammal enters the "exclusion zone" around a boat.

She also said the agencies received no reports of harm to marine mammals during the 2006 and 2007 seismic programs.

Earthjustice noted that the Ninth Circuit Court of Appeals in separate litigation in September issued a temporary injunction blocking Shell from drilling for oil in the Beaufort Sea because of risks to polar bears and endangered whales. The parties are waiting for a final ruling in that case. ●

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# Issues: Jobs, steel, taxes, TransCanada

AGIA license won't stop Denali gas pipeline, BP and Conoco tell Anchorage chamber; Canada, steel, taxes all need to be worked

By KRISTEN NELSON  
Petroleum News

What about Exxon? What about TransCanada? What about Point Thomson gas? You've overcharged to ship on the oil pipeline, why would we want you to own the gas pipeline? What about taxes on the gas? What about steel?

And when will you be taking applications for jobs and contracting?

That's a sample of questions Angus Walker of BP and Brian Wenzel of ConocoPhillips got from a full house at the Anchorage Chamber of Commerce April 28 following an overview the two gave of Denali — The Alaska Gas Pipeline. BP and ConocoPhillips announced April 8 that they would partner on a pipeline to take Alaska North Slope natural gas to market. This was an opportunity for the Anchorage business community to get questions about the project answered, and most of the presentation, following a short overview, was focused on questions and answers.



Angus Walker, BP



Brian Wenzel, ConocoPhillips

On the pre-open season money issue, Walker, BP Exploration (Alaska)'s senior vice president, gas and midstream, said the companies have been asked why they plan to spend \$600 million in the next 36 months to reach an open season. He said the answer is, "that's how much money we think it will take to do the job properly."

The entire project, Walker said, includes gas transmission lines on the North Slope; the gas treatment plant to remove and reinject carbon dioxide, some 12.4 percent of North South gas; the large-diameter high-pressure pipeline from the North Slope to Alberta; and, if necessary, a line to Chicago, although it may be possible to use existing pipelines.

Wenzel, ConocoPhillips Alaska's vice president of ANS gas development, said the \$30 million set aside for job training, in-state gas needs studies and an infrastructure upgrade needs study is necessary because those items are "foundational" and work on them needs to get started.

Both companies have a long history of Alaska hire, train, buy and build, and that won't change, Wenzel said. Training needs to get started sooner rather than later so that in addition to training, folks will be able to get out and get experience before they are needed for the Denali pipeline project.

The in-state need study is required for the Federal Energy Regulatory Commission process, Wenzel said, and will help facilitate gas for shipment for in-state use.

Infrastructure upgrades will be needed to move freight. Wenzel said there are numerous areas along some of the highways where the road needs to be straightened or widened. There are some 18 bridges that need to be strengthened or replaced, he said, and a number of areas

## Tanana Chiefs Conference first of contracts

In March ConocoPhillips Alaska contracted with the Tanana Chiefs Conference to assist in gas pipeline field studies, starting immediately, TCC said in a statement.

ConocoPhillips Alaska spokeswoman Natalie Lowman told Petroleum News at the end of April that the previously announced contract would be rolled into the larger effort, Denali — The Alaska Gas Pipeline, the joint venture between ConocoPhillips and BP announced April 8.

"Tanana Chiefs Conference is pleased to work collaboratively with ConocoPhillips to advance the natural gas pipeline in Alaska," TCC President Jerry Isaac said in the TCC statement. "We are very pleased to see that ConocoPhillips recognizes the need for early involvement by Alaska Natives to address Native interests and ensure project success."

TCC said it has been willing to work with any and all groups involved in the environmental research for the gas pipeline over the last few years and that ConocoPhillips is the first group to work with TCC; three-quarters of the Alaska portion of the proposed line is within the TCC region.

Lowman said no other contracts for work on Denali have been announced.

She said updates will be available on the project Web site, [www.denali-thealaskagaspipeline.com](http://www.denali-thealaskagaspipeline.com). There is also an information signup on the Web site for e-mail alerts on project activities.

—KRISTEN NELSON

where the companies want to increase the pipe-handling capabilities of ports to handle the big joints of pipe that the project will require.

## Exxon, Point Thomson

Asked if the project could succeed without the participation of ExxonMobil, Walker said ExxonMobil has been invited to participate, but that BP and ConocoPhillips will move forward by themselves. As for state participation: "We've always recognized in the past that there are advantages to state participation

in a project of this nature," he said, and are open to having that discussion with the state.

Can an open season be successful without Point Thomson gas?

Walker said Point Thomson is about 25 percent of known North Slope resources. "It's clearly a vital part of any pipeline and therefore with the Point Thomson leases being in question it causes us great concern as we move forward to open season." He said that without clear title to the Point Thomson gas that gas can't be committed in an open season,

"therefore it puts at risk the open season itself."

Asked about the value of TransCanada's data and are there negotiations with TransCanada, Wenzel said TransCanada is focused on the process under the Canadian Northern Pipeline Act while Denali will move forward under the Canadian National Energy Board regulatory process. Wenzel said the NEB process is the preferred regulatory process today.

He said the companies are not in negotiations with TransCanada, but are interested in participation by other parties including TransCanada if they can resolve some of the other issues associated with their application.

As for the special session of the Alaska Legislature the governor has called for June — at which an Alaska Gasline Inducement Act license for TransCanada might be up for approval, if the administration recommends awarding an AGIA contract — Walker said BP and ConocoPhillips have committed to move Denali forward "regardless of whether ... an AGIA license is awarded; whether it's awarded or not we will move forward with this project."

## Gas pipeline vs. oil pipeline

There was a pointed question about tariffs: Since the Alaska Supreme Court has found the trans-Alaska oil pipeline owners overcharged the state's shippers to ship oil through the producer-owned oil pipeline, why should Alaskans be in

see ISSUES page 6

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## FINANCE & ECONOMY

### Gasoline prices jump to record, oil pauses

Gasoline prices jumped nearly 3 cents to a new national record of nearly \$3.65 a gallon on May 8, while oil prices paused from their own climb to record highs and succumbed to mild profit-taking.

The delivered price of Alaska North Slope crude hit \$123.53 on May 7, a new record prompting Gov. Sarah Palin announce plans for a short-term energy fix for Alaska in the coming days.

At the pump, the average price of a gallon of regular gas nationwide rose 2.7 cents to a record \$3.645, according to a survey of stations by AAA and the Oil Price Information Service. Diesel prices also rose, adding 0.9 cents to match a record national average of \$4.251 a gallon.

Gas prices tend to lag oil futures, and with crude rising to a new record near \$124 a barrel on May 7 and likely headed higher, it's widely expected the average price of gas will soon rise as high as \$4. Motorists in many areas, including parts of Alaska, California and Hawaii, are already paying that much, or more.

"If oil prices go the way that pundits are expecting, there's no way we'll stay under \$4 a gallon," said Fadel Gheit, an analyst at Oppenheimer & Co. in New York.

Analysts said there was little in the way of news driving the most recent oil moves. Investors occasionally sell a little during rallies to lock in profits, Gheit said. But bullish momentum — and expectations that the dollar will continue to weaken against foreign currencies including the euro — are likely to keep pushing oil to new records, he said.

Goldman Sachs analysts recently predicted prices will rise as high as \$150 to \$200 a barrel within two years. That forecast has driven much of oil's gains in recent days.

— ASSOCIATED PRESS AND PETROLEUM NEWS

continued from page 5

## ISSUES

favor of the producers owning the gas line, the two were asked.

Walker said gas pipelines are regulated by FERC, so the tariff "will be subject to the regulation of one of the most senior regulatory bodies in the United States." He said that should give everybody who's proposing to ship comfort.

Wenzel said for companies like ConocoPhillips and BP with upstream rights, there is an advantage to aligning the interests of the pipeline builder with the pipeline shipper. Companies that ship gas, he said, "are going to pay for the cost of the pipeline. ... It's actually the shippers who have aligned interests with all of us here in Alaska in terms of keeping the cost of that pipeline as low as possible," he said, because "the lower that cost to build pipeline the higher value of this gas you receive ... in Alaska."

### When will new hires occur?

The companies have said they expect to have 150 employees at Denali by the end of the year.

Where will those employees come from

... probably "one of the very early pieces of work that Denali LLC needs to do is working with the steel mills, the manufacturers around the country and the world and establish how can that quantity and quality of steel be sourced in the right way."

—Angus Walker, BP Exploration (Alaska)'s senior vice president, gas and midstream

— how many will be new hires and how many reassignments from BP and ConocoPhillips, the two were asked.

Wenzel said initial staff will be seconded from BP and ConocoPhillips to staff management level positions. Initially those employees will be seconded from BP and ConocoPhillips in Alaska, but Denali will "also go around the world to find expertise," he said.

However, as numbers climb to the maximum 10,000 during construction, more and more will be hired from outside the companies.

And as for opportunities for young people, Walker said all skills will be required. "It is such a large massive engineering, construction project that I don't think there's anybody on this planet that's got a particular skill that wouldn't find it somewhere on this project."

Will there be competition for workers with the Alberta oil sands projects?

Wenzel said the hope is that Denali will be able to use labor from some of those Canadian projects "if we can't find the resources we need in Alaska." But it's impossible to predict the schedules of all those large projects, he said, and "clearly if they're on top of each other it's going to be a real resource drain — but if by chance they work out such that we can actually utilize some of their workers in addition to all the ones we can train here," that would be a plus, he said.

As for contacting Denali for employment or contact opportunities, Walker said Denali will publicize that information as soon as the team is mobilized and the company is set up. He said they are "committed to make sure people know what opportunities are out there."

### Taxes and fiscal issues; what about steel

Asked what a fair tax system would be, and if taxes would have to be locked in and for how long, Wenzel said ConocoPhillips and BP are "involved as pipeline developers" and that role has to be separated from that of "gas extraction right holder."

He said there are issues outstanding, and both companies — and others — have said it's important that the tax system for gas be clear and predictable. "We don't feel we're there today," Wenzel said.

The difference today, he said, is that the companies are "going to work those issues in parallel" with putting people on the ground.

Walker noted that fiscal issues "have been much debated in the past." He said the companies hope that moving the project forward "will take some of the pressure off and actually allow the right people to sit down at the right time and work this one out."

The project will require 5 million to 6 million tons of steel, Walker said, about 30 percent of the supply of high-grade steel the world can manufacture over a three-year period. Buying that much steel is going to require "a fair amount of strategic thinking," he said, adding that probably "one of the very early pieces of work that Denali LLC needs to do is working with the steel mills, the manufacturers around the country and the world and establish how can that quantity and quality of steel be sourced in the right way." ●



### Harnessing A Giant: 40 Years at Prudhoe Bay

To commemorate the 40th anniversary of the discovery of Prudhoe Bay in 1968, Petroleum News is preparing a special publication for 2008 that will tell the complete story of America's greatest oil field.

"Harnessing A Giant: 40 Years at Prudhoe Bay" will tell the story in words and pictures provided by the men and women who worked for nearly half a century in the frozen expanse of Alaska's Arctic to discover and develop the largest oil field in North America. Sections will include "Early days on the North Slope," "The Climb to Peak Production," "Making the Most of Maturity" and "Looking Ahead to Heavy Oil, Gas Production."

A highlight of the full color magazine will be a unique portrait of "What Prudhoe Bay Would Look Like If It Were Built Today," illustrating the shrinking environmental footprint of the industry.

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#### Your photos, stories needed!

Rose Ragsdale, who has contracted with Petroleum News to serve as the editor of the Prudhoe commemorative magazine, is looking for photos and personal accounts from the life of the oil field. She can be contacted by email at [roserragsdale@bellsouth.net](mailto:roserragsdale@bellsouth.net).



• EXPLORATION & PRODUCTION

# One the oil sands can't 'duck'

Dead birds in Syncrude Canada tailings pond stir international condemnation, industry contrition; incident derails Alberta's campaign to clean up oil sands' image; company's noise-making devices to scare birds were absent due to spring snowstorm

By GARY PARK

For Petroleum News

Oil sands giant Syncrude Canada, the world leader in pumping out synthetic crude, said April 28 it is working on a 33 percent expansion to 400,000 barrels per day by 2012, planning to add 100,000 bpd in 2016 and now pondering an eventual goal of 700,000 bpd.

CPC Corp., a Taiwan-government owned refiner, said it's ready to invest \$788 million on an exploration and development venture in the oil sands over the next five years, adding its name to the stable of international players in northern Alberta.

Startup OPTI Canada said April 30 its 50-50 joint venture with Nexen has finished construction of an upgrader at the Long Lake site, dealing with the most economically volatile aspect of an oil sands project. Now the partnership is ready to ramp up to 50 percent of capacity by mid-2008 and achieve full volume of 72,000 bpd by late 2009.

Canadian Natural Resources said April 30 construction of its massive Horizon project was 94 percent complete by the end of March, putting it on track to hit full capacity at 110,000 bpd in the first quarter of 2009, with capital spending on Phase 1 at 111 percent of the original C\$6.8 billion, or within the revised budget estimate.

So far so good for the oil sands business.

## Ducks in tailing ponds

All it took was a misguided flock of ducks to wreck that flurry of positive news and undo the Alberta government's efforts to burnish the somewhat soiled image of the resource.

What might have been gained from four days of upbeat announcements disappeared in the toxic sludge of Syncrude's tailing ponds, an incident that garnered global attention from CNN, the New York Times, several European publications and an array of blogs, to name a few.

Publicity was once the fondest dream of oil sands promoters, as they struggled to convince investors they had the ability to extract crude oil from the tarry sands of

northern Alberta and would one day become a critical element in North America's long-term energy supplies.

Only they didn't have in mind what occurred when word got out that 500 migrating ducks had met their end in a toxic water-based mixture of clay, sand, hydrocarbons and heavy metals, including mercury — the residue of a process used to flush oil from the extracted bitumen.

Normally, Syncrude deploys noise-making cannons to drive off waterfowl, but a spokesman for the consortium said the devices weren't in place because of a spring snowstorm.

## Tipster alerted government

Word that ducks had been caught in the sticky sludge apparently reached the Alberta government via an anonymous tipster. Syncrude said it was trying to assess the scope of the problem before contacting the government — an explanation that was scorned by environmentalists.

Despite all of the criticism and allegations aimed at the Syncrude consortium and other oil sands operators over the years for their use of water and natural gas, their role as a leading source of greenhouse gas emissions, and their scarring of the landscape, nothing has quite matched the furor caused by the dying ducks.

It has drawn a stinging rebuke from Canadian Prime Minister Stephen Harper and from Bruce March, chief executive officer of Imperial Oil, which owns 25 percent of Syncrude, making it the second largest stakeholder after the Canadian Oil Sands Trust at 36.74 percent. (The other partners are Petro-Canada 12 percent, ConocoPhillips 9.03 percent, Nexen 7.23 percent, Mocal Energy 5 percent and Murphy Oil 5 percent.)

## Harper: international image harmed

Harper said the dead ducks have harmed Alberta's and Canada's international image.

"I'm not here to make any excuses for the particular event that occurred over the last few days," he said in Edmonton. "It is a terrible event. It is not going to do anybody's image any good."

He said the Canadian and Alberta governments will cooperate to "make sure the industry fulfills both its existing obligations and any new obligations that we think are necessary."

March, who has been Imperial CEO for just a month, said he was "deeply disappointed" by the events.

"It's something that hasn't happened in a very long time, but there are really no excuses. ... We're deeply upset and we will do all we can do to change work processes and change procedures to prevent it from occurring in the future."

At the same time, March said that with 13 percent of the world's known reserves in Alberta it is "simply unimaginable that the world's energy needs can be met if these supplies are not included in the energy mix."

He said that satisfying domestic and global demand, while protecting the environment, is the "most significant opportunity and challenge facing the industry and Imperial."

## Syncrude apologizes

Tom Katinas, president and chief executive officer of Syncrude, issued a contrite statement saying the consortium offered a "heartfelt and sincere apology for the incident."

"We understand you expect the best from Syncrude in environmental manage-

ment and the protection of wildlife," he said.

"It's a value that we share and we are committed to making the necessary changes to our long-established practices to help ensure a sad event like this never happens again."

But, as Harper and March indirectly conceded, the oil sands sector is faced with even more of an uphill struggle to sell its message of land reclamation efforts, lowered greenhouse gas emissions per unit of production, and reduced water and natural gas consumption.

## Timing bad for Alberta

The timing could scarcely have been worse for the Alberta government of Premier Ed Stelmach, coming just a week after it announced a three-year, C\$25 million campaign to challenge the myths and misrepresentations being spread by critics of the oil sands.

Deputy Premier Ron Stevens had just spent four days in Washington, D.C., making a case to U.S. industry and lawmakers that output from the oil sands is a vital component of U.S. energy security.

He said the world will "need oil and gas for the foreseeable future, regardless of how much effort is put into developing alternatives."

see OIL SANDS IMAGE page 8



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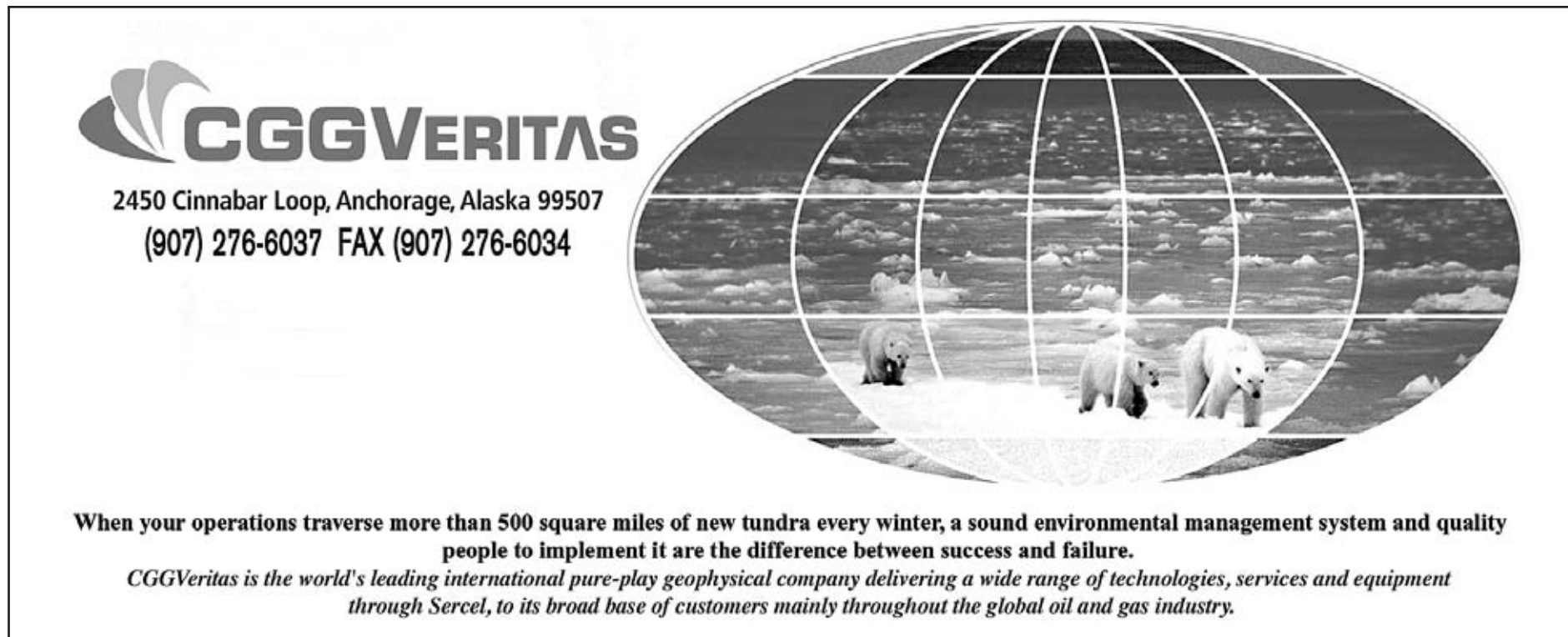
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• LAND &amp; LEASING

# State denies Corsair unit expansion

Two of Pacific Energy's first three wells in Cook Inlet prospect were planned for leases state to offer in May 2009 lease sale

By ERIC LIDJI  
Petroleum News

**O**n April 30, the state of Alaska denied a request to more than double the size of Corsair unit in the waters of Cook Inlet, arguing that expanding the Pacific Energy Resources-operated unit would be like "warehousing" undeveloped leases.

The decision presents a curious scenario around the upcoming drilling program at Corsair. While the state Division of Oil and Gas successfully pushed Pacific Energy to enter into a multi-million dollar deal to bring a jack-up rig to Cook Inlet, the division also refused to expand Corsair to include two leases Pacific Energy had previously mapped out as the drilling locations for two of its first three wells.

California-based Pacific Energy made the unit expansion request in March, hoping to keep three leases in the area from expiring at the end of April. The Corsair unit sits due south of the village of Tyonek.

The company wanted to add four surrounding leases to expand Corsair both to the north and the south. Those four leases would have added 16,546 acres to Corsair, bringing the total acreage of the unit to 26,731.

## Trouble getting started

Pacific Energy is the operator and sole working interest owner of Corsair, having acquired both the unit and the surrounding leases from Forest Oil in

August 2007.

At the end of 2007, the state gave Pacific Energy 90 days to either secure a drilling rig for an exploration program or lose the unit. The company did enough to assure the state before that deadline, and on April 15 confirmed it had signed a three-year \$156 million contract with Blake Offshore to bring a jack-up rig to Cook Inlet.

That rig, Blake 151, is currently in the Gulf of Mexico and could be part of a drilling program in the Bahamas this fall before finally heading up to Alaska. Pacific Energy hopes to start drilling in the spring of 2009.

The Corsair prospect is a long, thin structure running diagonally across the waters of the Cook Inlet from the northeast to the southwest. The primary targets are the Sterling and Beluga gas sands, but there is a secondary target in the deeper Tyonek oil sands.

The decision on whether to aim for the gas or oil first depends on when the jack-up rig arrives in the Cook Inlet, Pacific Energy Chairman and CEO Vladimir Katic told Petroleum News back in February.

If the company gets its rig in May or June it would have time to drill into the deeper oil reservoirs, but if the rig doesn't arrive until September, Pacific Energy would only have enough time to drill for gas, Katic said.

## Pacific Energy loses three leases

Pacific Energy plans to drill three wells by the end of 2009 and possibly a fourth by the end of 2011. However, the company will likely need to make some adjustments to

its drilling plans now that the state has denied the unit expansion.

In a plan of exploration filed with the state on March 18, Corsair proposed putting two wells of its initial three well program on leases outside the existing boundaries of the unit. But the first well, PAC No. 1, would have sat within the existing unit at the southwest corner of ADL 389196, about one mile south of the ARCO A-1 SRS Tern well and just east of the Shell SRS No. 1 well, both of which have been plugged and abandoned.

With the decision not to expand Corsair, three of the four leases outside the unit will expire and become part of the May 2009 state lease sale for Cook Inlet.

Pacific Energy planned to drill on two of those leases, ADL 389507 and ADL 389514, but did not yet submit plans for the third, ADL 389513. Pacific Energy still holds on to one lease outside the unit: ADL389923, which does not expire until the end of the year.

Pacific Energy has until May 20 to appeal the state's decision. (The company chose not to comment for this story.)

## Renaissance identified oil reservoirs nearby

The state received a comment from Renaissance Alaska LLC in regards to the expansion request by Pacific Energy. Renaissance said it had "identified certain oil reservoirs and potential hydrocarbon accumulations that may extend onto the proposed area to be included in the Corsair unit." ●

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continued from page 7

## OIL SANDS IMAGE

In particular, Stevens was attempting to gain an exemption for the oil sands from U.S. legislation adopted in December that bans the use by U.S. military and federal agencies of fuels that generate more greenhouse gas emissions than conventional sources.

He said progress was made on that front, but "the battle is not over."

The scope of the battle may just be unfolding, as more activist shareholder groups challenge the role of multinationals in the oil sands.

A coalition of 11 U.S. and United Kingdom investors, including Boston Common Asset Management, called BP's move into the oil sands last December a "disturbing step backwards"

for a company that promoted itself as the environmental pacesetter in the global industry.

Lauren Compere, director of shareholder advocacy at Boston Common, which has \$1 billion under management and holds 354,000 BP shares, said BP made a mistake because the technology does not exist to exploit the oil sands without harming the environment.

Trillium Asset Management, which also has \$1 billion under management, will support a proposal at ConocoPhillips May 14 annual meeting requiring the firm to report on the expected environmental damage from its various oil sands operations and the consequences of stopping that process.

Green Century Capital will take a similar tack at Chevron's annual meeting on May 28 as that company presses ahead with its Ells River and Athabasca projects.

## Biofuels and oil sands incompatible?

Larry Burns, vice president of research and development at General Motors, added a disturbing note for the industry by asking whether it made sense for governments to legislate the use of biofuels, while supporting oil sands expansion.

"I'm not saying it's right or wrong ... but I think it's a pretty bizarre way to get gasoline to a corner station," he told the Financial Post. "It's an awful lot of capital and an awful lot of work to pull it off."

Under full siege, Alberta government leaders made soothing noises about conducting a full investigation, with Sustainable Resources Minister Ted Morton taking the toughest line in declaring that "if there is negligence (on Syncrude's part) there will be prosecution."

But Tom Olsen, a spokesman for Stelmach, caused a few heads to spin when he said the premier welcomed the attention generated by the dead ducks "because what this allows him and Alberta to do is demonstrate to the world how seriously we take an incident like this." ●



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• NATURAL GAS

# Alaska gas lines compete in Calgary

Denali to move regardless of special session; state argues against 'comprehensive' fiscal terms; TransCanada, BP both tout experience

By GARY PARK, ERIC LIDJI & KAY CASHMAN  
Petroleum News

The two North Slope producers looking to build a natural gas pipeline in Alaska plan to move forward even if the state awards a license to a competing project, according to a senior executive.

BP and ConocoPhillips announced plans in early April to spend \$600 million over the next several years to prepare for a 2010 open season on a large-diameter pipeline from Alaska's North Slope to markets in the Lower 48.

But that project is in competition with a state-lead effort to build a similar line under the Alaska Gasline Inducement Act, or AGIA, passed last year.

The state is currently evaluating a proposal from the Canadian pipeline company TransCanada, submitted within the bounds of AGIA, and if the state approves the proposal, lawmakers will have 60 days to decide whether to award TransCanada the license to start work on an open season.

Regardless of the outcome, though, the BP-ConocoPhillips joint venture plans to continue its efforts on "Denali — The Alaska Gas Pipeline," according to a BP executive speaking at an oil and gas conference in Calgary on May 6.

Asked why the joint venture would "gamble" \$600 million of shareholders' money and later "untold" billions of dollars more on the project when TransCanada seems to hold an edge, Angus Walker, senior vice president at BP in Alaska, said the joint venture believes it has the experience needed to successfully complete the project.

"We've never given up on Alaska gas. ... We've had a team working on it for decades," Walker said during the final day of the Interstate Oil and Gas Compact Commission's midyear issues summit.

Alaska Gov. Sarah Palin is the chairwoman of IOGCC this year.



ANGUS WALKER, senior vice president at BP in Alaska, said, "We want to get our gas to market and if there's a commercially viable project, then people are going to make commercial decisions."

## On the Web



See previous Petroleum News coverage:

"Former DNR officials: Contract a bad deal" in the June 18, 2006, issue of Petroleum News  
<http://www.petroleumnews.com/pnads/378277051.shtml>

"Why \$500 million in AGIA?" in the March 18, 2007, issue of Petroleum News  
<http://www.petroleumnews.com/pnads/880803044.shtml>

"Producers pan AGIA" in the April 1, 2007, issue of Petroleum News  
<http://www.petroleumnews.com/pnads/983000693.shtml>

"New gas partnership" in the April 13, 2008, issue of Petroleum News  
<http://www.petroleumnews.com/pnads/899095599.shtml>

## Competing claims on experience

This summer, BP and ConocoPhillips plan to collect data between Tok and the Canadian border in preparation for the pipeline. Walker said the companies will be working in the field in both Alaska and Canada during the following two summers.

Following the open season in 2010, BP and ConocoPhillips expect to take two more years to complete the regulatory process and more detailed engineering, and another five years after that to finish major construction work, Walker said.

On that schedule, Walker said gas could start flowing through the pipeline as early as 2018, and ramp up to initial capacity of 4 billion cubic feet per day within a year.

With a combined 50,000 miles of oil and gas pipelines, \$300 billion in joint market capitalization and a track record in the Arctic, the companies believe they are best suited for the project, according to Walker.

But speaking to the same crowd the day before, Tony Palmer, vice president of Alaska development for TransCanada, made similar arguments, saying his company has been trying to build a gas pipeline in Alaska for 30 years.

"You might also ask, 'Well TransCanada, have you ever done a project this large?' And I would tell you, 'Indeed we have,'" Palmer said, comparing the proposed Alaska natural gas project to previous work done by TransCanada.

At 1,715 miles, the Alaska project would represent less than 5 percent of the existing TransCanada system of 36,500 miles of pipeline running throughout Canada and the United States, Palmer said.

He added that the Alaska pipeline would be shorter than both the original 2,300-mile mainline across Canada that TransCanada built in 1958 and the 2,150-mile Keystone pipeline currently under construction.

However, Palmer's comparison doesn't take into account the challenges of building a pipeline across subarctic climates like Alaska and the Yukon, and as of yet TransCanada has not built any pipelines north of the 60th parallel. And Walker does not mention the major problems the subsidiaries of BP, ConocoPhillips and ExxonMobil have had as owners of the trans-Alaska oil pipeline. The TransCanada pipeline, like Denali, could also start moving gas by 2018, Palmer said.

With the announcement of the Denali project in early April and the special session approaching in early June, an Alaska natural gas pipeline is starting to look more like a race to the finish line, but both

## Race to the finish?

proposals still face significant hurdles before construction. Walker said the BP-ConocoPhillips joint venture is best prepared to handle unresolved issues because the companies have already started work on their project, a theme he repeated several times in his presentation.

"We believe that this is the route to a successful project, rather than waiting and trying to resolve all of the issues before we start," Walker said.

Walker wasn't troubled by the prospect of TransCanada getting a state license because, he said, the BP-ConocoPhillips project doesn't require state funding, referring to the \$500 million subsidy the AGIA license holder will receive in exchange for going forward with an application to the Federal Energy Regulatory Commission even if the initial open season does not result in enough gas being committed, which could happen if BP, ConocoPhillips and ExxonMobil do not commit their North Slope gas reserves from the giant Prudhoe Bay field.

In addition to the project moving forward, the subsidy ensures that there are lower tariffs, expansion commitments and rolled-in rates. Lower tariffs also drive value to the state because the state collects taxes on the net value at the wellhead,

see COMPETITION page 11



TONY PALMER, TransCanada vice president of Alaska development, said TransCanada plans to offer equity ownership in the pipeline to producers that commit gas during the first open season.



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The 800-mile trans-Alaska oil pipeline runs from Prudhoe Bay to the Port of Valdez.

• EXPLORATION & PRODUCTION

## North Slope production down 3% from March

By KRISTEN NELSON  
Petroleum News

**A**laska North Slope crude oil production averaged 718,032 barrels per day in April, down 3.3 percent from a March average of 742,459 bpd. Prudhoe Bay, the slope's largest field, had the largest per-barrel drop, down an average of 18,177 bpd from March; Northstar had the largest percentage drop, down 9.5 percent from March.

April production was in line with the Department of Revenue's spring forecast shows, which shows ANS yearly averages of 720,000 bpd projected for fiscal year 2008, which ends in June; and a projected 689,000 bpd for FY 2009, which begins in July.

The BP-operated Northstar field, which averaged 31,741 bpd in March,

**April production was in line with the Department of Revenue's spring forecast shows, which shows ANS yearly averages of 720,000 bpd projected for fiscal year 2008, which ends in June; and a projected 689,000 bpd for FY 2009, which begins in July.**

dropped to 28,739 bpd in April. While the field's daily rates ranged up to more than 33,000 barrels, production was only 218 barrels April 28; the field had no production April 29-30.

BP Exploration (Alaska) spokesman Steve Rinehart told Petroleum News May 2 that Northstar is in the middle of a big planned maintenance event. A number of systems and elements are being reworked or replaced and the field is expected to be back online within a few days, he said.

Production at the BP-operated Prudhoe Bay field averaged 305,860 bpd in April, down 5.6 percent from a March average of 324,037. Prudhoe production includes natural gas liquids; satellite production from Aurora, Borealis, Midnight Sun, Orion and Polaris; some 400-600 bpd from Lisburne; and Point McIntyre.

Greater Prudhoe Bay, which includes Lisburne (Lisburne and Niakuk production), and some 33,000 bpd of Flow Station 2 crude currently being shipped through the Endicott pipeline, averaged 378,408 bpd in April, down 4.23 percent from a March average of 395,141 bpd.

The relatively smaller decrease in Greater Prudhoe Bay production is due to Lisburne, which had a 3.8 percent production increase, averaging 39,548 bpd in April compared to 38,104 bpd in March.

### Alpine averages 111,189 bpd

The ConocoPhillips Alaska-operated Alpine field averaged 111,189 bpd in April, down 2.6 percent from a March average of 114,144 bpd. Alpine includes satellite production from Fiord and Nanuq.

The BP-operated Endicott field averaged 48,207 bpd in April (this includes some 33,000 bpd of Prudhoe Bay FS-2 oil), down 1.5 percent from a March average of 48,924 bpd. In addition to the temporary FS-2 crude, Endicott includes Sag Delta and Eider production.

Production from the ConocoPhillips Alaska-operated Kuparuk River field (including Tarn, Meltwater and West Sak production) averaged 149,441 bpd in April, down 1.4 percent from a March average of 151,502 bpd.

In addition to Lisburne, there was increased production at BP's Milne Point field (including Sag River and Schrader Bluff production). Milne averaged 35,048 bpd in April, up 3 percent from a March average of 34,007 bpd.

The temperature at Pump Station No. 1 on the North Slope averaged 12.6 degrees Fahrenheit in April, compared to minus 17F in March, and compared to a five-year April average temperature of 2 F.

Cook Inlet production averaged 12,697 bpd in April, down 4 percent from a March average of 13,246 bpd. ●

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continued from page 9  
**COMPETITION**

which is lower the higher the tariff is; and the state pays tariff on its own royalty gas, Galvin told Alaska legislators last year.

**\$13 billion subsidy under Murkowski contract**

That doesn't mean BP and ConocoPhillips won't be making financial requests of the state. Under the Murkowski administration they and partner ExxonMobil insisted on subsidies that state officials said amounted to \$13.25 billion. Two of those same officials left the Murkowski administration, later joined the Palin administration, and are among the designers of AGIA — specifically Department of Natural Resources Commissioner Tom Irwin and DNR Deputy Commissioner Marty Rutherford. Galvin was also part of the Murkowski administration, supported Irwin and Rutherford, and was promoted to his present position by Palin and included on her gas line team.

So, one of the biggest issues, at least from a financial aspect, will be new fiscal terms with the state for the Denali pipeline, something BP and ConocoPhillips have demanded in recent pipeline discussions.

The two North Slope oil producers have said the most recent push to move forward on the pipeline doesn't reflect a willingness to give up on seeking a long-term fiscal package, it only means those talks are being deferred until the joint venture completes initial cost estimates and engineering. With that information, the joint venture believes it has a stronger position in negotiations.

The failed negotiations between the North Slope producers and the state, held under the Murkowski administration in 2006, prompted the Palin administration to draft AGIA in 2007, Galvin said at the Calgary conference.

Describing the negotiations between the producers and the Murkowski administration, Galvin said that while the companies "don't speak in a single voice" they did "provide a certain message to Alaskans about their interests and their expectations about what was going to be needed in order to move the project ahead."

Galvin said, "They were clearly looking for a project that they would control... both from the standpoint of controlling the costs and controlling access to the pipeline."

Some of that control also came from demands for a "comprehensive" definition of "fiscal certainty" over "every

interaction between the state and the oil industry, not just on gas, but on all the oil leases as well" and the authority of the court system, Galvin said.

"And all that basically had to be swept aside for a generation," Galvin said. "And that ultimately proved unacceptable to the State of Alaska, and I think it would be unacceptable to most sovereign governments. And it led to a stalemate, at least as far as the discussions with the producers were concerned."



In negotiations with the Murkowski administration, the North Slope producers "were clearly looking for a project that they would control... both from the standpoint of controlling the costs and controlling access to the pipeline," Revenue Commissioner Pat Galvin said.

**Conciliatory comments made by both sides**

By the end of this summer, Alaskans should know whether two pipeline proposals remain on the table or not, and Walker isn't troubled by the very real prospect that TransCanada will get the state license over the coming months.

"From our point of view that's fine. ... We're not afraid of competition," he said.

But Walker wasn't prepared to close the door on an eventual partnership with a third-party pipeline company like TransCanada or Enbridge, noting two-thirds of an overland pipeline would run through Canada.

And there is always the possibility of a more traditional partnership: the one between pipeline customers and owners. Even if TransCanada is successful with its proposal, individual producers will still determine the fate of the pipeline during an open season.

"We want to get our gas to market and if there's a commercially viable project, then people are going to make commercial decisions," Walker said.

TransCanada isn't opposed to a partnership, either.

Palmer said his company, which specializes in building and operating pipelines, would prefer to hand over the construction and ownership of the North Slope gas treatment plant associated with the gas line, believing "there are other companies better suited than ourselves." Walker said the gas plant at Prudhoe Bay would be the largest built anywhere.

TransCanada also plans to offer equity ownership in the pipeline to producers that commit gas during the first open season. ●

**Enbridge wants a piece of the pipeline**

The head of the Canadian pipeline firm Enbridge is again expressing interest in owning a piece of a producer-led natural gas pipeline from Alaska's North Slope, according to media reports.

After an annual meeting on May 7, company CEO Pat Daniel told reporters that Enbridge has had "informal" discussions with BP and ConocoPhillips about possibly participating in their \$30 billion "Denali — The Alaska Gas

**After an annual meeting on May 7, company CEO Pat Daniel told reporters that Enbridge has had "informal" discussions with BP and ConocoPhillips about possibly participating in their \$30 billion "Denali — The Alaska Gas Pipeline," according to a Calgary Herald report.**

Pipeline," according to a Calgary Herald report.

"We've always said if we were at a position of 10 to 20 percent that would be of interest to us," Daniel told the Herald. "That would be our objective, but of course it's all academic at this point — we don't have a position in the line yet."

Covering the same event, Reuters reported that BP and ConocoPhillips called Enbridge about the project before announcing it to the public in early April. Media reports around that announcement mentioned Enbridge as a potential partner.

Enbridge has aligned with the North Slope producers in a previous, but failed, gas line effort under the Murkowski administration. And last August, Daniel said his company told the Palin administration it would not participate in any pipeline that did not have the backing of North Slope resource owners.

In developed North Slope oil fields, BP, ConocoPhillips and ExxonMobil currently have under lease roughly 25 percent of northern Alaska's estimated onshore recoverable natural gas reserves, the bulk of which is contained in the Prudhoe Bay oil field, which contains about 24 trillion cubic feet of natural gas.

The Denali pipeline is rivaling a proposal by the other major Canadian pipeline company TransCanada to build a similar pipeline through a state-led effort.



Enbridge CEO Pat Daniel

— PETROLEUM NEWS

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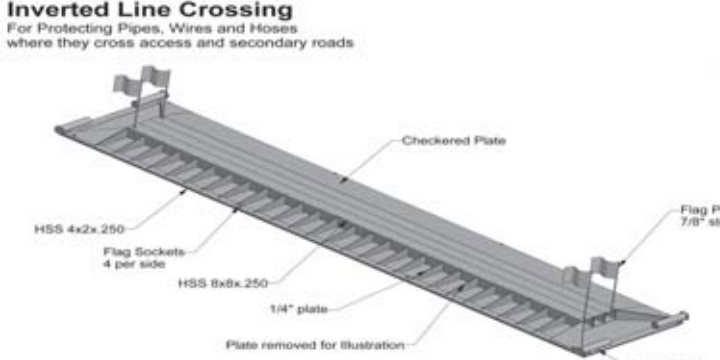
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## Study reports on LNG carrier designs for the Arctic

In advance of the likely use of LNG carriers to transport products from future Russian gas fields in the Arctic offshore, marine design standards company ABS has teamed with BMT Fleet Technology and Hyundai Heavy Industries to investigate the structural integrity of various cargo containment systems under different ice impact scenarios. According to ABS there is at present no in-service history for the use of ice-breaking LNG carriers.

The investigation involved modeling the impact of ice loads on vessel hull structures and the containment systems.

"We specifically wanted to check the containment system and hull structure simultaneously responding to ice impact loads," said Roger Basu, director of ABS corporate research and development.

Using six ice impact scenarios the investigation team also determined critical ice impact load cases for a 150,000-cubic-meter carrier.

The investigation report includes recommendations and guidance that will assist designers of LNG carriers and other large ships operating in ice, ABS says.

—ALAN BAILEY

## Snøhvit to use new CO2 capture technology

Norwegian company Sargas will soon launch its new technology for CO2 capture in partnership with Hammerfest Energy for use at the gas-fired power station at the Snøhvit LNG plant on the Barents Sea coast. A pipeline is already in place to transport CO2 from the power station at Melkøya to the Snøhvit gas field. Recent results from testing the technology at a coal-fired plant outside Stockholm were remarkable, according to Henrik Fleischer of Sargas.

Sequestration of CO2 using Sargas's technology takes place in a high pressure environment with high CO2 partial pressure, thus circumventing many of the challenges encountered by other CO2 capture technologies and lowering cost of capture, the company says on its Web site. The cost of the capture equipment represents an investment increase of less than 25 percent, Sargas adds.

—SARAH HURST

## Russia regrets leasing out ship, drill rig

Russia's hugely ambitious plans for developing its Arctic offshore resources are still mainly on the drawing board, but they are already encountering some choppy waters. A study initiated by Prime Minister Viktor Zubkov reports that key components of Russia's exploration equipment have been leased out to Norwegian compa-

see LEASE page 13

# Gazprom invests big bucks in gas line

First pipe arrives for gas line from Russia's Arctic onshore at Yamal Peninsula to Europe, gets green light from indigenous people

By SARAH HURST

For Petroleum News

Russia's state-owned Gazprom received the first pipe for its gas pipeline project on the Yamal Peninsula in early April, Sever Press reported.

The Yamal Peninsula is on the east side of the Kara Sea, north of Siberia. The peninsula and the adjacent shelf zone of the Kara Sea hold 11 proven natural gas fields and 15 oil and gas condensate fields with potential reserves estimated at 50.5 trillion cubic meters.

The Bovanenkovskoe-Ukhta pipeline is scheduled to come online by 2011, taking gas to European markets. Part of the pipeline will be on the seabed under Baydarat Bay. The annual capacity of the 2,451-kilometer (1,523-mile) pipeline will be 250 billion cubic meters (8.8 trillion cubic feet) of gas.

The project also received a boost in April when Gazprom obtained consent from regional indigenous peoples for the development of the Bovanenkovskoe gas field. All decisions on building the pipeline and infrastructure in the area will be made only after consulting with representatives of the indigenous peoples, said Igor Morozov, the head of Gazprom subsidiary Gazprom

Dobycha Nadym.

Adaptations that Gazprom will make to its project include protection for reindeer migration routes. Several thousand nomadic Nenets and Khanty reindeer herders on the Yamal Peninsula oversee about 500,000 reindeer.

Developing gas reserves on the Yamal Peninsula is a priority for Gazprom in its plan for production up to 2020. The Bovanenkovskoe field is the largest on the peninsula, slated to produce 115 billion cubic meters a year.

The second-largest gas field on the peninsula is Kharasaveyskoe, due to begin production in 2014.

"According to preliminary forecasts investment in the opening up of the Yamal Peninsula was supposed to amount to 194 million rubles (\$8.2 million)," the deputy governor of the Yamal-Nenets Autonomous Okrug, Alexander Kim, told Russian news agencies recently. "In connection with the development of Gazprom's Bovanenkovskoe gas condensate field, the volume of investment already totals 270 billion rubles (\$11.4 billion). By 2010 it will increase to 340 billion (\$14.3 billion). This is an enormous sum of money that will allow us to substantially improve all the social and economic indicators of the region for the long term."●

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# International research crucial for Russia

By SARAH HURST

For Petroleum News

International cooperation is vital for meeting the environmental challenges of offshore Arctic development,

Anatoly Zolotukhin said in a presentation at the University of Alaska Anchorage April 29. Zolotukhin, a professor at Gubkin Russian State University of Oil and Gas, has worked for Norway's StatoilHydro and is the author of 15 books on the petroleum industry.

Russia is sometimes left out in the cold when it comes to international projects, but some progress is being made, Zolotukhin said. For example, StatoilHydro has donated an oil sampling laboratory in the Murmansk region of Russia, and the two countries also have an oil spill contingency program in the same region. In the neighboring Arkhangelsk region, Norway and Russia are sharing their experience with fisheries

and the oil industry and conducting coastal sensitivity studies and environmental monitoring. They are also doing research into the spill that occurred in Omega Bay in September 2003 when 50 tons of oil leaked out of a Russian tanker that collided with another tanker.



ANATOLY ZOLOTUKHIN

Many countries are doing Arctic projects at the Ny-Ålesund Research Park in Norway's Svalbard archipelago, and Russia has been invited to participate but so far has been reluctant to do so, Zolotukhin said. Knowledge and experience about developing the Arctic must be shared, he stressed, as there are so many problems still to be solved. In the Russian Arctic one of the major challenges is dealing with thick ice conditions in shallow waters. From the Pechora Sea to the Chukchi Sea the water depth varies from 10 meters (33 feet) to 40 meters (131 feet), which is considered shallow. Temperatures in the Chukchi Sea can plunge below minus 60 degrees Celsius. ●



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# Anadarko plugs and abandons Altamura

The spring project in NPR-A will close the books on the first Alaska exploration well drilled by the busy Houston independent

By ERIC LIDJI  
Petroleum News

**A**s Anadarko Petroleum eyes its future in Alaska, it also took care of its past.

The company recently plugged and abandoned an old National Petroleum Reserve-Alaska well this spring. Originally spud on March 10, 2002, the Altamura No. 1 well was Anadarko's first wildcat on the North Slope, drilled during a period of limited activity in northern Alaska.

Anadarko, which owned a 100 percent interest in the Altamura lease, reached the well by traveling along an existing ConocoPhillips ice road leading to the Rendezvous No. 2 well site. Anadarko built a new road to cover the remaining 5.5 miles leading south to Altamura No. 1, situated along the southern boundary of the Greater Mooses Tooth unit.

Anadarko also built a 900-square-foot ice pad, a 5,000-foot ice airstrip and a 25-man construction camp at the Altamura No. 1 well site.

In its environmental assessment of the Altamura prospect, the U.S. Bureau of Land Management said the purpose of drilling at Altamura was to delineate the potential southern extension of the oil and gas formation



Originally spud on March 10, 2002, the Altamura No. 1 well was Anadarko's first wildcat on the North Slope, drilled during a period of limited activity in northern Alaska.

discovered on nearby leases owned by Anadarko and majority partner ConocoPhillips.

Altamura, BLM explained, was the farthest south of the NPR-A exploration wells, some four miles south of the Rendezvous discovery announced in 2001.

## Altamura showed pay, but low permeability

When Anadarko began exploring Altamura back in the early part of the decade, a company official said Anadarko hoped to repeat the success of the Alpine field.

But while the Altamura well reached a vertical depth of 9,041 feet and hit pay, the well also encountered low

permeability, meaning liquids would have a tough time flowing through underground rocks up to the surface, suggesting the field would have produced at lower rates.

"Pay means they hit hydrocarbon bearing rocks or a formation," which is good news, a state Division of Oil and Gas official told Petroleum News following Anadarko's March 2003 report in a Securities Exchange Commission filing.

"Low permeability means the well would produce, in relative terms, at lower rates. Permeability affects the flow rate, but not how much oil and gas is in the reservoir," he said.

There are two common ways to address permeability problems on the North Slope, where low permeability is not unusual. "You can drill vertical wells and fracture them or drill long, horizontal wells like they've done at Alpine, exposing a lot of the reservoir to well bore. Some of the Alpine horizontal wells are 3,000 feet long. ... Either way, you can substantially increase your flow rate," the state official said.

Anadarko suspended the Altamura No. 1 well on April 11, 2002. The company permitted, but never drilled, an Altamura No. 2 well, despite extending permits for the well when they first expired.

see ALTAMURA page 16

continued from page 12

## LEASE

nies without tenders and at a price much lower than the market price.

The Russian drilling ship Valentin Shashin (renamed Deep Venture) and the Murmanskaya rig have been leased to Norwegian companies on contracts that

expire in 2023 and 2010 respectively. The Valentin Shashin has been leased to a company called Arba and the Murmanskaya has been leased to Beta Drilling. The prime minister has called for an investigation of the company that leased out the equipment, Murmansk-based Artikmorneftegazrazvedka.

On a more optimistic note, a delegation

from Gazprom toured ship-building and machine-building companies in northwestern Russia in April, and the energy major also hosted a meeting in St. Petersburg to discuss its needs for the construction of vessels and special equipment to carry out its high-priority projects on the Arctic shelf.

"Domestic companies possess consid-

erable potential for building technological fleet, production and drilling platforms for Gazprom," said Gazprom's Alexander Ananekov, who led the delegation. "At the same time, there is equipment they haven't produced yet. Therefore it is necessary to gain experience, develop Russian technologies and attract qualified staff."

—SARAH HURST



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## • HISTORY

# Prudhoe discovery debate still rages

Finding Alaska's largest oil field involved two exploration wells, drilling milestones spanning 15 months; actual discovery date contested

By ROSE RAGSDALE  
For Petroleum News

Forty years after a team of explorers first drilled into North America's largest oil field, the actual date of discovery remains a subject of debate, even among the geologists, engineers and others who participated in the world-changing event.

One problem was that Prudhoe Bay's discovery, like many great endeavors, did not happen in a single moment. Instead, the process of unleashing the elephant trapped beneath the frozen tundra was gradual, evolving during months of drilling in the harsh Arctic conditions.

Shrouded in secrecy, the project encountered frustrations daily, forcing geologists, geophysicists and engineers to become absorbed in the details of correctly interpreting core samples and puzzling well logs.

"It was about as exciting as watching a tree grow," recalled John Sweet, then district explorationist for Atlantic-Richfield Co.

## Pivotal event in question

Sweet, who led the Prudhoe Bay discovery team, said he is convinced the Prudhoe Bay oil field wasn't actually discovered until the Sag River #1 well was drilled in the summer of 1968.

"The first well provided the leadership, but if that had been all we'd found, it would not have been commercial," Sweet told Petroleum News April 28.

H.C. "Harry" Jamison, then ARCO's Alaska exploration manager, disagrees. He said Prudhoe Bay's date of discovery was the date the well was completed — June 24, 1968, according to Alaska Oil and Gas Conservation Commission records.

"I've worked all over the United States, and I've always heard that conventional wisdom is that the date of discovery is the date the well was completed," Jamison said April 29. "Otherwise, you'll get dates all over the place. One guy will say, 'It was when we got first oil shows,' another one will say, 'It's when we first hit the Sadlerochit' (formation), and another will say, 'No, it's when we drilled the Mississippian.' You get the idea."

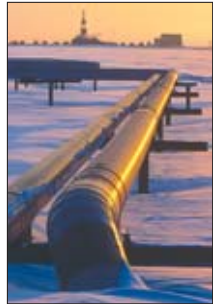
People, in fact, can't even agree on the year in which the oil field was discovered. Some still say it happened in 1967, though most people point to 1968.

## Complicated exploration timeline

The discovery chronology was complicated by many factors, including the harsh working environment and the constraints on drilling during the Arctic summers.

ARCO and Humble Oil Co. pooled resources to drill the

### Harnessing a Giant



40 years after Prudhoe Bay



Atlantic Richfield Co. and Humble Oil Co.'s exploration team, lacking storage equipment, opted to burn the oil produced while drilling the Prudhoe Bay State #1 discovery well in early 1968.

Prudhoe Bay State #1 well in April 1967, after the daunting failure of the Susie No. 1 well to the south and an impassioned plea to try again from then Gov. Walter J. Hickel.

In retrospect, the Prudhoe Bay well has been described as a last ditch effort as the entire oil industry, smarting from the expense and disappointment of 14 dry holes, seemed ready to abandon the North Slope as a frontier for petroleum exploration.

Drillers spud the Prudhoe Bay State #1 well April 22, 1967, but shut down for the summer after a couple of weeks due to breakup conditions.

The explorers re-entered the well in November 1967, and found small oil shows in drill cuttings from thin sandstones in the upper part of the well in late November and early December 1967.

## Early oil shows encouraging

"This, however, is not uncommon on the North Slope; almost all wells drilled there encounter some shows in the Cretaceous sandstones, thus seeing small oil shows in this part of the section was not particularly significant," said Gil Mull, who "sat on the well" as a geologist for Humble Oil during the Prudhoe Bay field's discovery.

On Dec. 8, 1967, a drill stem test run on an interval of thinly inter-bedded Cretaceous age sandstones and shale from 6,876 feet to 6,998 feet deep flowed with some natural gas and recovery of a few barrels of oil from the drill pipe, though no oil flowed to the surface.

"This was an encouraging sign, but again not terribly significant, because other wells previously drilled on the North Slope also had recovered small amounts of oil from rocks of Cretaceous age — those deposited some 65 million to 140 million years ago," Mull said.

On Dec. 27, 1967, the explorers encountered strong gas shows during drill stem test #2, and the well flowed with a high volume of gas, which marked a significant gas discovery.

Mull said this was the first significant production of hydrocarbons from what has become the main reservoir of the Prudhoe Bay field, but no oil was encountered in this part of the section.

Eyewitnesses recall that the gas rushed out of the well roaring like a jet engine with such force that it shot 50 feet into a 35-knot wind.

After drilling resumed Feb. 1, 1968, oil shows were seen in the drilling mud and in cores from the lower 40 feet of sandstones in the Sadlerochit Formation, but were not evaluated until logs were run on Feb. 8, 1968.

"Evaluation of these logs along with the core data indicated that the formation had sufficient porosity and contained enough oil that it could be considered a discovery," Mull said.

## Field discovery announced

ARCO sent out a news release Feb. 16 announcing the  
see DISCOVERY page 15

GIL MULL

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continued from page 14

## DISCOVERY

discovery of oil, though no flow tests had been conducted.

Two days later, the explorers conducted drill stem test #3 in the top of the Lisburne limestone. It flowed with a large amount of gas and an estimated 100 barrels per day of oil, but this oil and gas flow probably came from the overlying Sadlerochit Formation rather than the Lisburne, according to Mull.

The first actual measured oil flow from the Prudhoe Bay well came in Drill Stem Test #4 in the Lisburne on March 12, 1968. It measured the flow at 1,152 bopd and produced headlines March 13, 1968.

"However, this oil was produced from Lisburne limestone and dolomite that underlies the sandstone and conglomerate of the Sadlerochit Formation, and showed that there are multiple reservoirs in the Prudhoe Bay area," Mull said. "This had the effect of increasing the likelihood that the Prudhoe Bay field could be economically viable."

By May 1968, several drill stem tests had measured the flow of oil from several intervals in the Sadlerochit Formation.

About a month later — June 25, 1968 — explorers drilling the Sag River State #1 well encountered oil in the Sadlerochit Formation, seven miles away and 400 feet deeper than crude found by Prudhoe Bay State #1.

On July 18, 1968, ARCO and Humble announced that the Prudhoe Bay field probably contained 5 billion to 10 billion barrels of recoverable oil.

### Support for winter discovery

So when was the Prudhoe Bay oil field discovered?

"As you can see, there was a succession of events that built to the realization that the Prudhoe Bay State #1 well was a commercial discovery," Mull said in a letter to author Gene Rutledge in 1998. "But, if I had to pick a date at which one could say that oil was discovered in the Prudhoe Bay field, I would pick Feb. 1, 1968, when the first oil saturated sandstone was encountered in what has become the main reservoir in the field."

Not so, says Marvin Mangus, ARCO's well geologist for Prudhoe Bay State #1.

"Oil was discovered at Prudhoe Bay in December 1967," Mangus said April 28. "We decided not to make it known until we drilled the confirmation well. So the top brass decided to hold off making the announcement until February 1968. But all of us on the well had decided that we had something. It should have been right around Christmas 1967."

"You just don't have oil shows that big unless it's really good. We felt that it was a discovery," Mangus said.

### Frigid weather hampered progress

Garnett "Gar" Pessel, a geologist who worked with ARCO geophysicists at the time on core samples coming in to Anchorage from Prudhoe Bay State #1, said one possible reason for the conflicting views on the discovery date was the huge amount of uncertainty that loomed over the operation that winter because of frigid temperatures.

"During the early testing, the engineers were unfamiliar with working in the cold. The equipment kept freezing up and giving bogus results, and the guys kept arguing about it," Pessel said. "But Don Jessup, the district geologist for ARCO kept looking at the cores and getting excited."

Sweet agrees that the cores looked promising. "I had never seen oil shows like that before in my whole career," he told members of the Alaska Geological Society at its annual technical conference April 17.



Atlantic Richfield Co. and Humble Oil Co. found significant quantities of natural gas in what would become the Prudhoe Bay oil field on Dec. 27, 1967, months before crude was discovered in commercial quantities.

Still, those tantalizing glimpses of something big did not an economic discovery make, according to Sweet.

Part of the problem was that the initial target for the Prudhoe Bay well was the Lisburne Formation, he said.

At 8,700 feet, the drillers encountered

the Lisburne and got 150 bopd, but when they reached the Sadlerochit, gas flowed for 23 minutes and oil at 1,152 bpd, Sweet said.

The period was frustrating because the oil shows were in shale with very little sandstone. As the explorers drilled deeper, they reached the Sadlerochit Formation at 9,600 feet.

"The drill had been progressing at a foot an hour," Sweet recalled. "When it hit the Sadlerochit, the drill rate went ... to about a foot a minute. We ran a test and we had gas to surface at 1,250 Mcfpd."

"On Feb. 4, 1968, we reached the lower part of the Sadlerochit and what came out was aggregate, loose sand and oil, some of which ran through the rig floor."

"I received a core analysis on Feb. 7, and it was one of the most dramatic things you'd ever want to see. With that we made the first reserve calculations," he said.

### Incredible signs, cautious calculations

Sweet said those first calculations were based on reservoir characteristics such as porosity upwards of 30 percent, permeability in Darcies up to 3 (permeability in oil fields is usually expressed in millidarcies) and 65 percent oil saturation. Sweet's figures yielded 223 barrels per acre foot with 20 sections of proven, 17 sections of probable and 33 sections of

possible crude reserves for a total of 2.3 billion barrels of oil.

"That's the number we called in to Dallas," he said.

In March 1968 what we had was an unbelievable reservoir, a little oil value but with good flow of oil and lots of gas. It was exciting but with many questions," he said. "Almost immediately, everybody's minds turned to a confirmation well. We had to determine the oil column, if any, the water table and the continuity of the reservoir and an all season location, which required tons and tons of gravel."

Though the "Dallas people" pored over all the seismic maps, there was no drama and little politics involved in selecting the location of the confirmation well, Sweet said.

"It had to be a long step-out and near a source of gravel. That put the location near the Sag River where geologists determined there was lots of gravel," he explained.

The explorers spud Sag River State #1 May 3, 1968 and by July, ARCO and Humble geologists had tested the Sadlerochit Formation and confirmed the presence of the Prudhoe Bay oil field.

Says Sweet: "The statistical chance that the Sadlerochit (formation) would occur in conjunction with the Prudhoe Bay structure boggles the mind." ●

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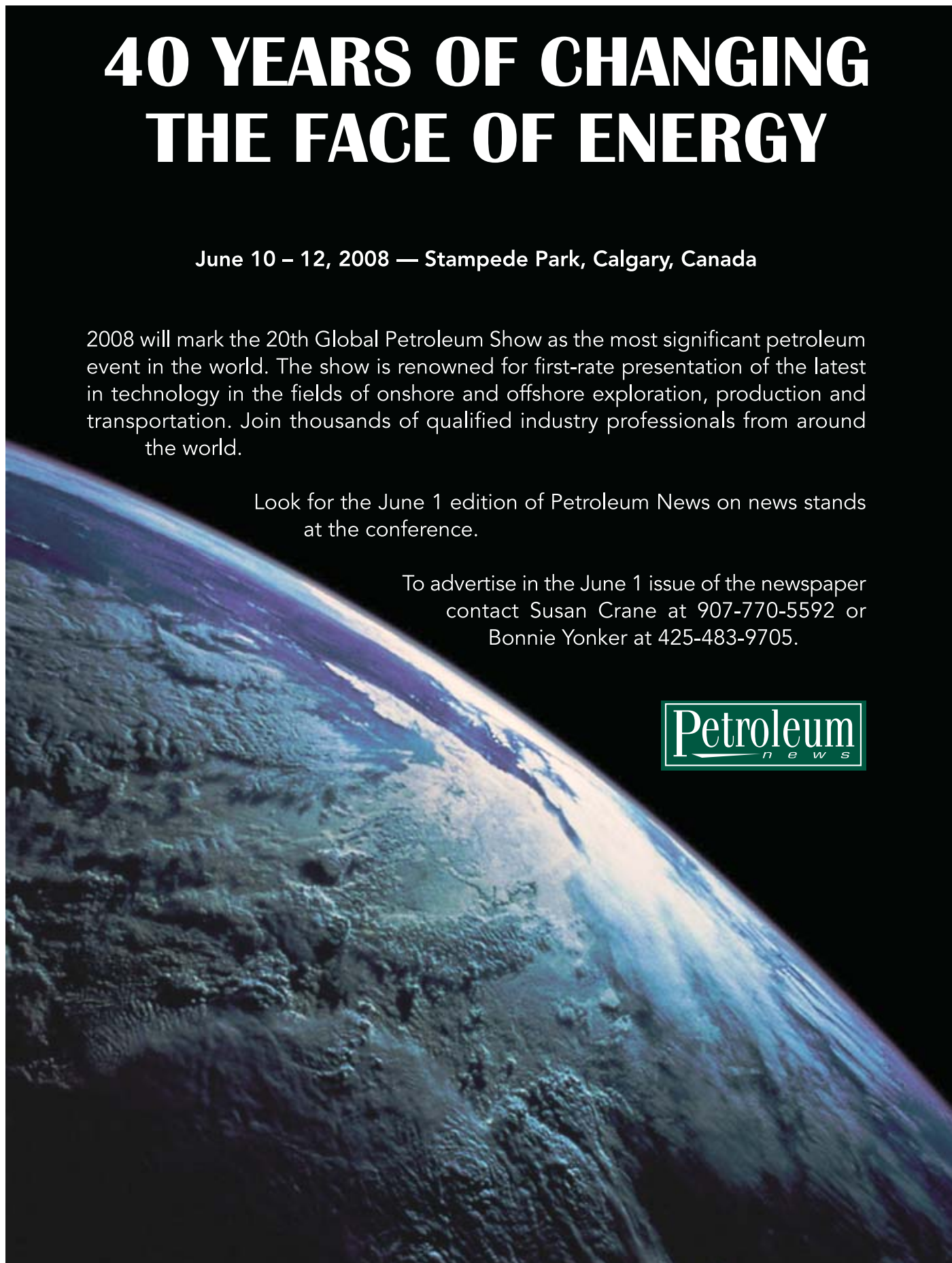
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## OIL COMPANY EARNINGS

### Earnings from Petroleum News Top 25

Earnings first quarter 2008 • Change from first quarter 2007  
Liquids production first quarter 2008 • Change from first quarter 2007  
Natural gas production first quarter 2008 • Change from first quarter 2007

Company	symbol	earnings	%	liquids	%	gas	%
ExxonMobil	XOM	\$10,890	+17	2,474,000	-10	10,246	+1
BP	BP	\$7,619	+63	2,453,000	0	8,464	0
RD/Shell	RDS-A	\$7,776	+12	1,840,000	-6	9,755	+9
Chevron	CVX	\$5,168	+10	1,665,000	-6	5,434	+9
ConocoPhillips	COP	\$4,139	+17	1,436,000	-9	4,900	-8
StatoilHydro	STO						
Occidental	OXY	\$1,846	+52	470,000	+3	846	+32
EnCana	ECA	\$93	-81	137,000	+5	3,733	+10
Can. Natural	CNQ.TO						
Anadarko	APC	\$237	-86	229,000	-20	2,137	-3
Devon	DVN	\$749	+15	231,800	+8	2,451	+9
Marathon	MRO	\$731	+2	190,000	-4	1,129	+33
Husky	HSE.TO	C\$887	+36	251,700	-11	590	-8
Talisman	TLM	C\$466	-10	216,625	-14	1,216	-7
Apache	APA	\$1,020	+108	273,188	+13	1,707	-3
Imperial	IMO	C\$681	-12	260,000	-2	325	-38
Suncor	SU.TO	C\$708	+23	248,000	0	229	+10
Petro-Canada	PCZ	C\$899	+55	308,000	+10	712	-5
Nexen	NXY.TO	C\$630	+421	224,100	+12	260	+12
XTO	XTO	\$465	+21	67,514	+20	1,708	+35
Chesapeake	CHK	-\$143	—	30,510	+28	2,087	+33
Pioneer	PXD	\$130	+338	47,553	+11	376	+14
EOG	EOG	\$241	+11	54,400	+38	1,549	+9
Newfield	NFX	-\$64	—	26,670	+12	449	-68
Swift	SFY						

Liquids production in barrels per day. Natural gas production in millions of cubic feet per day.

Top 25 is based on Petroleum News research on exploration spending

continued from page 13

## ALTAMURA

### Anadarko also asking for ROW renewal

An environmental assessment by the federal Bureau of Land Management said the “current need for

the project is to take advantage of another operation in the vicinity of the well,” referring to those nearby NPR-A projects where Anadarko is a partner with ConocoPhillips.

When it asked for a permit to plug the old well, Anadarko also requested a one-year right of way renewal within the Northeast portion of the NPR-A. ●

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## NATURAL GAS

# Natural gas price heralds Arctic boon

Price rebound and supply-demand outlook support notion of staying power for \$10 gas; Lippe doubts \$120 oil will continue

By GARY PARK

For Petroleum News

For those trying to get a fix on the long-range outlook for natural gas prices as they wrestle with the daunting economics of Arctic projects in Alaska and Canada there has been a sudden lift from analysts who believe rebounding gas prices, pulled along by rising crude oil prices, are here to stay.

The short-term blips have never been enough to sway those making multi-billion-dollar decisions on North Slope and Mackenzie Delta developments, but they have reason to draw hope that the return of gas prices to \$10 per million British thermal units (MMBtu) might have some staying power.

In Canada that is combined with word from the consulting firm of Ziff Energy that the 25 largest Canadian producers failed to replace their gas reserves in 2007, the first time since 2003. (The top 30 producers in the Lower 48 representing one-half of U.S. production replaced just over 200 percent of their reserves).

The pressure to keep Canada's output at its current level of 17 billion cubic feet per day is a constant treadmill for the industry, even though the new resource plays in the Upper Montney and Horn River Basin shales are a source of new hope.

But, if new reserves are to be found they need the support of strong current prices and a robust outlook.

Calgary-based FirstEnergy Capital is confident about the latest price resurgence, raising its price forecast twice in 45 days.

FirstEnergy vice-president Martin King told an industry gathering in Calgary that the price turnaround has been “phenomenal ... generally, there has been a lot of fundamental factors out there, some demand growth as well, that explains why prices are strong.”

In addition to the return of a more normal winter demand and a strong storage pull in the United States, prices have been boosted by “genuine constraints” on some supply sources, he said.

Rising U.S. consumption, the scramble to refill U.S. storage, shrinking

Canadian supply and the “tightest” liquefied natural gas market in history will offset gains in U.S. production, resulting in strong pricing in 2008 and 2009, he said.

FirstEnergy is now targeting an average \$9.75 per MMBtu this year and \$9.50 in 2009, with its forecast for the key AECO hub in Alberta at C\$9.01 per gigajoule for both years.

Beyond 2008, King said the gas market will stay buoyant as climate change regulations intensify the demand for gas-fired power generation.

He said FirstEnergy believes “low double digit gas pricing will become a reality, given that North America has to migrate closer to global gas price levels.”

### Upper Montney, Horn River near term

For the nearer term Canadian attention is turning to the Upper Montney and Horn River as the best hope to sustain supply levels.

Robin Mann, chief executive officer of AJM Petroleum Consultants, told an investor conference in Toronto on May 1 the Upper Montney has estimated gas-in-place of 50 trillion cubic feet.

Even if only half that potential turns out to be recoverable it will be a “major resource we didn't even have two or three years ago,” and provide a significant lift to current 58 tcf of estimated conventional gas potential in the Western Canada Sedimentary Basin, he said.


But the job of maintaining current output levels in Canada requires 3.5 billion cubic feet per day of new volumes every year, assuming an average 20 percent decline rate and an average 300,000 cubic feet per day from each new well that comes on stream, Mann said.

### 19,000 well completions per year

Achieving that basic requirement needs an annual tally of 19,000 well completions (about 65 percent targeting gas) in Western Canada, compared with AJM's forecast of 17,000 this year, down from 18,600 in 2007.

That underscores the importance of the new plays, which Mann said could lead the way to many other shales and projects

see BOON page 17




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• NATURAL GAS

# ANGDA contracting for natural gas supply coordinator

By KRISTEN NELSON  
Petroleum News

The Alaska Natural Gas Development Authority is contracting for a gas supply coordinator.

ANGDA is a state agency established by a voter initiative. It has been focused on getting North Slope natural gas to in-state markets, and has a conditional right of way for a spur line from Glennallen to Palmer. Gas would ride the main pipeline from the North Slope — when such a line is built — to an off-take point connecting to a spur line to Southcentral.

ANGDA said in its May 1 request for proposals for a gas supply coordinator that its project “may broaden to cover a Delta Junction to Prudhoe Bay alignment and a Fairbanks to Wasilla (along Parks Highway) alignment,” pending capital funding appropriations. Fairbanks to Wasilla is an alternative spur line route to Southcentral. As for the Delta Junction to Fairbanks reference, there has been discussion in the state of how to bring gas south faster than waiting for a major gas sales pipeline — and also discussion of how to provide gas for in-state use in the event a project to major markets outside the state is delayed.

## Work with utilities to continue

ANGDA has been working with Alaska utilities and other potential in-state users of natural gas to prepare for an open season for a main line, a North-Slope-to-market gas pipeline. In order to take natural gas off a mainline, those wanting to use gas in Alaska would have to participate in that mainline open season and commit to pay for space on the line to their in-state off-

**ANGDA said in its May 1 request for proposals for a gas supply coordinator that its project “may broaden to cover a Delta Junction to Prudhoe Bay alignment and a Fairbanks to Wasilla (along Parks Highway) alignment,” pending capital funding appropriations.**

take point, as well as negotiate with natural gas producers to purchase the gas.

The gas supply coordinator sought in the RFP “will provide the direction and leadership of ANGDA’s work in support of Alaska utilities and other gas users to develop multi billion-dollar long-term commitments for purchase and shipment of North Slope gas.” The budget for the assignment is up to \$175,000; the contract would run from June 5, 2008, to July 1, 2009.

The RFP lists a number of efforts the contractor selected will work on:

- The in-state open season process for North Slope natural gas, including regulatory approvals;
- Gas supply contracts including purchase of gas reserves;
- Gas shipping commitments to mainline in-state delivery points;
- Aggregate gas requirements of smaller utility and direct purchase gas users; and
- Financing and bonding of each of the items listed.

The RFP specifies 20 years or more of experience in natural gas contracting, management of gas transmission-distribution businesses and utility regulatory filings, with at least five years of the 20 years of experience in Alaska. ●

continued from page 16

## BOON

that are now possible because of the “technologies that will be developed for these types of plays.”

Based on current wells, the average deliverability is 1.3 million cubic feet per day for vertical wells with reserves of 1.6 billion cubic feet per well and 3.5 million cubic feet per day for horizontal wells with reserves of 4.3 billion cubic feet, Mann said, estimating well costs at C\$3 million to C\$5 million.

Investment dealer Peters & Co. said most horizontal Montney developments are economic at gas prices of C\$6.50 per thousand cubic feet, with hope of “already superior returns” improving as operators and service companies gain experience.

In the Horn River, where EOG Resources has announced a potential 6 tcf find on its 140,000 acres, potential well resources are estimated at 4 to 6 billion cubic feet per well, with deliverability up to 8 million cubic feet per day per multiple segment well.

Current well costs in Horn River are about C\$10 million, but some operators are now reporting a drop to the C\$6 million-C\$8 million range.

## If oil hits \$200, gas \$16.50-\$20

But Arctic players trying to get a handle on where the gas sector is headed might have found more reason for hope than they have ever held with recent comments by Peter Beutel, president of the Connecticut-based consulting firm Cameron Hanover.

Referring to the no longer unthinkable prospect of oil hitting \$200 per barrel, he said that if ever that happens “it would be kind of hard for natural gas to not be at something between \$16.50 and \$20” per MMBtu.

Assuming the U.S. dollar remains weak and serious constraints on oil supplies, “gas would go along for the ride,” he said.

But such a surge could also be accompanied by a “massive recession,” demand destruction, conservation measures and more affordable alternative energies if gas prices went into decline.

However, Beutel said higher gas prices could conceivably result in the

**the job of maintaining current output levels in Canada requires 3.5 billion cubic feet per day of new volumes every year. ... Achieving that basic requirement needs an annual tally of 19,000 well completions (about 65 percent targeting gas) in Western Canada, compared with AJM’s forecast of 17,000 this year; down from 18,600 in 2007.**

United States lifting its ban on drilling in the 1002 area of the Arctic National Wildlife Refuge, allowing E&P companies to pursue those controversial supplies.

## Gas on par with oil by 2012-03

Amid this speculation there is the unending debate over whether gas prices should be linked to oil.

Andy Weissman, senior managing director at FTI Consulting, said that although the two commodities basically decoupled two years ago, he expects that by 2012 and 2013 there is a “high probability” that gas will be on par with oil and possibly sell at a premium.

Dismissing Energy Information Administration predictions that oil will fall to \$70 per barrel, he said there is a “very high risk” that in another five years the U.S. could face a severe gas supply and demand crisis.

Dan Lippe, president of Petral Worldwide Consulting, said that if oil ever hit \$200, fuel-switching competition between residual fuel oil and gas could drive gas to \$20 per MMBtu.

He said that if fuel oil reaches \$140 per barrel (the equivalent of \$200 per barrel for conventional oil) gas prices would be \$20 per MMBtu after allowing for current discounts of \$3-\$4 per MMBtu.

However, Lippe does not think \$200 oil is in the cards, doubting that even \$120 can survive indefinitely beyond summer.

Even so \$120 oil and \$11 natural gas are sufficient to spur production and technological advances will make feasible the development of previously-unattainable resources, he said. ●

## GOVERNMENT

### Sentencings for former executives delayed

Federal prosecutors aren’t ready just yet to recommend sentences for their two witnesses in an ongoing federal corruption probe in Alaska.

In a status report filed in federal court April 30, prosecutors requested that sentencing for former VECO executives Bill Allen and Rick Smith continue to be postponed as the investigation continues.

Prosecutors wrote the investigation is “exceedingly complex,” and they promised to have another update no later than July 31.

Both Allen and Smith pleaded guilty last year to federal bribery charges. They’ve been key witnesses in the convictions of two former state lawmakers so far.

One more trial is pending.

—THE ASSOCIATED PRESS

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## EXPLORATION & PRODUCTION

### Study: Only 1% of Bakken recoverable

The Bakken shale formation in North Dakota holds up to 167 billion barrels of oil but only about 1 percent of it can be recovered using current technology, a new state study says.

The study released April 28 said current technology could lead to the recovery of about 2.1 billion barrels in North Dakota's "middle Bakken" formation, where oil-producing rock is sandwiched between layers of shale about 10,000 feet under the ground.

"The future potential is enormous — it means we will be able to exploit this for the rest of the century," said Lynn Helms, director of the North Dakota Department of Mineral Resources, which conducted the study.

Helms released the study April 28 at an annual state oil conference in Minot, N.D., where the Bakken was a big topic on the three-day agenda. The conference, limited to 1,300 participants, sold out.

Ron Ness, president of the North Dakota Petroleum Council, cautioned against over-hyping the Bakken play.

"This study gives a number that by no means guarantees those are the amount of barrels we can count on," Ness said. "The Bakken rock is full of oil and companies drilling out there know that, and they know it is extremely difficult and extremely expensive."

#### Costs \$5 million per well

Ness said it costs more than \$5 million to drill a Bakken well, and dozens are currently producing.

To capture oil from the middle Bakken in North Dakota, most companies "fracture stimulate" horizontal wells by forcing pressurized fluid and sand to break pores in the rock and prop them open to recover oil.

The middle Bakken, which ranges from a few feet thick to 80 feet, is between layers of loose shale. Its rock consists of sandstone and siltstone, with microscopic pores that contain the oil. The formation is 365 million years old, said Ed Murphy, the state geologist and director of the North Dakota Geological Survey.

Part of the conference will focus on sharing information on drilling technology for the Bakken, Ness said.

The state study mirrors the independent findings of a federal study released on April 10.

The U.S. Geological Survey estimated that up to 4.3 billion barrels of oil could be recovered from the Bakken shale formation in North Dakota and Montana, using current technology.

That report was done independently of the state study, Murphy said.

"Their numbers also include Montana, ours only includes North Dakota," he said.

The federal report found up to 2.6 billion barrels could be recovered in North Dakota, compared with the state's estimate of 2.1 billion barrels, Murphy said.

"We were quite surprised the numbers were so close," he said.

Helms said the federal study focused on the performance of wells currently working in the Bakken, while the state "went back and looked at the rock."

He said the state study partially validates a study done by Leigh Price, a USGS geologist who died in 2000 before his study was published. Price estimated the Bakken held between 200 billion and 500 billion barrels of oil.

The most recent federal study does not estimate how much oil may be in the formation — only what the agency believes can be recovered using current technology.

The state study gives an estimate of what the Bakken may hold in North Dakota, in what is known as an "in-place oil resource."

— JAMES MACPHERSON  
TheAssociated Press

## SAFETY & ENVIRONMENT

# BLM pushed to consider climate change concerns

*Group one of many protesting oil, gas leasing because of climate change, versus usual endangered species, pristine land arguments*

By SUSAN MONTOYA BRYAN

Associated Press Writer

Conservationists are shifting the debate over oil and gas development across the West from the preservation of a single species here or there to the potential impacts that development could have on entire landscapes due to climate change.

At the center of the debate are oil and gas lease sales held each quarter by the U.S. Bureau of Land Management. The agency offered about 100 parcels covering some 112,000 acres in New Mexico, Texas and Oklahoma in April and has more than 175,000 acres up for lease in Colorado in early May.

"The Rocky Mountain region is experiencing an unprecedented oil and gas boom right now so it's crucial that we get ahead of the curve here and not let this get away from us before it's too late to do anything," said Jeremy Nichols, director of Denver-based Rocky Mountain Clean Air Action.

Nichols' group is one of several organizations that have protested recent oil and gas lease sales across the region because of climate change concerns — rather than the usual arguments of how oil and gas might affect a particular endangered species or a pristine plot of land.

"We're really trying to change the nature of this debate and get the BLM to start looking at the bigger picture here," Nichols said. "Even though these are individual state lease sales, regionally it adds up."

#### Argument spreading in West

The climate change argument has spread from Montana and the Dakotas down to Colorado, Nevada and New Mexico, and BLM officials acknowledged May 1 that it's likely here to stay.

"I think it is going to be discussed more and more," said Tony Herrell, BLM's deputy director for minerals in New Mexico. "It's an issue that society is just becoming more aware of now."

Herrell's office is responsible for oil and gas development in New Mexico, Texas, Oklahoma and Kansas, making for one of the largest oil and gas programs in the BLM. The four-state area has more than 45 million acres of mineral estate, including two of the largest gas reserves in the world.

The region sold every one of the parcels it offered during the April lease sale, but Herrell said the leases have not been signed because the agency is still reviewing a protest filed by WildEarth Guardians.

The Santa Fe, N.M.-based conservation group targeted all the parcels, saying they

should not have been offered because the BLM's management plans do not address climate change as a potential result of greenhouse gas emissions from more oil and gas development.

The protest also alleges the agency skirted federal environmental laws by not considering new information about climate change from the Intergovernmental Panel on Climate Change, the New Mexico Climate Change Advisory Group or other federal scientists.

"It's just difficult to find words strong enough to express the irresponsibility that they're proceeding with in just lease after lease after lease and not addressing this problem," said Robert Ukeiley, WildEarth Guardians staff attorney.

#### BLM working on emissions

Herrell argued that the BLM has been working with the oil and gas industry for the past decade to get a handle on greenhouse gas emissions that result from flaring and venting on the oilfield. That work has paid off with more than a 50 percent reduction in emissions, he said.

He also said the agency is always looking for better ways of doing things to ensure that oil and gas development has minimal impacts on public lands — and ultimately climate change.

"We will be a part of the discussion, a part of the dialogue," he said. "But you have to remember our activities are only one small part of the global equation with greenhouse gases and that makes it difficult because, almost by default, if you want to address greenhouse gases you've got to expand and address everything else, the whole energy policy."

And that's what conservationists and sportsmen's groups are hoping to do with their flurry of protests. They say their goal is to get federal policy-makers to rethink America's energy portfolio to ease the impact on public lands.

But to do that, Herrell said, both sides of the energy equation — supply and demand — must be considered. "There is no one silver bullet answer to this and it's going to take time," he said.


#### Hunters, anglers also concerned

Austin Williams, the Rocky Mountain energy coordinator for Trout Unlimited, has organized a symposium in May in Wyoming to bring together hunters, anglers, researchers and planners to talk about how to balance conservation and energy development in the region.

"Our view right now is that to a certain degree we can have responsible oil and gas development and still have these wonderful natural resources," he said. "We just need to be cautious with how we move forward and make sure that we're making informed decisions and recognizing the importance of our fish, wildlife and water resources to our Western way of life."

Steven Williams, a hunter and angler who is president of the nonprofit Wildlife Management Institute, said he could think of several people who have a lifelong dream of heading West to fish for trout, hunt elk or just soak up the vast expanses.

But for the non-sportsmen, Williams fears it's a "not-in-my-backyard sort of thing." ●



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## PIPELINES & DOWNSTREAM

### BP gets to work on refinery expansion, will be top processor of heavy Canadian crude oil

BP wasted little time getting to work after receiving the final state approval needed for a \$3.8 billion expansion of its Whiting, Ind., oil refinery. Crews began piling work and laying foundations May 1, just hours after the state approved the air emissions permit, BP spokeswoman Valerie Corr said.

"We are just ecstatic," said Paul Maday, business manager and secretary-treasurer for Boilermakers Local 374 in Hammond, Ind., which does maintenance work at the refinery. "The boilermakers have supported this project since it was first presented to us a couple of years ago from BP Amoco. It's going to mean a lot of employment for our members."

BP has said the expanded refinery would be the nation's top processor of heavy high-sulfur Canadian crude oil, boosting its annual production of gasoline, diesel fuel and jet fuel by 15 percent to about 4.7 billion gallons annually. Some 1,700 people work at the 119-year-old refinery.

Environmentalists who opposed the permit said they will spend the next 18 days deciding whether to challenge the permit in court.

BP's construction permit is valid until construction is completed. After that, BP will need an operational permit, called a Title V permit. EPA Region 5 spokesman Bill Omohundro said the agency was working with the state to ensure that the Title V permit meets Clean Air Act requirements.

—THE ASSOCIATED PRESS

continued from page 1

### FAST-TRACK

"We are hoping we can learn from the experiences we've had on Mackenzie," Kirby told reporters.

She said it will be "helpful to have an Alaska pipeline organized as a major project and have the co-ordination of all federal departments ... with greater weight in terms of timelines that must be met and with memorandums of understanding between federal departments."

Kirby said a major projects office established in 2007 by Prime Minister Stephen Harper's government will make a "big difference" once Alaska awards a project license to set the ball rolling on the massive undertaking.

She said the regulatory review will be designed to fit the project, but it must include a "modern, independent and efficient environmental process."

### Aboriginal support critical

One of the toughest challenges involves the construction of a pipeline across aboriginal lands in the Yukon, British Columbia and possibly Alberta, with the support of First Nations "absolutely critical" to the success of the project.

She said Ottawa has a team available to handle aboriginal consultation and engagement and workshops have been held to identify employment, training and business opportunities.

"It won't be sufficient, but it's a start," she said. "We're spending more time up front."

### Plenty of room for both gas lines

Kirby said she was not troubled by the prospect of competition between the Mackenzie and Alaska pipelines, noting that the decline in conventional gas production and the rising demand for gas-fired power generation suggests there will be "more than enough room" for both projects to "deliver significant gas volumes (currently planned for about 4.5 billion cubic feet per day from Alaska and 1.2 billion cubic feet per day from the Mackenzie Delta) and to encourage U.S. exploration activity in the Arctic."

She said the Canadian government would prefer to have a pipeline through the Alberta gas hub to give Alberta's petrochemical plants access to ethane from the liquids-rich North Slope gas and

to help correct underutilized capacity in Canadian pipelines. (ConocoPhillips has calculated that 100,000 barrels per day of ethane could be removed from 4 billion cubic feet per day of Alaska gas).

Boosting volumes on Canadian pipelines would benefit Alaska and Alberta shippers and ultimately consumers by reducing tolls.

### Alaska open season by September 2009

Tony Palmer, TransCanada's vice-president of Alaska development, told the conference his company's system currently delivers about 15 billion cubic feet per day and has 2 billion cubic feet per day of surplus space, which could grow to 4 billion-5 billion cubic feet per day without Arctic gas being injected.

He estimated that feeding Alaska gas into the Alberta network could save Western Canadian producers about C\$10 billion over the first 15 years.

Palmer said that if TransCanada receives a license for an Alaska pipeline, an open season to secure shipping commitments could be completed by September 2009, four months behind its original forecast, but it would have to be preceded by a new cost estimate.

### Mac line faces another delay

Meanwhile, the Mackenzie Gas Project faces another delay, with a Joint Review Panel report now not expected in 2008, Brian Chamber, executive director of the Northern Gas Project Secretariat, said.

Until it receives the panel's recommendation, the National Energy Board is unable to hear final arguments, stalling until 2010 the regulatory approvals which had been expected in 2009.

Bob McLeod, the recently appointed industry minister in the Northwest Territories, had already voiced concern that the Mackenzie gas line's regulatory requirements were too onerous and too long, noting that the more time that is needed the more a revival of northern exploration is delayed.

Canada's Industry Minister Jim Prentice, who has cabinet control of the Mackenzie Gas Project file, has agreed Ottawa must streamline regulations to approve permits for the project. The various boards and agencies are planning to "bundle" permits in an effort to shrink the number of applications. ●

## LAND & LEASING

### Potential Alaska state and federal oil and gas lease sales

Agency	Sale and Area	Proposed Date
DNR	Cook Inlet Areawide	May 21, 2008
DNR	Beaufort Sea Areawide	October 2008
DNR	North Slope Areawide	October 2008
BLM	NE NPR-A	To be determined
BLM	NW NPR-A	To be determined
DNR	Alaska Peninsula Areawide	February 2009
DNR	North Slope Foothills Areawide	February 2009
DNR	Cook Inlet Areawide	May 2009
DNR	Beaufort Sea Areawide	October 2009
DNR	North Slope Areawide	October 2009
MMS	Sale 209 Beaufort Sea	2009
MMS	Sale 211 Cook Inlet	2009
DNR	Alaska Peninsula Areawide	February 2010
DNR	North Slope Foothills Areawide	February 2010
DNR	Cook Inlet Areawide	May 2010
DNR	Beaufort Sea Areawide	October 2010
DNR	North Slope Areawide	October 2010
MMS	Sale 212 Chukchi Sea	2010
MMS	Sale 217 Beaufort Sea	2011
MMS	Sale 214 North Aleutian basin	2011
MMS	Sale 219 Cook Inlet	2011
MMS	Sale 221 Chukchi Sea	2012

Agency key: BLM, U.S. Department of the Interior's Bureau of Land Management, manages leasing in the National Petroleum Reserve-Alaska; DNR, Alaska Department of Natural Resources, Division of Oil and Gas, manages state oil and gas lease sales onshore and in state waters; MHT, Alaska Mental Health Trust Land Office, manages sales on trust lands; MMS, U.S. Department of the Interior's Minerals Management Service, Alaska region outer continental shelf office, manages sales in federal waters offshore Alaska.

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## Alaska Dreams

Alaska Dreams was established in 1984 and incorporated in 1993. The Fairbanks firm's specialty is building fabric covered industrial buildings. Alaska Dreams is known for its superior products, expertise and experience, innovative thinking and customer service. Founder Meinrad Huser is excited about expanding into custom fabrication at his Fairbanks manufacturing facility.

### Meini Huser, President & CEO

This avid skier and adventurer, born in Switzerland, toured the United States before setting eyes on Alaska and starting a guide business headquartered in Fairbanks. He climbed Mt. McKinley three times (solo), races cars, rides bikes, motorcycles and snow machines, and loves building structures in the most challenging environments. He met and married his sweetheart Anna in 1993. Their family consists of four adult children and six grandchildren, with another grandchild on the way this fall.

### Anna Huser, Vice President/CFO

Anna moved to Fairbanks from California, where she worked as a correctional officer. Once in Alaska, she worked in communications, eventually retiring from CellularOne in 2003. By then Alaska Dreams had grown to require her full attention. Anna loves cooking family dinners, gardening, rollerblading and enjoying the summer sun. Her next post-retirement plan includes Alaska wilderness rafting trips with Meini.

—PAULA EASLEY



SUSAN CRANE

## Companies involved in Alaska and northern Canada's oil and gas industry

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## Anadarko plans return for foothills gas

Anadarko is planning its strategy for returning to gas prospects on the western North Slope near the edge of the National Petroleum Reserve-Alaska.

The company drilled two wells, Gubik No. 3 and Chandler No. 1, in the foothills of the Brooks Range this winter as part of a two- or three-year program to prove up gas accumulations discovered back in the early 1950s by the U.S. Navy and the U.S. Geological Survey, and to test deeper formations.

The drilling program was the first to deliberately target gas in northern Alaska.

Anadarko said it "encountered natural gas in two zones" at the Gubik No. 3 well just east of the Colville River, northeast of the village of Umiat.

Anadarko suspended the Chandler No. 1 well just to the south, and left the Nabors rig 105 at the ice pad. Spokesman Mark Hanley said the expectation is to return next year to finish the deep gas well.

Other plans for next year could include one or more of the five other wells proposed at Gubik. Anadarko's partners in the Brooks Range Foothills are BG Group and PetroCanada.

By announcing a gas exploration program in the foothills, Anadarko expressed some faith in the ongoing process to build a large-diameter natural gas pipeline from Alaska's North Slope to markets outside the state.

Since starting the drilling program, however, the options for Gubik gas have increased as Enstar Natural Gas recently renewed discussions of a \$3.3 billion bullet line from Gubik to Southcentral Alaska.

### \$31 million spent in Alaska this year

In addition to its majority-owned prospects, Anadarko also maintains a minority position in the ConocoPhillips-operated Colville River unit.

In first-quarter filings, Anadarko said gross production at Colville River was around 110,000 barrels of oil per day.

Work there this winter included "several" development wells in the Fiord area using a rig eventually headed for work at Qannik in the later part of the year.

"In addition, construction continues for various modules in connection with the Qannik development at CD2 with initial production from this reservoir anticipated to begin in late 2008," the filings said.

Anadarko and ConocoPhillips also brought a rig to the Nanuq area at the end of the quarter "to drill and complete up to two development wells."

Anadarko spent \$31 million in capital expenses in Alaska in the first quarter of the year. Companywide, the mega-independent has spent \$1.056 billion in capital expense so far this year.

—ERIC LIDJI

## EXPLORATION & PRODUCTION

### Pacific Energy to drill Escopeta's onshore Cook Inlet gas prospect

Pacific Energy Resources will be the operator for Escopeta Oil's 2008-09 winter drilling program at the North Alexander exploration unit in Alaska's Cook Inlet basin, Escopeta President Danny Davis and Pacific Energy Chairman and CEO Vladimir Katic told Petroleum News.

"We think we each have about 50 percent of the reservoir," Davis said, noting he expects the reservoir to hold about 100 billion cubic feet of natural gas.

"We have adjoining leases there, so it makes sense we operate the exploration, since we already operate in Cook Inlet and Escopeta does not. ... We'll position the well along seismic lines; it's a common structure so we can test both at the same time," Katic said.

Davis also said that all the permitting for North Alexander has been completed, and that it was done by former state Division of Oil and Gas employee Bruce Webb.

The North Alexander onshore prospect sits along the mouth of the Susitna River in the upper Cook Inlet basin, across the inlet from the Kenai Peninsula and some 13 miles north of Beluga. The North Alexander No. 1 well, planned as an 8,500-foot vertical hole, will target gas producing sandstones in the Beluga and Upper Tyonek formations, Escopeta said.



DANNY DAVIS

**The North Alexander onshore prospect sits along the mouth of the Susitna River in the upper Cook Inlet basin, across the inlet from the Kenai Peninsula and some 13 miles north of Beluga. The North Alexander No. 1 well, planned as an 8,500-foot vertical hole, will target gas producing sandstones in the Beluga and Upper Tyonek formations, Escopeta said.**

The well site is about 6.5 miles northeast of the Lewis River unit, just south of Mount Susitna, about 1.5 miles west of the Susitna River on a low, southeast-facing ridge at 55 feet above sea level in low shrub and mixed lowland forest. The closest existing wells are Lewis River 1-A, six miles to the southwest, and Isla Grande 1, some 2.5 miles to the southeast.

Escopeta's 22,882-acre North Alexander prospect is onshore on four state oil and gas leases within the Susitna Flats State Game Refuge; both surface and subsurface mineral estates are state owned. Escopeta maintains a 75 percent working interest in the unit, formed in early 2007, with Taylor Minerals holding the remaining 25 percent.

The North Alexander unit terms had originally required Escopeta to drill a well in the winter of 2007-08, holding leases which would otherwise have expired in January 2007. But the state Division of Oil and Gas Division extended the drilling date to March 31, 2009, Davis said.

A rig from Aurora Well Services will be used to drill the prospect. "It's an excellent company. We're glad to be working with them," Davis said.

—ERIC LIDJI & KAY CASHMAN

continued from page 1

## JACOB'S LADDER

Ladder piqued some interest because of the presence of Karst topography, a type of terrain where near-surface limestone gets eroded by water to form extensive underground caves.

These caves can be excellent for trapping oil and gas, as proven by the similar features within the Yates field in west Texas, one of the most prolific reservoirs in the epic Permian Basin.

The state recognized this back in 2005 upon formation of the Jacob's Ladder unit, saying a drilling program would help evaluate "a previously unrecognized play type on the North Slope of Alaska."

At that time, Anadarko publicly spoke of its strategy to "anchor" its operations in Alaska in large oil and gas accumulations.

Jacob's Ladder also includes a prospect in the Ivishak formation of the

Sadlerochit structure that could possibly hold between 50 million and 800 million boe.

On top of those estimated reserves, the field sits just east of the trans-Alaska oil pipeline and the production facilities of Prudhoe Bay, closer to infrastructure than some of the company's other prospects across northern Alaska.

Anadarko maintains a 50 percent interest in Jacob's Ladder, with the remaining 50 percent shared by BG Group (40 percent) and the Arctic Slope Regional Corp. (10 percent).

After bringing on those partners in 2006, Anadarko began drilling the Jacob's Ladder exploration well last year, but didn't finish by the end of the season and returned this year with a newly winterized Akita 63 rig.

The company started drilling in February and achieved a total depth of 14,416 feet.

The Akita 63 rig is now headed to Canada, after a brief stint in Deadhorse. ●

continued from page 1

## IMPERIAL

terms and no sign of a breakthrough in negotiations with the Deh Cho First Nations.

### Focus on commercial aspects

March said Imperial has done about all it can for now on access agreements with aboriginal communities along the pipeline route and on rights of way.

"What we really need is to develop commercial aspects of the project, get

stakeholder support and buy-in, then start the regulatory process that we haven't done yet," he said.

Despite cuts in staffing and a slowdown in all aspects of the MGP, he said progress on the commercial front is "when you'll see the resources come back to the project."

March said a proposal made late last year to all stakeholders, including the Canadian government, for a commercially sound project does not require any "giveaways" from the government to any of the co-venturers.



—GARY PARK

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continued from page 1

## NORWAY

North Sea Ekofisk oil field the Norwegian industry moved into an era of huge offshore production platforms standing on the seafloor under their own weight, Zolotukhin said. Ekofisk and the Frigg gas field were in production by 1979, by which time the Stafjord oil field and Troll gas field had been discovered.

Troll went into production with an offshore platform that achieved a record as the biggest structure ever moved by "Man on Earth," Zolotukhin said.

### Gas pipelines

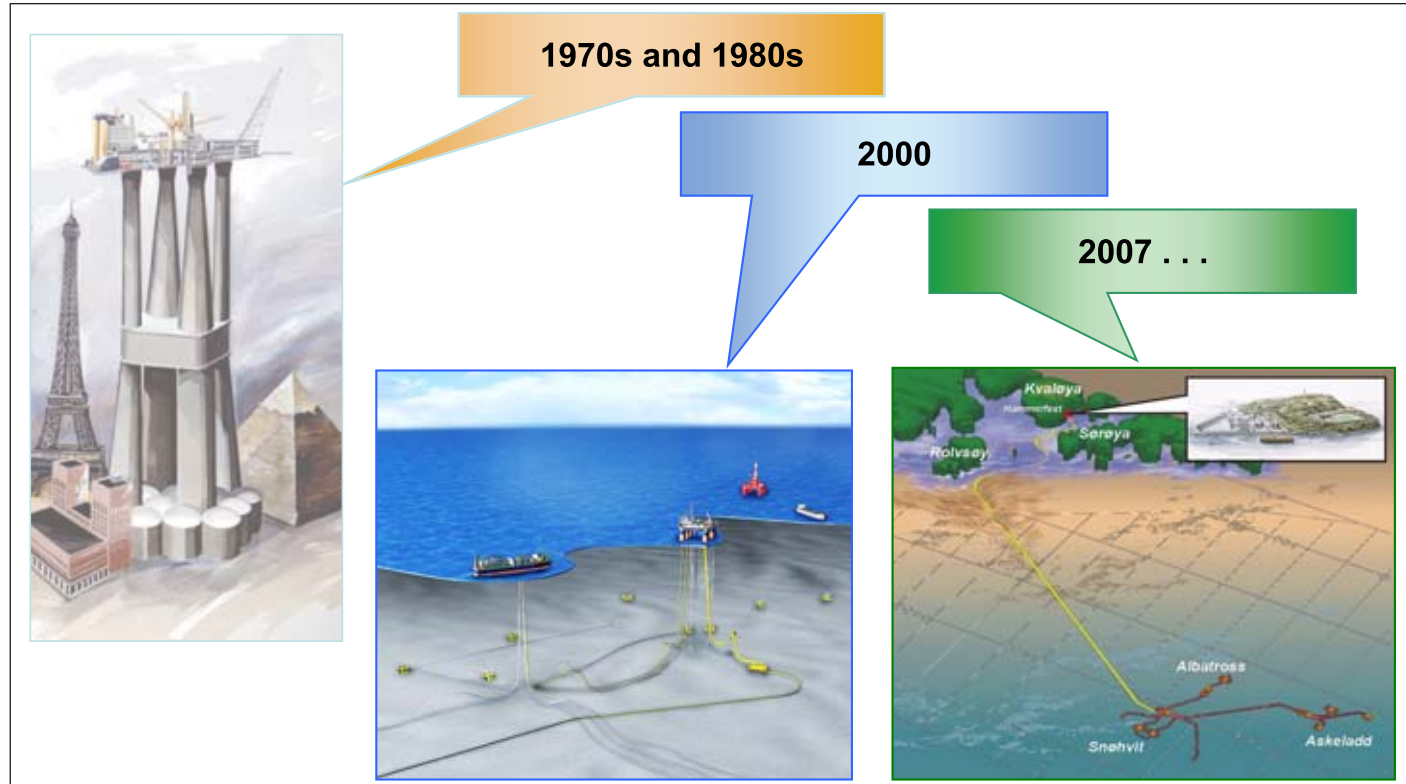
In 1985 the opening of the Statpipe pipeline brought gas from the Stafjord area to the Kårstø receiving terminal in Norway, north of Stavanger. The Troll-Sleipner pipeline system started up in 1999, Zolotukhin said. And by 2007 a spider's web of pipelines in the North Sea and the Norwegian Sea delivered gas from various offshore fields to European markets.

Around 2000, as Norwegian oil and gas development moved north into the deeper waters of the Norwegian Sea, a new era arrived, involving the use of ships, semi-submersible platforms and subsea templates, Zolotukhin said.

The Åsgard oil and gas field, for example, uses a ship-based floating production system. In this arrangement the ship with the production facilities encases a vertical turret containing the risers to the subsea wells. In the event of a severe storm, the turret can be detached and left semisubmersed, while the ship moves away from the site, Zolotukhin said.

### Snøhvit

The Snøhvit gas field in the Barents Sea uses remotely controlled subsea wellheads,



In three decades oil and gas technology used on the Norwegian continental shelf has evolved from giant platforms to subsea well completions

### On the Web

See previous Petroleum News coverage:

"Making headway in Arctic" in the December 2, 2007, edition of Petroleum News  
<http://www.petroleumnews.com/pnads/249893578.shtml>

"\$2.64 trillion please" in the May 4, 2008, edition of Petroleum News  
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the latest progression in offshore technical development.

The wellheads connect to umbilical pipelines that feed into a main subsea pipeline that carries products to processing

facilities on an island at Hammerfest on the Norwegian Sea coast. All field structures lie on the seafloor, operated from the land and maintained by remotely operated subsea vehicles.

The Snøhvit design resulted from a 17-year debate in the Norwegian parliament regarding the concerns of fishermen about Barents Sea oil and gas development, Zolotukhin said.

"(The fishermen) didn't like platforms. They didn't like ships. They didn't like thrusters," Zolotukhin said.

The huge Ormen Lange gas field in the southern Norwegian Sea is also pioneering the use of remotely controlled subsea well completions tied by pipeline to onshore facilities. From the onshore plant a long subsea export gas pipeline crosses the North

Sea to Easington on the east coast of England.

And in a new twist on subsea technology, the Tordis field is pioneering the use of subsea fluid separation, with produced water being injected back into the reservoir from a seafloor facility.

### Pipeline flow assurance

The use of subsea pipelines from producing fields has required technologies for flow assurance, to keep fluids moving through the pipeline even in low temperatures, Zolotukhin said.

But he said that whereas there are technical limitations on subsea pipeline lengths for carrying multiphase fluids, natural gas

see NORWAY page 23



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continued from page 22

## NORWAY

can be piped over great distances. However, as the amount of condensate in the gas increases, the maximum pipeline length becomes less.

"If the main phase is gas, then it's not a problem to extend the existing (distance) records," Zolotukhin said. Snøhvit set a record distance 125 kilometers and a 420 kilometer pipeline is being built this year, he said.

But the Shtokman field that is earmarked for development in the Russian Barents Sea lies 550 kilometers from land. That distance is too great for the transportation of Shtokman products through a subsea pipeline using current technology, Zolotukhin said.

On the other hand, it ought to be possible to move products to shore from a Chukchi Sea field that is, say, 50 miles offshore northern Alaska, Zolotukhin commented.

### Enhanced recovery

The Norwegian oil industry has also made use of advances in enhanced oil recovery, with techniques such as water-alternating-gas and carbon dioxide injection, Zolotukhin said. That has resulted in particularly aggressive targets for total oil recovery — target recoveries of 70 percent of in-place oil for the Stafford field and 65 percent for the Gullfaks field, for example. Those percentages compare with a worldwide average of 34 percent recovery, he said.

Stafford has already achieved 68 percent recovery and is on course for that 70 percent target, Zolotukhin said. A new concept is the injection of bacteria into a reservoir to further increase oil recovery, he said.

Drilling technologies have also made huge strides. The use of single-diameter wells with expandable casing has reduced drilling costs and drilling waste, Zolotukhin said. And, as in Alaska, the Norwegian industry makes extensive use of directional and sidetrack drilling.

In a new drilling concept, a device called a Badger Explorer would bore its way through the subsurface at the end of a cable, with the crushed rocks closing up behind it. The technique would eliminate the need for wells and drilling rigs and could cut exploration drilling costs by a factor of 10, Zolotukhin said.

### Safety paramount

Although the Norwegian industry has forged ahead with new technologies, stringent standards for health, safety and the environment underpin all activities, Zolotukhin said.

Zolotukhin attributes this environmental culture in part to the transparency of companies with state ownership, like StatoilHydro, and in part to government regulation of the industry. Norwegians want the oil industry to meet tough environmental standards, he said.

And strict regulation has also forced technical innovation in fields such as Snøhvit, Zolotukhin said.

Norway's carbon dioxide legislation, for example, has driven the development of techniques for carbon dioxide extraction and re-injection — in Snøhvit carbon dioxide separated onshore from the gas production is piped back offshore for underground sequestration. And the country has established a target of zero discharges into the sea from drilling activities, Zolotukhin said.

StatoilHydro has a track record of using many more substantial innovations than are used on average worldwide, Zolotukhin said.

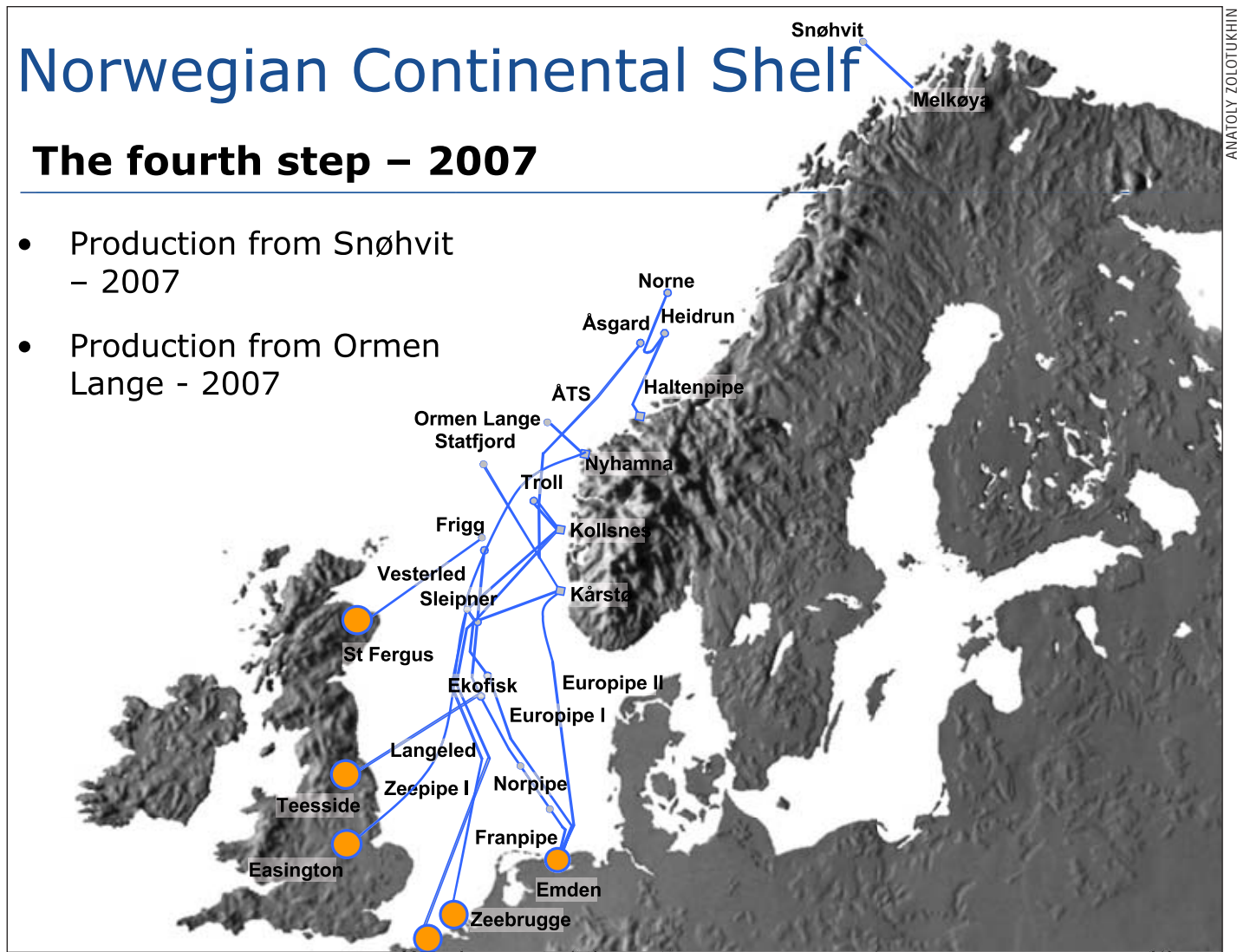
### Culture of learning

Zolotukhin attributed the Norwegian oil

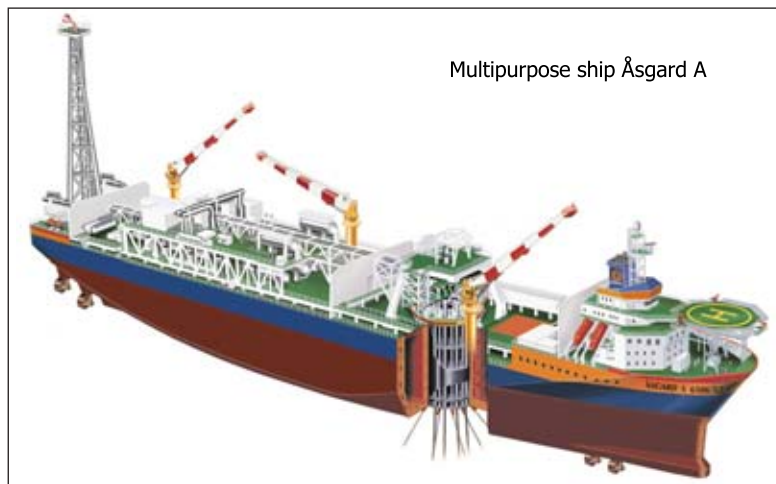
## Norwegian Continental Shelf

### The fourth step – 2007

- Production from Snøhvit – 2007
- Production from Ormen Lange - 2007



A network of subsea gas pipelines connects various North Sea and Norwegian Sea oil and gas fields to European markets



Multipurpose ship Åsgard A



At left, the Åsgard field floating production and accommodation facility uses a ship stationed over a vertical turret containing the well risers. At right, is this the offshore oil field of the future? — a subsea production facility remotely controlled and maintained from land.

industry's rapid growth since its inception 30 years ago in part to a culture of learning.

"They learned it the hard way because there were no specialists 30 years ago. ... Now it's one of the most advanced nations of Europe," Zolotukhin said. "... You will never see a Norwegian coming to a meeting

without a notebook. ... They're still on a learning curve."

And that's the kind of attitude that Zolotukhin thinks will be needed to meet the huge challenges of developing new oil and gas frontier provinces in the offshore Arctic. But Zolotukhin also thinks that the

massive costs, technical difficulties and the need for specialist expertise in the Arctic will require international cooperation and an industrywide approach.

A single company cannot overcome all of the challenges alone; nor can a single country, Zolotukhin said. ●

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