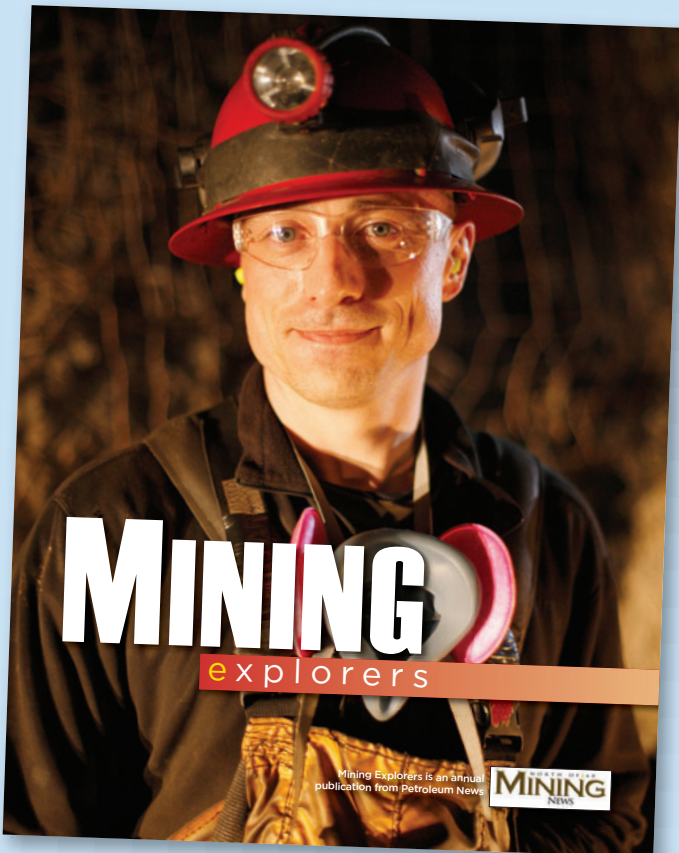


**page 11** Great Bear has completed two wells, determining next steps

## 2012 Mining Explorers inside



Mining Explorers provides a comprehensive overview of the mining companies investing the capital and time needed to unlock the enormous mineral potential of Alaska and northern Canada.

## Oil sands crunch point: Will cumulative impact slow expansion

All of the conflicting forces at play in the Alberta oil sands have arrived at a pivotal junction — Shell Canada's bid for regulatory approval of two projects that are designed to add 300,000 barrels per day to production from the region.

The test for a joint review panel of the Canadian Environmental Assessment Agency, CEAA, and Alberta's Energy Resources Conservation Board, ERCB, is whether it agrees the time has come to slow the pace of oil sands growth.

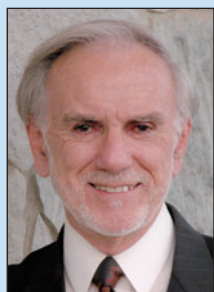
The two applications were filed five years ago — a delay that has allowed oil sands opponents to assemble their resources, make their case in the court of public opinion and set the stage for hearings that will focus on the cumulative impact of oil sands development, an issue that has received little attention until now.

see **CRUNCH POINT** page 29

## Nordaq extends Smith Bay lease position in Beaufort Sea lease sale

Nordaq Energy, a company known in Alaska primarily because of its active gas exploration program in the Cook Inlet basin, signaled a continuing interest in Arctic Alaska by picking up some leases in Smith Bay, some 100 miles to the west of the Prudhoe Bay area, in the State of Alaska's Nov. 7 Beaufort Sea areawide lease sale. The company had purchased a block of Smith Bay leases in the state's December 2011 Beaufort Sea sale — the new leases fill in the unleased margin around the edges of that original block.

After the Nov. 7 sale Bob Warthen, Nordaq's president, told Petroleum News that his company plans to do some exploration drilling in Smith Bay but that the drilling would not take place until 2014 at the earliest. With Smith Bay being in an



**BOB WARTHEN**

see **NORDAQ LEASES** page 31

## LAND & LEASING

# \$15 million in sales

State, feds both hold lease sales; North Slope brings in most at \$11.5 million

By **KRISTEN NELSON**

Petroleum News

The State of Alaska and the federal government opened bids for four oil and gas lease sales Nov. 7 in Anchorage, with preliminary results from the sales showing apparent high bids totaling some \$15.1 million. The majority of that, more than \$14.2 million, came from three state areawide lease sales — Beaufort Sea, North Slope and North Slope Foothills. The U.S. Department of the Interior's Bureau of Land Management brought in \$898,901 from its National Petroleum Reserve-Alaska lease sale.

This is the second year the Alaska Department of Natural Resources, Division of Oil and Gas, has coordinated its fall lease sales, formerly held earli-

er in the year, with BLM sales. Bill Barron, director of the division, said after the sale that coordination of the state and federal sales allows bidders to assemble positions on both state and federal acreage without fear that bidding in an earlier sale would signal their interest to competitors. Ted Murphy, associate state director for BLM in Alaska, said after reading bids at the NPR-A sale that BLM will continue to coordinate its sale with the state and said the next sale would probably be in the last quarter of 2013.

## NPR-A

BLM offered 398 tracts in the sale, some 4.5 million acres, in the northeast and northwest NPR-

see **LEASE SALES** page 30

## GOVERNMENT

# AIDEA considering road

Proposal would have state invest \$20M in 4.5-mile Tarn to Mustang road

By **ERIC LIDJI**

For Petroleum News

The Alaska Industrial Development and Export Authority is considering whether to invest \$20 million in a small road and pad at a proposed North Slope oil development.

The public corporation of the state is currently conducting due diligence to determine whether it should build, own and operate a 4.5-mile access road connecting the existing Tarn road to the Mustang field, as well as a production pad at the development site.

After announcing a 40 million barrel discovery earlier this year, the small independent Brooks Range Petroleum Corp. is working to bring the Mustang

At a meeting at the end of October, the AIDEA board of directors agreed to spend up to \$75,000 evaluating the project and crafting a business structure to own the road.

field online by 2014.

Through its investment, AIDEA would fund more than 80 percent of the \$24 million project to connect the field to the Alpine facilities and the North Slope infrastructure grid.

At a meeting at the end of October, the AIDEA board of directors agreed to spend up to \$75,000 evaluating the project and crafting a business structure to

see **ROAD INVESTMENT** page 32

## LAND & LEASING

# Exxon wins right of way

New Alaska North Slope pipeline will carry Point Thomson natural gas condensate

By **WESLEY LOY**

For Petroleum News

ExxonMobil's planned Point Thomson development is over another hurdle, as Alaska officials have granted a right of way for a new pipeline to support the project.

It's the second major authorization the company has received since late October. The first was a wetlands permit from the U.S. Army Corps of Engineers.

ExxonMobil still needs a variety of state and local permits, but the way now appears nearly clear for the company to begin construction this winter as planned.

Dan Sullivan, Alaska's natural resources commissioner, signed the right-of-way lease for the pipeline

ExxonMobil has estimated the cost of the new line at \$253 million.

on Oct. 31. Taking the lease was PTE Pipeline LLC, an ExxonMobil unit formed to build and operate what will be known as the Point Thomson Export Pipeline.

## Long time coming

The Point Thomson field is situated on state-owned land along the Beaufort Sea coast, about 60 miles east of Prudhoe Bay.

Although Exxon discovered Point Thomson with

see **ROW GRANTED** page 32



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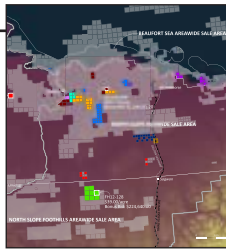
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• NATURAL GAS

# AG: FNG should be regulated

Public advocate believes Fairbanks Natural Gas isn't competing against fuel oil prices in the Interior, should be regulated

By ERIC LIDJI

For Petroleum News

Almost a decade after regulators gave the utility permission to set its rates at will, an economist representing the state Attorney General's office believes state regulators should once again subject Fairbanks Natural Gas LLC to traditional rate regulation.

"The rationale for FNG's economic exemption is negated by its pricing behavior," economist Christina Klein wrote in testimony to the Regulatory Commission of Alaska.

Additionally, Klein said the RCA should consider shrinking the Fairbanks Natural Gas service area if the company cannot supply all the potential customers in the region.

The RCA is currently investigating whether pricing restrictions implemented in 2008 have effectively protected Fairbanks Natural Gas customers from monopoly pricing.

Because Fairbanks Natural Gas hasn't changed its prices since 2008, even when those prices were more expensive than heating oil, Klein said the company could no longer claim to need the rate-setting agility afforded by exemption from economical regulation.

Between November 2008 and October 2010, the Fairbanks Natural Gas residential rate of \$23.35 per thousand cubic feet exceeded the average monthly heating oil price in the region. The large commercial rate of \$22.66 per mcf topped local heating oil prices for a 17-month stretch from November 2008 and March 2010, Klein noted in her testimony.

In the two years since then, natural gas has been priced below heating oil, but largely because "heating oil prices have remained very high during this period," Klein wrote.

While Fairbanks Natural Gas offered "reasonable" explanations, according to Klein, those have been redacted from her testimony, as have other details, particularly concerning the Fairbanks Natural Gas customers able to easily switch between fuels.

Even considering those factors, though, Klein said Fairbanks Natural Gas "did not behave competitively for a very long stretch of time," thus upending its rationale for exemption.

## Reasonable, not competitive

The question hinges, in part, on "dual

fuel" customers, or those able to switch between heating oil and natural gas. With enough dual fuel customers, Fairbanks Natural Gas would presumably need to beat heating oil prices to avoid a mass exodus, but "the percentage of customers who are dual fuel and who actually switch fuels appears to be too low to force FNG to drop its prices to retain those customers," Klein wrote.

Fairbanks Natural Gas acted "reasonably," but not "competitively" in his pricing habits, according to Klein, adding that the company could charge excessive prices in the future.

But another consultant, Parker Nation, testified that Fairbanks Natural Gas may have "over-recovered" revenue beyond what it needed for a set rate of return beyond its costs.

Because over-recovery requires regulators to first set a revenue requirement and a rate of return, the distinction is inherently muddled for unregulated Fairbanks Natural Gas. But by estimating company costs using financial statements, and applying various rates of return, Nation said

Fairbanks Natural Gas might be over-recovering by 4.5 to 9.2 percent.

With regulation, Fairbanks Natural Gas customers would pay a rate tied to the cost to provide service, a distinction that guarantees "reasonable" rates, but not necessarily lower rates. Additionally, ratepayers would have to pay for rate cases every three to five years.

And if unregulated heating oil prices in the future ever fell far enough below the regulated natural gas price for dual fuel customers to flee, Fairbanks Natural Gas could request a rate increase on its few remaining customers to make up for the lost revenue.

## Service area concerns

Just like the old joke where the food is bad and the portions are small, Klein also argues Fairbanks Natural Gas might be turning away potential customers in its service area.

Between 2008 and 2012, Fairbanks Natural Gas added 16 customers. Its market share in the Fairbanks North Star Borough is currently between 1 percent and 6.7 percent by class.

Without a long-term fuel supply, Fairbanks Natural Gas cannot serve all the potential customers in its service area. Although the company signed a supply agreement with ExxonMobil in 2008 to purchase Prudhoe Bay natural gas, it needs to build liquefaction facilities on the North Slope before it can leave its current Cook Inlet supply source.

Because of this limitation, and because no other utility can currently provide natural gas service in the Interior, the question is moot. But Klein said the RCA should revisit the matter, either as part of a future rate case or if another company enters the market.

## FNG 'willing' to be regulated

The regulation question might be a technical one.

In October, Fairbanks Natural Gas announced it "might be willing to accept full economic regulation by the RCA, if the new regulatory status were subject to a reasonable phase-in, and if certain other agree-

see FNG REGULATION page 5

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## ● EXPLORATION &amp; PRODUCTION

# Canadian oil producers face squeeze

By GARY PARK

For Petroleum News

Canada is under pressure from oil producers as far afield as Brazil and Colombia to speed up its approval of crude oil deliveries from Alberta to the Pacific Coast or lose the race to Asia, says a report by Scotiabank.

“Changing oil market dynamics highlight the increasing commercial risk for Western Canada’s oil patch of relying on one major export market — the United States — and the critical need to build additional pipeline and rail capacity to the British Columbia coast,” wrote commodities analyst Pat Mohr.

She forecast that on a global basis, petroleum prices and demand will be stable over the next five years until flows from North and South America dramatically change that picture.

Mohr said emerging plans to ship Western Canadian crude to eastern Canada and the United States by reversing Enbridge’s pipeline which imports crude into Ontario and Quebec or converting part of TransCanada’s main natural gas pipeline, would offer important options.

## Not all agree

But not all Canadian producers agree with Mohr’s thesis that U.S. Gulf Coast pricing would weaken against competition from South American heavy crude sources over the next five years.

Byron Lutes, chief executive officer of Southern Pacific Resource, is confident future prices will support his company’s plans to ship 12,000 barrels per day from its new STP-McKay thermal oil sands project to the Gulf Coast by truck, rail and barge.

He said it would be hard to imagine Gulf Coast prices, especially for heavy crude, taking a significant drop against Brent-priced crude.

Mohr said in an earlier report that Western Canadian heavy producers lost out on C\$5.8 billion in revenues over the first half of 2012 because they were unable to access higher-priced markets.

*The Canadian Association of Petroleum Producers expects light oil will go east and heavy oil will move to the Gulf Coast or West Coast for delivery to California or Asia, where access is vital.*

Her report said that even if Keystone XL proceeds and delivers oil sands crude to Midwest and Texas refineries, it faces competition from growing sources of heavy crude in South America, noting that Brazil is expected to grow from 2.9 million barrels per day by 2017 from 2.2 million bpd.

Martin King, a commodities analyst with FirstEnergy Capital, doubts Colombia and Brazil will greatly influence competition in the Gulf Coast because of the declining volumes from Mexico and Venezuela.

The Canadian Association of Petroleum Producers expects light oil will go east and heavy oil will move to the Gulf Coast or West Coast for delivery to California or Asia, where access is vital.

Scotiabank forecasts that the greatest demand growth will come from China (where consumption is counted on to grow to 11.3 million bpd in 2017 from 9.5 million bpd this year), India and the rest of emerging Asia.

In the U.S. it said consumption of crude is unlikely to rise from this year’s 18.7 million bpd — down 2.1 million bpd since 2005 — as fuel efficiency standards rise and there is some shift to natural gas.

Mohr forecast that U.S. oil and liquids production will grow to 11.4 million bpd in 2017 from 8.95 million bpd this year, as the U.S., powered by plays such as the Bakken, accounts for 75 percent of the growth in supply of nonOPEC countries over the next five years.

She said Canadian output will add 1.1 million bpd to reach 4.9 million bpd, with the oil sands contributing 2.6 million bpd, an increase of 900,000 bpd. ●

Contact Gary Park through publisher@petroleumnews.com



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● GOVERNMENT

# State takes over wastewater permitting

Alaska assumes authority over the permitting of discharges from oil and gas operations within state territory and coastal waters

By ALAN BAILEY  
Petroleum News

At the end of October the State of Alaska's Department of Environmental Conservation, or DEC, took over the permitting of wastewater discharges from oil and gas operations in Alaska, a role previously performed by the federal Environmental Protection Agency. The permitting comes within the operation of the National Pollution Discharge Elimination System, or NPDES, a program that is mandated under the federal Clean Water Act with the objective of protecting U.S. water from unacceptable pollution.

Under NPDES any discharge of waste into the waters of the United States, either directly or via some form of wastewater collection system, requires a permit.

Although the Environmental Protection Agency, or EPA, retains ultimate authority over NPDES, states that can demonstrate the means to adequately administer the program can take on the operation of the NPDES permitting. And a majority of states now operate the program for themselves.

In 2008 the State of Alaska applied to implement NPDES in the form of a state program called the Alaska Pollutant Discharge Elimination System, or APDES.

## Four phases

The state has been implementing APDES in four phases. Phase I, which included domestic discharges and discharges from seafood processing facilities and hatcheries, was completed in 2008; phase II, which included federal facilities, storm water and wastewater pre-treatment plants, was completed in 2009; and phase III, covering mining activities, was completed in 2010.

Phase IV, which covered wastewater permitting for the oil and gas industry, as well as the permitting for some other activities such as the use of pesticides, was scheduled to be finished in 2011. But completion was deferred into 2012 to allow more time for what DEC characterized as "the substantial workload associated with the oil and gas sector permits."

With phase IV complete, DEC is now administering the entire wastewater discharge permitting system in Alaska. However, EPA remains responsible for NPDES

permitting for offshore activities on the federal outer continental shelf, outside state waters, which generally extend three mile out from the coastline.

"This is an important accomplishment for the State of Alaska," said DEC Commissioner Larry Hartig on Nov. 1 when announcing the completion of the transfer of authority from EPA. "The transfer of authority will enable us to manage wastewater issues closer to home and better serve Alaskans as a result. We appreciate EPA's efforts in helping us meet this goal."

## Prompt permitting

APDES Program Manager Wade Strickland told Petroleum News that the biggest advantage of the state taking over the NPDES program is the state's ability to assign a sufficient number of knowledgeable staff to the program, to ensure the processing of permits quickly enough to meet project deadlines.

"We have a total of five permitting sections in the wastewater discharge authorization program," Strickland said. EPA had relatively few permit writers assigned to

see PERMITTING TAKEOVER page 7

continued from page 3

## FNG REGULATION

ments could be reached." Asked by Interior policymakers why it would willingly accept regulation, Fairbanks Natural Gas President Dan Britton described economic regulation as an inevitability, especially as the company begins applying for state grants or tax credits. Additionally, he said, the cost to keep revisiting rate regulation had negated some of the financial benefits of being exempt.

"We're just trying to shorten the process," he said.

## A recurring issue

Although the Alaska Public Utility Commission initially subjected Fairbanks Natural Gas to economic regulation when it certificated the utility in 1997, the Regulatory Commission of Alaska exempted the company in 2003. At the time, regulators said Fairbanks Natural Gas needed to be able to change its rates quickly to compete against the swarm of unregulated fuel oil companies dominating the Interior heating market.

Fairbanks Natural Gas remains a small player in the Interior marketplace, but the regulation question perennially dogs the company. The RCA first reconsidered the question in late 2006, as part of its investigation into a supply contract between Fairbanks Natural Gas and Enstar Natural gas Co, but chose not to pursue economic regulation.

The issue returned in May 2008. After Fairbanks Natural Gas posted its first profitable year, a group of state lawmakers asked the RCA to investigate reinstating rate regulation.

In those proceedings, public advocates worried some Fairbanks Natural Gas residential customers could be "captive," or unable to economically switch between natural gas and heating oil should one fuel or the other become a better deal. Through a deal with the Attorney General's office, Fairbanks Natural Gas avoided rate regulation by tethering its residential rates to its large commercial rates, a more competitive customer class.


In approving the deal, the RCA decided to revisit the matter this year. ●

Contact Eric Lidji  
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## FINANCE &amp; ECONOMY

# US crude projected at 6.3 million bpd

EIA expects 6.8 million bpd in 2013, highest level since 1993, with growth primarily from Bakken, Permian Basin, Eagle Ford areas

By KRISTEN NELSON

Petroleum News

The U.S. Energy Information Administration is projecting domestic crude oil production to average 6.33 million barrels per day this year, up from 5.65 million bpd in 2011.

Crude oil production in the Lower 48, excluding the federal Gulf of Mexico, is

forecast to grow by some 790,000 bpd, with the increase “primarily from the Bakken, Permian Basin and Eagle Ford producing areas,” the agency said in its November Short-Term Energy Outlook.

Crude production is expected to grow by an additional 520,000 bpd in 2013, to some 6.8 million bpd, “the highest level of production since 1993,” EIA said.

The agency said the number of oil

directed drilling rigs as reported by Baker Hughes is up from 777 at the beginning of 2011. The count grew to 1,191 at the beginning of the year, to 1,414 in June, and has since remained near 1,400.

## Imports down

EIA said the share of U.S. consumption met by imports of crude and products has been falling since peaking at more than 60 percent in 2005, averaging 45 percent in 2011, down from 49 percent in 2010.

“EIA expects that the total net import share of consumption will continue to decline to 41 percent in 2012 and to 39 percent in 2013 because of the substantial increases in domestic crude oil production. If the 2013 forecast holds true, it would be the first time the share of total U.S. consumption met by liquid fuel net imports is less than 40 percent since 1991,” the agency said.

## Crude, natural gas prices

The West Texas Intermediate crude oil price is expected to average \$89 per barrel in the fourth quarter, EIA said, down about \$4 a barrel from its October outlook.

Brent crude is expected to average about \$1 less than the October forecast, some \$110 per barrel in the fourth quarter.

“The projected WTI discount to Brent crude oil, which averaged \$22 per barrel in October 2012, falls to an average of \$11 per barrel in the fourth quarter of 2013,” EIA said, with WTI forecast to average \$88 per barrel in 2013, and Brent \$103.

The Henry Hub natural gas spot price is expected to average \$2.77 per million Btu this year, down from \$4 per million Btu in 2011. EIA said it expects the Henry Hub spot price to average \$3.49 next year.

## Natural gas

EIA said it expects domestic natural gas consumption to average 69.7 billion cubic feet per day this year, up 3.2 bcf per day from 2011.

“Large gains in electric power use in 2012 more than offset declines in residential and commercial use,” the agency said.

Natural gas consumption is projected to decrease by 0.5 bcf per day next year, with declines expected in the electric power sector offsetting increases in residential, commercial and industrial con-

EIA said it expects small declines in natural gas production in the coming months related to recent reported drops in the natural gas rig count, which Baker Hughes put at 424 on Nov. 2, compared with 811 at the beginning of the year.

sumption.

Total marketed production of natural gas grew by 4.8 bcf per day in 2011, EIA said, forecasting growth to slow this year, with 2013 near 2012 levels.

There was strong upward growth from 2009 to 2011, the agency said, but this year production has “fluctuated slightly” around an average of 69 bcf per day. EIA said it expects small declines in natural gas production in the coming months related to recent reported drops in the natural gas rig count, which Baker Hughes put at 424 on Nov. 2, compared with 811 at the beginning of the year.

The agency said it “expects that growth in associated gas from crude oil, as well as continued drilling in liquids-rich areas, will help offset the decline in drilling activity.”

## Gas imports down

Pipeline gross imports are expected to fall by 0.2 bcf per day this year, “as domestic supply continues to displace Canadian sources.”

Liquefied natural gas imports are expected to fall by about one-half this year from 2011, with an average of slightly less than 0.5 bcf per day expected to arrive in the U.S. mainly at the Elba Island terminal in Georgia and the Everett terminal in New England this year and next, EIA said, “either to fulfill long-term contract obligations or to take advantage of temporarily high local prices due to cold snaps and disruptions. Higher prices for LNG, particularly in Asian markets, have made the United States a market of last resort for LNG suppliers. Even as natural gas prices are expected to rise in the United States next year, prices in Japanese and Korean markets have historically been much higher.” ●

Contact Kristen Nelson  
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## EXPLORATION & PRODUCTION

### MGM readies Mackenzie well

Northern Canadian explorer MGM Energy is engaged in logistics planning and procurement to drill a vertical well this winter in the Central Mackenzie Valley, targeting the Canol oil shale.

MGM acquired the land in 2011 and 2012 and will drill the well as operator under a farm-out agreement with Shell Canada.

Shell has agreed to fund the drilling and completion of up to two wells in the Canol play to earn up to a 75 percent interest in MGM's Exploration License 466B.

Currently MGM is pinning its hopes of production on completion of a project that allows commercialization of its northern natural gas resources or the successful development of the Canol shale.

MGM recorded exploration expenses of C\$1.18 million in the third quarter, primarily the result of computer upgrades and hiring geological and geophysical employees and consultants.

Exploration spending for the first nine months of 2012 was C\$2.73 million, including C\$600,000 of land costs.

—GARY PARK

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• LAND & LEASING

# Wide spread expirations in third quarter

Companies across the state lose acreage as leases reach the end of their primary terms; Eni drops two leases from Nikaitchuq unit

By ERIC LIDJI

For Petroleum News

Anadarko Petroleum Corp. lost five leases in September to expiration.

The leases — ADL 391186, ADL 391187, ADL 391188, ADL 391189 and ADL 391202 — were all on the eastern North Slope, surrounding the former Jacob's Ladder unit.

Anadarko picked up the prospect over three lease sales during the late 1990s and early 2000s, and brought BG Group and Arctic Slope Regional Corp. on board as partners.

Indications of unique geology in the region led to hopes of a new type of prospect on the North Slope, one capable of containing hundreds of millions of barrels of oil equivalent.

The partners spent more than \$30 million over two seasons exploring the prospect.

Anadarko began drilling Jacob's Ladder C in early 2007, but suspended the well because of seasonal drilling restrictions. The following winter, Anadarko re-entered the well as a sidetrack, but subsequently determined the well found "no commercial hydrocarbons."

Anadarko terminated the unit in late 2008 and its surrounding leases gradually expired over the following years. The current expirations were Anadarko's last in the region.

Mobil previously drilled the Kadler State 15-9-16 well on ADL 391202. Shell and Texaco drilled nearby in the late 1960s and early 1970s, without commercial discoveries.

## AVCG, Conoco, Repsol

Alaska Venture Capital Group LLC lost four leases to expiration in September.

The leases — ADL 391203, ADL 391204, ADL 391205 and ADL 391921 — were all un-unitized leases adjacent to the southern border of the Tofkat unit, near Nuiqsut.

To the south, ConocoPhillips Alaska Inc. lost three leases in September the expiration.

The leases — ADL 391190, ADL 391191 and ADL 391192 — hug a bend in the Colville River. Anadarko Petroleum Corp. held a 22 percent interest in the three leases.

continued from page 5

## PERMITTING TAKEOVER

work on Alaska permits, he said.

The DEC staff also understands the unique weather and environmental conditions that operators need to contend with in Alaska. And DEC has an established protocol for working with tribes and local communities which a project may impact, Strickland said.

A further benefit from the state operating the permitting system is that permit applicants will no longer have to travel to Seattle for face-to-face meetings with EPA permit writers, he said.

"Overall it's a program that we've been really excited for a long time to take on and we're confident that industry will enjoy working directly with Alaskans on their projects as well," Strickland said. ●

### In October, Apache Alaska Corp. lost 13 Cook Inlet leases to expiration.

Repsol E&P USA Inc. lost three leases to expiration in September.

A pair of those leases — ADL 391181 and ADL 391184 — was in the White Hills region, in the central North Slope near the Meltwater satellite of the Kuparuk River unit.

Repsol drilled the Kachemach No. 1 well in the vicinity of the two expired leases this past winter. Texaco drilled the Wolfbutton 32-7-8 well on ADL 391181 in the winter of 1988-1989 and Chevron previously drilled the Ruby State No. 1 well on ADL 391184.

The third, ADL 391163, was a small coastal lease north of the Colville River unit.

Repsol held all three leases in partner-

ship with the Armstrong subsidiary 70 & 148 LLC.

### Bachner, Armstrong

Also in September, the Alaska Department of Natural Resources terminated two leases on the eastern North Slope held by investor J. Andrew Bachner for failure to pay rent.

The offshore leases — ADL 391377 and ADL 391379 — were adjacent to the northern border of the Badami unit and included the ARCO W. Mikkelsen No. 2 well.

And William D. Armstrong transferred a 0.0625 percent royalty interest in some 160 leases scattered across the North Slope and Beaufort Sea areas to Edward S. Smida.

### Point Thomson

Two Four Six Exploration Inc. trans-

ferred its small working and royalty interest — slightly more than 1 percent — in two Point Thomson leases to Aubris Resources LP.

The leases, ADL 47562 and ADL 47567, include the Exxon Pt. Thomson No. 2 well.

The recent Point Thomson settlement listed Two Four Six Exploration as an affiliate of United Oil & Minerals Limited Partnership. Unrelated court filings also list Aubris Resources LP as an affiliate of the same United Oil & Minerals Limited Partnership.

### Nikaitchuq contraction

In October, two leases contracted out of the Nikaitchuq unit and expired.

The leases — ADL 388579 and 389719 — were at the northeast corner of the near-shore unit, operated by Eni Petroleum.

see **ACREAGE LOSSES** page 8

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## EXPLORATION & PRODUCTION

### Pioneer prepping winter program

Pioneer Natural Resources Inc. produced some 4,500 net barrels of oil per day in Alaska during the third quarter, down slightly from 5,000 net bpd in the second quarter but up slightly from 4,000 net bpd during the third quarter of 2011.

At its offshore Oooguruk drill site, the Texas independent is using one rig to drill four wells — three into the Nuiqsut formation and one into the Torok formation. Pioneer plans to complete the wells early next year using a mechanically diverted fracture system.

After using the system at its oil fields in the Lower 48, Pioneer tested the technique in Alaska this past winter, generating some of its best results among its drilling in the state.

Because of the time needed to complete the wells, Pioneer expects to have results by the middle of next year, according to President and Chief Operating Officer Tim Dove.

"I think we're going to have some good success here fracking these wells with Lower 48-style completions," Dove told analysts during a third quarter earnings call Nov. 1.

Pioneer is also "essentially ready to drill" an appraisal well to test a 50 million barrel oil discovery it made this past winter in the Torok formation, Dove said. The appraisal well would start from an onshore drill site and extend directionally to an offshore target.

During the quarter, Pioneer reported a \$7.9 million after-tax gain from its sale of the Cosmopolitan unit and a \$2.5 million after-tax gain from Alaska production tax credits.

—ERIC LIDJI

continued from page 7

### ACREAGE LOSSES

Neither lease had been the site of previous drilling.

In its most recent plan of development for Nikaitchuq, Eni agreed to contract the leases out of the unit because the leases could not be reached from either of the existing drilling pads at the unit, and because neither lease had been covered by previous seismic surveys.

### Interior exploration

In the Interior, Windmill Canyon LLC transferred a 5 percent working interest to Cedar Creek Oil & Gas Co. and a 10 percent working interest to Doyon Ltd. in ADL 390079. The area includes the large exploration license Doyon holds near Nenana.

On the same license acreage: Cedar Creek transferred a 5 percent working interest to Doyon, Usibelli Energy LLC transferred a 10 percent working interest to Doyon, and Arctic Slope Regional Corp. transferred a 15 percent working interest to Doyon.

The companies are all partners on an exploration effort in the region.

### Ramshorn Investments

Ramshorn Investments Inc. transferred a 0.3125 percent royalty interest in five offshore leases to Alaska Venture Capital Group LLC. The leases — ADL 391160, ADL 391161, ADL 391162, ADL 391163 and ADL 391164 — are in the Beaufort Sea, north of the Colville River unit. The leases are located in and around the Repsol Qugruk unit.

Ramshorn also transferred a 0.39583 royalty interest in two leases — ADL 391825 and ADL 391827 — to Alaska Venture Capital Group. The leases are on the eastern North Slope in a region previously known by the names Greater Bullen,

Sluggor or Telemark.

### Apache expirations, etc.

In October, Apache Alaska Corp. lost 13 Cook Inlet leases to expiration.

The leases were scattered across the massive leasehold it began acquiring in mid-2010.

On the east side of Cook Inlet, ADL 391086 was an onshore lease on the Kenai Peninsula between Sterling and Soldotna. A pair of nearby leases held by independent investor John M. Martineck — ADL 391088 and ADL 391089 — also expired, as did two neighboring leases held by Marathon Alaska Production Inc. — ADL 391084 and ADL 391085.

(Another Marathon lease — ADL 391555 — also expired in October. The lease was located to the southwest of the previous cluster, between Ninilchik and Clam Gulch.)

Continuing with Apache: ADL 391096 was to the northwest of the cluster, near Nikiski.

Across the basin, ADL 391100 was an offshore lease near the Kustatan facilities. ADL 391110 and ADL 391111 were just up the coast, near the mouth of the McArthur River.

ADL 391121 was an onshore-offshore lease covering the south half of the city of Anchorage. (Also in October, the other outstanding Anchorage-area lease expired. The lease, ADL 391120, was a non-contiguous lease held by Northern Future Energy Corp.)

ADL 391122 was a small isolated offshore lease between the Beluga River unit and the Northwest Cook Inlet unit. Meanwhile, ADL 391124, ADL 391125 and ADL 391127 were a cluster on onshore leases on the west side of Cook Inlet just west of the Lone Creek unit, and ADL 391126 is an onshore lease just to the northeast of that cluster.

ADL 391130 was an onshore lease along the Susitna River, at the northern boundary of the Cook Inlet lease sale boundary. It included the Inlet Oil Fish Creek No. 1 well.

Finally, ADL 391135 was a small offshore lease near Ninilchik.

### Leasing odd and ends

Armstrong Cook Inlet LLC lost one lease to expiration in October. ADL 391143 is an isolated onshore lease just northeast of the Hilcorp-operated Nikolaevsk unit.

Alaskan Energy Alliance Inc. lost one lease to expiration. ADL 391128 was an isolated onshore lease on the west side of Cook Inlet, just west of the Pretty Creek unit.

Also in October, the state committed part of two Nordaq Energy Inc. leases — ADL 391103 and ADL 391104 — to the Tiger Eye unit. The un-unitized portion of ADL 391103 expired. The un-unitized portion of ADL 391104 became ADL 392260.

Finally, Paul L. Craig transferred a 50 percent working interest and 43.75 percent royalty interest in one lease to Peter G. Zamarello. ADL 391849 was offshore Trading Bay.

In September, Bruce D. Webb transferred a 0.5 percent royalty interest in 25 leases at Kitchen Lights, an offshore unit in the Cook Inlet basin, to Bailey M. Webb.

Colby Dowlin transferred a 0.5 percent royalty interest in four Cook Inlet leases — ADL 391091, ADL 391092, ADL 391094 and ADL 391095 — to Gregory E. Micallef. ●

—A copyrighted oil and gas lease map from *Mapmakers Alaska* was a research tool used in preparing this story.

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● EXPLORATION & PRODUCTION

# Ion doing early winter Beaufort survey

Company using in-ice technique to gather offshore basin-wide seismic data after the end of the fall subsistence whaling season

By ALAN BAILEY

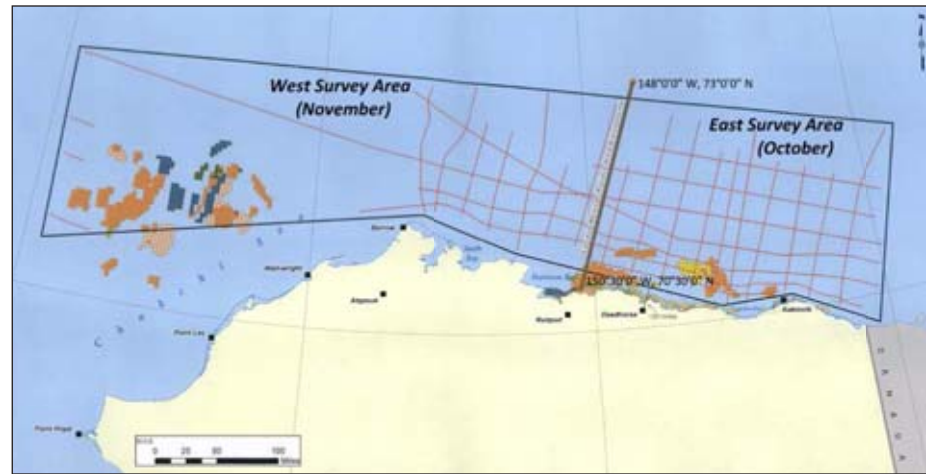
Petroleum News

Ion Geophysical is carrying out an early winter 2-D seismic survey in Alaska's Beaufort Sea using a technique that the company has developed for gathering offshore seismic data in sea-ice conditions. The survey will cover the entire length of the Beaufort Sea and is designed to enable deep, basin-wide imaging of the regional offshore geology.

"The work's progressing in good ice conditions," Joe Gagliardi, vice president Marine-GeoVentures for Ion Geophysical, told Petroleum News Nov. 1.

## In-ice system

In 2006 GX Technologies, a division of Ion, conducted a regional survey in the U.S. Chukchi Sea during the summer open water season using conventional marine surveying techniques. But the company later decided



Planned seismic lines in Ion Geophysical's seismic survey Alaska Beaufort Sea cover the entire sea, with a couple of lines extending west into the northern Chukchi Sea. Ion planned to start its survey in the east, moving west as most bowhead whales migrate out of the region.

to rethink its method of collecting seismic data in the Arctic and developed the in-ice system that it is now using. The company has successfully used the technique in ice-laden waters offshore Greenland and

Canada.

The in-ice system enables Ion to gather seismic in the early winter, after the winter sea ice has started to form, thus enabling the company to avoid conflicts other offshore

activities, especially subsistence bowhead whale hunting.

The company had originally planned to conduct its Alaska Beaufort Sea survey in 2010 but deferred the survey both that year and the following year.

The survey, conducted by seismic vessel the Geo Arctic, supported by an icebreaker, started in the second half of October and could continue until Dec. 15. Ion is starting its survey at the eastern end of the Alaska Beaufort, moving progressively west and eventually shooting a couple of seismic lines across into the northern Chukchi Sea — Ion planned to survey the eastern part of the Beaufort, to the east of the Colville River Delta, in October, moving to the western part of the Beaufort in November, after the Barrow bowhead whale hunt. The Chukchi Sea lines will enable the images from the 2006 Chukchi Sea survey to be correlated with the new images from the Beaufort.

## Survey technique

In a marine seismic survey a seismic vessel tows arrays of air guns that periodically discharge sound through the ocean water and into the rocks below the seafloor. The vessel also tows "streamers" of special microphones called hydrophones that detect echoes from the air-gun sounds, reflected from rock strata deep below the seafloor.


According to the Bureau of Ocean Energy Management's environmental assessment for Ion's Beaufort Sea survey, the in-ice system involves towing a single streamer, either 2.8 or 5.6 miles long. Equipment attached at intervals along the streamer will maintain the streamer at a depth of about 31 feet below the surface, thus enabling the streamer and geophones to run below the bottom of any sea ice. An icebreaker moves ahead of the seismic vessel, clearing a route through the ice. Ion has said that the system can operate in conditions where ice covers up to nine-tenths of the sea surface.

## Wildlife monitoring

The environmental assessment says that wildlife observers on the vessels will monitor for marine mammals during daylight hours. Night vision equipment will be available to watch for wildlife after dark. And the icebreaker has an infrared imaging system for detecting seals and polar bears on the ice. Ion has said that it will not ramp up the survey air guns after dark unless it has established that there are no marine mammals within appropriate exclusion zones around the guns.

The Bureau of Ocean Energy Management, or BOEM, has determined that the seismic program will have negligible environmental impacts. In the environmental assessment BOEM says that many bowhead and beluga whales and other marine mammals will already have departed the survey area for the winter at the time of the survey. Polar bears and seals which live on and around the ice during the winter could experience small and temporary disturbance from vessel noise and seismic sound, BOEM says in a finding of no significant impact. And the overall impact of the seismic operations on sea ice, the polar bear's critical offshore habitat, would be slight, given the small area of ice affected and the relative rapidity with which ice would reform behind the vessels conducting the survey, BOEM says. ●

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• EXPLORATION & PRODUCTION

# Great Bear determining its next steps

Company has completed first two vertical test wells and is evaluating drilling results before moving ahead with more drilling

By **ALAN BAILEY**  
Petroleum News

Great Bear Petroleum has now completed both of its initial vertical test wells, the Alcor No. 1 and the Merak No. 1, and is in the process of determining the next steps in its shale oil project on Alaska's North Slope, Patrick Galvin, Great Bear's vice president of external affairs and deputy general counsel, told Petroleum News in a Nov. 2 email.



JUDY PATRICK

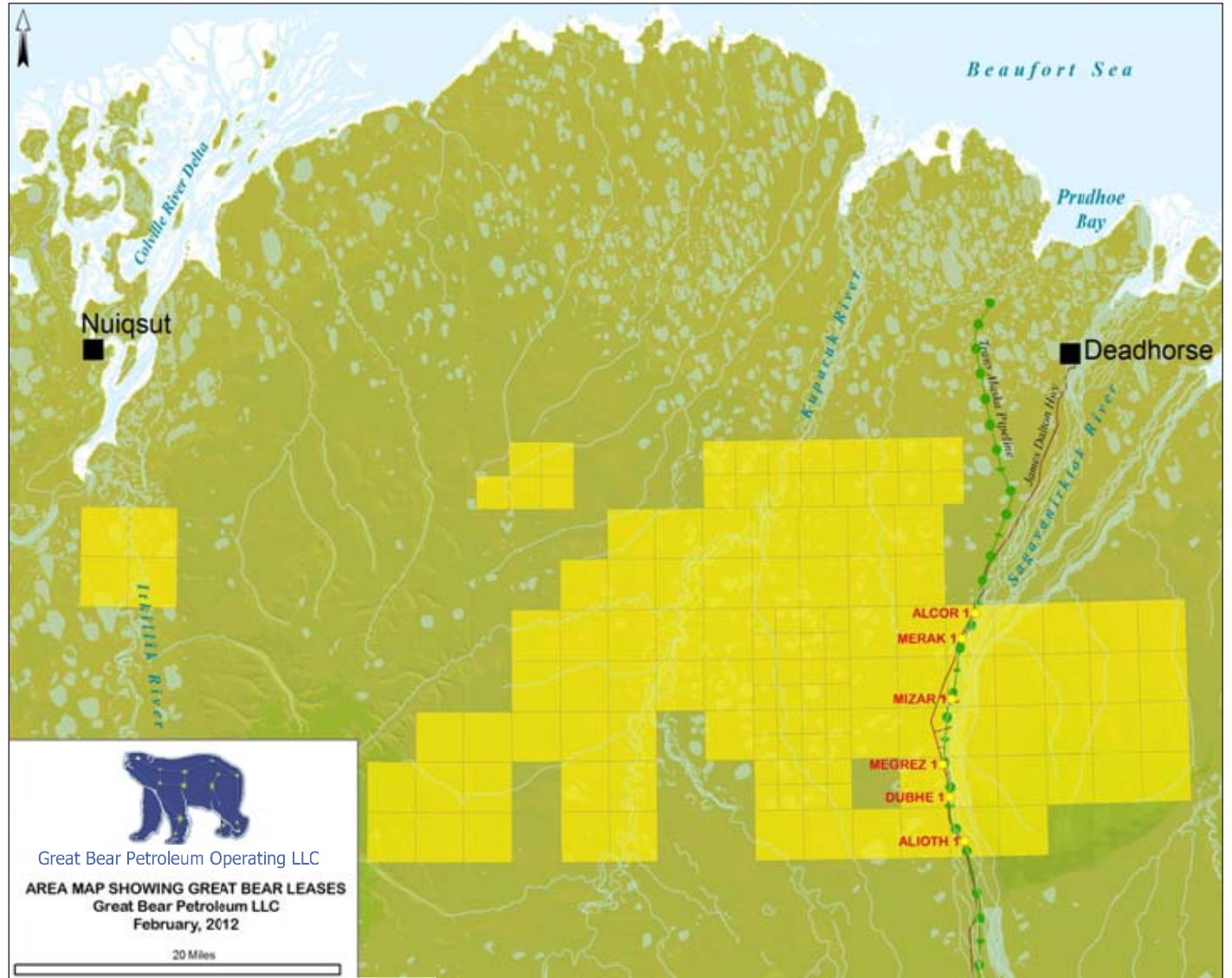
"Great Bear is currently conducting complex technical analysis on the well data and whole cores to evaluate the results," Galvin said. The company has acquired a large amount of core and other well data, he said.

ED DUNCAN

### Found oil

In September Ed Duncan, Great Bear's president and CEO, told the Alaska Oil and Gas Congress that his company had found oil as anticipated in source rocks encountered by the Alcor well and that the thicknesses of the source rocks penetrated by that well had exceeded expectations. The well penetrated all three of the North Slope's major source rock intervals: the Shublik, the lower Kingak and the GRZ/HRZ.

Great Bear has acquired state leases see **GREAT BEAR** page 13



Great Bear has staked six shale oil test wells near the North Slope Haul Road and has successfully drilled the most northerly of those wells, the Alcor No. 1.

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## • FINANCE &amp; ECONOMY

# State sets Marathon takeover conditions

Consent decree for Hilcorp purchase of Marathon's Cook Inlet assets sets limits on natural gas prices and conditions for LNG exports

By **ALAN BAILEY**  
Petroleum News

The State of Alaska and Hilcorp Alaska LLC have agreed on a proposed consent decree, as a prerequisite to Hilcorp completing its purchase of Marathon Oil Co.'s Cook Inlet assets, state Attorney General Michael Geraghty announced on Nov. 7. The consent decree, designed to resolve competitive concerns over the purchase, puts a price cap on gas sold for local use over the next five years and prohibits Hilcorp from selling gas for

*The state has filed the consent decree in Alaska Superior Court. The court will hold a hearing to determine whether to approve or reject it after a 60-day public comment period.*

export as liquefied natural gas unless all local gas supply needs are met.

The state has filed the consent decree in Alaska Superior Court. The court will hold a hearing to determine whether to approve or reject it after a 60-day public

comment period.

## April announcement

Hilcorp announced in April that it had come to an agreement with Marathon for the purchase of the Marathon assets. And, with Hilcorp having just completed the purchase of Chevron's Cook Inlet properties, Hilcorp was set to become the dominant producer of natural gas from the Cook Inlet basin.

It became known during the summer that the Federal Trade Commission, presumably concerned about a single company dominating a small, isolated gas market, was investigating the proposed takeover. And the state attorney general, with a role in protecting the interests of Alaska's gas consumers, was also involved in the investigation.

The investigation, with no clear end date, became a subject of major concern to Southcentral power and gas utilities. With utility gas supplies from the Cook Inlet's aging gas fields becoming tight, and with contracted utility gas starting to fall short of projected utility gas demand, utilities have been striving to sign new gas supply contracts with gas producers. But the takeover investigation put contract negotiations into something of a state of limbo, with Marathon unable to commit supplies from fields it was in the process of selling and Hilcorp reluctant to negotiate new supply contract while uncertainty continued over its Marathon purchase.

## Drilling delays?

The takeover impasse also raised concerns over potential delays in urgently needed drilling in Marathon's gas fields. Hilcorp, a recent newcomer to the Alaska oil and gas industry, has been moving forward on an aggressive program of field development.

"Hilcorp is well known in the oil and gas industry as an active developer in mature oil and gas basins such as Cook Inlet," Geraghty said when announcing the filing of the decree. "It plans to spend approximately \$300 million over the next two years on new Cook Inlet development in addition to the more than \$200 million Hilcorp spent in 2012 alone. This settlement allows Hilcorp to keep investing in Cook Inlet while still protecting consumers."

And in a Nov. 7 press release Hilcorp expressed its concurrence with the terms of the decree.

"Hilcorp appreciates the efforts of the Attorney General's office and other state agencies, including the Department of Natural Resources, that worked hard to facilitate this agreement," the company wrote. "We look forward to working closely with them as we move towards completion of this transaction. Hilcorp also remains committed to completing this acquisition as quickly as possible as it opens the door for further development and investment into the Cook Inlet basin." ●

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INTERNATIONAL

# BP's Indonesia LNG project may expand

Agreement with government sets stage for a \$12B third train at Tangguh, with a sizeable share of gas committed for local use

By WESLEY LOY

For Petroleum News

BP has won Indonesia's approval for a potential \$12 billion expansion of the Tangguh liquefied natural gas project.

The expansion would involve developing a third liquefaction train for Tangguh, located in Papua, which is the western half of the huge island shared with Papua New Guinea.

Indonesia's Ministry of Energy and Mineral Resources, along with the country's regulatory body for oil and gas upstream activities, approved in principle the "plan of further development" for Tangguh, BP said.

The approval was announced Nov. 1 in London by British Prime Minister David Cameron, following a bilateral meeting with Indonesia President Susilo Bambang Yudhoyono. BP's chief executive, Bob Dudley, and other company executives attended the meeting.

The agreement on the expansion "is great news for BP, one of the largest foreign investors in Indonesia," Cameron said in a press release from BP. "It's a huge boost to the UK's growing trade and investment in Indonesia's emerging market."

The deal includes significant provisions to supply energy to Indonesia villages and industry.

## Tangguh's history

BP Indonesia operates Tangguh as contractor to Indonesia's oil and gas regulatory body, known as BPMIGAS.

BP holds a 37.16 percent interest in the project. Other Tangguh contract partners are MI Berau B.V. (16.3 percent), CNOOC Ltd. (13.9 percent), Nippon Oil Exploration (Berau) Ltd. (12.23 percent), KG Berau/KG Wiriagar (10 percent), LNG Japan Corp. (7.35 percent) and

Talisman (3.06 percent).

The government of Indonesia in 2005 gave the go ahead for the Tangguh LNG project in Bintuni Bay of West Papua. The site is several hours by air east of the Indonesian capital of Jakarta.

The project takes its name from the Indonesian word for "resilient and strong." It involves tapping six fields with proven gas reserves of more than 14 trillion cubic feet. Gas is piped from offshore production platforms in Bintuni Bay to an onshore processing plant. The LNG is then shipped out aboard specialized tankers.

Tangguh LNG began operations in mid-2009. The project has long-term contracts with four customers in China, Korea and Mexico, BP says.

## Gas for locals

BP in early September submitted the plan for development of a third train. A train is a unit that purifies and liquefies gas.

"Approval of the plan is an important step in preparation for the final investment decision for this expansion, which is

see **INDONESIA LNG** page 15

continued from page 11

## GREAT BEAR

across a fairway of land in a region south of the producing North Slope oil fields, in an area where geologists think it likely that the source rocks have in the past generated oil. The company wants to determine whether it is possible to viably produce oil directly from any of the source rocks, in a similar manner to oil production in shale oil plays such as the Eagle Ford and Bakken in the Lower 48 states.

Great Bear has staked out a series of six test wells alongside the North South Haul Road, to the south of Deadhorse. The Alcor No. 1 and Merak No. 1 are the two most northerly wells in this series.

The initial purpose of the test wells is to obtain rock core and well data, to determine whether shale oil production seems possible. But, assuming that this initial testing pans out, determining the technical and economic viability of production will then entail drilling and hydraulically fracturing horizontal wells through target source rocks, to test the oil production characteristics of the rocks.

In July, while the drilling of Alcor No. 1 was in progress, Galvin told Petroleum News that Great Bear hoped to drill a horizontal lateral well out from the vertical Merak No. 1 for an initial production test, after the drilling of the vertical well had been completed. The company then expected to move back to the Alcor 1 well to drill a horizontal lateral there, before heading south to drill a third vertical well, the Mizar well by the end of the year.

## Extended testing

Since then, apparently buoyed by the

initial drilling results, Great Bear has applied to Alaska's Division of Oil and Gas for permission to conduct extended production tests using its initial horizontal wells, once these wells have been drilled. The company's approved plan of operations assumes just five to seven days of testing but the company wants to extend the test durations to 180 days. This extended testing would eliminate the need for a pilot test pad for production testing, thus potentially enabling a decision in mid-2013 on whether to move to a full-scale shale-oil development, Duncan told the Oil and Gas Congress. Great Bear had anticipated making that decision in 2014.

One complication is an unanticipated problem in the Alcor No. 1 well. Apparently a glitch that occurred during the drilling of that well resulted in the installation of well casing that is unsuitable for drilling the horizontal sidetrack that is necessary for production testing. Great Bear has requested approval from the Division of Oil and Gas for a change to Great Bear's plans, to allow the drilling of a second Alcor well, so that the horizontal well can be drilled.

But at this point Great Bear has not said what its next drilling operation will be. Based on the anticipated timing laid out in the company's plan of operations, the drilling program would appear to have slipped a little behind schedule. And with access to a single drilling rig, the company must presumably decide on one of the two or three drilling options that are possible for the next step in the company's program. ●

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## • UTILITIES

# Study investigates small scale HVDC

Preliminary results out from phase II look at whether 1 MW high voltage direct current transmission would work for rural areas

By KRISTEN NELSON

Petroleum News

The Denali Commission has funded two phases of a study looking at whether high voltage direct current, HVDC, transmission would work for small Alaska rural communities, those which need about 1 megawatt of electricity.

Jason Meyer, emerging energy technology program manager for the Alaska Center for Energy and Power, ACEP, at the University of Alaska Fairbanks, told the Anchorage Association for Energy Economics at a Nov. 5 meeting that this isn't the big backbone project that's been discussed to use North Slope natural gas to generate electric power which would be transmitted to Interior and Southcentral Alaska via HVDC.

It isn't even the size of project would take power off the backbone line for major communities.

"We're on the other side of that sector," Meyer said. "So you have the trunk, which is the backbone project, branches (to the) larger hubs, and then we're the twigs."

## HVDC

As Meera Kohler, president and CEO of Alaska Village Electric Cooperative and Robert Jacobsen, Ph.D., vice president, science and technology for Marsh Creek LLC, said in presentations over the summer, HVDC is used to take massive amounts of power long distances, and the transmission lines for HVDC are much cheaper than AC alternating current lines.

But there is a big expense — at both ends of the line, converter stations are required to take AC generation and put it on the HVDC line and then take it off and put it into the grid at the other end.

HVDC hasn't been considered economic for distances under 300 miles based on economics, but because of environmental and right-of-way issues today, it has become economic well under 300 miles.

## Two goals

Meyer said the project ACEP is managing has two goals: developing low-cost small-scale HVDC converter technology, and developing innovative transmission infrastructure.

Meyer said the scale needed for rural Alaskan communities is megawatt-scale.

That's compared to large commercial-scale technology in use to move large quantities of power across long distances — currently in use in China and the Lower 48.

While technology is available for the large projects — in the size range from hundreds to thousands of megawatts — and even for the medium-sized projects, from tens to thousands of megawatts, "there is no commercial technology available for anything under that (mid-sized scale); so if you're looking at a megawatt there isn't anything available."

## Phases of project

Phase I of the project, completed in 2009, evaluated the technical feasibility of HVDC converter technology. That project, also funded by the Denali Commission, was managed by the Alaska Village Electric Cooperative.

In that phase, Princeton Power did preliminary estimates on the breakeven point for HVDC costs and found that lifecycle HVDC costs were projected to be lower

than alternating current lifecycle costs for overhead interties longer than about 10 to 23 miles, Meyer said.

Phase I developed a prototype that worked, he said, and in phase II a demonstration-scale prototype was developed, with converters to laboratory engineering scale.

Polarconsult, the project lead, also "identified some innovation in actual transmission line infrastructure that they felt would be relevant," specifically fiberglass poles, which would allow poles to be spaced farther apart, and also provide a transportation cost savings.

Phase II, with full-scale prototyping, was completed in May and a preliminary report is out, with the final report expected by the end of the year.

## Converter demonstration

Meyer said the scale of the converter — to convert AC to DC power and back again at either end of the transmission line — is about 1 megawatt, which he described as the general size appropriate to a lot of rural Alaska communities.

The demonstration went OK, he said, and showed the system could be brought up to full voltage but said there were some issues in the design and actual layout. They aren't major flaws, he said, but will require some tweaking of the system to make it work appropriately.

But, he said, it's not turnkey, "you can't bring this up here today."

Polarconsult has installed one of their prototype fiberglass poles in Fairbanks and will monitor it for a couple of years. He said there are concerns with maintaining wires on a fiberglass pole and also cold-weather concerns.

## Funding sought

Meyer said Polarconsult is seeking phase III funds for an Alaska-based laboratory and field demonstration of converter units. He said that stage would involve bringing finalized converters to Alaska and doing laboratory and field demonstrations.

The general findings, he said, are that HVDC is a mature and stable technology, but power scales on which it is currently available are much too large for small-scale Alaska applications. ●

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• EXPLORATION & PRODUCTION

# Companies start pre-packing ice roads

*Snow on the North Slope is deeper than normal but soil temperatures remain above freezing as winter drilling season approaches*

By **ALAN BAILEY**  
Petroleum News

With greater than normal depths of snow on the tundra of Alaska's North Slope, companies have started pre-packing ice road routes, in preparation for ice road construction for this winter's off-road drilling operations, Melissa Head, manager of the Alaska Department of Natural Resources Northern Oil and Gas Team, told Petroleum News in a Nov. 5 email.

The Department of Natural Resources, or DNR, has approved planned pre-packing activities by Savant Alaska, Pioneer Natural Resources, Repsol, ConocoPhillips and Linc Energy, Head said. Savant is presumably planning to drill in the Badami field this winter, while the other four companies are known to have exploration drilling plans.

### Standard technique

Ice roads, constructed after winter temperatures have dropped to suitably low levels, have become the standard means of transporting massive drilling rigs to remote sites on the Slope without damag-



Pre-packing an ice-road route with snow and ice chips conserves snow, ready for road construction, as well as improving tundra protection.

ing the delicate tundra. The roads melt during the summer, leaving little or no trace of their brief existence.

Road construction proper cannot start until DNR determines that the snow is deep enough and the ground sufficiently frozen to allow off-road travel by vehicles otherwise restricted to on-road operation. But it has become a common practice to

use tundra-certified vehicles to pre-pack the snow along a road route and spray the route with water, thus preventing wind from blowing snow back off the route, speeding up the freezing of the ground and providing maximum protection to the tundra.

Pre-packing gives companies a head start on road construction, shortening the

time required for construction after the tundra opening: The less time required for road construction, the more time becomes available for drilling wells in the relatively short winter drilling season.

### Not frozen yet

Because of high snow depths, soil temperatures remain above freezing at the moment, Head said.

"To open the tundra to general winter off-road travel snow depths must reach 6 inches in the coastal areas and 9 inches in the (Brooks Range) foothills, and soil temperatures must reach -5 C at 30 centimeters below the tundra surface," Head said.

In a notice to North Slope operators issued on Oct. 25, DNR said that it may allow standard ice-road construction to start on pre-packed routes before the general opening of winter tundra travel, if the department determines that required criteria for opening have been attained along the road route.

### Four areas

For the purpose of managing winter

see **ICE ROADS** page 16

continued from page 13

## INDONESIA LNG

currently expected to be taken in 2014," BP said. "This would potentially enable commissioning operations for the new train to begin in late 2018."

The third train would boost liquefaction capacity by a third, to 11.4 million tons annually, BP said.

Train 3 is expected to cost Tanguh project partners up to \$12 billion.

The expansion plan includes a number of provisions for supplying Indonesia itself with more energy.

BP and its partners have agreed to sell and supply 40 percent of the LNG output from Train 3 to Indonesia's state electricity company, BP said.

"In addition, as part of the plan up to 15 million standard cubic feet a day of

pipaged gas, supplied from the Tanguh fields and sufficient to generate up to 50MW of local power, would be allocated for sale from the date of the Train 3 start-up," BP said. "This would supply and enable local infrastructure and commercial business as well as stimulate light industrial development, particularly in the North Shore villages of Teluk Bintuni Regency and beyond."

BP said tendering would now begin for the front-end engineering and design, or FEED, services for the proposed Train 3 development.

The company noted, however, that further regulatory and partner approvals are required before the final investment decision for Tanguh expansion is made. ●

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## ENVIRONMENT & SAFETY

### New research into timing of dispersant use

As part of a research program funded by the Bureau of Safety and Environmental Enforcement, or BSEE, into the use of dispersants for oil spill response, S.L. Ross Environmental Research has been conducting tests in BSEE's Ohmsett test facility, according to a recent Ohmsett newsletter.

Oil spilled in water degrades over time and, for dispersants to be effective in responding to an oil spill, the dispersants need to be applied before that degradation reaches a point where the dispersants cease to work. The objective of the research is to evaluate the potential time window within which dispersants can usefully be applied following a spill. The Ohmsett facility consists essentially of a large, long water tank with equipment that enables the simulation of ocean conditions. The dispersant research involved the placement of several different types of crude oil in the tank and then periodically testing the condition of the oils and the effect of dispersants on the oils as the oils weathered. Apparently, depending on the type of oil involved, weathering of the oil took place over periods of 3.5 to 61 hours.

The test facility is located in New Jersey and is currently closed while staff clears up damage caused by Hurricane Sandy.

—ALAN BAILEY

## GOVERNMENT

# GOP claims control of Alaska Senate

By BECKY BOHRER

Associated Press

Republicans on Nov. 7 wasted no time in claiming control of the Alaska Senate, one day after winning a majority of seats in the chamber.

Coming into Nov. 6's elections, the Senate was comprised of 10 Democrats and 10 Republicans, with six Republicans joining Democrats to form a bipartisan majority. The GOP won at least 12 seats Nov. 6, in a political landscape reconfigured by redistricting. Two other races were too close to call.

During a hastily called news conference late in the afternoon Nov. 7, after organizational talks earlier in the day, an 11-member Republican majority was unveiled, with Sens. Kevin Meyer and Lesil McGuire of Anchorage the only members of the bipartisan coalition — at least so far — to join.

### Huggins to lead Senate

It was announced that Sen. Charlie Huggins of Wasilla will be Senate president, while Sen. John Coghill of North Pole will be majority leader. Coghill defeated Sen. Joe Thomas, D-Fairbanks, on Nov. 6.

McGuire will be rules chair and Meyer will serve as co-chair of the powerful Senate Finance Committee, along with Pete Kelly of Fairbanks. Elections results showed Kelly defeating Sen. Joe Paskvan, D-Fairbanks.

Huggins called the group a work in progress and said there would be no requirements or litmus test for others to join. In

addition to Kelly, the group includes four Senate newcomers: Click Bishop of Fairbanks, Mike Dunleavy of Wasilla, Peter Micciche of Soldotna and Rep. Anna Fairclough of Eagle River. Fairclough defeated Sen. Bettye Davis, D-Anchorage, on Nov. 6.

The other two members of the majority are Cathy Giessel of Anchorage and Fred Dyson of Eagle River.

Conspicuously absent were the remaining Senate Republicans, Bert Stedman of Sitka and outgoing Senate President Gary Stevens of Kodiak, who have been more moderate voices and critical of Gov. Sean Parnell's plan to cut oil taxes. Stevens did not immediately return a call Wednesday. Two other Republicans who were part of the coalition lost primary races.

### Oil production, affordable energy

The majority's three areas of concern will be increasing oil production, getting affordable energy to Alaskans and developing sustainable capital and operating budgets for "current and future generations."

The politician who could benefit most from Nov. 6's Republican gains in the Legislature, Parnell, said Nov. 7 he was pleased as the GOP had solidified its strength in the House and took control of the Senate.

Democrats feared Republican control of both the House and Senate would mean a rubber-stamping of Parnell's tax-cut ideas, which they consider dangerous.

Democrats on Nov. 6 won or held six seats, including that of Sen. Dennis Egan of Juneau, the only lawmaker whose seat was not up for grabs in 2012. Two Democrats were in races where absentee votes might factor in: results showed Paskvan was trailing Kelly by 517 votes and Sen. Hollis French of Anchorage leading Republican Bob Bell by 247 votes.

In southeast Alaska, in the other incumbent pairing, Sen. Bert Stedman, R-Sitka, defeated Sen. Albert Kookesh, D-Angoon. Stedman had been a leader in the coalition, and helped guide Senate efforts to change Alaska's oil tax structure.

### House contests

On the House side, Rep. Bill Thomas, R-Haines, faced a possible upset against political newcomer Jonathan Kreiss-Tomkins, who led by 43 votes with all precincts reporting but where outstanding ballots also were being watched.

Rep. Peggy Wilson, R-Wrangell, won a three-way race that included Rep. Kyle Johansen, R-Ketchikan. Johansen, a former

see **SENATE CONTROL** page 17

continued from page 15

### ICE ROADS

tundra travel, DNR has subdivided state land north of the Brooks Range into four areas: the western coastal area, the eastern coast area, the lower foothills and the upper foothills. At present all four areas remain closed to general off-road travel.

DNR's Northern Oil and Gas Team is currently on the North Slope assessing conditions and will issue a status report by Nov. 9, Head said. ●

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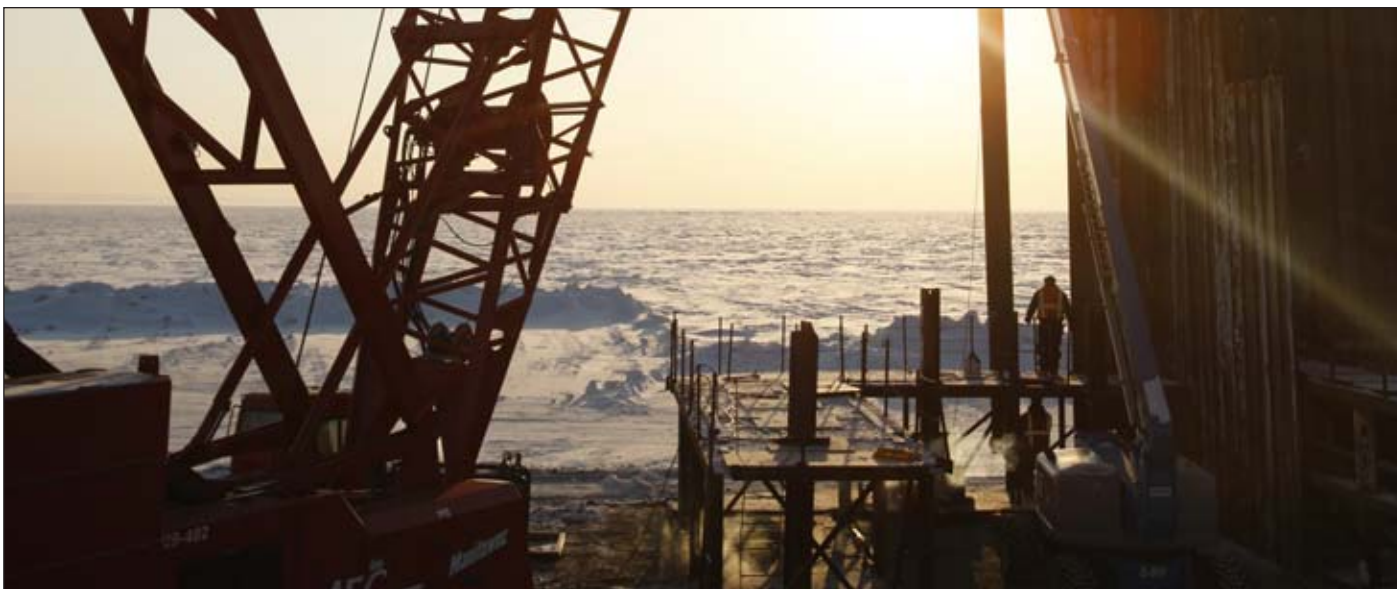


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## EXPLORATION & PRODUCTION

### Weather delays Linc plans in Cook Inlet

A run of bad weather forced Linc Energy Inc. to delay its underground coal gasification exploration program in Southcentral Alaska, the company told investors recently.

After moving its custom rig to the KEEX02 well site on the west side of Cook Inlet, some 18 miles southwest of the Beluga airstrip, “a series of unseasonably early, strong winter storms” delayed operations by “requiring road and facility repairs before drilling operations could commence,” the Australian independent said in third quarter filings.

Linc is drilling using a new rotary-core rig built by Buffalo Custom Manufacturing. The rig — Linc Energy Core Rig No. 1 — is the first of its type in Alaska, the company said.

As the company restarts its exploration efforts, Linc said, “discussions are ongoing with a number of possible partners and off-takes for UCG derived syngas in the region.”

Underground coal gasification is a process of synthesizing the carbon and oxygen molecules in deep coal deposits into methane, the chief component of natural gas.

Also during the quarter, Linc received a \$3.7 million tax credit from the State of Alaska for exploration work the company undertook in the winter of 2011 and 2012.

—ERIC LIDJI

### DGGS releases online index to geologic data

Alaska’s Division of Geological and Geophysical Services, or DGGS, has released an online application for locating unpublished reports, maps, field notes, drilling logs and other geology related data using a map-based interface. The application, called the Alaska Geologic Data Index, or AGDI, can be accessed on the DGGS website at <http://maps.dggs.alaska.gov/agdi/>.

The application is the first publication in a new “Digital Data Series,” which will enable DGGS to more easily release up-to-date geologic data and online maps — the series will enable members of the public to delve into the division’s geologic data using a map-based interface, the division says.

The available content in this first application includes project documents, imagery and geochemical data, while the application’s index references data and documents from domains that relate to geology, including oil and gas; engineering geology; the minerals industry; scientific data; and government agency archives. The index catalogues the physical location of the data, as well as providing a basic description of the data and information about data accessibility, DGGS says.

DGGS is also encouraging institutions and companies to contribute information about unpublished data to the system — enquiries about the system should be directed to DGGS at 907-451-5028.

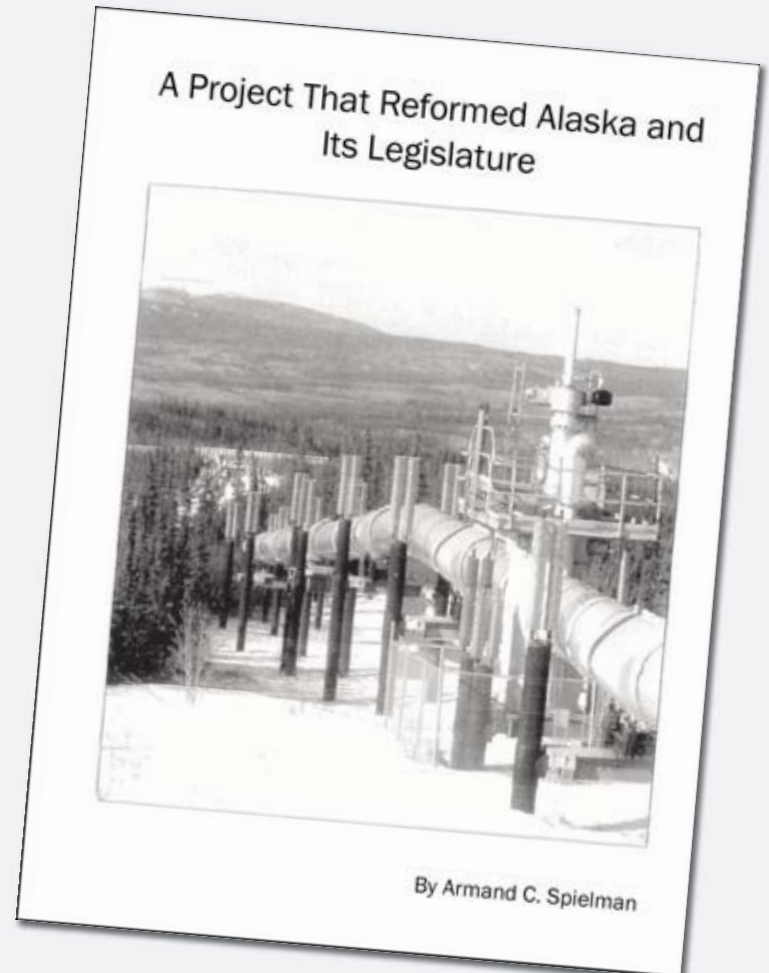
—ALAN BAILEY

## CORRECTION

### Homer Electric has preliminary license

The article “On the precipice edge” in the Nov. 4 edition of Petroleum News states that Homer Electric Association has obtained a license for a small hydropower plant at Grant Lake on the Kenai Peninsula. In fact, the utility has a preliminary license to study the possible construction of a 5-megawatt hydropower project at Grant Lake — the Federal Energy Regulatory Commission has not given the go-ahead for the construction of the power plant, Homer Electric has pointed out.

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continued from page 16

### SENATE CONTROL

House majority leader, ran as an unaffiliated candidate in House District 33, after skipping a crowded GOP primary in August. He finished a distant third, behind Democrat Matt Olsen.

Republican Rep. Lance Pruitt held a 96-vote lead over Democratic Rep. Pete

Petersen in District 25 in Anchorage, and was confident the outstanding absentee ballots favored him; Rep. Tammie Wilson, R-North Pole, led Rep. Bob Miller, D-Fairbanks, by 294 votes in District 2, with all precincts reporting and Rep. David Guttenberg, D-Fairbanks, led Rep. Alan Dick, R-Nenana, by 253 with all precincts reporting in District 38, with non-affiliated candidate Dorothy Shockley in third. ●

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## LAND & LEASING

### Alberta logs another billion

In this age of “every dime a prisoner,” the Alberta government drew some comfort from again squeaking past the C\$1 billion mark in its annual sales of exploration lands.

By the barest of margin, it edged past what was once a magic number by collecting C\$18.21 million in its second October auction — second only to a mid-June return of C\$17.66 million as the low-water point for 2012.

The government still has another three auctions to solidify its position, but not enough to come even close to last year’s C\$3.6 billion.

A total of 46,014 hectares (113,700 acres) changed hands Oct. 31 at an average C\$395 per hectare, pushing the year to date total to 2.72 million hectares at a per-hectare average of C\$369, a far cry from the comparable numbers in 2011 of 3.88 million hectares at an average C\$833.

Topping the bidding was the C\$3.32 million paid by Sandstone Land & Mineral for 768 hectares, with an average C\$4,321 per hectare.

Steve Hager, senior exploration analyst at Canadian Discovery, said the license at Kakwa in northwestern Alberta includes three sections of petroleum and natural gas rights, emphasizing that the Montney formation remains a popular target for oil and liquids-rich gas.

—GARY PARK

*A total of 46,014 hectares (113,700 acres) changed hands Oct. 31 at an average C\$395 per hectare, pushing the year to date total to 2.72 million hectares at a per-hectare average of C\$369, a far cry from the comparable numbers in 2011 of 3.88 million hectares at an average C\$833.*

## EXPLORATION & PRODUCTION

# Cook Inlet Energy restores Redoubt well

Flow rate from RU-1 well on Osprey platform impresses after company completes an extensive workover operation; more to come

By WESLEY LOY

For Petroleum News

Cook Inlet Energy LLC recently reactivated another well on its offshore Osprey platform, following a vigorous “fishing” expedition.

Osprey is the southernmost platform in Cook Inlet, and sits in the Redoubt unit.

Cook Inlet Energy and its parent company, Tennessee-based Miller Energy Resources Inc., acquired the platform in late 2009, along with a collection of other oil and gas assets on the inlet’s west side.

Since then, the Anchorage-based Cook Inlet Energy team has been working to restore production from the shut-in wells on Osprey. The platform had multiple operators previously, the last of which liquidated through bankruptcy.

On Oct. 30, publicly traded Miller Energy announced that a workover had been completed on the RU-1 oil well, and that its initial production was 482 barrels per day.

That greatly exceeds the average flow rate of 125 barrels per day under the previ-

ous operator from September 2007 through July 2009, Miller said in a press release.

### Gone fishin’

During an Oct. 30 investor conference call, Cook Inlet Energy’s chief executive, David Hall, said the RU-1 well was producing oil with no water cut.

“I’m not aware of any other crude oil well on the Cook Inlet that produces 100 percent oil,” said Hall, a veteran of the Cook Inlet oil scene. “RU-1 is well-positioned high on the Redoubt Shoal structure, producing from the Hemlock formation, which is over 700 feet thick.”

Cook Inlet Energy used its new rig 35, recently installed atop the Osprey platform, to do the well workover. The rig showed outstanding performance on quite a complex operation, he said.

The workover entailed the removal of numerous fish from the well. In oil industry parlance, a fish is anything left behind in a wellbore. In this case, the fish included bad electric submersible pumps, packers, subsurface valves, clamps, straps, electrical cable, “basically various stuff left in the well from previous operators,” Hall said.

“Thankfully, we were able to remove the majority of these items,” he said. “We estimated that we removed a total of 31,000 pounds.”

### More workovers planned

During the workover, Cook Inlet Energy also encountered collapsed casing nearly 2.5 miles down that took considerable time to expand back to its original inside diameter, Hall said.

A new electric submersible pump was installed in bringing the RU-1 well back online on Oct. 27, Hall said.

Another well, RU-7, has been running for some time on the Osprey platform. Since January, that well has produced nearly 60,000 barrels of oil and is far exceeding its historical rates, Hall said.

Overall, production from the Osprey platform is running just over 700 barrels per day.

The company is now setting its sights on reviving other Osprey wells.

The next target is RU-3, a 14,000-foot natural gas well that had initial production of more than 8 million cubic feet a day before output dramatically fell off, Hall said.

The previous operator thought it was a formation problem, he said.

“We believe it was not a formation problem, but rather a surface mechanical issue due to the high pressure with nearly 4,000 psi without a sufficient pressure reducing device in place to keep the wellhead and associated piping from literally freezing off,” Hall said. “Our workover plan basically consists of removing all the old completion and reassessing the zone of interest, followed by installing the necessary devices to effectively reduce the high pressure without freezing.”

Rig 35 already has been skidded over the RU-3 well, which Hall believes has “enormous potential” for supplying the company’s internal gas needs and helping it become a net gas exporter. ●

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INTERNATIONAL

# Cuba: 3rd exploratory well also a bust

By **PETER ORSI**  
Associated Press

The third exploratory well drilled this year in deep waters off Cuba has come up a bust, authorities announced Nov. 2, in yet another blow to the island's hopes of a petroleum windfall that could boost its sagging economy.

Work on the well in the Gulf of Mexico off the western tip of Cuba, sunk by key ally Venezuela's state oil company PDVSA, concluded Oct. 26, according to a notice published by Communist Party newspaper Granma.

"Although this well does not offer possibilities for commercial exploitation, the results obtained in the exploration will permit the guidance and expansion of the operations on the blocs of Cuba's Exclusive Economic Zone in the Gulf of Mexico," said the statement from Cuban government oil concern Cubapetroleo.

Two other wells drilled this year, first by Spain's Repsol and then by a subsidiary of Malaysia's Petronas and Russia's Gazpromneft, also failed to strike black gold. Sonangol of Angola has an option to drill next.

Deepwater oil exploration is an inexact science and it is common for exploratory wells to turn out to be dry or commercially

nonviable. And analysts say production is always at least three to five years out from a confirmed strike.

Still, it was disappointing news for Cuba, where an estimated 5 billion to 9 billion barrels of crude may lie deep below the Gulf of Mexico, according to geologic surveys.

All three wells drilled this year were sunk by a massive, one-of-a-kind semisubmersible platform, the Scarabeo-9, which was built with less than 10 percent U.S.-made parts to avoid triggering sanctions under Washington's 50-year-old economic embargo on the island.

The Scarabeo is supposed to sail to Brazil soon to drill there, and it is not clear when the rig might be available again for operations off Cuba.

In June, Russian company Zarubezhneft signed a contract to use a different rig to drill in much shallower waters off Cayo Coco, one of Cuba's leading tourist resort areas, beginning in late November. ●

## GOVERNMENT

### USCG winds down its 2012 Arctic Shield

The U.S. Coast Guard has completed its Arctic Shield 2012 program, the Coast Guard announced on Nov. 1.

The program, designed to ensure a Coast Guard presence in the Arctic during the summer open water season, involved the deployment into the Arctic of the cutter Bertholf; two 225-foot sea-going buoy tenders; a 283-foot medium-endurance cutter; and a 378-foot high-endurance cutter. Two MH-60 Jayhawk helicopters, with air, ground and communications crews, provided air support.

"For the first time, we had Coast Guard crews standing the watch and ready to support search and rescue, environmental protection and law enforcement operations in the Arctic," said Rear Adm. Thomas Ostebo, commander, Coast Guard 17th District. "Our Arctic Shield crews were directly responsible for saving or assisting 10 people and supporting partner agencies in conducting numerous operational missions."

During the summer the Coast Guard conducted training exercises with the U.S. Northern Command, Navy Supervisor of Salvage and Diving, and with other government agencies to develop expertise in the Arctic deployment of oil skimmers. Skimming systems tested included the Coast Guard's Spilled Oil Recovery System; a U.S. Navy fast-sweep boom system; and a "pocket skimmer," designed for use in ice-covered waters. The Coast Guard also tested the use of an amphibious craft.

The Coast Guard is conducting an assessment of Arctic vessel traffic density, to assess the need for safety improvements and the need for additional navigation aids. This assessment also involves working with government agencies on a study for the implementation of routing measures for ships transiting the Bering Strait.

Starting in February, the Coast Guard also conducted a community outreach program, visiting 33 Arctic communities and 27 village schools, to provide training in safety issues such as water and boating safety. The Coast Guard also provided medical, dental and veterinary assistance for some communities.

—ALAN BAILEY

## P&D

### Exxon tanker keel laid with lucky coins

A ceremonial keel laying was held Oct. 17 in Pennsylvania for the first of two new tankers being built to carry Alaska North Slope crude oil for ExxonMobil.

The double-hull tankers, to be called Liberty Bay and Eagle Bay, are scheduled for completion in 2014. Each will be 820 feet long and capable of carrying 730,000 barrels of crude, more than the current average daily production of North Slope oil.

Aker Philadelphia Shipyard described the ceremonial keel laying in an Oct. 17 press release.

"Keeping with long-held shipbuilding tradition, coins were placed on one of the keel blocks before the 230-ton unit was lowered into place in the dry dock," the release said.

Representatives from Aker and ExxonMobil's shipping affiliate, SeaRiver Maritime, placed the coins "as a ceremonial sign of good fortune and safe travels."

The new tankers will replace a pair of aging double-hull ships in the SeaRiver fleet.

Since its inception in 1998, Aker Philadelphia says it has delivered 17 vessels for operation in the Jones Act market.

The construction of the two new SeaRiver tankers, valued at \$400 million, will create more than 1,000 jobs, Aker said.

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# Stages of Alaska exploration



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Above, Apache Alaska running seismic on the West Side of Cook Inlet. The company conducted both on and offshore seismic activity from November 2011 through September of this year. The area spanned the Cook Inlet from Tyonek to Nikiski, covering more than 300 square miles.



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Repsol was a new explorer on the North Slope last winter and completed two wells, Kachemak No. 1 with Nabors Rig 9ES, and Qugruk No. 4 with Doyon's Arctic Fox rig. This winter the company plans to finish the five-pad program it began last winter.

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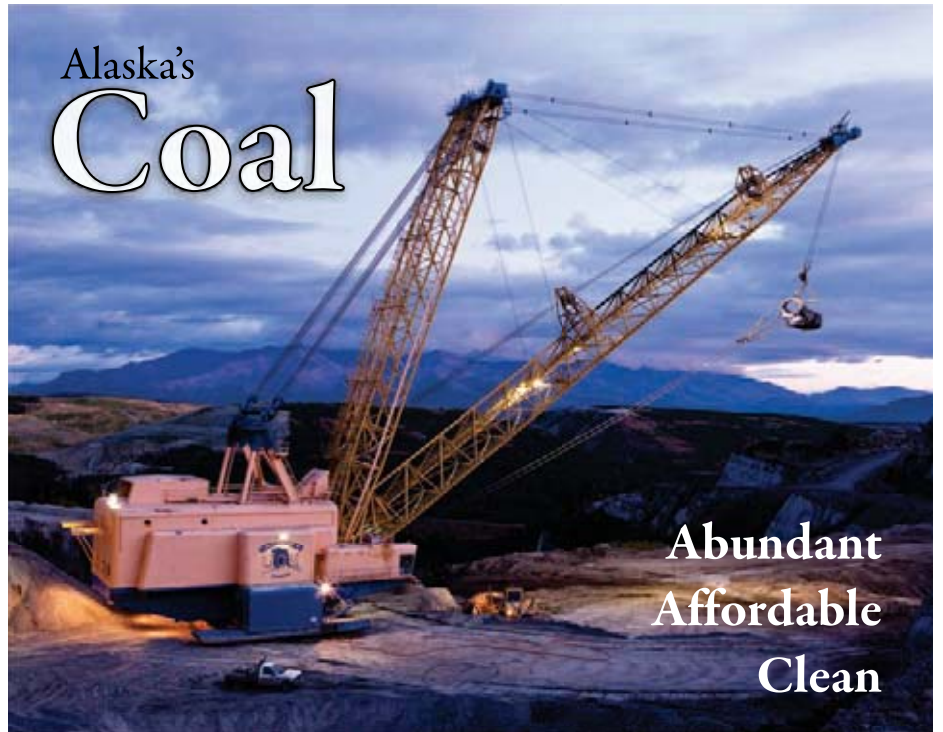
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## Stages of Alaska exploration



DOLLY NORTON

Statoil's Plan of Cooperation, or POC, involved visiting five villages during the summer from Nome to the Village of Atkasuk. Each visit included elders luncheons, local entity meetings, a POC meeting open to the public and an education function for children. Door prizes were provided for the elders, dinner and door prizes for the POC Meeting and the children's function.

JUDY PATRICK



Linc Energy's custom built rig LECR No. 1 is a hybrid rotary-core platform that Linc will use in the company's UCG exploration and development. That program is focused in Cook Inlet and the Interior. Linc plans to drill five wells, including one disposal well, at the Umiat field on the border of NPR-A this winter, using the Kuukpik No. 5 drill rig.

Far right, Shell workers conducting spill training in Dutch Harbor in preparation for drilling in the Chukchi and Beaufort seas. In the background is the ice breaking support vessel Aiviq.



JUDY PATRICK

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Pioneer Natural Resources executives Jay Still and Todd Abbott accompany other key team members on a winter tour of the Oooguruk Development Project as well as the company's Nuna No. 1 appraisal well last February. Pioneer is planning an additional appraisal well in the 2013 winter season, Nuna No. 2 as well as additional work at the Oooguruk Drill Site.

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• NATURAL GAS

# Supply, pricing uncertainty cloud LNG

Changes in industry weighing on both buyers and sellers, with buyers demanding lower prices, producers saying they can't go too low

By **LARRY PERSILY**

Federal Coordinator, Office of the Federal Coordinator

The speed — and uncertainty — of changes in global LNG supply, demand and pricing are weighing on buyers and sellers, said speakers at an international gas conference in London.

"There is no industry that is as volatile and cyclical as the LNG business — maybe pig farmers," was how Philip Olivier, president of Paris-based GDF Suez Global LNG, put it at the Gastech 2012 conference held Oct. 8-10.

"We find ourselves in very uncertain times as an industry," said Andrew Walker, vice president for global LNG at U.K.-based BG Group.

Conference registration totaled 1,500 delegates, with the largest contingent, 52, coming from ExxonMobil and its affiliates.

LNG buyers made clear at the conference that they want lower prices for the fuel. Producers were clear they couldn't go too low. And many speakers made clear that nothing is clear about future LNG pricing.

"I suggest North American and European prices will have to increase" to a level that will encourage exploration and development of new gas supplies, said Noel Tomnay, head of global gas research at U.K.-based energy consultants Wood Mackenzie. At the other end, high prices in Asia likely will drop as new LNG suppliers compete for customers, Tomnay said.

But regardless of what buyers may want, there is no cheap natural gas left in the world, said Fereidun Fesharaki, chairman of FACTS Global Energy, a Singapore-based international consulting firm. New



LARRY PERSILY

JUDY PATRICK

*Though buyers and sellers are haggling over pricing, particularly in Asia where buyers want to break the LNG link to oil prices, long-term deals are still the norm for LNG projects to justify the huge upfront capital cost of liquefaction plants. "Oil is like dating, gas is like getting married," Fesharaki said of the difference between the oil and LNG markets.*

LNG projects generally need to receive around \$12 per million Btu for their output, he said.

Tomnay said it's a struggle to find new Australian LNG export projects that can break even at less than \$11. Some, he added, need to sell their output at \$14. That's about \$1 higher than this month's spot market price in Asia.

Meanwhile, some Asia buyers are signing shorter-term contracts as they wait for new supplies later this decade from Australia, Papua New Guinea, Africa and possibly Russia, Canada and the United States, Fesharaki added. They are betting a supply surplus will drive down prices in a few years, he said.

They could win that bet. LNG supply will exceed Asian demand though 2025, according to forecasts from Japan's Institute of Energy Economics, said Kunio Nohata, senior general manager at the gas resources department of Tokyo Gas. And that doesn't count proposed export projects waiting final investment decisions by corporate boards.

Though buyers and sellers are haggling over pricing, particularly in Asia where buyers want to break the LNG link to oil prices, long-term deals are still the norm for LNG projects to justify the huge upfront capital cost of liquefaction plants. "Oil is like dating, gas is like getting married," Fesharaki said of the difference between the oil

and LNG markets.

The LNG industry has seen spectacular growth since Gastech, held every two years, started in 1972. Global LNG trade totaled 105 billion cubic feet in 1970. In 2011, it topped 11 trillion cubic feet.

Just 11 LNG tankers sailed the oceans 40 years ago. Today, 370 tankers ferry liquefied natural gas between continents, said Chris Clucas, commercial director at Cyprus-based Bernhard Schulte Shipmanagement. An additional 82 tankers are on order, said Mike Rowley, LNG division director at Tokyo-based Mitsui OSK Bulk Shipping.

## Global pricing

Much of the conference talk focused on whether LNG sales in Asia will remain linked to the price of crude oil or, with the anticipated entry of North American gas supplies to the market, shift to a new pricing formula somehow connected to the U.S. benchmark price at Henry Hub, La.

"Henry Hub just happens to be the lowest price in the world today," so everyone wants it, said Sir Frank Chapman, chief executive of BG Group. But Henry Hub, especially at today's low prices, has nothing to do with the actual cost of production, particularly capital-intensive LNG, he said.

"We don't think Henry Hub is always cheap," said Noel Nohata, of Tokyo Gas. The price at Henry Hub spiked above \$10 for several months in 2005 and again in 2008 — a fact that did not escape the notice of LNG players.

"It is important to note that Henry Hub pricing doesn't necessarily mean cheaper pricing," said BG Group's Walker.

"I believe that a fungible, global gas market eventually will come," Chapman said. Buyers will want more

see **LNG UNCERTAINTY** page 25



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## LNG UNCERTAINTY

flexibility to divert LNG cargoes to take advantage of market fluctuations. But he expects gas prices will be “highly regionalized for the foreseeable future.”

The Henry Hub price for pipeline gas delivered in the U.S. this month has hovered around \$3.50, with the price just under \$13 for spot-market LNG cargoes delivered in Asia. LNG buyers, however, have to cover the substantial cost of liquefaction and shipping to have gas delivered to their receiving terminal. Those “handling” costs would add at least \$6 per million Btu to the Henry Hub price from any of the proposed U.S. Gulf Coast and Canadian West Coast liquefaction terminals.

Nohata said Japanese buyers would like to add Henry Hub prices as a factor — but not as the exclusive link — to their LNG purchase contracts, along with a softer oil-price link when world crude markets are high. “We believe diversification is the biggest keyword,” he said, both in pricing formula and supply.

### Oil-linked pricing

“The oil-linked pricing mechanism is no longer rational,” said Shigeru Muraki, executive vice president of Tokyo Gas, Japan’s largest gas utility. The company is discussing with potential suppliers a combination of Henry Hub and oil-linked pricing, Muraki said, adding that Japan should take the lead in creating a pricing mechanism for LNG sold in Asia.

A new pricing formula, removed or at least cushioned from high global oil prices, is especially important for China and India, Muraki said, because expensive LNG strains their government subsidies of gas prices to consumers. “That kind of market cannot continue.”

But there is a limit to how much LNG suppliers can drop their price, said Wood Mac’s Tomnay. Developers must cover their heavy upfront costs, which can run tens of billions of dollars for the most expensive projects. Whereas the long-term contract price for 1 million Btu of LNG — roughly 1,000 cubic feet of gas — had been around 17 percent of the cost of a barrel of crude oil, it has softened in recent years to 14 percent, Tomnay said. “You can only go so far because of the high cost of these projects.”

When the world’s first LNG contracts were negotiated decades ago the fuel replaced oil, so oil-linked pricing made sense, said Jonathan Stern, chairman and senior research fellow for the natural gas program at the Oxford Institute for Energy Studies in England.

But no one expected oil prices to rise so much or gas demand to grow so much. As market fundamentals changed, the contracts did not adapt. “The discontent ... is growing” with crude-linked LNG prices, Stern said.

“How do you get a price that works for buyers and sellers,” said Robin Baker, global head of project and reserve-based finance at Paris-based bank Societe Generale. Finding that balance will be important in putting together project deals, he said.

### North American LNG

Several speakers talked about how much North American LNG exports could affect prices in Asia. There was no consensus.

“The impact will not be overwhelming,” said BG’s Chapman. Other projects from outside North America still will be needed to satisfy demand in the years ahead, and those projects will need higher prices to cover their costs.

First, the U.S. Department of Energy must decide how many LNG export projects it will approve from among the 15 or so applications that are on hold pending a consultant’s report on how gas exports could affect the nation’s economy.

“The issue in the Americas is an issue of political will,” said Andy Brogan, global leader of oil and gas advisory services at international consultants Ernst & Young. “There is a lot of skepticism that any politician in the U.S.” will have the will to allow exports, he added. Brogan is more optimistic of Canadian export projects, noting there is not the same political resistance to exports as in the U.S.

Supply and demand and the markets should set the level of U.S. exports, not the government, said Richard Guerrant, vice president for LNG at ExxonMobil Gas and Power Marketing.

BG Group’s Walker said he expects the Energy Department eventually will approve projects totaling more than 2 trillion cubic feet of liquefaction capacity a year, or 6 billion cubic feet a day. The industry will self-limit what it produces, he said, not wanting to flood the market.

Catherine Verdier, vice president for markets and strategy at France’s Total Gas & Power, offered a two-tier prediction:

About 4.5 bcf a day of U.S. exports by 2020, growing to 8 bcf a day by 2030. Still, she does not believe it will be enough to substantially affect global pricing. The LNG trade worldwide totaled 32 bcf a day last year, a figure expected to grow substantially in the coming decades.

The availability of gas to supply U.S. liquefaction terminals depends on continued use of hydraulic fracturing in shale plays. “As we all know, fracking has many opponents, especially in Hollywood,” said Derek Brower, editor at Petroleum Economist magazine.

The fracking fight is mostly about water — keeping the dirty stuff deep underground and away from community water supplies — said Susan Sakmar, energy law scholar at the University of Houston. “By far one of the most critical issues ... is what the EPA calls the water life cycle,” she said, adding that fracking a typical deep Marcellus Shale well consumes 5 million to 6 million gallons of water. Much of it comes back up and requires safe disposal.

Environmental controversies over fracking and shale drilling were cited as a good example of needing a “social license” to develop a project. “A social license is earned and it’s intangible,” said

Julie Nelson, director of public and governmental affairs at BG Group. “It’s simply not good enough to have all of your permits in place. ... A company must go above and beyond” to earn the public’s credibility and trust.

“You have to seek out the people who don’t want you and explain it to them,” said Darron Granger, senior vice president for engineering and construction at Cheniere Energy, developer of the first LNG export plant in the Lower 48 states.

### Demand Variables

Though proposed, Japan has not adopted a nuclear-free future for electrical generation as national policy, and the proposal could change, said Muraki, of Tokyo Gas. Such a policy could boost Japan’s demand for LNG. But Japan’s demand will not grow unless prices drop, he said. The country even is discussing building coal-fired generating plants to lower its power costs.

A gas pipeline from Russia is another option under consideration, Muraki said. A supply of pipeline gas to Japan “is the other issue that could change the pricing” of LNG. A pipeline, however, faces polit-

see LNG UNCERTAINTY page 27

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### NASCO's new website offers more product guidance

NASCO Industries Inc., the market leader in waterproof protective outerwear, said Nov. 6 that it has launched a completely new and updated website. Designed for quick and easy navigation, NASCO's new website ([www.nascoinc.com](http://www.nascoinc.com)) makes getting information just a click or two away. New features include a new mega menu for easy navigation, more product images and an industry based guide to aid in product selection. Please visit NASCO at [www.nascoinc.com](http://www.nascoinc.com) for the latest in protective outerwear solutions. What's in your rainwear? You are. Make sure you are protected.

### SAExploration orders \$14 million wireless GSX system

Geospace Technologies Corp. said Nov. 5 that it has received a \$14 million order from SAExploration Canada LTD for a 10,000-channel GSX wireless recording system. Delivery of this system to SAE is expected to occur in December 2012 and the system will initially be deployed in Canada.

"We committed an exhaustive effort to identify a wireless system that was the right fit for our company. Our goal was to provide our expanding client base with a system suited to a wide variety of climates. The system we looked for also had to complement our high HSE standards: our crews need to be able to take full advantage of lightweight equipment

and continuously improve efficiency in the field. We are very excited to be working with Geospace Technologies and look forward to a relationship that provides for continuous improvement," said Darin Silvernagle, SAE executive vice president Technology.

SAExploration is a seismic services company offering a full range of geophysical services to its oil and gas industry customers in North and South America, and Southeast Asia. SAE provides a full range of services related to the acquisition of seismic data including program design, survey, drilling, recording, in-field processing and QC.

Geospace Technologies Corp. designs and manufactures instruments and equipment used by the oil and gas industry in the acquisition and processing of seismic data as well as in reservoir characterization and monitoring activities.

### CGGVeritas signs Baker Hughes shale deal

Baker Hughes Inc. said Nov. 5 that it, along with CGGVeritas is announcing a collaborative relationship to improve shale reservoir exploration.

Using reservoir models that integrate log-derived, near-wellbore geomechanical and petrophysical properties from Baker Hughes with calibrated seismic data from CGGVeritas, operators can optimize well placement and completion design earlier in the asset lifecycle for more efficient well construction and more productive wells.

see OIL PATCH BITS page 28

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

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## LNG UNCERTAINTY

ical hurdles, in addition to the technological challenge of crossing 500 miles of water almost 2 miles deep at its low point.

Several speakers said China will be a bigger market driver than Japan in the years ahead.

If China sees LNG at \$15, “they’ll say, fine, let’s develop (our) shale,” said Stern, of the Oxford Institute. The U.S. Energy Information Administration estimates China’s shale gas reserves could top those of the United States, though exploration and development is in its infancy.

Ernst & Young’s Brogan also warned that pipeline gas could displace LNG in China. “Don’t be surprised if some markets lose out to indigenous production and piped gas.”

China already is turning to pipeline gas in greater quantities. This year China has imported more pipeline gas than LNG, the first time that has happened.

China consumed about 4.6 trillion cubic feet of gas in 2011, producing about 3.6 tcf from its own fields and importing the rest — with a slight advantage for LNG — said Jennifer Coolidge, executive director of CMX Caspian and Gulf Consultants, based in Cyprus. And although she expects the gap between consumption and domestic production could grow to several trillion cubic feet a year by 2020, Coolidge said China already has made plans to take more pipeline gas from Turkmenistan in the near term, adding Kazakhstan and Uzbekistan gas longer term.

Two west-to-east pipelines already move gas from Central Asia into China, with a third starting construction this fall.

That pipeline gas has been less expensive than LNG this year.

The high cost of LNG was a recurring theme among speakers. China, with India, relies on government subsidies to hold down the cost of gas to consumers and may try to boost domestic production or even build coal-to-gas conversion plants if LNG is too expensive, said Anna Howells, head of Asia energy for Herbert Smith Freehills, the world’s third largest law firm by number of attorneys.

### Supply variables

In addition to North America, conference speakers talked of other potential new LNG supplies. Several mentioned the tens of trillions of cubic feet of gas discovered offshore Tanzania and Mozambique in East Africa. But just as many talked about the hurdles in developing those projects.

Almost half of the 250 tcf in natural gas discoveries worldwide in 2010-2012 have come in East Africa, said Wood Mac’s Tomnay.

But a lack of infrastructure, a shortage of skilled labor and local government issues are problems, said Bill Dudley, president and CEO of Bechtel Corp., a builder of LNG facilities worldwide.

Citing East Africa’s undeveloped infrastructure and regulatory uncertainty, Howells said she doesn’t expect to see any LNG tankers sailing from East Africa before 2020.

Still, Tomnay said, “East Africa looks tremendously exciting. ... There are so many supply options, it’s very difficult to pick a winner.”

Qatar is the world’s leader in LNG production capacity at 10 bcf a day. The nation’s moratorium on new projects expires in 2014, noted Khalid Sultan R. Al Kuwari, marketing and shipping executive at Qatar’s RasGas, though he did not speculate whether the government would decide to undertake new projects.

Qatar’s drawback in the Asia market is its distance — almost 7,500 miles to Tokyo, said Rowley, of Mitsui OSK Bulk Shipping. Australia is several thousand miles closer, as are Canada’s West Coast and Alaska. (LNG tanker costs from Australia to Japan run about 85 cents per million Btu less than from the Mideast, according to recent figures from ICIS Heren, a global energy information firm.)

The LNG supply even farther away from Japan than Qatar is the U.S. Gulf Coast, Rowley said, at more than 10,000 miles. And that is after the expanded Panama Canal opens in 2014.

Coming up fast on Qatari gas production is Australia, which is poised to overtake the Mideast nation as the world’s largest LNG supplier before the end of the decade, with more than \$170 billion in liquefaction projects under development.

Those are costly projects, especially the three projects that will source their gas from coal-seam plays, Howells said. The coal-seam gas is low on valuable liquids and condensates, putting more of a burden on getting a strong price for the methane.

Project delays, labor shortages and cost overruns are making it tough on new

projects in Australia, said William Breeze, a colleague of Howells at Herbert Smith Freehills. “The window of opportunity for Australia projects may be closing.”

### Project financing

“The sheer size of projects ... the amount that has to be financed increases every year,” said Stephen Craen, an energy projects banker at Societe Generale. A Papua New Guinea project under construction (led by ExxonMobil) set the world record for LNG project financing at \$13 billion, he said. The Ichthys project in Australia will set a new record at \$20 billion in debt financing for the \$34 billion development, he added. Japanese oil company Inpex and France’s Total are developing Ichthys.

Baker, of Societe Generale, said lenders signed up for the Papua New Guinea project because they saw the same window for Asia LNG demand as the developers; there are solid off-take contracts for the gas; ExxonMobil brings strength as the plant operator; and the project has national support. The project was financed with 70 percent debt at 15- to 16-year terms.

That’s a typical term for project debt,

Craen said, noting, “There is quite a lot of scope for lenders to lend longer.” Extending the payments over more years — just like homeowners and car owners often do — lowers the loan payments.

Since 2005, most LNG projects have been project financed with cash flow from the plant to pay off the debt, rather than the owners using their own balance sheets and other profits to cover the mortgage, said James Ball, a director at Gas Strategies, an international gas consulting firm. He predicts financing deals will grow more complex as many projects are attracting multiple partners, each with different needs and aspirations.

The industry can handle complex deals, Ball said, but he doubts financing will be available for developers without a proven track record.

Pre-2009, commercial banks covered about half the debt, Baker said, but since the global financial crisis banks are down to one-quarter of the debt, with government export-import banks helping to take up the slack. Looking ahead, government export credit agencies will be increasingly important, and marginal projects will have a harder time getting financing

see **LNG UNCERTAINTY** page 28

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## LNG UNCERTAINTY

unless developers put up more equity, Baker said.

The U.S. Export-Import Bank this year agreed to help finance an LNG project in Australia that includes ConocoPhillips as a partner.

There will be challenges ahead, Brogan said. Banks are weaker, especially in Europe; governments are running deficits; and many lenders are risk adverse and are thinking short term. "In the short term what we'll be looking at" is a heavier use of corporate balance sheets pledged for financing.

Another possibility for project financing, Baker said, may come from insurance companies and pension funds looking for long-term, stable cash flows.

A project cost warning came from Colin Harrison, of the downstream oil and gas infrastructure team at international energy consultants Gaffney, Cline and Associates. Almost 78 percent of oil and gas megaprojects since 2000 "have exhibited poor cost and/or schedule performance," Harrison said. Deep-water construction, environmental restrictions, political interference and remote locations all contribute to the problem, he said. The answers are robust front-end engineering, a realistic project development strategy and identifying risks.

### Cheniere's Louisiana project

A key element of putting together financing for Cheniere Energy's LNG export terminal under construction at Sabine Pass, La., was that the developer did not ask the lenders to take any commodity price risk, said Roberto Simon, head of project finance for the Americas at Societe Generale.

When Cheniere approached Societe Generale for help with financing, the bank told the company to get its federal export authorization and construction approval, gather up a lot of equity, and get 20-year contracts with investment-grade customers, Simon said. Cheniere raised \$2 billion for its equity contribution to the project: \$1.5 billion from Blackstone Group-affiliated investment funds and a combined \$500 million from a Singapore investment bank and U.S. private-equity firm.

Cheniere will first spend the equity on construction, Simon said, tapping the debt later in the project. U.S., Canadian and European banks participated in the debt, which totaled \$3.6 billion and included issuing bonds rated by Standard

& Poor's one notch below investment grade.

That was more a reflection on the parent company, Cheniere Energy, than on the LNG export project itself. Cheniere had fallen to the brink of default on its debt after building an LNG import terminal that today only rarely receives shipments as U.S. shale gas production reduced the nation's need for gas imports.

"For us it was a matter of life and death," said Charif Souki, Cheniere's CEO. The company was close to bankruptcy and needed to find a way to salvage its investment in LNG storage tanks, a loading terminal and docks, pipes and the rest. It also still had half of its 1,000-acre riverfront site available for construction. All of which made it a very economical project to add a liquefaction plant and run it as an LNG export terminal.

The almost \$6 billion in equity and debt will cover construction of the first two trains at the plant, Simon said. The first production train is scheduled to come online in late 2015, with Cheniere counting on \$255 million in cash flow from that first train to help pay for construction of the second train — a strategy cited by S&P's as a point of concern in its credit rating.

The development budget covers \$4.9 billion for construction, \$661 million for interest during construction, and \$214 million in upfront fees and development expenses, Simon said.

After the first two trains are completed, Cheniere plans to construct two more trains, bringing total capacity to more than 2 billion cubic feet a day, ranking it among the world's largest liquefaction plants. The capacity of all four trains is fully subscribed under 20-year contracts, with customers paying a fixed charge for liquefaction and whatever the market price is for gas. Cheniere takes no commodity price risk — it falls entirely on the plant's customers. This is a new LNG pricing approach that global buyers and sellers are watching keenly.

Cheniere also has applied for federal approval for an LNG export project at Corpus Christi, Texas. Construction could start in 2014, pending federal approval and a corporate go-ahead, Granger said, adding, "Cheniere could not be happier." ●

*Editor's note: This is a reprint from the Office of the Federal Coordinator, Alaska Natural Gas Transportation Projects, online at [www.arcticgas.gov/print/supply-pricing-uncertainty-cloud-lng-industry](http://www.arcticgas.gov/print/supply-pricing-uncertainty-cloud-lng-industry)*

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## OIL PATCH BITS

Baker Hughes brings a broad portfolio of oilfield expertise and services to the collaborative relationship, most notably its reservoir and production engineering team and its Center of Reservoir Excellence team focused on unconventional resources. The company's proprietary geomechanical models and JewelSuite™ reservoir modeling software use data from Baker Hughes logging and subsurface imaging tools to deliver decision support capabilities.

CGGVeritas brings to the relationship a global market-leading position in seismic data acquisition and geosciences, including differentiating technologies for shale reservoirs characterization. These technologies include Hampson-Russell software products and, with the acquisition of Fugro's Geoscience division, will soon include Jason technologies for high-end reservoir characterization and Robertson expertise in exploration and geology. This complete portfolio enables optimization of project design, a compression of project timelines and offers a comprehensive product for final interpretation of key reservoir attributes.

While the long-range goal of the collaboration is to help operators optimize full-field development projects, the initial phase focuses on integrating near-wellbore log data with reservoir characteristics away from the well.

*Editor's note: All of these news items — some in expanded form — will appear in the next Arctic Oil & Gas Directory, a full color magazine that serves as a marketing tool for Petroleum News' contracted advertisers. The next edition will be released in March.*



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## CRUNCH POINT

“The environmental impact assessment for (Shell’s Jackpine project) offers the clearest indications we’ve ever seen that the cumulative impacts are just too high to be considered responsible,” said Simon Dyer, policy director of the Alberta-based Pembina Institute, in a statement by groups which have formed The Oil Sands Environmental Coalition.

Shell (which is currently producing 205,000 bpd from the oil sands) and its Albian Partners, Chevron and Marathon Oil, are seeking approval to bring another 100,000 bpd into production in 2017 at their Jackpine Mine, doubling capacity since production came on-line at 100,000 bpd in late 2010.

Also before a joint review panel is an application for a 200,000 bpd facility at the Pierre River Mine, with startup scheduled for 2018.

Shell concedes the timing and development of the projects now hinges on a number of factors including the outcome of the regulatory process, market conditions, final project costs and economics and consultations with key stakeholders.

A spokesman for the company said the single environmental impact assessment for both projects is “intended to provide the broadest, most comprehensive and conservative assessment of Shell’s mineable oil sands development plans.”

The prospect of oil sands output growing to 5 million bpd by 2020 from the current 1.7 million bpd has galvanized critics and opponents, who have gained strength from papers filed by Shell at the request of the CEAA to give an accounting of how the environment in the oil sands region has changed since production started and what part the Jackpine Mine would play.

Written by consultants Golder and Associates, the document estimates that annual levels of sulfur dioxide are about 20 times what they would naturally be over an area from Fort McMurray to about 60 miles north, while nitrogen dioxide is estimates to be at least 10-fold greater than pre-development levels.

Randall Barrett, director of Alberta Environment’s northern region, said the projects were derived from models deliberately designed to overestimate emissions as a way to ensure caution.

“It shows us we have to be very diligent in how we are setting pollution controls for any plants in this area, because the computer models are predicting that we are getting close to or over some of the air quality levels,” he said.

Barrett said regulators use the models to decide what emission controls to impose on

projects.

### Impact of all development

Shell, included in 18,000 pages of documents, has also disclosed that the impact of all development projects in the region, including the Jackpine Mine, would result in a loss of 40 percent-60 percent of habitat for birds, 47 percent of habitat critical to woodland caribou, 39 percent of habitat used by wood bison and significant swaths of forest important to lynx, wolverine, moose, beaver and black bear.

Dyer said the numbers are “unprecedented and show we are getting closer and closer to an environmental tipping point. If everyone develops what they want to develop in the region it could be devastating.”

“It is time some tough choices were made when it comes to deciding which projects go forward and which should be held back,” he said.

A Shell spokesman said the assessments look drastic because they represent a the impact of all possible mining and logging activity in the region and assume that all pending applications will be approved, with all going into operation at the same time and all resulting in maximum habitat disturbance.

### First Nation challenge

Also challenging the applications is the Athabasca Chipewyan First Nation, ACFN, which is downstream of the mines and has spent years voicing its concerns about the

negative impact on habitat, wildlife and the human population of the oil sands industry, and a regional group of the Metis Nation of Alberta.

The ACFN argued before an Alberta court that the governments of Canada and Alberta had failed to meaningfully address the impacts of Shell’s proposed operations on the Native communities and was therefore a violation of treaty rights, but failed to obtain an injunction to stop the hearing process.

The ACFN, despite repeated pleas to the joint review panel, was also kept out of the hearings and is now filing an application with the Alberta Court of Appeal, citing a section of the Canadian Constitution which guarantees aboriginals and First Nations the right to fishing, logging and hunting in their traditional areas.

Faced with ever-increasing interventions in oil sands applications, the Alberta government will introduce a single-window oil and gas regulator next June to streamline the

applications process.

Energy Minister Ken Hughes said the new regulator will be responsible for energy resource development from the initial application to reclamation, allowing the industry and landowners to build on Alberta’s commitment to the environment.

The new body will assume the functions of the ERCB and Alberta Environment and Sustainable Resource Development with respect to oil, oil sands, natural gas and coal development.

Hughes insisted the new regulator “will not compromise the environment for one second; rather, it will be responsible for administering statutes under a number of existing acts. It will have a broader enforcement toolbox to draw from and increased fines to levy for companies and individuals found in non-compliance.”

—GARY PARK

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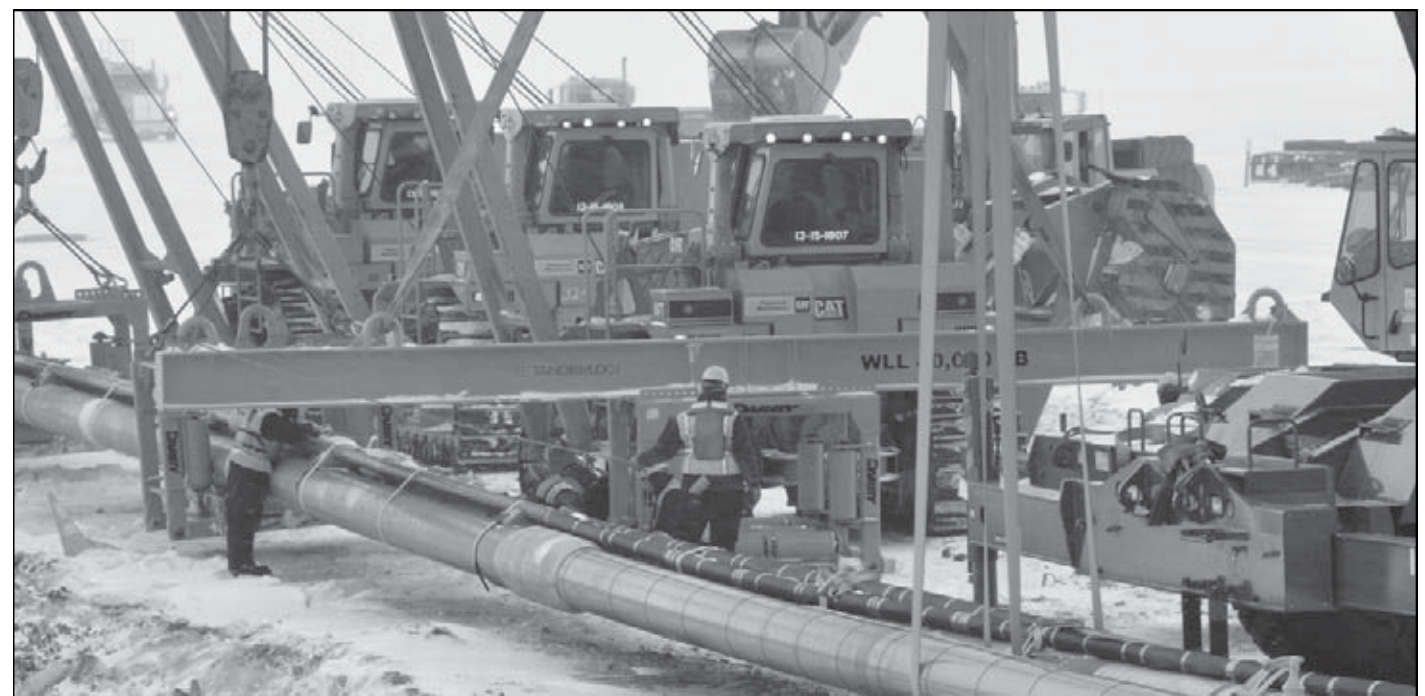
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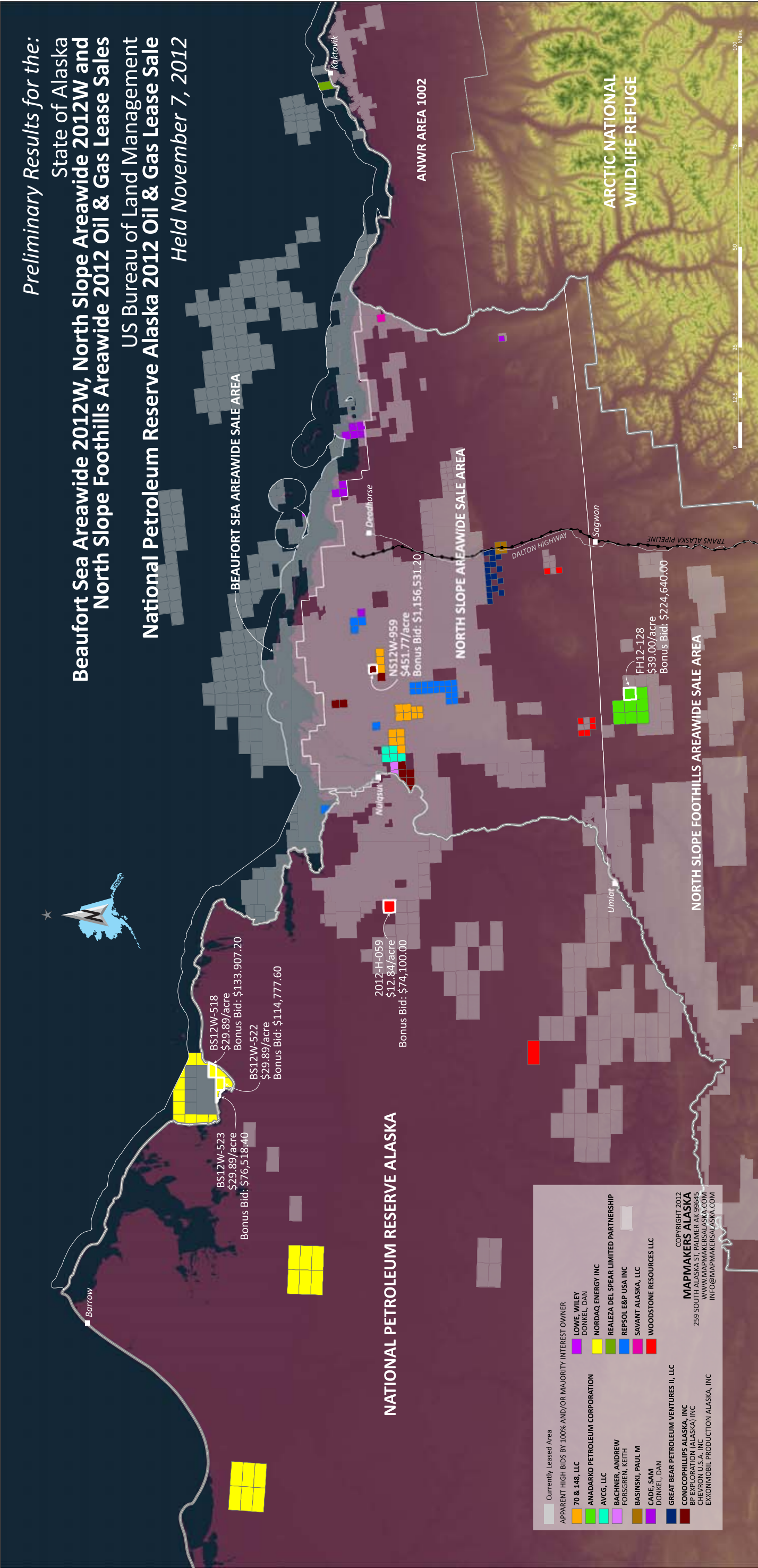
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**US Bureau of Land Management**  
**National Petroleum Reserve Alaska 2012 Oil & Gas Lease Sale**  
**Held November 7, 2012**



continued from page 1

## LEASE SALES

A planning areas, and attracted two bidders, Woodstone Resources LLC of Houston and NordAq Energy Inc., who bid on 14 tracts, 160,088 acres.

In last year's NPR-A sale BLM attracted 20 bids on 17 tracts from three bidders with apparent high bids of \$3.6 million on almost 120,000 acres.

NordAq had the most bids in the sale and took the most acreage, bidding on 12 tracts totaling 137,293 acres for bids ranging from \$5.13 to \$6.14 an acre, for a total of \$750,700 in bids. Minimum bid on these tracts was \$5 an acre.

The NordAq tracts are in two blocks in the northwest planning area, one block of six tracts on the western edge of the available tracts south of Peard Bay; the other block of six tracts is on the eastern edge of the northwest planning area, south of Admiralty Bay.

NordAq, which is currently working Cook Inlet properties, was also a bidder in the state's Beaufort Sea areawide sale.

Woodstone bid on two tracts in the northeast planning area, adjacent to acreage the company acquired in last year's NPR-A sale when the company took three tracts, 34,293 acres. Woodstone had the highest per-acre bids, \$6.49 and \$6.51 per acre, in this year's NPR-A sale, bidding \$74,100 on an 11,410-acre tract and the same amount on an 11,385-acre tract, for a total of 22,795 acres and total bids of \$148,200. The tracts Woodstone acquired in the two sales are in southern NPR-A, adjacent to acreage held by Anadarko, Petro-Canada and BG. The minimum bid on tracts in this area of the sale was \$5 an acre.

Woodstone, which bid in the state's North Slope areawide sale last year, was also a bidder in this year's North Slope sale.

Woodstone President Warren McFatter told Petroleum News after last year's sale that the privately owned company has oil production in the Bakken and Eagle Ford and is also engaged in Gulf Coast exploration in Texas and Louisiana.

### North Slope Foothills

Last year the North Slope Foothills sale attracted no bidders, but this year Anadarko Petroleum bid a total of \$961,920 for eight tracts, 46,080 acres, paying from \$11 to \$39 an acre, an average of \$20.88.

The tracts are southeast of Umiat adjacent to state acreage held jointly by Anadarko (33.34 percent), Petro-Canada (33.33 percent) and BG (33.33 percent). Foothills acreage is generally believed to be gas prone, and this acreage sits astride a proposed gas pipeline route running southeast from Umiat.

The minimum bid for North Slope Foothills tracts was \$10 an acre and all tracts have a 10-year term.

### Beaufort Sea

The state's areawide Beaufort Sea sale attracted 26 bids from five bidders or bidding groups on 26 tracts, a total of 99,200 acres with \$1,781,307.20 in apparent high bids. The 2011 Beaufort Sea sale drew 89 bids on 78 tracts with 281,095 acres sold and \$6,874,656.80 in high bonus bids.

see LEASE SALES page 31



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## LEASE SALES

NordAq Energy was the major bidder in this year's sale, with bids on 15 tracts, 69,760 acres, for a total of \$1,185,384. NordAq's bids included three at the high-per acre bid for this sale, \$29.89 an acre. The tracts surround NordAq's existing acreage in state waters in Harrison Bay north of NPR-A (see page 1 NordAq story).

A bidding partnership of 25 percent Dan Donkel and 75 percent Samuel Cade took 12,800 acres for \$295,936, paying \$26.12 an acre for most tracts. Samuel Cade bidding by himself took three tracts, 7,680 acres, for \$200,601.60, paying \$26.12 an acre for those tracts. A bidding partnership of 25 percent Dan Donkel and 75 percent Wiley Lowe took one 640-acre tract for \$10 an acre. The Donkel and Cade acreage ranges from the Badami area to the east to the Endicott area on the central North Slope.

Repsol E&P USA picked up a single tract adjacent to a large block of their holdings north of the Colville River unit and Realeza del Spear Ltd. Partnership out of Midland, Texas, picked up a single tract near Kaktovik.

### North Slope areawide

The North Slope areawide sale, the big sale of the day at \$11.5 million, had a wide range of bidders. The state received 98 bids on 88 tracts from 12 bidders or bidding groups on 165,179 acres. Last year's sale drew 219 bids on 161 tracts from 13 bidders or bidding groups and brought in \$11,836,735.64 in high bids on 289,434 acres.

The Kuparuk River unit owners — ConocoPhillips Alaska, BP, Chevron and ExxonMobil, had the highest per-acre bid of any of the sales, \$451.77 an acre, for a 2,560-acre tract at the southern edge of Kuparuk, paying a total of \$1,156,531.20. That same bidding group paid \$210.87 an acre (\$539,827.20) and \$204.87 an acre (\$503,775.33) for two 2,560-acre tracts on the western edge of the unit. Those three tracts accounted for \$2.2 million of the \$11.5 million the state brought in from the North Slope areawide sale.

But the largest bidder at the sale was 70 & 148 LLC, with 16 apparent high bids totaling \$3,138,707.20 on 36,480 acres, with bids ranging from \$25.11 to \$113.11 per acre. This Armstrong subsidiary has been establishing positions and bringing larger players into the state for a number of years, most recently Repsol. The acreage 70 & 148 LLC picked up in this sale is south and west of Kuparuk in three large blocks.

ConocoPhillips, bidding by itself, was the sale's third-largest bidder, with \$2,053,222.40 in apparent high bids on seven tracts, 17,920 acres, with bids ranging from \$27.37 an acre to \$171.93 an acre. One of these tracts is south of Kuparuk; the other six are in a block adjacent to ConocoPhillips acreage along the Colville River south of Nuiqsut.

Repsol E&P USA was apparent high bidder on 24 tracts, 39,040 acres, bidding \$1,588,759 with per-acre bids ranging from \$25.10 to \$73.03 per acre. The company took a large block, 20 leases, south of Kuparuk, one lease west of Kuparuk and three leases east of Kuparuk. All of the tracts were adjacent to existing Repsol acreage.

AVCG took five tracts, 12,800 acres, for a total of \$996,992, bidding \$77.89 an acre for all tracts. The tracts are in a block southeast of the Tofkat unit operated for AVCG by Brooks Range

Petroleum Corp. and south of the company's large acreage position between the Kuparuk River and Colville River units.

Great Bear Petroleum Ventures II took 24,448 acres in 17 tracts for \$637,214.40, paying \$26.03 per acre for each of the tracts, which are on the southern edge of the company's extensive holdings where it is currently drilling to develop shale oil.

Paul Basinski of Houston, Texas, took four tracts for \$276,709.80, bidding against Great Bear for three of them with a range of prices from \$27.54 to \$72.54 an acre. The tracts Basinski took include the site of 2005 coalbed methane test well drilled by the Department of the Interior, the U.S. BLM No. 1 Franklin Bluffs.

Woodstone Resources LLC took seven tracts, 10,080 acres, for \$267,120, paying \$26.50 per acre on each tract. The tracts are adjacent to two blocks, nine tracts, on which Woodstone was apparent high bidder in last year's North Slope lease sale. The area, well south of existing production, contains sites of three old exploration wells: Itkillik Unit 1,

Nora Fed 1 and Susie Unit 1.

Savant Alaska took one tract, 2,560 acres, for \$103,424, paying \$40.40 an acre. This tract is adjacent to a block of Savant acreage near the Arctic National Wildlife Refuge which contains the BP-drilled Yukon Gold well.

A bidding block of J. Andrew Bachner 90 percent and Keith C. Forsgren 10 percent took two tracts, 4,480 acres, for \$130,412.80, bidding \$29.11 an acre for both tracts. The tracts are south of Nuiqsut along the Colville River.

The 25 percent Donkel and 75 percent Cade bidding group bid \$66,877.20 on a 2,560-acre tract between Kuparuk and Prudhoe; Cade bid \$37,612.80 on a 1,440-acre tract in the southeastern area of the sale. Both tracts are the site of old wells. ●

*NOTE: Copyrighted oil and gas lease maps from Mapmakers Alaska (www.mapmakersalaska.com) were research tools used in preparing this story.*

Contact Kristen Nelson at knelson@petroleumnews.com

continued from page 1

## NORDAQ LEASES

extremely remote location, operational logistics present the biggest hurdle in moving a drilling program forward, Warthen said. Nordaq is in the process of developing the relationships it needs to progress its plans, he said.

Nordaq is using existing seismic data for evaluating prospects at Smith Bay, Warthen said.

Although situated many miles from the nearest support infrastructure, Smith Bay appears especially prospective for oil and gas. The bay sits on the Barrow Arch, a regional geologic structure that controls the petroleum system responsible for most of the North Slope oil fields, including the Kuparuk River and Prudhoe Bay fields. And there are several well-known surface oil seeps at Cape Simpson, on the northwest

see **NORDAQ LEASES** page 32



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## NORDAQ LEASES

side of the bay.

Nordaq also picked up two blocks of leases in the northwest National Petroleum Reserve-Alaska in the Bureau of Land Management's NPR-A sale, also held on Nov. 7.

### Shadura

In the Cook Inlet basin, there has been

considerable interest in Nordaq's efforts to develop the Shadura field, a gas field that the company discovered in the northern Kenai Peninsula. Nordaq has been reticent about making any public statement about the size of the field but has said that it anticipates drilling up to six gas production wells.

Asked about progress at Shadura, Warthen said that his company is waiting for completion of the U.S. Fish and Wildlife Service's environmental impact statement,

or EIS, for the development. With completion of the EIS and a subsequent record of decision now expected in March 2013, production from the field is unlikely to start before 2014, Warthen said.

The Fish and Wildlife Service has told Petroleum News that it anticipates publishing a draft EIS in mid-December for public review.

—ALAN BAILEY

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## ROAD INVESTMENT

own the road. Hoping to complete the project this winter, the board could vote on the project as soon as Dec. 6.

Brooks Range Petroleum is required to cover the \$75,000 study cost.

### 15-year amortization

During this due diligence phase, AIDEA would determine the structure and ownership of the limited liability corporation that would own the road, prepare a finance plan and outline how AIDEA would recoup its investment. AIDEA is currently imagining a toll or fixed-fee structure allowing it to recoup its investment in 15 years at 8 percent interest.

The study would also detail the incen-

tives and tax credits available to the project, and assess whether other parties near Mustang would be interested in using the road.

The Mustang field is in the Southern Milveach unit, adjacent to the southwestern corner of the Kuparuk River unit. Other prospects in the region include the Brooks Range Petroleum-operated Kachemach and Tofkat units, and the Arctic Slope Regional Corp.-operated Placer unit. Repsol E&P USA Inc. also holds extensive leases in the region.

Through a mostly confidential feasibility study, AIDEA staff argued the project merited further consideration because it would help Brooks Range Petroleum develop \$180 million standalone production facilities at Mustang and produce 15,000 barrels per day.

Through the development, AIDEA

expects the road to directly create 30 jobs, leading to 250 jobs during production facility construction and 25 full-time operations positions.

By Brooks Range Petroleum developing the 25 million barrels of proven oil reserves at Mustang, AIDEA estimates the state would earn some \$1.2 billion in taxes and royalties over the life of the field, in addition to increasing throughput on North Slope pipelines.

If approved, the Mustang road would be the first energy industry transportation infrastructure project undertaken by AIDEA. In 2011, AIDEA entered the drilling business with a \$24 million investment in a jack-up drilling rig currently in Cook Inlet. ●

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## ROW GRANTED

wells drilled in the late 1970s, the field has yet to produce any oil or natural gas. It remains one of the largest proven, undeveloped fields not only in Alaska but in North America.

Point Thomson is believed to be especially rich in gas, holding an estimated 8 trillion cubic feet or about a quarter of total North Slope reserves. But the lack of a North Slope gas pipeline has precluded development of the gas.

Under a recent legal settlement with the state, ExxonMobil agreed to go forward with the initial project to produce condensate, a light liquid hydrocarbon associated with natural gas. The project could lead to a fuller development of Point Thomson, at a potential investment cost of billions of dollars.

On Oct. 26, the Army Corps issued a permit for construction of well pads, roads and other field infrastructure, plus the export pipeline. The permit allows activity that disturbs wetlands and navigable waters.

### 30-year lease

The above-ground Point Thomson pipeline will be 22 miles long and will run west along the Beaufort Sea coast, connecting to BP's existing Badami pipeline. From there, Point Thomson production ultimately will flow into the 800-mile trans-Alaska oil pipeline.

ExxonMobil has estimated the cost of the new line at \$253 million.

The common carrier pipeline will feature "an eventual design capacity for up to 70,000 barrels a day." But ExxonMobil expects production of only 10,000 barrels per day of condensate to start. The company is aiming to begin production at Point Thomson in the winter of 2015-16.

The state right-of-way lease is good for 30 years, expiring on Oct. 31, 2042.

The lease calls for the lessee, PTE Pipeline, to pay the state an annual rental amount of \$819,755.64 during the period of pipeline construction. Going forward, the rental payment will be subject to adjustment based on appraisals.

PTE still needs a further authorization from the Regulatory Commission of Alaska in the form of a certificate of public convenience and necessity to build and operate the Point Thomson Export Pipeline.

The RCA held a hearing on the matter on Oct. 23, and could issue the certificate by the end of November.

Other major stakeholders in the Point Thomson field include BP and ConocoPhillips. ●

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