



## 'Street View' in Deadhorse?



JUDY PATRICK

You may not be able to Google locations in Deadhorse right now, but apparently that's going to change. Two Google Maps camera-equipped vehicles were spotted driving around Deadhorse July 29, photographer Judy Patrick reports. They stopped at the Arctic Caribou Inn and visited with a group of motorcycle riders who were also guests at the hotel.

## B.C. turns up the heat; puts more logs on royalty fire with stimulus

If it's not all-out war there's at least a skirmish taking place across the Canadian Rockies as British Columbia and Alberta strive for popularity within the petroleum industry.

Both governments do their utmost to avoid any suggestion of a them-against-us contest, but the evidence is tough to ignore.

With Saskatchewan also factoring into the mix, the three provinces seem ready to pull out all stops to attract oil and natural gas investment dollars during one of the worst drilling slumps on record.

And the contest doesn't end in Canada. Especially for gas-rich British Columbia, what happens in Texas and Louisiana is just as crucial.

David Pryce, a vice president of the Canadian Association of Petroleum Producers, told the Calgary Herald that "all see **HEAT** page 13

## Alberta's pubs with no beer

A **QUENCHING DRINK** after an often long, cold (or sweltering), grimy day in the Alberta oil sands is gradually coming with more no-alcohol restrictions.

Especially at the 77 lodges and work camps over the sprawling Athabasca region of the province's northeast, booze is banned.

Leading the prohibition movement are Petro-Canada and Suncor Energy, now one and the same after their merger.

They report positive results from their efforts to provide all workers with a "consistent living experience" and protect the safety of employees at the camps.

Suncor has decided to add its Millennium and Borealis lodges to the dry list based on feedback from the Firebag mine.

However, the company will continue to offer a shuttle bus

see **INSIDER** page 14



## NATURAL GAS

# More gas storage needed

Zager says a variety of storage options required; scope for conservation

By **ALAN BAILEY**  
Petroleum News

With winter cold in Southcentral Alaska perhaps three months away, the season is fast approaching when a severe cold snap could push the required delivery rate of utility natural gas for heating and power generation up to and perhaps beyond the limits of feasible production from gas wells in the Cook Inlet basin. One possible solution to this gas deliverability crunch is the use of gas storage facilities, to store excess gas produced during the summer and then release that gas into the utility system during the winter when



JUDY PATRICK

JOHN ZAGER

demand is high.

### Three facilities

There are already three storage facilities successfully operating in depleted gas fields around Cook Inlet. Marathon operates one of these facilities in its Kenai gas field; Chevron operates two facilities, one in the Swanson River field on the Kenai Peninsula and one in the Pretty Creek

field on the west side of the Cook Inlet. And Aurora Gas is proposing to establish an additional storage facility in its Nicolai Creek field south of Tyonek.

"At peak, when our storage is full, we can do in

see **GAS STORAGE** page 15

## EXPLORATION & PRODUCTION

# Eni aims for 2010 oil

Italian firm submits revised plan for Nikaitchuq field, cites work already done

By **WESLEY LOY**  
For Petroleum News

Back in February, managers for Eni Petroleum were explaining to Alaska industry regulators how plunging oil prices and other complications had shifted their fast-track Nikaitchuq oil field development on Alaska's North Slope into a lower gear.

Now the Italian oil and gas firm is back with essentially the same strategy, but with a new set of dates for first oil from Nikaitchuq.

Even though the first barrels are now slated to come a year later than Eni originally projected, it's plain from the company's latest development plan that Nikaitchuq is a sophisticated project with an aggressive timeline.

Eni filed the plan with the state Division of Oil and Gas on July 20. It's the second such plan the company

**Unlike Pioneer's approach with Ooguruk, which sends its crude into the ConocoPhillips-operated Kuparuk field for processing, Eni is developing Nikaitchuq as a standalone project with its own processing facilities located at Oliktok Point.**

has submitted for the field, which is centered in the shallow, nearshore waters of the Beaufort Sea north of the giant Kuparuk oil field.

A review of the two plans reveals Eni hasn't changed course very much. The project still involves producing Nikaitchuq's heavy, viscous oil from two drill pads, one offshore and one onshore. The number

see **ENI** page 16

## EXPLORATION & PRODUCTION

# Big money going offshore

By **KAY CASHMAN**  
Petroleum News

With oil and gas employment in Alaska at an all-time high for the fourth year in a row, crude prices bumping \$70 per barrel, four northern Alaska oil fields under development, and the world's majors lined up to invest billions more offshore the North Slope, the future of Alaska's oil industry looks rosy, with or without a natural gas pipeline.

Except that BP says it might not have developed one of those four fields, its Liberty discovery, if the Beaufort Sea accumulation was under state, not federal, waters and therefore subject to Alaska's new production tax, Alaska's Clear and Equitable Share, commonly known as ACES.

The feds levy a flat 12 percent production tax on oil, whereas

see **OFFSHORE** page 8



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Point Thomson wellheads will be capable of handling 15,000 psi, or pound-force per square inch.

## BREAKING NEWS

**4 Denali moves FERC date back:** Application will be filed in 2012, not 2011; company says '09 field work not needed for open season

**5 Multitrillion-dollar engine:** Study says Canadian O&G industry could pump incremental C\$3.6 trillion into GDP over 25 years

**13 CCS won't come cheap:** Canadian report says carbon capture and storage could require billions from governments

# contents

Petroleum News

A weekly oil & gas newspaper based in Anchorage, Alaska

## ON THE COVER

### More gas storage needed

Zager says a variety of storage options required; scope for conservation



### Eni aims for 2010 oil

Italian firm submits revised plan for Nikaitchuq field, cites work already done

### Big money going offshore

**SIDEBAR**, Page 8: The Point Thomson challenge

### B.C. turns up the heat; puts more logs on royalty fire with stimulus

**SIDEBAR**, Page 13: Bakken is cookin'

## OIL PATCH INSIDER

**1** Alberta's pubs with no beer

**14** Energy rally planned for Aug. 31



## EXPLORATION & PRODUCTION

**4** Norwegians regain hope in oil sands

**6** MMS: Shell's new Beaufort plan complete

## FINANCE & ECONOMY

### 5 Canada's multitrillion-dollar engine

Study forecasts petroleum industry could pump incremental C\$3.6 trillion into GDP over next 25 years, spreading jobs, tax benefits

**6** EIA projects \$70 oil in fourth quarter

### 7 Pacific Energy proposes \$100 asset sale

California oil and gas producer looks to shed stake in Trading Bay oil field in Cook Inlet, unload debt and other obligations

## NATURAL GAS

### 4 Denali moves FERC application date back

Company says '09 field work not needed for 2010 open season; TransCanada working on corridor review, limited geophysical

**5** Kitimat LNG set to 'move forward'

## SAFETY & ENVIRONMENT

**11** Arctic Ocean ice melting in summer heat

**13** Report: Carbon capture won't come cheap

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# Alaska - Mackenzie Rig Report

Rig Owner/Rig Type      Rig No.      Rig Location/Activity      Operator or Status

## Alaska Rig Status

### North Slope - Onshore

<b>Doyon Drilling</b>			
Dreco 1250 UE	14 (SCR/TD)	Prudhoe Bay 04-02	BP
Sky Top Brewster NE-12	15 (SCR/TD)	Stacked at Deadhorse	Available
Dreco 1000 UE	16 (SCR/TD)	Prudhoe Bay 13-12	BP
Dreco D2000 UEBD	19 (SCR/TD)	Alpine CD2-73-B1	ConocoPhillips
OIME 2000	141 (SCR/TD)	Stacked at Deadhorse	Available

<b>Nabors Alaska Drilling</b>			
Trans-ocean rig	CDR-1 (CT)	Stacked, Prudhoe Bay	Available
AC Coil Hybrid	CDR-2	Kuparuk 1Q-15	ConocoPhillips
Dreco 1000 UE	2-ES	Prudhoe Bay, Stacked out	BP
Mid-Continental U36A	3-S	Stacked, Milne Point	BP
Oilwell 700 E	4-ES (SCR)	Prudhoe Bay DS 06-09	BP
Dreco 1000 UE	7-ES (SCR/TD)	Prudhoe Bay DS 01-18	BP
Dreco 1000 UE	9-ES (SCR/TD)	Prudhoe Bay U-05A	BP
Oilwell 2000 Hercules	14-E (SCR)	Stacked	Available
Oilwell 2000 Hercules	16-E (SCR/TD)		Available
Oilwell 2000	17-E (SCR/TD)	Stacked, Point McIntyre	Available
Emsco Electro-hoist -2	18-E (SCR)	Stacked, Deadhorse	Available
Emsco Electro-hoist Varco TDS3	22-E (SCR/TD)	Stacked, Milne Point	Available
Emsco Electro-hoist	28-E (SCR)	Stacked, Deadhorse	Available
Emsco Electro-hoist Canrig 1050E	27-E (SCR-TD)	Point Thompson PTU#16	ExxonMobil
Academy AC electric Canrig	105-E (SCR-TD)	Chandler #1	Anadarko
Academy AC electric Heli-Rig	106-E (SCR/TD)	Demobilization rig shut down	Chevron

<b>Nordic Calista Services</b>			
Superior 700 UE	1 (SCR/CTD)	Prudhoe Bay Drill Site C-18	BP
Superior 700 UE	2 (SCR/CTD)	Prudhoe Bay Drill Site B conducting rig maintenance	BP
Ideco 900	3 (SCR/TD)	Stacked out, Kuparuk	ConocoPhillips

### North Slope - Offshore

<b>Nabors Alaska Drilling</b>			
OIME 1000	19-E (SCR)	Oooguruk ODSN-36	Pioneer Natural Resources
OIME 2000	245-E	Oliktok Point OP04-P07	ENI
Oilwell 2000	33-E	Northstar, Stacked out	BP

### Interior

<b>Doyon Drilling</b>			
TSM 7000	Arctic Wolf #2	Drilling at Nunivak #1 Nenana Basin	Rampart Energy

### Cook Inlet Basin - Onshore

<b>Aurora Well Service</b>			
Franks 300 Srs. Explorer III	AWS 1	Kaola 2 workover	Aurora Gas

<b>Doyon Drilling</b>			
TSM 7000	Arctic Fox #1	Beluga BRU 232-23	ConocoPhillips

<b>Marathon Oil Co. (Inlet Drilling Alaska labor contractor)</b>			
Taylor	Glacier 1	Stacked	Marathon

<b>Nabors Alaska Drilling</b>			
Continental Emsco E3000	273	Stacked, Kenai	Available
Franks	26	Stacked	Available
IDECO 2100 E	429E (SCR)	Stacked, removed from Osprey platform	Available
Rigmaster 850	129	Kenai SLU 41-33RD	Chevron

<b>Rowan Companies</b>			
AC Electric	68AC (SCR/TD)	Stacked, Kenai	Pioneer Natural Resources

### Cook Inlet Basin - Offshore

<b>Chevron (Nabors Alaska Drilling labor contract)</b>			
	428	Kenai M-06 Steelhead platform	Chevron

<b>XTO Energy</b>			
National 1320	A	Platform A no drilling or workovers at present	XTO
National 110	C (TD)	Idle	XTO

<b>Kuukpik</b>	5	Stacked in Kenai	Available
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## Mackenzie Rig Status

### Canadian Beaufort Sea

<b>SDC Drilling Inc.</b>			
SSDC CANMAR Island Rig #2	SDC	Set down at Roland Bay	Available

### Mackenzie Delta-Onshore

<b>AKITA Equitak</b>			
Modified National 370	64 (TD)	Racked in Inuvik	Available

### Central Mackenzie Valley

<b>Akita/SAHTU</b>			
Oilwell 500	51	Racked in Norman Wells, NT	Available

The Alaska - Mackenzie Rig Report as of August 13, 2009.  
Active drilling companies only listed.

TD = rigs equipped with top drive units WO = workover operations  
CT = coiled tubing operation SCR = electric rig

This rig report was prepared by Marti Reeve



Barges hauling unassembled pieces of the Liberty rig arrived at Endicott ahead of schedule on two Crowley barges in late July.

COURTESY OF BP EXPLORATION (ALASKA) INC.

## RIG REPORT

### BP's Liberty rig to start drilling spring 2010

In order to develop its Beaufort Sea Liberty field from near-shore Endicott, BP Alaska commissioned Parker Drilling to build a powerful top-drive drill rig that could drill ultra-extended-reach wells with a horizontal departure of six to eight miles and two miles deep. To handle such a long drill string, Parker built what BP characterizes as the world's most powerful onshore drill rig with a price tag of \$215 million and counting. When assembled the rig will weigh 8,500 tons and stand 240 feet tall.

To handle the exceptional demands of rotating and moving a drill string in a well bore that may be up to 8 miles long, the rig has to be able to apply an exceptionally high turning force to the drill pipe. Consequently, a key component in the new rig is its massive top drive, which will apply 105,000 foot-pounds of torque to the drill pipe while rotating the pipe at 130 revolutions per minute. In a typical North Slope rig, the top drive provides torque in the range of 30,000 to 45,000 foot-pounds.

The rig, which is owned by BP and operated by Parker, has eight 2,640-horsepower engines producing 16 megawatts of power. It was delivered, in pieces, to Endicott by Crowley at the end of July. Rig assembly, testing and training is scheduled for this fall, and production drilling is expected to start in spring 2010.

### Baker Hughes North America rotary rig counts\*

	July 24	July 31	Year Ago
US	955	948	1,967
Canada	195	200	475
Gulf	29	35	66

Highest/Lowest		
US/Highest	4530	December 1981
US/Lowest	488	April 1999
Canada/Highest	558	January 2000
Canada/Lowest	29	April 1992

\*Issued by Baker Hughes since 1944

The Alaska - Mackenzie Rig Report is sponsored by:



## EXPLORATION & PRODUCTION

### Norwegians regain hope in oil sands

StatoilHydro is open to all options for processing bitumen from its Alberta oil sands operation after shelving plans last year to build a 20,000-barrel-per-day upgrader because of "prohibitive construction costs."

Eldar Saetre, chief executive officer of the Norwegian major, told analysts Aug. 4 that as costs show some signs of easing his company is pondering whether to weigh plans to build an upgrader against those to export diluted crude or seek refining commitments in the United States.

But StatoilHydro is also still faced with uncertainty relating to the global economy, the outlook for oil prices and a lack of clarity on Canada's climate-change regulations.

#### US\$70-\$80 needed

He also said the full cost of building an upgrader requires confidence that oil prices will remain at a break-even level of US\$70-\$80 per barrel.

"The cost environment in Canada comes from a very heated situation and now we see that the cost is coming down and we think that is extremely important in order to be able to move on with new developments," Saetre told analysts.

StatoilHydro bought North American Oil Sands in 2007 for C\$2 billion, acquiring plans to build an upgrader with initial capacity of 75,000 bpd by 2012 and 250,000 bpd over the long term.

Meanwhile, Saetre said StatoilHydro is "very pleased" with progress on another recently acquired North American holding — Chesapeake Energy's Marcellus shale gas acreage in the Appalachian region.

Saetre said the deal gives his company access to recoverable resources of up to 3 billion barrels of oil equivalent and future production of 50,000 boe per day in 2012, increasing to 200,000 boe per day by 2020.

—GARY PARK

## NATURAL GAS

# Denali moves FERC application date back

Company says '09 field work not needed for 2010 open season; TransCanada working on corridor review, limited geophysical

By KRISTEN NELSON

Petroleum News

Denali is delaying by more than a year its submittal of a FERC application.

Denali — The Alaska Gas Pipeline LLC, said in an early August monthly status report to the Federal Energy Regulatory Commission that company representatives met with federal officials in Washington, D.C., in early July to provide an update on the project, "including a change of Denali's target date" for submission of its application for a certificate of public convenience and necessity.

The target date, originally August 2011, is now set for October 2012.

That October 2012 date is the same as TransCanada's date for application submission.

Denali spokesman Dave MacDowell told Petroleum News in an Aug. 11 e-mail that the company's focus remains on its 2010 open season.

"During our work program reviews, it became apparent that additional field work during 2009 would not be needed to achieve that goal," MacDowell said.

The revision in the filing target for the certificate of public convenience and necessity — for both FERC and Canada's National Energy Board — was changed from August 2011 to October 2012 to "allow for a full 2010 and 2011 field survey as needed" to support the certificate filing, he said.

"We will continue to monitor our progress against this schedule and make any necessary adjustments required at the appropriate times," MacDowell said.

#### Open season dates unchanged

Open season dates are different for the two projects.

TransCanada's schedule — included as part of its Alaska Gasline Inducement Act application — calls for conclusion of its open season in July 2010.

Denali's schedule shows the number of years each part of the process will take, rather than specific dates, but the company has said in the past that it would begin its open season in late 2010 or early 2011.

In a report to FERC in early July Denali said its "2009 plans continue focused on holding a successful open season during 2010."

TransCanada told the FERC in a mid-July report that, subsequent to the joint project with Exxon Mobil Corp. announced in June, personnel from both companies are participating in project activities.

TransCanada said it is continuing to study the pipeline corridor through Alaska. Preliminary ground reconnaissance took place in April and May with planning for a limited late-summer geophysical program for specific locations along the route. Work on the gas treatment plant included a review of potential sites for the facility.

Focus — in both Alaska and Canada — is on developing cost estimate information for the open season, TransCanada told FERC.

Denali said in its latest report to FERC that its gas treatment plant contractor, Arctic Solutions, continued work on conceptual and basic engineering; execution planning and cost estimating efforts are also proceeding while contractor Bechtel continued engineering, scheduling and cost estimating work for the pipeline.

"Denali is also working on Canadian pinch point alternative evaluations," the company said. ●

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# Canada's multitrillion-dollar engine

Study forecasts petroleum industry could pump incremental C\$3.6 trillion into GDP over next 25 years, spreading jobs, tax benefits

By GARY PARK  
For Petroleum News

The anti-petroleum faction in Canada has been given something to ponder, if it has an open mind.

Whatever the industry's failings — and even the strongest defenders concede there are many — the flip side contains many persuasive arguments relating to job creation and revenue generation.

In a detailed study of the impact, the Canadian Energy Research Institute estimates the oil sands alone could attract C\$1.7 trillion in incremental Gross Domestic Product growth in Canada over the next 25 years, translating into 700,000 new jobs, while additional tax revenues could run to C\$306 billion.

And those numbers cover only 20 percent of the total investment in the petroleum industry to 2030, with 80 percent going to conventional gas, which will claim the largest chunk of capital outlay, followed by oil development in Saskatchewan and tight and shale gas in British Columbia, LNG facilities, pipelines and offshore production — just some of the industry sectors that can contribute to GDP and employment growth.

When the economic impact of the oil sands is rolled into the entire sector, the projected incremental rise in GDP is C\$3.6 trillion and new jobs tally 980,000, while the associated tax revenues are C\$429 billion.

## GDP contributions significant

The 200-page report said that despite the recent flurry of concerns and criticism aimed at the industry's environmental impact, contributions to GDP can't be ignored.

The study estimates that C\$218 billion will be invested in new oil sands capacity over the upcoming 25 years, compared with the US\$240 billion Mexico plans to invest over the next 14 years to stimulate its failing oil

**Overall, the federal government could get a tax infusion of C\$167.4 trillion, with almost C\$104 billion being spread among Canada's 10 provinces and three territories.**

industry.

Of the C\$1.7 trillion in incremental GDP growth flowing from the oil sands, C\$78.1 billion could reach Ontario, where much of the oil sands criticism originates.

When the industry's total estimated incremental increase of C\$3.6 trillion is broken down, Ontario could receive C\$144 billion.

Alberta could see investment of C\$1.42 trillion, 7.465 million person-years of employment, and generate C\$234.9 billion in taxes, of which C\$149.6 billion would end up in federal coffers.

Overall, the federal government could get a tax infusion of C\$167.4 trillion, with almost C\$104 billion being spread among Canada's 10 provinces and three territories.

CERI estimated that, despite a slowdown in oil sands activity over the next two years while the economy regains its health, oil sands production could still reach 4.3 million barrels per day by 2030, almost quadrupling from current levels.

The study said while that is well short of past projections, mostly targeting 5 million bpd, it is realistic based on the economic downturn and the lasting impacts on the economy.

## Other capital projects

Aside from the Western Canadian upstream, CERI noted that several other capital projects can fuel the economy, including Enbridge's Northern Gateway Pipelines which could see 500,000 bpd delivered from

the oil sands to the British Columbia coast for shipment to Asia and the United States by 2015; the Kitimat LNG liquefaction project to export gas from British Columbia; a Quebec LNG re-gasification terminal; the Mackenzie Gas project; and EnCana's Deep Panuke gas project offshore Nova Scotia.

This lineup will need investment of C\$23.5 billion and pump an incremental C\$60 billion into GDP.

Royalties from Alberta's Horseshoe Canyon and Mannville coalbed methane formations — whose potential role is often overlooked — could contribute C\$7.15 billion or C\$286 million a year, compared with oil sands royalties of C\$184.6 billion or C\$7.4 billion a year, divided almost equally between mining and in-situ projects.

British Columbia's conventional gas royalties could run to C\$21 billion, or C\$840 million per year, while shale and tight gas royalties from Horn River and Montney could surge to a combined C\$67.82 billion, or C\$2.7 billion a year.

Drilling costs over the quarter century are estimated at C\$24.6 billion in Horn River, with infrastructure costs reaching C\$1.7 billion and 3,684 wells being drilled. Montney drilling costs are projected at C\$20.6 billion on 6,269 wells, with infrastructure spending at C\$2.9 billion.

GDP impacts from unconventional gas developments in British Columbia could spread C\$263 billion across Canada, with B.C. taking the lion's share of C\$240 billion.

Saskatchewan royalties from conventional oil are forecast to contribute C\$39.8 billion, or C\$1.6 billion a year.

The study did not attempt to calculate the economic benefits of shale gas development in Quebec or oil sands development in Saskatchewan, both in their infancy but seen as strong contenders to help Canada achieve Prime Minister Stephen Harper's goal of becoming a "global energy superpower." ●

## NATURAL GAS

### Kitimat LNG set to 'move forward'

The stream of announcements on Canada's first LNG export project has crested, giving the proponent, Kitimat LNG, enough confidence to declare that it is "ready to move forward."

With Apache joining EOG Resources as a likely supplier of feedstock, Ilene Schmaltz, vice president of supply and marketing, said Aug. 10 that the privately held company now hopes to make a final investment decision in summer 2010, launching a construction phase of 36 to 40 months and start exports by late 2013.

In short order over recent months, Kitimat LNG has named Korea Gas Corp. and Spain's Gas Natural as tentative customers and the two U.S.-based independents as gas suppliers.

Schmaltz said the fully permitted project can now start front-end engineering and design and seek financing to allow corporate sanctioning next summer.

She also expressed optimism that the final deals will be in place within two months on gas supplies to meet the target of 700 million cubic feet per day.

While conceding Kitimat LNG would like to develop a second train, she said the company wants to "walk before we run," noting that doubling capacity would also require a fresh set of environmental approvals.

### Apache 200-300 million cubic feet

Apache has established a framework to supply 200 million to 300 million cubic feet per day. EOG has not disclosed what volumes it can contribute.

Kitimat LNG President Rosemary Boulton said the Apache agreement "gives our project strong momentum and reinforces the fundamental strength of our business strategy."

Since switching last year from plans to import LNG, the company has argued the rapidly emerging shale gas plays in British Columbia give Canadian producers added reason to explore an alternative to their traditional export market in the United States, given the premium on LNG prices in the major Asian markets of China, Japan and South Korea.

Apache, which is involved in a Horn River joint venture with EnCana covering 425,000 acres, has issued a bundle of upbeat results lately, reporting that initial production from three horizontal wells has averaged 16 million cubic feet per day each; estimating that wells in the area could yield 10 billion cubic feet; and disclosing that its six producing wells are averaging 14 million cubic feet per day after a full year, with decline rates flattening out faster than expected.

—GARY PARK

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● EXPLORATION & PRODUCTION

# MMS: Shell's new Beaufort plan complete

By ALAN BAILEY  
Petroleum News

The U.S. Minerals Management Service has determined that Shell's new Beaufort Sea exploration plan is complete, thus starting a 30-day period during which the agency must carry out an environmental assessment of the plan. At the end of the environmental assessment the agency will decide whether to approve the plan, require modification to it or disapprove it, the U.S. Department of the Interior said Aug. 10.

"The responsible development of offshore resources is part of our nation's comprehensive energy plan, which includes a renewed emphasis on conservation and an aggressive effort to develop renewable resources so we can move the nation towards energy independence," said Interior Secretary Ken Salazar. "Now that Shell's plan has reached this important milestone, we will review it careful-

ly to ensure that it is technically sound and will protect the Beaufort Sea and Alaska's environment."

## Scaled-down plan

The new exploration plan, scaled down considerably from Shell's earlier 2007 to 2009 plan that became the subject of lengthy and unresolved litigation in the U.S. Court of Appeals for the 9th Circuit, covers just the year 2010 and envisages a single drillship, the Frontier Discoverer, tended by a single ice-management vessel, drilling two wells in the Sivulliq prospect in a couple of Shell leases on the west side of Camden Bay, offshore the eastern end of the North Slope. When in May Shell submitted the new exploration plan for approval, the company said that it had scaled down its plan to address concerns about the cumulative impacts of offshore activities, and to demonstrate its ability to safely conduct offshore drilling.

In addition to MMS approval of its exploration plan,

Shell must demonstrate compliance with Alaska's coastal management plan and obtain permits and authorizations from the Environmental Protection Agency, the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. The leases being explored were issued in the MMS 2002-07 lease sale program, thus predating the 2007-12 program which a federal appeals court has sent back to MMS for further environmental analysis.

Shell Alaska spokesman Curtis Smith said in an Aug. 11 e-mail that the MMS decision that the 2010 Beaufort Sea plan is complete "is one important step of many that must take place before we proceed with our 2010 drilling plan."

Smith said Shell will continue to work closely with regulators, local communities and the State of Alaska as the company moves closer to "exploring for oil and gas reserves that could ultimately lead to tens of thousands of jobs, extend the life of the trans-Alaska pipeline and increase domestic energy security for decades to come." ●

● FINANCE & ECONOMY

# EIA projects \$70 oil in fourth quarter

Henry Hub spot price expected to average less than \$4 per mcf this year; rise to \$5.48 in 2010 based on current decline in drilling

PETROLEUM NEWS

The U.S. Department of Energy's Energy Information Administration said Aug. 11 that it expects the West Texas Intermediate crude oil price to remain roughly flat at \$70 per barrel in the fourth quarter, an increase of some \$27 compared with the first quarter. The agency noted recent volatility in the WTI Price — from \$71.47 on June 29 to \$59.62 on July 14 and then up to \$71.59 on Aug. 3 — and said it is projecting the WTI spot price to "rise slowly as economic conditions improve, to an average of about \$72 per barrel in 2010." This compares to a 2008 average of \$100 per barrel.

The agency expects the monthly average Henry Hub natural gas spot price to stay below \$4 per thousand cubic feet until late in the year as natural gas inventories are projected to set a new record high Oct. 31, the end of the year's injection season. EIA expects the Henry Hub to increase from an average of \$3.92 per mcf this year to an average of \$5.48 per mcf in 2010, based on the current decline in drilling and projected growth in consumption next year.

## Global economy

"The oil market continues to be defined by the tension between optimism over the perceived recovery of the global economy on the one hand and persistently weak global consumption of crude oil and other liquid fuels on the other," the agency said.

Oil consumption could be recovering outside developed countries represented by the Organization for Economic Cooperation and Development. But that has been somewhat offset by "an erosion of compliance with production cuts" among members of the Organization of Petroleum Exporting Countries.

**Total marketed U.S. natural gas production is expected to be flat in 2009 and decrease by 2.8 percent next year; "conditioned on the current low price environment that has brought about a significant pullback in drilling activities." —U.S. DOE Energy Information Administration**

Rising oil inventories, combined with weak current consumption, indicate overall weakness in the market, EIA said.

Commercial crude oil and petroleum product stocks in the United States have increased for five straight quarters, the first time that has happened since 1979-80, and another increase is projected for the third quarter.

World oil consumption declined by 3.1 million barrels per day in the first half of 2009 compared to the first quarter of 2008, with OECD countries accounting for 2.8 million barrels of that decline and non-OECD countries only 300,000 barrels.

## Natural gas consumption

EIA projected that U.S. natural gas consumption will be down 2.6 percent in 2009 and grow by 0.5 percent next year.

There was a 3.8 percent decline in daily average natural gas consumption in the first half of the year compared to the first half of last year, "driven principally by a drop in industrial activity."

Natural gas prices are so low that gas now competes with coal for a share of baseload generation in the electric power sector, the agency said.

Total marketed U.S. natural gas production is expected to be flat in 2009 and decrease by 2.8 percent next

year, "conditioned on the current low price environment that has brought about a significant pullback in drilling activities," EIA said. The agency cited Baker Hughes numbers showing total working natural gas rigs down 58 percent since September.

March through May numbers show a decline of some 0.3 billion cubic feet per day, but EIA said production is expected to decrease at a faster rate through the rest of the year.

## LNG imports up

Liquefied natural gas imports into the U.S. are expected to increase to about 500 bcf this year, up from 352 bcf last year; the 2010 estimate is for imports of some 740 bcf, the EIA said.

The agency said U.S. import growth this year has been constrained by increased demand in Europe and "delays and maintenance to new and existing LNG liquefaction capacity."

Recent data suggest that what limited gas storage Europe has is nearing capacity and as a result LNG shipments may be redirected to the U.S. "in the coming months as prices in the European market become less attractive to LNG suppliers."

EIA said a similar thing may occur in Canada, "with natural gas pipeline imports increasing in the months ahead as Canadian storage facilities are topped off. An increase in U.S. natural gas imports would likely be balanced by larger-than-expected declines in domestic natural gas production."

Current natural gas storage, 3,089 bcf on July 31, is 496 bcf above the five-year average and 580 bcf above the corresponding week in 2008. EIA said it expects natural gas stocks to reach 3,800 bcf at the end of October, 235 bcf above the record of 3,565 bcf set in October 2007. ●



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● FINANCE & ECONOMY

# Pacific Energy proposes \$100 asset sale

California oil and gas producer looks to shed stake in Trading Bay oil field in Cook Inlet, unload debt and other obligations

By **WESLEY LOY**

For *Petroleum News*

**F**inancially troubled oil and gas producer Pacific Energy Resources Ltd. is proposing to sell some of its most valuable assets in Alaska's Cook Inlet for \$100.

The asset package includes Pacific Energy's interest in the Trading Bay oil field, which Chevron operates.

A judge in U.S. Bankruptcy Court in Delaware, where Pacific Energy is involved in a Chapter 11 reorganization, considered the company's proposed sale in an Aug. 12 hearing, but the outcome couldn't be immediately confirmed. One Petroleum News source said the judge approved the sale contingent on the buyer finding financing.

Pacific Energy identified the buyer as Ocar Energy, a Delaware limited liability company with a business address in Toronto, Canada. Delaware records show that Ocar Energy LLC was incorporated in that state on Aug. 4 of this year.

### Sale terms

Pacific Energy filed a 77-page purchase and sale agreement that sets the price for the assets at \$100 cash.

The tiny purchase price, however, doesn't reflect the true size of the deal as the buyer would assume some major financial obligations, court papers say.

Chevron's lawyers have said Pacific Energy owes at least \$43.6 million for its share of production costs, maintenance and other expenses in the Trading Bay unit, of which Pacific Energy holds a 47 percent share.

What's more, the buyer would assume "future plugging, decommissioning and abandonment obligations" associated with the sale properties, lawyers for Pacific Energy said.

The lawyers told the court a sale is contingent on the buyer finding financing for the transaction.

A spokesman for Pacific Energy, based in Long Beach, Calif., could not be reached immediately to discuss the status of the Ocar deal.

An official in the Alaska Division of Oil and Gas said little was known about Ocar.

### Broad liquidation

Pacific Energy, citing millions of dollars in losses on its Alaska holdings, also is trying to sell a second package of Cook Inlet assets to a different buyer.

That package includes assets that Pacific Energy itself operates: the West McArthur River field, the West Foreland field, and the Redoubt Shoal field with its Osprey offshore platform and Kustatan onshore facility. Also included are interests in the Three Mile Creek field, which Aurora Gas LLC operates; some exploration properties; and a 50 percent stake in Cook Inlet Pipe Line Co.

Pacific Energy has said in court filings that it has a \$7 million offer for these assets from New Alaska Energy, an

Alaska limited liability company.

Pacific Energy also is trying to sell its oil and gas properties in California.

The company filed for Chapter 11 bankruptcy reorganization on March 9 citing the steep drop in oil prices toward the end of 2008. Eruptions of Redoubt volcano on the west side of Cook Inlet made matters worse by interrupting oil production, the company said.

Pacific Energy entered the Alaska scene in 2007, buying the assets of

Forest Oil Corp. for about \$464 million.

Due to debt pressures and the likelihood of further losses, Pacific Energy has said it might simply abandon Cook Inlet assets it can't sell.

Lawyers for the company and many other interested parties including the state — which has told the court it wants proof of any buyer's financial and technical fitness before it will transfer leases — are now focused on a Sept. 1 court date where much could be decided. ●



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continued from page 1

## OFFSHORE

under Alaska's tax rules, "you're denied the upside because the tax rate gets up around 80 percent," Doug Suttles said in 2008, while he was president of BP in Alaska.

Suttles was referring to the progressivity feature in ACES, under which the tax rate increases when oil prices are high and decreases as oil prices come down.

The State of Alaska also offers some generous incentives and tax credits for exploration and development projects, which have been highly praised by smaller oil companies exploring in Alaska. And because ACES assesses only the net amount producers receive for their oil, companies can deduct most of their drilling and related expenses before the state tax is levied.

But even though, under ACES, ExxonMobil and its partners should be able to recoup more than 45 percent of their \$1.3 billion cost of developing their phase 1 Point Thomson project, it is doubtful the Point Thomson partners would have made the decision to move forward with the high pressure gas cycling project under ACES if they were not in danger of losing their leases to the State of Alaska. (See sidebar to this article on page 9 of this issue.)

Petroleum News asked one executive, whose company is a detractor of ACES and a major partner in the Point Thomson project, why the Point Thomson leaseholders wanted to hold onto leases in a state with what he described as an "onerous" production tax.

He said, "We want to be a major part of a gas pipeline from the North Slope. And Point Thomson has close to 25 percent of the known natural gas reserves on the slope. We think its gas is needed to make the project viable."

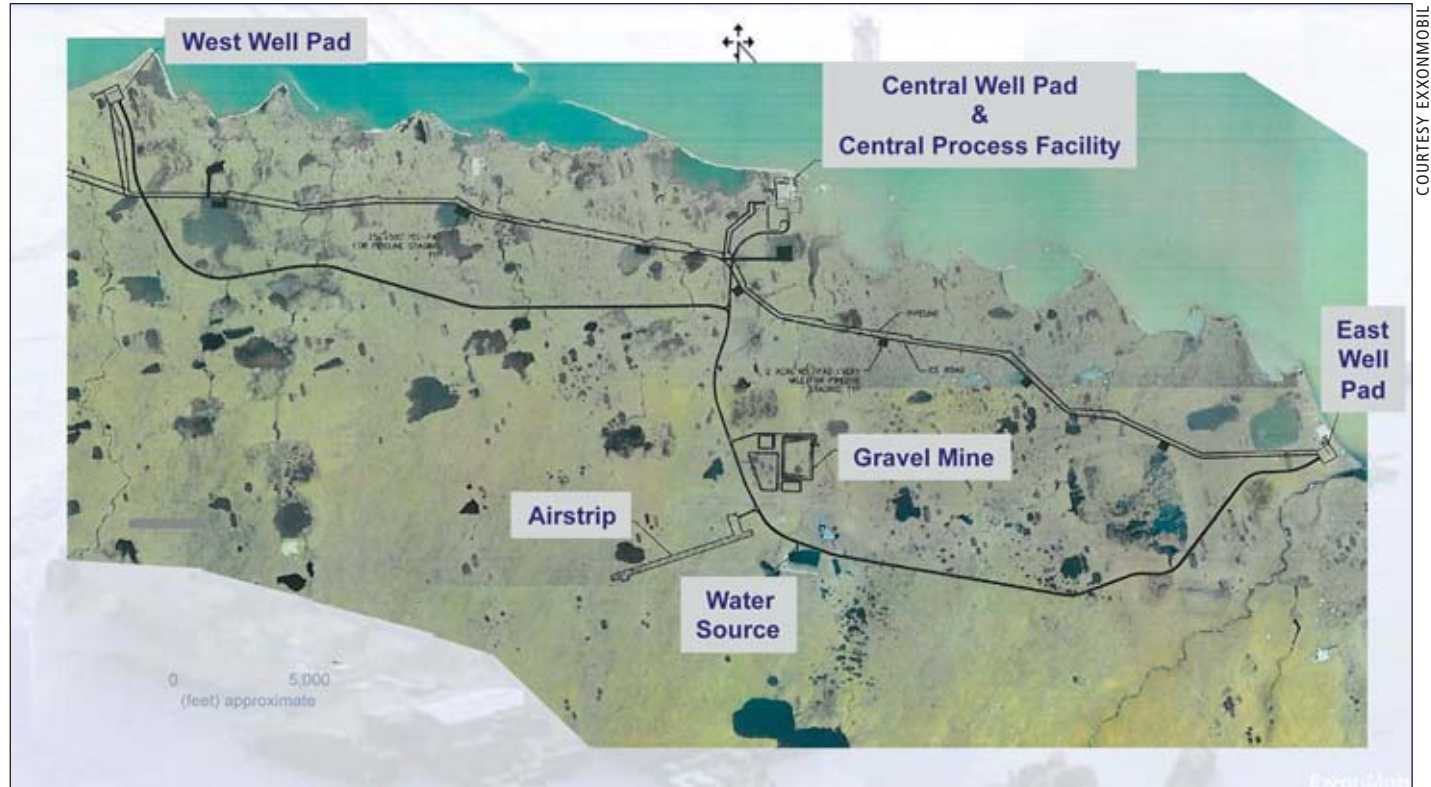
### ACES works for one major producer

Still, at least one of the two major Alaska producer-operators, ConocoPhillips, is making a nice profit under ACES. (BP, the other major operator-producer, does not break out its Alaska numbers in financial reports.)

Alaska oil and gas production makes up about 12 percent of ConocoPhillips' worldwide output. In the first quarter of this year, Alaska operations earned the company \$240 million, or 29 percent of its worldwide exploration and production income.

In an April 23 analyst presentation, ConocoPhillips' top executives in Houston made a point of acknowledging

see OFFSHORE page 9



The Point Thomson project conceptual layout

### The Point Thomson challenge

The technical challenges involved in producing hydrocarbons from the Point Thomson field have proved a subject of intense debate in the 30 years since the field was discovered.

Although there is an oil rim in the Point Thomson reservoir, the hydrocarbons in the pool consist predominantly of natural gas and condensate. Because of the temperature and pressure regime in the reservoir, the condensate is mixed with the gas as a gas phase, but the pressure and temperature conditions are such that were the pressure of the gas to be reduced, the condensate would condense out as a liquid. Hence the use of the term "retrograde condensate reservoir" to describe Point Thomson, because the condensation of a liquid when the pressure is reduced runs counter to a normal expectation of liquids vaporizing under the effect of pressure reductions.

Initially gas production from the field would bring condensate to the surface. As the gas pressure falls at the surface, the condensate would drop out and could be shipped to market. But continued production would cause the reservoir pressure to drop and the condensate would condense as liquid within the reservoir.

There are several ways of producing from this type of field. The field can be operated as gas field, leaving liquid condensate in the ground. Or the gas can be injected back into the reservoir to maintain reservoir pressure and achieve maximum economic condensate recovery, before operating the field as a conventional gas field.

Producing the field as a conventional gas field would raise issues of the reservoir becoming clogged by liquid condensate and trap significant quantities of condensate in the reservoir — condensate has a higher economic value than natural gas.

The second approach, gas cycling, could significantly improve hydrocarbon recovery but is expensive and technically challenging.

Until Exxon submitted its 2004-05 work plan for the Point Thomson unit, which has since been dissolved by the State of Alaska, the unit owners had been working on a plan to produce the high pressure condensate, separate out and ship the liquids,

and re-inject the gas for production later when the more valuable condensate and oil had been produced and when a natural gas pipeline was available.

Work on a federal environmental impact state and permitting was suspended in 2003 when the owners concluded the cost for producing the condensate and re-injecting the gas was too great.

The owners tried to identify a smaller gas injection project which would be viable, "in light of a smaller condensate resource," and although "significant" cost reduction potential was identified, the reductions were not enough to make a gas injection project viable, "and further engineering work on the resulting cost reduction case ... was suspended," the companies said in their review of the 2003-04 work plan.

Instead they proposed moving forward with pre-planning for a gas field. Specific work was to include developing "a conceptual gas sales depletion plan," conducting "screening evaluations of Point Thomson gas sales production facilities" and doing any work necessary to support ongoing negotiations with the administration former Gov. Frank Murkowski.

But State of Alaska officials were not convinced that abandoning the more valuable oil and condensate resource at Point Thomson was in the state's best interest, and they wanted the Point Thomson leases back, noting Exxon and its partners had held the remote eastern North Slope unit for more than 30 years without developing it.

Many court dates later, Exxon' proposed a compromise in early 2008 that calls for a relatively small gas cycling facility to produce condensate and possibly some oil, and to test that approach as an initial step in developing the Point Thomson field.

—extracted from March 2, 2008, Petroleum News article by Alan Bailey titled "The enigmatic sands." Some changes were made to the text. The full story can be found online at [www.petroleumnews.com/pnads/542269874.shtml](http://www.petroleumnews.com/pnads/542269874.shtml). Also in Petroleum News' online archive is a July 10, 2008, article, titled "Massey: Cycling won't work," which can be found at [www.petroleumnews.com/pnads/465830879.shtml](http://www.petroleumnews.com/pnads/465830879.shtml).

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continued from page 8

## OFFSHORE

Alaska production tax credits as being a significant component in the company's profit.

In the second quarter, ConocoPhillips had \$725 million in E&P worldwide earnings, more than 55 percent of that, \$404 million, came from its Alaska business.

ConocoPhillips' Alaska executives contend, however, that ACES places too heavy a burden on the oil companies and deters investment from the state. Most of Alaska's resource organizations agree.

### Offshore: where the big money is

Whether you like ACES or not, the state's tax regime won't be a factor for most of the money aimed at Alaska E&P in the next few years because a large chunk of that investment is earmarked for offshore, in the Beaufort and Chukchi seas.

In fact, three of the oil fields currently under development in northern Alaska are offshore — BP's Liberty in federal waters, and Pioneer's Oooguruk and Eni's Nikaitchuq in state waters.

Although it sits in federal waters, because Liberty is less than 6 nautical miles offshore the State of Alaska will receive 27 percent of the federal royalties from Liberty production.

Shell has been a leader in re-opening exploration in both the Beaufort and the Chukchi.

But Alaska's premier onshore explorer, ConocoPhillips, is right behind the Dutch major, having allocated \$506 million of its \$1.4 billion capital budget for Alaska in 2008, to picking up 98 leases from the U.S. Minerals Management Service in the undeveloped Chukchi Sea.

Footnote: In the last year ConocoPhillips has almost entirely pulled out of the Beaufort Sea, surrendering 41 state and federal leases, citing the economic difficulty of developing the remote, isolated and challenging region.

The company retained three federal leases in the waters of the Beaufort northeast of the Milne Point unit. The leases, which cover 15,000 gross acres, are the site of the Sandpiper prospect, estimated to hold between 20 million and 70 million barrels of oil.

In September 2008, Michael Faust, offshore exploration manager for ConocoPhillips, told Petroleum News that the company prioritized the Chukchi acreage over its pre-existing portfolio of Beaufort Sea leases.

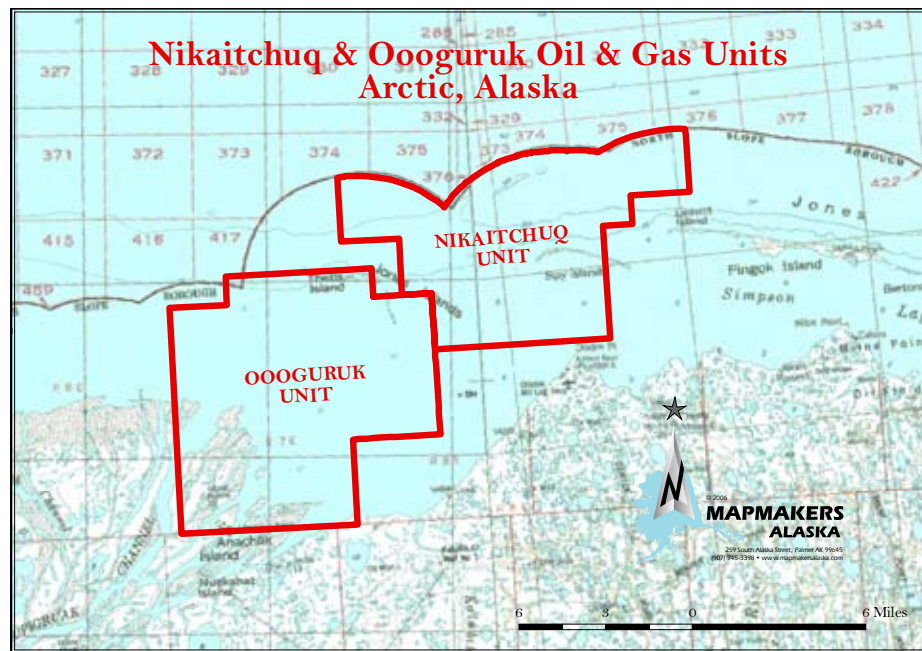
"Chukchi is definitely our offshore focus right now," he said.

Shell spent \$2.1 billion on acreage in the Chukchi Sea in MMS' 2008 lease sale, and the company has an exploration drilling program it hopes to kickoff in the Beaufort and Chukchi seas during 2010's open water season.

Shell is reportedly working hard with agencies — and dealing with court challenges — to get its permits in hand by December; or to be reasonably confident it can get the permits in time for the open water season that begins in late July.

In order to get all the associated vessels to Alaska in time for drilling and necessary contractors and supplies lined up, the company has to make a \$100 million commitment in December. Otherwise drilling has to wait until 2011, company officials have said.

Shell made that commitment to vessels and contractors in both 2007 and 2008, and lost a great deal of money in the process, but the company bailed on 2009 when it became obvious court challenges were going to prevent it from moving forward with drilling.



### Aug. 10 announcement hailed

Part of the problem has been the Obama administration's failure to declare its intentions toward drilling offshore Alaska, which leaves federal agencies, such as the Environmental Protection Agency, unsure of whether to proceed on permit applications.

The Aug. 10 press release from MMS, saying it had deemed Shell's exploration plan to explore two leases in the Beaufort Sea as "complete," was hailed by pro-drilling advocates as a major step forward because it was the first indication that the Obama administration was not going to

stand in the way of oil drilling (see story on page 6).

Advocates say they still do not know the full limit of the administration's support — whether Obama is going to simply tolerate drilling or give it a lot of support — and they do not know if that support includes the Chukchi Sea.

ConocoPhillips is looking at drilling in the Chukchi in 2011.

### Project updates

The four projects currently under development in northern Alaska all carry a price tag of \$1 billion-plus.

One of those four, Eni's Nikaitchuq field, is written up in this issue of Petroleum News (see page 1).

Following are summaries of the other three projects.

One of these fields, Oooguruk, is already in production but development drilling has not yet been completed.

On Aug. 13 Petroleum News asked Oooguruk operator Pioneer if it intended to drill more than the 40 wells its development plan with the State of Alaska calls for.

Pioneer's public relations director in Alaska emailed this reply: "While we continue to evaluate expansion opportunities, we have not altered our plan of development with the Department of Natural Resources."

When asked if Pioneer was planning to build its own processing facility, Owens said, "We successfully negotiated a commercially acceptable agreement with the owners of the Kuparuk River unit (ConocoPhillips) to process our production from Oooguruk. Nothing in that agreement precludes Pioneer from pursuing another arrangement for processing in the future. We continuously look for ways to improve the economics of all our projects."

**PROJECT NAME:** Point Thomson field, phase 1

**DESCRIPTION:** High-pressure gas

see **OFFSHORE** page 10



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continued from page 9

## OFFSHORE

cycling project, including central production facility, upgrade of three drill pads, pipeline capable of handling 70,000 barrels per day, five wells, related infrastructure and camps (see map on page 8). Delineation drilling and construction began winter 2008-09. Expected to be complete by year-end 2014. Subsequent field development (more phases) will be determined, which could include expanding injection capacity, oil production, pursuing natural gas sales if a pipeline from the North Slope will be built, or a combination.

**LOCATION:** 60 miles east of Prudhoe Bay and trans-Alaska oil pipeline, 22 miles east of Badami, on east abutments 1002 area of ANWR.

**OPERATOR:** ExxonMobil

**PHASE 1 RECOVERABLE HYDROCARBONS:** Exxon has not said publicly or told the State of Alaska.

**PHASE 1 INVESTMENT:** approximately \$1.3 billion-plus

**JOBS:** 2009 through 2013: 400

**PRODUCTION START:** year-end 2014

**PRODUCTION:** Exxon says 10,000 barrels

per day of liquid condensate and has mentioned an additional 10,000 bpd of oil. Two hundred million cubic feet of natural gas per day will be re-injected.

**WHAT'S DIFFERENT ABOUT POINT THOMSON:** World's highest pressure gas cycling project (>10,000 psi injection pressure, 15,000 psi at wellhead).

**DRILL RIG ON SITE:** Nabors 27E

**MAJORITY PARTNERS (ROUGH ESTIMATES):** Exxon 36 percent, BP 32 percent, Chevron 25 percent, ConocoPhillips 5 percent

**STATUS AS OF AUG. 12, 2009:** Surface casing set in one of two wells expected to be drilled by end of 2010. Rig spud second well in early August, surface casing will be set by end of August. Drilling window opens Nov. 1. Have begun contracting process for all front-end engineering work necessary to build surface facilities. RFP out for ice road and air strip.

**PROJECT NAME:** Liberty

**DESCRIPTION:** Beaufort Sea oil field being developed with four to six ultra-extended reach wells (up to four producers and two injectors) from near-shore Endicott oil field (see map on page 9). Existing satellite drilling island and processing

facilities at BP-operated Endicott field causeway, which connects field to shore, will be used for drilling Liberty, negating need for offshore platform, drilling island or sub-sea pipeline. Liberty wells, guided by 3-D seismic imagery, will extend two miles deep and as far out as 8 miles. Pad expansion and improvements needed at Endicott and special Arctic drilling rig designed.

**LOCATION:** Reservoir under federal waters 6 miles offshore, 15 miles east of the Prudhoe Bay field. Water depth over Liberty leases shallow, about 20 feet.

**OPERATOR:** BP

**DISCOVERY DATE:** 1997

**RECOVERABLE OIL:** 100 million barrels

**COST:** approximately \$1.5 billion

**JOBS:** To date (Aug. 12) more than 1,000 people involved in project. BP and contractor employment for next several months, until the end of 2009, expected to be 200-250. In 2010 will begin to climb, ramping up as high as 300 when drilling starts in spring 2010.

**PRODUCTION START:** 2011

**PRODUCTION:** BP says 40,000 bpd once field ramps up in 2013.

**WHAT'S DIFFERENT ABOUT LIBERTY:** Will produce from world's longest wells,

which will be drilled by world's most powerful onshore drill rig.

**BP'S LIBERTY PROJECT MANAGER:** Darryl Luoma

**DRILL RIG:** BP Alaska commissioned Parker Drilling to build powerful top-drive drill rig that could drill ultra-extended-reach wells; BP characterizes as world's most powerful onshore drill rig. Cost \$215 million. When assembled will weigh 8,500 tons, stand 240 feet tall. Key component is massive top drive, which will apply 105,000 foot-pounds of torque to drill pipe while rotating pipe at 130 revolutions per minute. Typical North Slope rig top drive provides torque in range of 30,000 to 45,000 foot-pounds. Rig owned by BP, operated by Parker.

**MAJORITY PARTNERS:** BP sole owner.

**Status as of Aug. 12, 2009:** Extension of Endicott Satellite Drilling Island, or SDI, camp and facility fabrication, upgrades to the Sagavanirktok (Sag) River bridge completed in early summer. Barges hauling unassembled pieces of drill rig arrived at Endicott ahead of schedule on two Crowley barges in late July. Rig assembly, testing and training scheduled for fall.

**PROJECT NAME:** Oooguruk

**DESCRIPTION:** Development drilling continues at Oooguruk oil field offshore Alaska's North Slope, developed from a manmade gravel island drill site some six miles offshore in Harrison Bay, with crude oil moving to shore via a subsea flowline and then on to Kuparuk River unit processing facilities. First wells went online in June 2008. Continuing program of development drilling for total of 40 wells.

**LOCATION:** About 5 miles offshore northern Alaska in Beaufort Sea, in about 5 feet of water. Inside barrier islands offshore eastern Harrison Bay, northwest of Oliktok Point.

**OPERATOR:** Pioneer Natural Resources

**DISCOVERY DATE:** 2003

**RECOVERABLE OIL:** Originally slated as 70-90 million barrels of oil equivalent, but not long after June 2008 startup, higher than expected well flow rates and additional 3-D seismic, led to February 2009 statement by Pioneer, raising estimates of recoverable oil equivalent to between 120 million and 150 million barrels.

**COST:** approximately \$1 billion. (Pioneer plans to spend between \$250 million and \$300 million in 2009 with largest share, around 35 percent, directed toward drilling.)

**JOBS:** In 2009 will average between 100-140 field personnel on North Slope.

**PRODUCTION START:** June 2008


**PRODUCTION:** Expected to peak in 2011 at 15,000-20,000 bpd. Expected to outperform expectations for second half 2009, averaging 6,000 to 7,000 bpd.

**WHAT'S DIFFERENT ABOUT OOOGURUK:** First producing North Slope oil field to be operated by an independent oil company. First subsea pipeline in northern Alaska utilizing pipe-in-a-pipe concept.


**DRILL RIG:** Nabors 19E

**MAJORITY PARTNERS:** Pioneer 70 percent, Eni 30 percent

**STATUS AS OF AUG. 12, 2009:** Although field production started from Kuparuk formation, with oil flow rates from zone proving very robust, Pioneer considers the Nuiqsut to be Oooguruk's main production horizon — company is in process of drilling a pattern of horizontal production and water injection wells in this horizon. In current plan of development filed with State of Alaska for Oooguruk unit, Pioneer says it will use knowledge gained during development to assess "our exploitation opportunities in the acreage immediately outside our development areas and at varying horizons." ●




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SAFETY & ENVIRONMENT

# Arctic Ocean ice melting in summer heat

By CHARLES J. HANLEY  
Associated Press

The Arctic Ocean has given up tens of thousands more square miles of ice on Aug. 9 in a relentless summer of melt, with scientists watching through satellite eyes for a possible record low polar ice cap.

From the barren Arctic shore of Tuktoyaktuk, Northwest Territories, in Canada's far northwest, 1,500 miles north of Seattle, veteran observer Eddie Gruben has seen the summer ice retreating more each decade as the world has warmed. By this weekend the ice edge lay some 80 miles at sea.

"Forty years ago, it was 40 miles out," said Gruben, 89, patriarch of a local contracting business.

Global average temperatures rose 1 degree Fahrenheit in the past century, but Arctic temperatures rose twice as much or even faster, almost certainly in good part because of manmade greenhouse gases, researchers say.

In late July the mercury soared to almost 86 degrees Fahrenheit in this settlement of 900 Inuvialuit, the name for western Arctic Eskimos.

"The water was really warm," Gruben said. "The kids were swimming in the ocean."

As of Aug. 6, the U.S. National Snow and Ice Data Center reported, the polar ice cap extended over 2.61 million square miles after having shrunk an average 41,000 square miles a day in July — equivalent to one Indiana or three Belguims daily.

The rate of melt was similar to that of July 2007, the year when the ice cap dwindled to a record low minimum extent of 1.7 million square miles in September.

In its latest analysis, the Colorado-based NSIDC said Arctic atmospheric conditions this summer have been similar to those of the summer of 2007, including a high-pressure ridge that produced clear skies and strong melt in the Beaufort Sea, the arm of the Arctic Ocean off northern Alaska and northwestern Canada.

In July, "we saw acceleration in loss of ice," the U.S. center's Walt Meier told The Associated Press. In recent days the pace has slowed, making a record-breaking final minimum "less likely but still possible," he said.

## Ice makeup shifting

Scientists say the makeup of the frozen

polar sea has shifted significantly the past few years, as thick multiyear ice has given way as the Arctic's dominant form to thin ice that comes and goes with each winter and summer.

The past few years have "signaled a fundamental change in the character of the ice and the Arctic climate," Meier said.

Ironically, the summer melts since 2007 appear to have allowed disintegrating but still thick multiyear ice to drift this year into the relatively narrow channels of the Northwest Passage, the east-west water route through Canada's Arctic islands. Usually impassable channels had been relatively ice-free the past two summers.

"We need some warm temperatures with easterly or southeasterly winds to break up and move this ice to the north," Mark Schrader, skipper of the sailboat "Ocean Watch," e-mailed The Associated Press from the west entrance to the passage.

The steel-hulled sailboat, with scientists joining it at stops along the way, is on a 25,000-mile, foundation-financed circumnavigation of the Americas, to view and demonstrate the impact of climate change on the continents' environments.

## Concern over bears

Environmentalists worry, for example, that the ice-dependent polar bear will struggle to survive as the Arctic cap melts.

Schrader reported seeing only one bear, an animal chased from the Arctic shore of Barrow, Alaska, that "swam close to Ocean Watch on its way out to sea."

Observation satellites' remote sensors will tell researchers in September whether the polar cap diminished this summer to its smallest size on record. Then the sun will begin to slip below the horizon for several months, and temperatures plunging in the polar darkness will freeze the surface of the sea again, leaving this and other Arctic coastlines in the grip of ice. Most of the sea ice will be new, thinner and weaker annual formations, however.

At a global conference last March in Copenhagen, scientists declared that climate change is occurring faster than had been anticipated, citing the fast-dying Arctic cap as one example. A month later, the U.S. National Oceanic and Atmospheric Administration predicted Arctic summers could be almost ice-free within 30 years, not at the century's end as earlier predicted. ●

## OIL COMPANY EARNINGS

### Earnings from Petroleum News top companies

Earnings first second 2009 • Change from second quarter 2008  
Liquids production second quarter 2009 • Change from second quarter 2008  
Natural gas production second quarter 2009 • Change from second quarter 2008

Company	symbol	earnings	%	liquids	%	gas	%
ExxonMobil	XOM	\$3,950	-66	2,347,000	-2	8,013	-6
BP	BP	\$4,385	-53	2,526,000	+5	8,580	+4
Shell	RDS-A	\$3,822	-67	1,647,000	-8	7,614	-2
Chevron	CVX	\$1,745	-71	1,839,000	+10	4,988	-4
Total	TOT	\$2,957	-60	1,328,000	-10	4,686	-2
ConocoPhillips	COP	\$1,298	-76	1,030,000*	+9	5,051*	+5
Eni	E	\$1,197	-76	986,000	-1	4,290	-4
StatoilHydro	STO	\$0	—	1,032,000	-1	696	+4
Occidental	OXY	\$682	-70	496,000	+9	935	+13
EnCana	ECA	\$239	-80	136,000	+6	3,788	-1
Can. Natural	CNQ.TO	C\$162	—	365,672	+15	1,352	-11
Anadarko	APC	-\$224	—	228,000	-3	2,336	+25
Devon	DVN	\$314	-76	253,300	+14	2,792	+11
Marathon	MRO	\$413	-47	303,000	+47	955	-3
Husky	HSE.TO	C\$430	-68	225,200	-12	552	-11
Talisman	TLM	C\$63	-85	212,149	-3	1,271	-0
Apache	APA	\$443	-69	292,462	+7	1,770	-5
Imperial	IMO	C\$209	-82	215,000	-4	286	-8
Suncor	SU.TO	-C\$51	—	301,000	+72	211	-7
Petro-Canada	PCZ	C\$77	-95	267,000	-10	645	-8
Nexen	NXY.TO	C\$20	-95	204,000	-4	215	-12
XTO	XTO	\$496	-14	89,913	+35	2,352	+31
Chesapeake	CHK	\$237	—	34,637	+10	2,245	+5
Pioneer	PXD	-\$92	—	51,224	+1	393	+3
EOG	EOG	-\$17	—	72,000	+28	1,645	+4
Swift	SFY	-\$2	—	11,400	-7	61	-3

Liquids production in barrels per day, including oil sands.  
Natural gas production in millions of cubic feet per day.  
\*Does not include Lukoil investment

Top companies chosen based on exploration spending and commitment to Alaska and Canada

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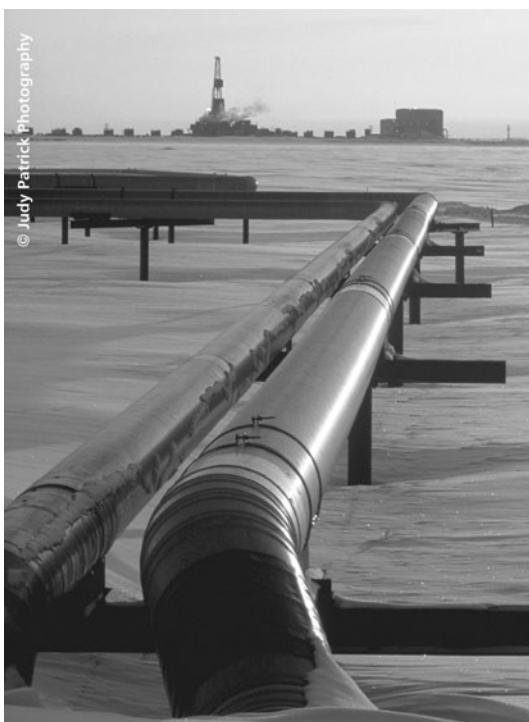
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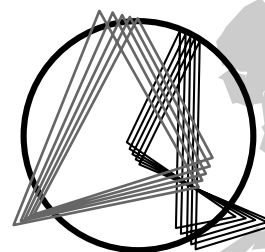


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**Rain for Rent touts continuous portable radar gauge**

Rain for Rent said July 17 that its portable liquid level gauge continuously measures liquid levels with a nonintrusive 26 GHz radar signal. Monitoring, measuring and controlling liquid levels in portable or fixed tanks is easy with the portable radar gauge, the company said.



Level measurements are not affected by temperature, gas, vapor or control process instruments and FVD pumps for flow monitoring and liquid levels, Rain for Rent said.

The radar liquid level gauge is easy to install and requires no contact with liquid and no confined space entry, the company said, noting that the programmable data logger can be

remotely mounted from the radar-sending unit.

The gauge is one of many instrumentation rental products available exclusively through Rain for Rent.

For more information visit [www.rainforrent.com](http://www.rainforrent.com).

**Polar Tankers receives award**

The Bellingham Herald reported Aug. 7 that representatives from the State of Washington Department of Ecology recently presented Polar Tankers with its Exceptional Compliance Program Award.



The Polar Endeavour

The award was given to the subsidiary of ConocoPhillips

for achieving excellence in marine safety and environmental stewardship.

The oil tankers arrive approximately twice a week at the Ferndale dock near the ConocoPhillips' Ferndale refinery.

Polar Tankers operates U.S.-flagged crude oil tankers on the West Coast including Washington, Oregon, California, Alaska, Hawaii and Canada. Its five modern, Endeavor Class tankers are specifically designed to carry crude oil in an environmentally safe manner.

The double-hulled vessels feature 10 feet of space between the inner and outer hulls, two independent engine rooms, redundant propulsion, twin steering systems and a bow thruster.

*Editor's note: All of the above 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 September.*

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Alaska Marine Lines		ExxonMobil		Peak Civil Technologies	16
Alaska Railroad Corp.		Flowline Alaska	11	Peak Oilfield Service Co.	
Alaska Regional Council of Carpenters (ARCC)		Fluor		Penco	14
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SAFETY & ENVIRONMENT

# Report: Carbon capture won't come cheap

By GARY PARK

For Petroleum News

The Alberta Carbon Capture and Storage Development Council has issued a bottom-line report on the costs of advancing CCS to a technically and financially viable level on a large scale.

In a final report by the council, appointed in April 2008 by the Alberta government to develop a blueprint for implementing CCS, the Canadian and provincial governments were advised they might have to pump C\$1 billion to C\$3 billion a year over eight years into the undertaking.

Council Chairman Jim Carter, former president of Syncrude Canada, said in a statement that Alberta, which is contributing C\$2 billion for the CCS program, has "again tapped its pioneering roots and has assumed a globally leading role in the development of CCS technology. The projects that will result from this program will create important momentum."

He said the council report endorses the potential of CCS to have an impact on greenhouse gas emissions and establishes a path forward, but the process will be costly and needs governments, industry and consumers to shoulder the burden.

Carter said the council has been able to provide a better

guide to capital and operating costs than was available before.

### Expertise will reduce costs

The report said those costs will decline as expertise is gained and improved commodity prices "could deliver manageable costs to industry" that are comparable with other alternatives to reduce greenhouse gases.

For Alberta to achieve its CCS goal of removing 25 million to 30 million metric tons from the atmosphere by 2020 it will be necessary to "remove the financial disadvantage created by CCS" until costs can be improved and/or higher compliance costs level the field for the industry worldwide, the report said.

The council estimated an additional C\$1 billion to C\$3 billion a year will be needed from the Canadian and Alberta governments to further promote CCS projects after the first wave of demonstration projects.

"Industry will likewise need to shoulder significant additional investment," the report said.

"Energy consumers will ultimately bear a large share of the burden of the costs of CCS."

### Council: Expenses justified

Regardless of those obstacles, the council insists the

expenses are justified if the result is cleaner energy production.

Enhanced oil recovery could find itself at the center of the CCS efforts, the council said, estimating that based on an oil price of US\$75 per barrel there is sufficient EOR capacity in Alberta to store 450 million metric tons of carbon dioxide and produce 1.4 billion barrels from conventional sources, or double the province's conventional oil recovery.

That incremental production would translate into C\$105 billion of revenue over the development life, potentially generating C\$11 billion to C\$25 billion in extra provincial royalties and taxes.

But the council cautioned that rather than being a silver bullet, CCS is just a large piece of the puzzle.

It said CCS will take time to develop — the council last year estimated commercial CCS might be 15 years away — and costs could range from C\$76 to C\$150 per metric ton. "Over and above any potential compensation available to industry, deploying CCS currently carries a financial disadvantage of up to C\$100 (per metric ton)," the report said.

Energy Minister Mel Knight said the findings will be "considered carefully" as the government moves forward with CCS technology development. ●

continued from page 1

## HEAT

provinces are watching what the others are doing and that's a good thing. It keeps us on the sharp edge of competitiveness."

He credited B.C. with making its move just as companies are preparing their budgets for the 2009-10 winter drilling season, with a particular emphasis on companies aiming to prove up their Montney properties.

### British Columbia

In the latest round of anything-you-can-do-I-can-do-better, B.C. decisively answered the most recent pump-priming by Alberta with ultra-low royalties and millions of dollars in infrastructure incentives.

This year started with B.C. introducing royalty cuts in March, stretching a program it started in 2004; Alberta answered two days later with its own incentives, in response to industry hostility to new royalty increases and a precipitous fall in upstream activity, by lowering royalties on some new conventional oil and gas wells to 5 percent or less for a year, then extending the offer to mid-2010.

B.C. came back on Aug. 6 with a bare-bones 2 percent royalty, compared to an average rate of 19-20 percent, on the first year of production from wells drilled in the 10 months starting in September as the centerpiece of a stimulus package that includes: an increase of 15 percent in the existing royalty deductions for gas deep drilling, including horizontal wells drilled to between 1,900 and 2,300 meters in the deep royalty credit program, a vital incentive to the tight- and shale-gas operators; an additional C\$50 million, on top of an existing C\$120 million, for an infrastructure royalty credit program to be offered this fall to encourage spending on oil and gas roads and pipelines; and changes to drilling license regulations to let the industry move wells to production without losing the privileges of converting licenses to leases.

The 2 percent royalty would constitute a giveaway in Alberta, where first-year decline rates from conventional gas wells are extreme, compared with the unconventional Montney and Horn River plays in B.C., where the initial reserve depletion is modest and gas can flow at sus-

tained rates for 15 to 30 years.

### Objective more wells

The changes are expected to generate C\$2.50 in net incremental revenue for every C\$1 of royalty credits without needing any direct government spending, although the government made no attempt to project the actual revenue gain, beyond hoping for an incremental gain of 942 wells over four years, translating into a 0.6 percent hike in the province's Gross Domestic Product.

Energy Minister Blair Leckstrom made no secret of B.C.'s objective, noting that natural gas is the "largest contributor to the economic well-being of this province" — a matter of crucial importance with B.C. facing a budget deficit of C\$495 million in the current fiscal year after a string of surplus budgets.

He said the projected proceeds from increased gas production will go to education, health care and social programs.

Leckstrom said that rather than competing directly with Alberta or

see HEAT page 14

## Bakken is cookin'

Feeling the pressures from its western flank, Alberta is also being squeezed from its eastern side, as Saskatchewan gets a thumping vote of confidence in the future of its Bakken oil play, which extends northward from Montana and North Dakota.

In a deal valued at about C\$2.24 billion, Petrobank Energy and Resources plans a cash-and-shares takeover of TriStar Oil & Gas prior to spinning out a new publicly traded, pure-play company called PetroBakken to exploit the unconventional Bakken resource, which has an estimated 400 billion barrels of light sweet crude in place on both sides of the 49th parallel, up to 25 percent in Saskatchewan.

Provided the offer (which includes a 29 percent premium to TriStar's average trading price over 10 days before the announcement) gets shareholder approval and is completed on Oct. 1, Petro-Bakken will exit 2009 with production of 37,000 barrels of oil equivalent per day from proved and probable reserves of 127 million boe.

Of the Bakken players in Saskatchewan, only Crescent Point Energy Trust will be larger, at 39,000 barrels per day.

"It really is a unique once-in-a-lifetime opportunity," said Petrobank Chief Executive Officer John Wright.

"We really both believe firmly that the application of technology is going to be the path of future growth in the oil and gas industry.

"There is a lot of hidden value in each one of our business units," he told analysts.

### Montney, Horn River holdings

In addition to Bakken, the new entity will also have a major foothold in British

see BAKKEN page 14



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continued from page 13

## HEAT

Saskatchewan, B.C. is focused on becoming one of the most competitive jurisdictions in North America.

"At the end of the day, we have to do what is best for B.C.," he said. "In this day and age, capital investment is very fluid and we want to encourage the oil and gas sector to invest in British Columbia."

Noting that global oil and gas activity is experiencing a "bit of a slowdown," he said B.C. has weathered the storm "quite well, but this stimulus package is based on bringing things back to a higher level

of activity."

### Alberta doing study

While Alberta Energy Minister Mel Knight is adamant his province is not in direct competition with its neighbors, his government is in the midst of a "competitiveness" study to determine how Alberta stacks up against other jurisdictions.

A spokesman for the Alberta Energy Department said his government will not change its policies purely in response to what others do, but conceded B.C.'s regulatory regime will be part of the Alberta review.

The B.C. plan was unveiled on the same

day that executives of Canadian Natural Resources, Canada's second largest gas producer after EnCana, delivered a barely disguised slap at Alberta.

Chairman Allan Markin made an urgent plea for cooperation among producers, all levels of government, suppliers and stakeholders to rescue Western Canada's gas sector which he said is "at a crossroads."

He said the industry "must be vigilant in reducing costs and improving efficiencies" if it has any hope of participating in a price recovery, which CNR does not expect will happen over the short-term.

Demonstrating its own pessimism, CNR has shifted C\$100 million in capital spending this year from gas to oil, reduced its forecast gas wells this year to 110 from 140 (continuing a slide from 240 wells in 2008 and 450 in 2007) and has shut-in 10 million cubic feet per day.

Markin, prior to the B.C. announcement, said the province was one of the jurisdictions that is "proactively looking at ways to support the industry." He pointedly made no comment on Alberta.

CNR President Steve Laut said the independent producer will drill wells over the balance of 2009 purely for strategic reasons because "it makes no sense to drill for any other reason."

But he said work continues to delineate findings in the Montney region, where the latest horizontal well posted initial output of 15 million cubic feet per day.

Richard Dunn, vice president of EnCana, which is spending about C\$1 billion a year in B.C., told reporters his company is "very supportive of the way B.C. has worked with industry to produce these win-win solutions."

He said the competition for investment is clearly North Americanwide because gas prices apply to the continent. "Canadian jurisdictions have to be competitive," he said.

Michael Culbert, chief executive officer of Progress Energy Resources, which usually divides its C\$200 million capital budget between B.C. and Alberta, said the stimulus program "could sway some additional dollars going into B.C."

He said B.C. is offering a level of investment certainty, while Alberta is involved in constant "backtracking" on its royalty changes, adding that "from a planning perspective, knowing exactly what we have to work with is quite positive."

Gary Leach, managing director of the Small Explorers and Producers Association of Canada, said the changes have the potential to draw investment dollars away from Alberta.

He said the incentives are "not hand-outs," suggesting the industry will respond "with continued high levels of investment."

—GARY PARK

continued from page 1

## INSIDER

into nearby Fort McMurray, the oil sands capital city.

But not all companies are going cold turkey.

Canadian Natural Resources is retaining pubs at its Blacklands Lodge near Fort McMurray and its new Horizon camp site; a joint venture by Fort McKay First Nation and ATCO Frontenac has a lounge at its Creeburn Lake Lodge; Royal Dutch Shell has support from its workers and the local community for alcohol at its Albian Village; and Syncrude Canada will offer both a lounge at its Mildred Lake Lodge, and a shuttle bus to Fort McMurray.

The Albian Village pub has BYOB rules, but it demands that employees show up for work on time and with clear heads.

—GARY PARK

## Energy rally planned for Aug. 31

**THE ALASKA SUPPORT INDUSTRY ALLIANCE** is one of the sponsors of an energy issues rally planned for Aug. 31.

The Alliance said the intent is to draw attention to pivotal energy issues facing Congress when it returns from its August recess. The rally will begin at 10:45 a.m. at the Dena'ina Center, preceding an Anchorage Chamber of Commerce luncheon there which features U.S. Sen. Lisa Murkowski.

The Alliance said there are a number of business and resource development groups supporting the effort, which will feature speakers from business and community groups.

The rally will be a call to action for Alaska's federal officials on energy access issues such as the outer continental shelf and domestic energy development, taxes, an Alaska gas pipeline and cap-and-trade legislation.

—PETROLEUM NEWS

continued from page 13

## BAKKEN

Columbia's unconventional gas plays, with a 100 percent working interest in 11,000 acres of Montney and 62,000 gross acres of Horn River.

The Montney holdings have an estimated 510 billion to 850 billion cubic feet of original gas in place, of which 25-35 percent is deemed recoverable, and 2.5 trillion to 25 trillion cubic feet of OGIP in Horn River, with expected recoveries of 20-30 percent.

"There are places in the world where you can explore and there are places where there are unexploited reserves," Wright said. "Frankly, most of the stuff that's left in Canada is pretty tough to get out of the ground."

"We've been focusing our (Petrobank and TriStar) technical teams on finding newer and better ways to get oil out of very tough rock," he said.

### Advanced fracturing

Gregg Smith, chief operating officer of Petrobank's Canadian assets, said technology has allowed Bakken to produce "high-quality oil" from what was viewed for 50 years as a marginal reservoir that pumped

25 barrels per day, per well.

The use of advanced fracturing technology, which is now moving from eight "frac" per horizontal well to 20, cutting costs, raising productivity and allowing re-entries to existing wells, is the key.

At Petrobank the philosophy is that "We're allowed to make mistakes. We just don't repeat them," Smith said. "People know they won't be punished for making a mistake or trying something different. That encourages experimentation and produces the breakthroughs we've seen," he said.

Smith has demonstrated that spirit over many years, as a member of Canada's canoe racing teams through most of the 1970s (including two Olympic selections) and most recently being named Saskatchewan's 2009 Oilman of the Year.

He said Petrobank made the major leap in Bakken when it bought a fracturing system from Packers Plus, using a combination of hydraulic fracturing and horizontal wells.

Clarus Securities analyst Kirk Wilson said Petrobank, while not alone in taking an innovative approach to the Bakken formation, has always been more of a technology company than an oil and gas producer.

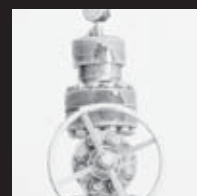
He said creating PetroBakken is strong evidence that heavy oil technology is on the verge of going big time.

—GARY PARK

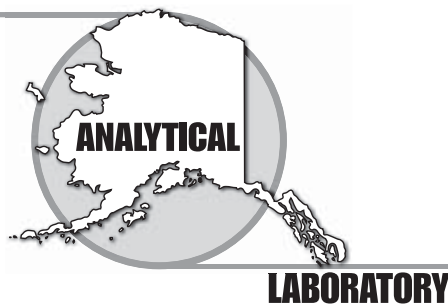


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continued from page 1

## GAS STORAGE

excess of 60 million cubic feet per day out of the combined (Chevron) systems," John Zager, Chevron's Alaska manager, told Petroleum News Aug. 4.

Both facilities can help support either the on-going high gas load of a typical winter or the peak load during particularly severe cold. However, Chevron tends to use Pretty Creek primarily to bolster the on-going winter load.

"We tend to turn that on and leave it on throughout the winter, whereas we tend to use Swanson more as a peaking field," Zager said.

Zager said that gas storage is critical to addressing the short to intermediate issues relating to the deliverability of utility gas. And a variety of different types of storage could address different delivery needs, such as continuous or needle peaking supply. In addition to the type of below-ground storage that has been implemented already, the above-ground storage of LNG would be especially suitable for needle peaking delivery of gas.

### Not cheap

But none of the gas storage options is cheap.

"People want to talk about affordable gas, which is a great desire, but you need to look at security of supply too," Zager said.

Both Chevron and Marathon operate their storage facilities in support of their own operations, to ensure that they can meet their contracted gas supply obligations during the winter. But the storage supports long-term, full-service supply contracts, with constant gas pricing regardless of season variations in demand. This type of contract is disappearing, in part because it does not recognize the full cost of meeting winter demand, Zager said.

Instead, pricing will likely become more flexible, perhaps tiered to the gas demand level, thus opening possible gas storage roles for gas utilities, power utilities or perhaps third-party gas storage operators.

"The market will find an answer, given the opportunity," Zager said. "Tiered pricing may work. There may also be a mechanism whereby a utility and the customers would pay a capacity charge, whether they use the gas or not."

The concept of a capacity charge arises from the need to protect a gas storage operator from the risk of establishing and filling a storage facility, and then encountering a mild winter in which the storage is not needed — essentially the capacity charge would operate like an insurance premium, to ensure the availability of sufficient gas during exceptionally cold weather.

And then there is the risk associated with uncertainty in the future of the Cook Inlet gas market — in June Ethan Schutt, vice president for land and legal affairs for

Cook Inlet Region Inc., a Native regional corporation with major land holdings around the Cook Inlet, told the Senate Resources Committee that CIRI had determined that the development of gas storage for third-party use in the Cook Inlet basin is very unattractive for private industry because of high development costs and high market uncertainty.

"Although the concept seems attractive and to serve a public purpose, the economics aren't worth the risk right now," Schutt said.

### Technical challenges

However, aside from the commercial challenges of establishing a viable gas storage facility, anyone setting up an underground storage facility in the Cook Inlet basin faces some significant technical challenges. Whereas in the Lower 48 a company might construct an underground storage facility by using fossilized reef structures with large cavities, or by leaching salt from an underground salt dome to create a cavern that can be filled with gas, operators in the Cook Inlet basin have to use relatively poor reservoirs in muddy sandstones, Zager said.

"We in the Cook Inlet do not have what are considered good storage reservoirs,"

he said.

Producing gas too fast from a Cook Inlet sandstone reservoir runs the risk of sand production through the gas wells, while issues such as water encroachment in the reservoir need to be considered. There's also the risk of losing gas that's pumped into a less-than-optimum reservoir for storage.

"The first time you're filling that reservoir with gas, you're just hoping it comes back out again," Zager said.

And the need to use a depleted gas field for storage limits the number of underground storage facilities that can be brought into use, as well as determining the locations of gas storage sites and possibly introducing issues relating to joint ownership of field leases. The need to locate a storage facility at a place on the Cook Inlet pipeline system where stored gas can be delivered at sufficient rate through the pipelines further limits the availability of gas storage locations — many Chevron properties are offshore, where storage operation does not seem to make much sense, Zager said.

And no one is going to take the risk of trying to establish an underground facility in a location other than a depleted field.

"My theory would be if nature hasn't

been able hold gas for a long period of time, I'm not going to bet on it," Zager said.

### New gas

Zager also cautioned that, although gas storage can help with short-term gas deliverability issues, the storage does not actually create any new gas to bolster supplies. In the longer term gas from new Cook Inlet discoveries, from the North Slope or from LNG imports will have to come on line, he said.

And, in the short term, gas conservation, through measures such as turning down thermostats, using wood stoves and deferring activities with high power or gas consumption, could go a long way to overcoming the peak gas deliverability hurdle.

"If on a cold day you could shave demand by 10 percent, that would equate to a nice-sized gas field or an entire storage facility," Zager said.

And building a new storage facility, including permitting, and perhaps drilling a new well and installing compression, would likely take a couple of years.

"It's not like if we decided now, we can have anything ready for this winter, or probably even next winter," Zager said. ●

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continued from page 1

## ENI

of wells remains essentially the same.

While Eni's initial development plan of May 2008 had first oil flowing by the end of this year, the updated plan sees first oil by Dec. 31, 2010.

State officials, still reviewing Eni's new plan, are glad to see Eni back on track.

Eni is one of the "shining stars" of state efforts to encourage a greater diversity of companies working on the North Slope, said Nan Thompson, units manager in the Division of Oil and Gas.

"They are very good to work with," she said.

### Project's significance

Rome-based Eni is a global oil and gas player and one of Italy's largest companies.

It arrived on the scene in Alaska in the fall of 2005 with the acquisition of North Slope leases from Armstrong Oil & Gas of Denver. Eni had a 30 percent stake in Nikaitchuq, but in April 2007 the company took full control of the field in acquiring Anadarko's 70 percent.

Eni is working to become only the second independent oil producer on the North Slope, and the fourth company overall to operate an oil field in the region.

The first independent, and currently the only operator other than giants BP and ConocoPhillips, is Pioneer Natural

Resources, which started up its small offshore Oooguruk field in summer 2008. Eni holds a 30 percent stake in that development.

Nikaitchuq is a bigger and more complicated project than Oooguruk. Unlike Pioneer's approach with Oooguruk, which sends its crude into the ConocoPhillips-operated Kuparuk field for processing, Eni is developing Nikaitchuq as a standalone project with its own processing facilities located at Oliktok Point.

Eni has said Nikaitchuq is a \$1.45 billion project with recoverable reserves estimated at 180 million barrels. That's a sizeable amount of oil, though small relative to major North Slope fields such as Prudhoe Bay and Kuparuk, which so far have produced well in excess of 11 billion and 2 billion barrels of oil respectively.

Nikaitchuq in the Inupiaq language means "perseveres" or "keeps trying."

### 'A more normal pace'

In its latest development plan, Eni attributes the project slowdown earlier this year to more than just the plunge in oil prices over the final months of 2008.

"A variety of factors, including but not limited to schedule delays, not meeting sealift deadlines, capital constraints and fabrication delays have caused Eni to change the pace of development for the Nikaitchuq Unit from an accelerated pace of development to a more normal pace," the plan says.

Part of Eni's problem was Hurricane Ike, which caused a work stoppage last

September at a Louisiana fabrication yard making oil processing and operations modules for sealift to Alaska, Division of Oil and Gas records show. Barging equipment through icy Arctic Ocean waters to the North Slope is limited to a narrow window each summer.

Much work, however, has been completed on Nikaitchuq.

Three gravel work pads already have been built, as well as an elaborate subsea pipeline and part of an overland pipe to feed Nikaitchuq oil into the Kuparuk pipeline.

The first Nikaitchuq production well also was drilled this past winter, and is currently shut-in until production equipment is ready, Eni's development plan says.

### Two drill sites

Eni's plan includes two drills sites, one on land at Oliktok Point and the other on a gravel pad installed in six feet of water along the inner shore of Spy Island, a barrier island off the North Slope coastline.

Eni, in its initial and revised development plans, has not significantly varied the number of wells it plans.

At Oliktok Point, Eni expects to drill seven oil producer wells and eight injector wells targeting the OA Cretaceous sands within the Schrader Bluff formation. All the wells will be directionally drilled from Oliktok Point into the Nikaitchuq acreage offshore, Eni's latest development plan says. The wells will include horizontal sections of 6,000 to 10,000 feet through the reservoir.

Nabors rig 245-E will do the drilling, to commence in the first quarter of 2010, the development plan says.

Aside from the producers and injectors, up to six water supply wells and one well to dispose of drill cuttings will be required. Eni already has installed a grind-and-inject module at Oliktok Point.

"Water injection in the Nikaitchuq field development will play a fundamental role in well production and reserve exploitation," the plan says. The water will help maintain reservoir pressure, which can enhance oil recovery.

A plant to separate the oil, gas and water coming in from Nikaitchuq wells will share the gravel pad at Oliktok Point. The Nikaitchuq operations camp will occupy a separate pad.

First oil from the Oliktok Point drill site is expected by Dec. 31, 2010, Eni's plan says.

At Spy Island, 24 producing wells and 24 injector wells are planned into the Schrader Bluff sands. Three additional wells might be drilled to target minor oil accumulations in the Triassic Sag River formation sandstones.

No rig has been lined up yet for the Spy Island drilling, which is scheduled to begin in the third quarter of 2011 with first oil from the offshore site expected by Dec. 31 of that year, Eni's development plan says.

### The pipelines

One of the most impressive aspects of the Nikaitchuq project is the buried 3.1-mile "offshore flowline bundle" linking the Spy Island drill site to the processing facility at Oliktok Point.

Eni already has installed the subsea bundle, which features an oil production pipe within a pipe plus a lot more. Eni's initial development plan provided details: "The bundle will transport three phase fluids from the drill site to the facility, provide arctic heating fuel to the island for fuel and well treating, water for reservoir injection, electrical power and communications cables."

In terms of leak detection, a pressure change in the outer pipe will signal a possible breach of the inner pipe, Eni says. Further, a fiberoptic cable in the bundle will be able to detect temperature changes that might indicate a leak.

Eni is not the first to lay such a multipurpose line on the sea floor off the North Slope. Pioneer put one in for its Oooguruk project.

To carry processed Nikaitchuq oil to market, Eni also plans to complete a 14-mile onshore pipeline tying into the Kuparuk pipeline. The 14-inch line was about 20 percent done when construction was suspended, but work will resume later this year, Eni says. Meantime, fabrication of modules for processing well fluids is ongoing in Louisiana, with a sealift planned for next summer, the company says. ●

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