Petroleum news

page 7 Interior wind farm would balance output with batteries, generators

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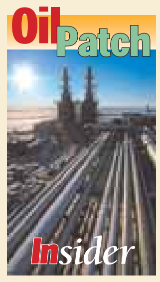
Wiggin getting back to business; TransCanada becomes TC Energy



FORMER ALASKA DEPARTMENT OF NATURAL RESOURCES Deputy Commissioner Mark Wiggin is ready to "get back to business."

After leaving office when the Dunleavy administration took over in early December, Wiggin and his family headed home to New Orleans and spent the holidays there and in Seattle.

He's back in Anchorage, has slapped on the label "consultant," and is looking forward to getting involved in the oil and gas industry again.

"I want to take some of what I've learned in the commis-

see **INSIDER** *page 11*

ANWR border, land transfer being discussed at highest levels

In last week's Jan. 6 edition, Petroleum News reported that the Dec. 21 conveyance of 39,995 acres in the Goodnews Bay area to the state of Alaska by the U.S. Interior Department's Bureau of Land Management "cast hope on the state's efforts to secure approximately 19,322 acres" along the disputed boundary of the Arctic National Wildlife Refuge, referring to a statement made following the conveyance by Ted Murphy, acting BLM Alaska state director, who said the land transfer was "just one of many we anticipate in the near future."

While what Murphy said Dec. 21 is true for conveyances related to the full revocation of the Alaska Native Claims Settlement Act withdrawals known as "d-1s" (referring to Section 17(d)(1) in ANCSA), it is not true for the disputed acreage between the Staines and Canning rivers running along the western border of

see **ANWR DISCUSSIONS** *page 12*

Court dismisses HB 331 complaint but path to bonding not yet open

The Alaska Superior Court issued a decision Jan. 2 on House Bill 331, the bonding plan for cashable oil and gas exploration credits, but that doesn't mean the state can go ahead with bonding, Revenue Commissioner Bruce Tangeman told Petroleum News Jan. 7.

While the Superior Court decision grants the state's motion to dismiss the complaint challenging HB 331, there are still legal paths the plaintiff could take, Tangeman said.

Technically the state could issue bonds, but that would open it up to other issues if the Supreme Court were to decide in the plaintiff's favor, he said.

see **HB 331 COMPLAINT** *page 9*

Dunleavy changes AGDC board members; 2 public members out

Gov. Mike Dunleavy has made substantial changes to the board of the Alaska Gasline Development Corp., dismissing two public members, Hugh Short of Girdwood and Joey Merrick of Eagle River, both AGDC executive board members, and naming Doug Smith and Dan Coffey, both of Anchorage, to fill those seats.

There are five public members on the AGDC board, confirmed by the Legislature and serving at the pleasure of the governor.

To the two commissioner seats Dunleavy named Department of Labor and Workforce Development Commissioner Tamika Ledbetter and Department of Environmental Conservation

see **AGDC BOARD** *page 13*

EXPLORATION & PRODUCTION

Sourdough drilling

First new well in eastern North Slope prospect in early 2020

By KAY CASHMAN
Petroleum News

For years industry observers saw new drilling at the Sourdough oil prospect on state land next to the border of the Arctic National Wildlife Refuge as key to opening ANWR's 1002 area to oil and gas exploration and development.

ERIK OPSTAD

While the Trump administration recently took the first step by planning two ANWR 1002 lease sales, the first of which is expected to take place in October, it appears a new Sourdough well in the ExxonMobil-operated Point Thomson unit will follow early in the winter of 2020.

Per this issue's lease report on page 10, Jade Energy's newly approved agreement with Exxon on ADL 343112, the most southeasterly lease in Point Thomson, involves a commitment to drill on the lease, which contains the two 1990's Sourdough wells. Geologists think Sourdough's reservoir, estimated at 100 million recoverable barrels based on the two wells, stretches under the 1002 area.

The new drilling plan proposed for Point Thomson state of Alaska lease 343112 is spelled out in the two-year Point Thomson Unit

see **SOURDOUGH DRILLING** *page 15*

EXPLORATION & PRODUCTION

An old oil target

The Nanushuk was prime drilling objective prior discovery of Prudhoe Bay

By ALAN BAILEY
Petroleum News

The Nanushuk formation, the rock unit that has become the focus of new major oil discoveries on the North Slope, has acquired a reputation as something of a new kid on the block, a new oil play, overlooked in the past but now the known reservoir for finds such as Pikka and Willow. Apparently, however, the Nanushuk was a prime target of early North Slope exploration, prior to the discovery of the massive Prudhoe Bay field in 1968.

Veteran North Slope geologist Gil Mull has explained to Petroleum News that early interest in the Nanushuk emanated from U.S. Navy exploration in the 1940s and 1950s in what is now the National Petroleum Reserve-Alaska, a region underlain by a vast quantity of lower Cretaceous Nanushuk strata. The Nanushuk had been a focus

The discovery of the Prudhoe Bay oil field shortly after the drilling of the Susie well caused attention to shift to the coastal region of the central North Slope, and to the reservoir potential of rocks older and deeper than the Nanushuk.

see **NANUSHUK FORMATION** *page 14*

GOVERNMENT

Bleak and gloomy

Woes facing Canada's petroleum industry compounded by carbon tax, well cleanup

By GARY PARK
For Petroleum News

As Canada's drill rig count nosedives and foreign investors start fleeing to more competitive corners of the globe, the Canadian petroleum industry is now having to come to grips with the imposition of a new federal carbon tax and the threat that companies may soon be hit for the costs of cleaning up dormant oil and gas wells.

It all amounts to the bleakest, gloomiest outlook in memory for a sector that has been counted on to fuel a large chunk of the government costs of health care, education and other social services.

The latest rig count shows that just 70 rigs were working in late December, down by 104 rigs in a two-week period, and barely 10 percent of the tally 12 years ago.

Prodding the decline is Alberta Premier Rachel Notley's decision to enter 2019 by shrinking production in her province by 325,000 barrels per day in an effort to stem the decline in prices for Western Canada Select, the benchmark for oil sands crude.

The latest rig count shows that just 70 rigs were working in late December, down by 104 rigs in a two-week period, and barely 10 percent of the tally 12 years ago.

see **INDUSTRY GLOOM** *page 12*

● FINANCE & ECONOMY

Slight uptick for O&G jobs this year

Department of Labor's 'Trends' forecast projects 0.4% jobs increase overall statewide, driven by growth in military, oil, tourism

By KRISTEN NELSON

Petroleum News

The Alaska Department of Labor and Workforce Development has its jobs forecast out for 2019, and that forecast is just slightly positive, coming off three years of statewide job declines, starting in 2016 and running through last year.

In the January issue of "Alaska Economic Trends" economist Karinne Wiebold summarized the statewide forecast, noting three drivers of growth for the year, starting with the military, with work underway for the arrival of F-35 fighter jets at Eielson beginning in 2020. A half-billion dollars of work is expected for the jets and additional military and civilian support staff, with the Air Force base set to host two full squadrons of F-35 jets by 2022. New oil and gas projects will also add to jobs growth in the year, as will tourism, with 2019 expected to be another record year for visitors, Wiebold said in the statewide summary.

Construction is projected to grow the most, adding 900 jobs in 2019, 5.8 percent, with those jobs mostly related to the work at Eielson, but also including work in Southcentral following the 7.0 magnitude earthquake Nov. 30.

Oil and gas industry jobs dropped 37 percent from a peak in 2014, down 5,500 jobs, with the bottom appearing to occur last year. Statewide the oil and gas industry is expected to add 300 jobs this year.

The hardest hit industries, from 2015-18 were oil and gas; construction; and professional and business services. All are expected to begin to recover this year, Wiebold said.

Overall jobs are expected to increase statewide by 1,400, a monthly average of 328,200 this year, up from 326,800 in 2018 and 329,000 in 2017.

Economist Neal Fried said modest job growth was expected in Anchorage, after three years of job losses, "the longest recession in the city's history." The gain this year is only expected to be 0.2 percent, coming from small gains in a number of industries.

The oil industry, headquartered in Anchorage, lost 6,100 jobs statewide between December 2014 and November 2017, with employment mostly stable since then, he said, and a small gain in jobs is expected this year, based on better oil prices, recent discoveries and improved access to resources.

Fried noted ConocoPhillips plans to drill six to eight new wells in 2019 and has an increase in their budget from $900 million last year to $1.2 billion this year.

Independents also have bigger plans for 2019, he said. "This means the industry is hiring again after three years of cuts, which bodes well for Anchorage employment."

Construction was also hard hit, losing 1,100 jobs between 2015 and 2017, with modest gains in 2018 which

see LABOR TRENDS page 9

contents

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Alaska - Mackenzie Rig Report

Alaska Rig Status

North Slope - Onshore

Rig Owner/Rig Type	Rig No.	Rig Location/Activity	Operator or Status
Doyon Drilling			
Dreco 1250 UE	14 (SCR/TD)	Milne Point, MPU M-10	Hilcorp
Dreco 1000 UE	16 (SCR/TD)	Standby	
Dreco D2000 Uebd	19 (SCR/TD)	GTMU, MT6-02	ConocoPhillips
AC Mobile	25	Alpine	ConocoPhillips
OIME 2000	141 (SCR/TD)	Alpine, CD4-59	ConocoPhillips
	142 (SCR/TD)	Kuparuk 2M-41	ConocoPhillips
TSM 700	Arctic Fox #1	Pikka well	Oil Search
Hilcorp Alaska LLC	Rig No.1	Milne Point	Hilcorp Alaska LLC
Kuukpik Drilling	5	Deadhorse	Available
Nabors Alaska Drilling			
AC Coil Hybrid	CDR-2 (CTD)	Deadhorse P-04A	BP
AC Coil	CDR-3 (CTD)	Kuparuk 1D-08	ConocoPhillips
Dreco 1000 UE	7-ES (SCR-TD)	Kuparuk 2T-27	ConocoPhillips
Mid-Continental U36A	3-S	Stacked	Available
Oilwell 700 E	4-ES (SCR)	Stacked	Available
Dreco 1000 UE	7-ES (SCR/TD)	Kuparuk 3C-08	ConocoPhillips
Dreco 1000 UE	9-ES (SCR/TD)	Stacked	ConocoPhillips
Oilwell 2000 Hercules	14-E (SCR)	Deadhorse	Available
Oilwell 2000 Hercules	16-E (SCR/TD)	Stacked	Brooks Range Petroleum
Oilwell 2000 Canrig 1050E	27-E (SCR-TD)	Stacked	Glacier Oil & Gas
Oilwell 2000	33-E	Deadhorse	Available
Academy AC Electric CANRIG	99AC (AC-TD)	Stacked	Repsol
OIME 2000	245-E (SCR-ACTD)	Stacked	ENI
Academy AC electric CANRIG	105AC (AC-TD)	Stacked in Deadhorse	Doyon Ltd
Academy AC electric Heli-Rig	106AC (AC-TD)	Stacked	Great Bear Petroleum
Nordic Calista Services			
Superior 700 UE	1 (SCR/CTD)	Kuparuk	ConocoPhillips
Superior 700 UE	2 (SCR/CTD)	Prudhoe Bay	Available
Ideco 900	3 (SCR/TD)	Winx exploration well	Great Bear
Rig Master 1500AC	4 (AC/TD)	Oliktok Point	ENI
Parker Drilling Arctic Operating Inc.			
NOV ADS-10SD	272	Prudhoe Bay DS 18	BP
NOV ADS-10SD	273	Prudhoe Bay DSW-59	BP

North Slope - Offshore

Rig Owner/Rig Type	Rig No.	Rig Location/Activity	Operator or Status
BP			
Top Drive, supersized	Liberty rig	Inactive	BP
Doyon Drilling			
Sky top Brewster NE-12	15 (SCR/TD)	Spy Island SP 18-N5 Standby	ENI
Nabors Alaska Drilling			
OIME 1000	19AC (AC-TD)	Oooguruk Stacked	Caelus Energy LLC

Cook Inlet Basin – Onshore

Rig Owner/Rig Type	Rig No.	Rig Location/Activity	Operator or Status
BlueCrest Alaska Operating LLC			
Land Rig	BlueCrest Rig #1	Anchor Point, drilling production section of H14	BlueCrest Alaska Operating LLC
Glacier Oil & Gas	Rig 37	West McArthur River Unit Workover	Glacier Oil & Gas
All American Oilfield LLC			
IDECO H-37	AAO 111	North Slope stacked	Available
Aurora Well Services			
Franks 300 Srs. Explorer III	AWS 1	Stacked out west side of Cook Inlet	Available
Saxon			
TSM-850	147	Stacked	Hilcorp Alaska LLC
TSM-850	169	Seaview	Hilcorp Alaska LLC

Cook Inlet Basin – Offshore

Rig Owner/Rig Type	Rig No.	Rig Location/Activity	Operator or Status
Hilcorp Alaska LLC			
National 110	C (TD)	Platform C, Stacked	Hilcorp Alaska LLC
	Rig 51	Steelhead Platform, Stacked	Hilcorp Alaska LLC
	Rig 51	Monopod A-13, stacked	Hilcorp Alaska LLC
Spartan Drilling			
Baker Marine ILC-Skidoff, jack-up		Spartan 151, Upper Cook Inlet KLU#4	Furie
Furie Operating Alaska			
Randolf Yost jack-up		Nikiski, OSK dock	Furie
Glacier Oil & Gas			
National 1320	35	Osprey Platform, activated	Glacier Oil & Gas

Mackenzie Rig Status

Canadian Beaufort Sea

Rig Owner/Rig Type	Rig No.	Rig Location/Activity	Operator or Status
SDC Drilling Inc.			
SSDC CANMAR Island Rig #2	SDC	Set down at Roland Bay	Available

Central Mackenzie Valley

Rig Owner/Rig Type	Rig No.	Rig Location/Activity	Operator or Status
Akita			
TSM-7000	37	Racked in Norman Wells, NT	Available

The Alaska - Mackenzie Rig Report as of January 9, 2019.
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

JUDY PATRICK

Baker Hughes North America rotary rig counts*

	Jan. 4	Dec. 28	Year Ago
United States	1,075	1,083	924
Canada	76	70	174
Gulf of Mexico	22	24	17

Highest/Lowest

US/Highest	4530	December 1981
US/Lowest	404	May 2016

*Issued by Baker Hughes since 1944

The Alaska - Mackenzie Rig Report is sponsored by:

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EXPLORATION & PRODUCTION

ExxonMobil continues tackling tech challenges

Compressors performing well in handling high pressure Thomson sands; field infrastructure bodes well for more development to east

By KAY CASHMAN
Petroleum News

By building pipeline infrastructure at its Point Thomson unit, ExxonMobil improved the development economics of nearby on and offshore oil and gas prospects across the eastern North Slope.

In order to get Point Thomson online — and keep it producing condensate as required in its plans of development for the state of Alaska — the company has faced numerous technical challenges in the high-pressure Thomson sands.

From warm shut-down to record output

Per a page 1 story in last week's issue of Petroleum News, "Thomson at full production," Exxon's investment of time and money is starting to pay off — knock on wood because Point Thomson output has been up and down since its startup in April 2016: In November, the field produced its highest ever daily average, 9,949 barrels per day.

In October, Point Thomson produced 5,129 bpd; in September 93 bpd.

The field had effectively been in warm shut-down for maintenance since early June.

In July, Exxon officials were unwilling to speculate when Point Thomson would go back online, indicating they and their contractors were working diligently to bring it up.

Advanced technology key

In a Point Thomson plan of development submitted to the state almost two years ago, Exxon said production to date had been impacted by gas injection compressor equipment, referring to the compressors as "industry-first," which likely explains their serial numbers, 001 and 002.

Development of the Point Thomson field required handling reservoir pressures upwards of 10,000 pounds per square inch, a pressure corresponding to "the effect of an elephant standing on the end of someone's thumb," former Exxon production manager Cory Quarles said in mid-May 2016.

Development of the Point Thomson field required handling reservoir pressures upwards of 10,000 pounds per square inch, a pressure corresponding to "the effect of an elephant standing on the end of someone's thumb," former Exxon production manager Cory Quarles said in mid-May 2016.

Advanced technology has been key to producing the high-pressure field, the plan of development indicated.

The reservoir pressure at Point Thomson is the "highest in ExxonMobil's portfolio," Quarles said, and possibly the highest of any natural gas recycling project in the world, per Petroleum News research.

Two compressors online

Since each compressor allows the field to produce 5,000-6,000 bpd, both are apparently online and working well.

Point Thomson's Initial Production System, or IPA, was designed to produce 200 million cubic feet of recycled gas for reinjection and 10,000 barrels of condensate a day; condensate being a liquid hydrocarbon akin to very light oil.

A state official told Petroleum News July 31, "Point Thomson would be tough for any other major to deal with, but

see TECH CHALLENGES *page 9*

LAND & LEASING

BLM postpones coastal plain DEIS meetings

The Bureau of Land Management said Jan. 9 that it will postpone "currently scheduled meetings" on the draft environmental impact statement for the Coastal Plain oil and gas leasing program.

The agency said it plans to hold public meetings in Anchorage, Arctic Village, Fairbanks, Kaktovik, Fort Yukon, Venetie, Utqiagvik and Washington, D.C., "at times and locations to be announced at a future time in local media, newspapers, and on the BLM website."

The deadline for comments on the draft EIS is Feb. 11.

—PETROLEUM NEWS

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FINANCE & ECONOMY

Moody's upbeat on oil and gas in 2019

While 2019 will see only gradual increase in drilling activity, oilfield service sector prices will likely increase over medium term

By KAY CASHMAN

Petroleum News

Moody's recent report on the global oil and gas industry examines credit analysts' themes heading into 2019, finding an industry kicking off the year on steady footing.

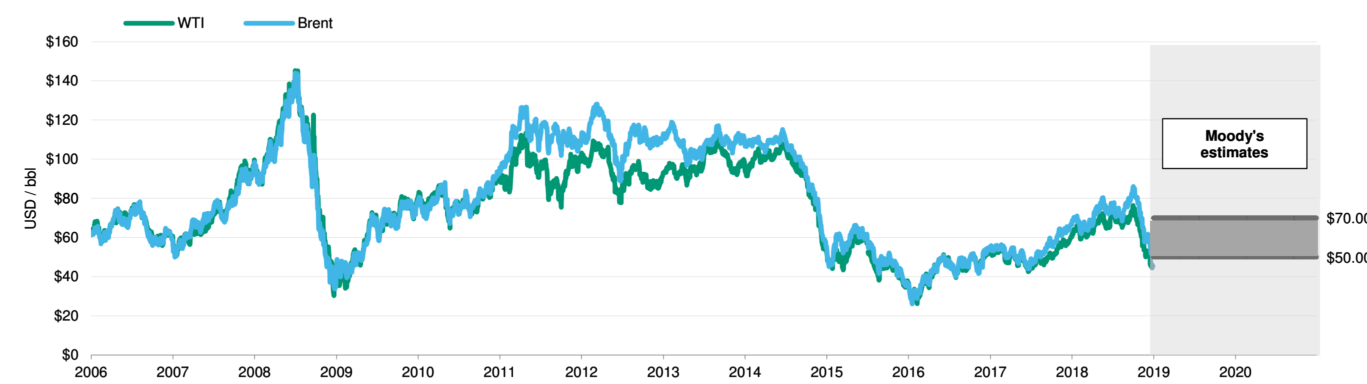
The investors service arm of Moody's predicts the "medium-term price band for WTI crude will be $50-$70 per barrel in 2019."

West Texas Intermediate crude, the main North American benchmark, has been running about 20 percent less than Alaska North Slope crude: On Jan.8, for example, ANS closed at $59.18 a barrel as compared to $49.78 for WTI.

However, "wide differentials for regional oil and natural gas prices will narrow against the main North American benchmarks in 2019," as infrastructure comes into service in late 2019 and 2020, which will ease bottlenecks in the Permian, western Canada and other regions, relieving stress on commodity prices, says Moody's report, which was released Jan. 3.

Exhibit 2

WTI crude prices will stay within $50-$70/bbl band



Source: US Energy Information Administration; Moody's Investors Service (estimates)

Expectations are that North American natural gas at Henry Hub — the chief benchmark for U.S. natural gas prices — will average $2.50-$3.50 per million British thermal units, Moody's says, with natural gas liquids, or NGLs, trading at roughly 45 percent of WTI, for a $22-$32 per barrel average.

"The December 2018 announcement that OPEC and Russia have agreed to cut production by a total 1.2 million barrels per day from October 2018 levels helps alleviate concerns about an oversupplied oil market, which had led to a more than 40 percent drop in crude prices in the past three months," Terry Marshall, Moody's senior vice president, says in the report.

"Market expectations for continued strong oil demand growth of 1.4 million bpd have remained in place, despite concerns of slowing demand growth tied to weaker global economic growth, the impact of tariffs and a strong U.S. dollar, especially in the emerging markets," Marshall continues. "Very high Saudi and Russian production, mixed signals on Iran sanctions, and U.S. presidential pressure on Saudi Arabia to maintain high production levels have all heightened supply volatility."

The key questions for 2019, Moody's report concludes, are whether OPEC and Russia will maintain production discipline and what happens when the current agreement expires in June.

Increase in rig activity

While 2019 will see "only a gradual increase in rig activity … oilfield services, or OFS, costs will likely rise over the medium term," Marshall says.

Higher oil prices, he says, will encourage more production activity, which will stimulate already rising OFS prices, "raising the breakeven cost of the marginal barrel and potentially raising medium-term oil prices."

As far as OFS firms themselves, Sajjad Alam, Moody's vice president and senior analyst, says the sector faces an "inauspicious start for 2019" after recording steady gains in revenue, utilization and pricing during most of 2018.

"While we expect that overall earnings will increase by 10-15 percent from a relatively low level, most of that growth will likely come only later in 2019 after the heightened oil-price volatility of late 2018," he says.

"While E&P companies grew cautious after a precipitous 40 percent decline in WTI prices between early October and the end of 2018, we still expect low single-digit growth in E&P spending in 2019. E&P companies have dramatically reduced their

see MOODY'S UPBEAT *page 8*

● ALTERNATIVE ENERGY

New Delta Junction wind power proposal

AEP and Eco Green Generation planning new wind farm in conjunction with battery storage and propane generators for firm power

By ALAN BAILEY
Petroleum News

Mike Craft, a wind power developer from Fairbanks, has announced that his company, Alaska Environmental Power LLC, and Eco Green Generation LLC are planning to build a new wind farm at Delta Junction, in conjunction with battery storage and a series of propane generators for delivering a firm electricity supply in the Fairbanks region.

AEP already operates Delta Wind Farm, a small 2-megawatt wind system at Delta Junction, connected to Golden Valley Electric Association's power supply system. For several years Craft has been pushing to build an additional, larger wind farm at the Delta Junction site, but has been stymied by failure to reach a workable tariff arrangement with GVEA. The key issue is the fluctuating nature of the wind energy — GVEA has maintained that the cost of handling the fluctuations in Delta Junction wind output would make the wind power too expensive in relation to other power sources.

Counterbalancing the wind power

Craft now says that the impasse will be resolved by having 4.4 megawatts of battery storage to smooth out the wind power, and by using propane powered generators that can rapidly change their outputs to counterbalance the fluctuating wind output. Heat from the generators would be sold for applications such as heating buildings. Craft has in the past said that Delta Wind Farm is in a particularly advantageous position for making use of a wind system flowing from the Wrangell-Saint Elias Mountains and that the farm enjoys an especially high capacity factor as a result.

In a Jan. 4 press release Craft said that the plan is to implement 42 megawatts of wind power next to the existing wind farm at Delta Junction, in conjunction with up to 100 megawatts of cogenerated power and the battery storage. The cogenerated power would consist of up to 20 separate propane heat and power plants distributed across Fairbanks and North Pole — the plants would presumably be colocated with sites that could make use of the generated heat, in the form of hot water.

In comments to the board of the Interior Gas Utility on Jan. 8 Craft said that propane for the system would be sourced from Canada and shipped to Fairbanks by barge and the Alaska Railroad, using 33,000-gallon rail cars.

Propane from Canada

In comments to the board of the Interior Gas Utility on Jan. 8 Craft said that propane for the system would be sourced from Canada and shipped to Fairbanks by barge and the Alaska Railroad, using 33,000-gallon rail cars. And the establishment of a propane supply to Fairbanks would make propane available as a heating fuel for consumers in the Fairbanks region, as well as elsewhere in Interior Alaska. Essentially, the companies would sell propane in addition to using propane as a fuel for power generation.

"We'd like to be able to get propane to anybody and everybody that wants it," Craft told the board, adding that part of the plan involves making loans available for people who want to retrofit their heating systems.

However, the primary intent is to implement a viable new wind farm at Delta Junction.

"We want to sell wind. That's our goal," Craft told the board. "We want to sell as much wind power as we can get out hands on, because it's the cheapest form of energy."

see WIND POWER page 8

Court rejects wind farm tariff appeal

The Alaska Superior Court has rejected an appeal against the Regulatory Commission of Alaska's July 2016 approval of Golden Valley Electric Association's tariff for the connection of small renewable and alternative energy sources to GVEA's electricity supply system. Alaska Environmental Power LLC, operator of a small wind farm at Delta Junction, launched the appeal following the RCA approval decision — AEP wants to expand its wind farm, but has been struggling to come to some workable agreement with GVEA over the terms and conditions for connecting an expanded wind power facility.

In a separate case, in December 2016 AEP formally requested GVEA for a specific tariff for the connection of an expanded Delta Junction wind farm. GVEA subsequently published a tariff. However, following an investigation, the RCA rejected that tariff on the grounds that it was uneconomic: Essentially, GVEA had concluded that payment for the wind power would require an increase to its electricity rates. GVEA supplies electricity in the Fairbanks region of the Alaska Interior.

Complex issue

The question of connecting a renewable energy source to the Alaska Railbelt grid is a complex and contentious issue, in particular because of the intermittent nature of the power output from a wind farm, for example. This fluctuating power must be counterbalanced by equal and opposite fluctuations in some

see TARIFF APPEAL page 9

LAND & LEASING

NPR-A lease sale appeals go to 9th Circuit

Two appeals challenging the legality of recent Bureau of Land Management oil and gas lease sales in the National Petroleum Reserve-Alaska have now been appealed in the U.S. Court of Appeals for the 9th Circuit. As previously reported in Petroleum News, the federal District Court in Alaska dismissed the appeals in early December — the environmental organizations challenging the lease sales have now asked the 9th Circuit to review the District Court decisions.

One of the appeals challenges the 2017 NPR-A lease sale on the grounds that BLM did not conduct an adequate evaluation of the potential environmental impacts of the sale, prior to conducting the sale. In rejecting this appeal, the District Court accepted BLM's position that an environmental impact statement developed for the NPR-A integrated activity plan encapsulated the environmental evaluation required for the lease sale — the plan envisaged the conducting of lease sales in specific areas of the reserve, including the area encompassed by the 2017 lease sale.

The other appeal targets the 2016 and 2017 lease sales, arguing that in conducting these sales BLM had not adequately considered the potential greenhouse gas emissions impacts of the sales, and that the agency had not adequately considered a range of lease sale configurations. The District Court found that this appeal, in effect, targeted the integrated activity plan, under which the sales were conducted. Consequently, the appeal does not have legal standing because it was launched too long after the plan was published, the court found.

—ALAN BAILEY

continued from page 6

MOODY'S UPBEAT

cost structures since 2015, and today most companies can break even, reinvest enough to sustain production, and even grow modestly in most regions with oil prices at $50-$55," Alam says.

E&Ps struggle to boost returns

E&P investors looking for higher shareholder returns will continue to wait in 2019, Moody's says, even though oil and gas companies have made strides in capital efficiency and commodity prices are higher than in the 2015-16 downturn.

Still "investor sentiment is weak and infrastructure constraints reduce prices that E&Ps receive," the investors service says.

"E&P companies in 2019 will continue to exercise spending discipline and focus on capital efficiency. While labor inflation has increased their operating costs, rising production has largely contained their costs per unit. Higher demand for OFS has raised the costs of drilling and completing onshore wells, but efficiencies have helped most E&P companies offset some of these higher capital costs," Amol Joshi, vice president and senior analyst says in the report.

Still, elevated oil prices through most of 2018 did not benefit many producers in the Permian, the dominant U.S. producing basin.

"Permian-based E&P companies had increased production beyond what midstream companies could take away, and higher transportation costs will continue to hurt profitability in 2019, while insufficient takeaway capacity could stifle E&P growth plans. Such constraints have soured investors' expectations over near-term earnings potential. Investor sentiment has weakened — especially at the end of 2018 — amid increased commodity-price volatility, U.S. production growth, renewed economic uncertainty, and tariff wars," Joshi says, with no mention of Alaska by him or elsewhere in the public version of the Moody's report. ●

Contact Kay Cashman at publisher@petroleumnews.com

continued from page 7

WIND POWER

Applied for tariffs

Craft told the board that the companies had already applied to GVEA for a connection tariff. The companies have also applied to Doyon Utilities LLC, the company that provides utility services for the military in Alaska — the idea is that the new system could provide power and heat for Fort Wainwright, Fort Greely and Eielson Air Force Base, with propane combined heat and power plants located in the military bases. The press release says that a base's entire winter supply of propane could be stored at the base. And, more generally, the use of distributed powerhouses would provide improved energy security in the Fairbanks region, the press release says.

Craft told the IGU board that under federal law GVEA and Doyon Utilities must write tariffs for the proposed power supply within 60 days. ●

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HB 331 COMPLAINT

As for the amount, Tangeman said the total liability is currently just under $800 million. Once the $100 million appropriated is used on a pro-rata share basis, and on the basis of where in the queue applicants are, the total will be just under $700 million.

Agreement with state's position

The Department of Law said in a Jan. 3 press release that in the Jan. 2 decision the court agreed with the state's position "that the subject-to-appropriation bonds authorized in HB 331 did not create unconstitutional 'state debt' for the purposes of the Article 9, section 8 of the Alaska Constitution."

"The court rightfully affirmed that when bonds are 'subject-to-appropriation,' they are not truly a debt owed by the State," Attorney General Kevin G. Clarkson said. "HB 331 was an innovative solution to the difficult problem faced by Alaska's oil and gas explorers, and I am pleased that the superior court has upheld it as constitutional."

The Department of Law noted in the press release that final judgment had not been entered in the case. The ruling can only be appealed once the final judgment is entered.

Commenting on the purpose of the program in the press release, Tangeman said the tax credit bond program allows the state to follow through "in paying down the tax credits, so industry and the financial markets know we are open for business. This will bring more stability to State finances and help the business community to get the economy back on track."

HB 331

Credits designed to create incentives for oil exploration beginning in 2006 expanded the existing tax credit program, the court said in discussing HB 331. The Department of Revenue was given authority to purchase certain transferrable tax credit certificates and the Legislature created an oil and gas tax credit fund, supported primarily through appropriation by the Legislature, to fund purchases by the department.

By 2015 appropriations to the fund were no longer sufficient to pay the full amount of tax credit certificates, estimated by early 2018 to have reached nearly $800 million. Gov. Bill Walker introduced HB 331 in early 2018 in response to reduced appropriations to the fund and the decline in oil prices.

HB 331 allowed issuance of up to $1 billion in subject-to-appropriation bonds. It established the Alaska Tax Credit Certificate Bond Corp., with a board consisting of the commissioners of the departments of Commerce, Community and Economic Development; Administration; and Revenue.

The corporation would issue the bonds and proceeds would be disbursed, subject to appropriation, from the corporation to the Department of Revenue for tax credit and refund purchases.

Credits would be purchased at a discount from face value, with the discount paying the cost of financing the bonds.

Because of the litigation, no bonds were issued in 2018.

In the Legislature

In 2018 testimony on the bill, industry expressed concern over the discount rates but was supportive of paying off the credits sooner rather than later.

As passed, the bill has a discount of about 10 percent, covering the state's costs and interest on the bonding. There are provisions allowing a discount closer to 5 percent for companies which meet certain qualifications: agreeing to provide the state an overriding royalty interest; committing to reinvest the money in Alaska within 24 months; agreeing to an early waiver of confidential seismic data; or having refinery or gas storage credits.

When oil prices were high, the state was able to buy all the cashable credits submitted; when prices dropped, the amount appropriated was limited, with payments pro-rated among companies, and companies ranked by when the purchase request was approved.

In the fiscal note accompanying HB 331, Revenue said that some $800 million in tax credits awaited state repurchase at the end of calendar year 2017. The department said that while most cashable tax credits were repealed in 2017, it would take time for the remaining credits to work their way through the system.

HB 331 passed the House 22-16 and the Senate 14-5, with both bodies passing the immediate effective date.

The bill applies only to cashable credits earned by small oil and gas companies; the state's major oil producers were never eligible for these credits.

To qualify, a company must commit all its cashable credits to the program.

—KRISTEN NELSON

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TARIFF APPEAL

other power source, such as a gas or oil-fired power station. The regulation of the wind power costs money. And the larger the amount of wind power in relation to a utility's total power generation capacity, the greater the impact of the wind power regulation on the economics of the overall power system. On the other hand, the cost of wind power is typically stable over long periods of time because the power generation does not require the purchase of fuel.

Alaska Environmental Power has argued that its wind farm is positioned at a particularly advantageous location for benefiting from Interior wind patterns and that GVEA could handle the fluctuations in power output from the facility.

PURPA regulations

Under RCA regulations, driven by the federal Public Utilities Regulatory Policies Act, or PURPA, electricity utilities are required to purchase power under reasonable terms from qualifying, independent renewable power producers. Determining what constitutes reasonable terms involves projecting both the cost of integrating the renewable power into the electrical system and the benefits that the relevant electric utility would gain from the use of the renewable energy. Benefits can come, for example, from the displacement of some of the utility's other power sources.

But contention can arise over the methodologies used both to calculate the cost of regulating the varying renewable energy, and to calculate the benefits to the utility from the use of the wind power. Different methodologies and assumptions can lead to different economic conclusions.

The legal position

In challenging the RCA's July 2016 approval of GVEA's general tariff for renewable energy sources, AEP raised a long list of issues. And Superior Court Judge Andrew Peterson commented that "it is clear to this court that the parties do not agree on much, including what issues are presently before the court." Peterson elected to base his ruling simply on the question of whether the RCA had appropriately approved the tariff. And that question revolved around two key issues: whether the commission should have conducted a full-scale investigation of the tariff, rather than simply approving it; and whether the tariff complies with the commission's PURPA regulations.

Peterson concluded that approval of the tariff without an investigation had been reasonable, given the fact that the commission had issued a memorandum explaining how it had reviewed AEP's comments about the tariff, and how it had concluded that those comments had not raised any valid concerns.

The issues over the tariff's regulatory compliance are more complex and relate to the method for calculating power purchase rates, depending on the scale of the renewable energy facility. Peterson found that the version of the GVEA tariff that the RCA had approved only applied to power generation facilities with capacities greater than 100 kilowatts. And the purchase rate options offered for that scale of facility complied with PURPA requirements, Peterson concluded.

—ALAN BAILEY

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LABOR TRENDS

are expected to continue in 2019, Fried said. This year's gain in construction isn't due to big projects "but because activity had fallen to such a low level," only getting back to the 2001 level of some 7,400 jobs, steeply down from 9,800 in 2005.

Another job category, professional services, will see losses taper, Fried said, with the recession having "taken a big bite out of architectural, engineering, environmental, and other consulting services through a multiyear slowdown in construction and oil and mining exploration." The category of which these services are a part, professional and business services, began to lose jobs in 2014 and continued declining through last year, with a total loss of 3,300 jobs to date. The 2019 loss is forecast to be smaller, he said, "because the improved outlook for construction and oil will increase demand for related services."

Overall, Anchorage jobs are forecast to increase by 300 this year, for a monthly average of 151,100, up from 150,800 last year. Oil and gas jobs are forecast to average 2,700 per month this year, up from 2,500 in 2018. ●

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TECH CHALLENGES

Exxon keeps whittling away at the problem. We're fortunate they're operating that field. I doubt it would ever have been developed otherwise," he said, crediting "Exxon's deep pockets and technical savvy."

Eastern North Slope boon

Off and on over the years the conversation about Point Thomson focused largely on its importance to any future North Slope natural gas pipeline project because of the unit's large natural gas reserves.

An additional topic has become increasingly popular: the importance of the most easterly North Slope field and its pipeline infrastructure that connects it with the Badami line to the west and ultimately to the trans-Alaska oil pipeline at Pump Station No. 1.

The pipeline infrastructure is especially important to leaseholders with undeveloped oil prospects farther east, such as Yukon Gold, Stinson, Sourdough (see related story on page 1 of this issue) and ultimately any future activity at the 1002 area of the Arctic National Wildlife Refuge.

The pipeline infrastructure is especially important to leaseholders with undeveloped oil prospects farther east, such as Yukon Gold, Stinson, Sourdough (see related story on page 1 of this issue) and ultimately any future activity at the 1002 area of the Arctic National Wildlife Refuge.

The Point Thomson line is currently capable of shipping 70,000 bpd, but it can be expanded. ●

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EXPLORATION & PRODUCTION

Winx well ice road construction under way

Construction of an approximately 11-mile ice road to the drill site for the planned Winx 1 exploration well is underway, project operator 88 Energy Ltd. announced on Jan. 7. The company said that it had filed an application with the Alaska Oil and Gas Conservation Commission for a permit to drill — drilling should start in mid to late February. The company anticipates the ice road taking about three weeks to complete, after which it will be necessary to construct an ice drilling pad. The Nordic-Calista Services rig No. 3 will conduct the drilling, which is being funded by 88 Energy Ltd., Otto Energy, Red Emperor Resources and Great Bear Petroleum.

The drilling location is about four miles east of the Horseshoe 1/1A discovery well, drilled in 2017, and close to the Pikka/Horseshoe trend in which major oil resources have been found in the Nanushuk formation. The Nanushuk forms the primary focus of recent significant oil discoveries on the North Slope. 88 Energy says that a prospect in the Nanushuk forms the primary target for the Winx well, but that there are multiple, stacked drilling objectives. The companies identified the drilling targets using 3-D seismic data acquired from the Alaska Department of Natural Resources. They estimate a gross oil resource of around 400 million barrels across the multiple plays that the well is testing.

—ALAN BAILEY

● LAND & LEASING

Jade Energy promises to pursue drilling

ExxonMobil assigns 63 percent interest in Point Thomson lease along ANWR border to independent run by Eric Opstad, Greg Vigil

By KAY CASHMAN

Petroleum News

This report covers state of Alaska-approved November and December lease assignments by leaseholders to other companies and individuals.

There were two major lease deals between oil and gas entities in November, the largest being BP's transfer of its 39.2 percent interest in the Greater Kuparuk area to operator ConocoPhillips, as reported in the Nov. 18 issue of Petroleum News; the other being a Point Thomson unit lease that was transferred by operator ExxonMobil Production to Jade Energy LLC.

The lease, ADL 343112, contains the Sourdough 2 and 3 wells (both under state confidentiality protection) and is the most southeasterly Point Thomson unit lease, bordering the 1002 area of the Arctic National Wildlife Refuge. The 1002 area is a narrow strip of ANWR coastline that was set aside for potential development by Congress because of its hydrocarbon-rich geology.

Sourdough, a prospect discovered by BP on state land just outside the border of ANWR in 1997, is estimated to hold 100 million barrels of recoverable oil.

Exxon assigned Jade a 62.674 percent working interest in the lease, retaining a 2 percent overriding royalty interest.

Jade Energy LLC formed January 2018

The assignment will create a new segment from the surface on the southern portion of the lease. In its explanation for requesting the divided interest assignment, Jade told the Division of Oil and Gas it will "pursue drilling operations on the newly-created segment, as part of a farm-out agreement" with Exxon, division Director Chantal Walsh wrote in her Nov. 13 approval letter, noting Jade will also become a party to the Point Thomson Unit Agreement.

Jade Energy LLC was formed in Alaska in January 2018. According to state Division of Corporations filings, Jade's members and managers are Anchorage-based Eric Opstad and Castle Rock, Colorado-based Greg Vigil, who each own 50 percent of the firm.

Lease assignments, all effective Dec. 1

• On Dec. 11, Douglas A. Barr's assignment to Samuel Cade of a 75 percent working interest and a 62.5 royalty interest in two leases, Beaufort Sea ADL 393578 and North Slope ADL 393687, was approved.

• On Dec. 18, Petro-Hunt LLC's assignment to ConocoPhillips of a 38 percent working interest and a 0.110832 royalty interest in two North Slope Colville River unit leases, ADL 384215 and ADL 389725, was approved.

• On Dec. 18, ConocoPhillips' assignment to ExxonMobil of a 0.3648 percent working interest and a 0.3040 royalty interest in six North Slope leases, ADL 393667, ADL 393668, ADL 393669, ADL 393670, ADL 393671, and ADL 393672, was approved. ●

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INSIDER

sioner's office and working for industry for 36 years and use it wherever I am most needed — as a consultant, company employee or getting involved in public policy again," Wiggin told Petroleum News Jan. 9.

His most recent position with private industry was engineering and development manager for independent Brooks Range Petroleum, a job he held from 2012 to third quarter 2016 when he was joined DNR as deputy commissioner.

MARK WIGGIN

Wiggin's industry experience includes about 12 years with ConocoPhillips/ARCO, beginning his career in 1980 in Houston, Texas, and moving to Alaska with ARCO in 1983.

He held a number of engineering positions with ARCO, and later worked for various consultancy and engineering firms on major Alaska oil and gas projects. From 2005 to 2012 he worked for ASRC Energy Services on the Alaska gas pipeline project and on the Nikaitchuq oil field. Wiggin was a lead startup engineer for the Alpine and Milne Point oil fields, DNR said at the time of his appointment in 2016.

Beckham 'keeps the trains running'

As for not being retained as deputy commissioner Wiggin brushed aside the question, "Did you want to stay?," saying "it's not new. It's something to be expected when a new governor takes office."

He said he has no hard feelings.

Just the opposite. "It was an honor to serve. DNR has some very talented people. I was happy to see Corri Feige appointed DNR commissioner. And it was my urging that helped convince Chantal Walsh to leave private industry and take a job as director of the Division of Oil and Gas just a couple of months after I became deputy commissioner. I was pleased to see she was kept in that position."

As for deputy director of the division, Jim Beckham, who was also retained, Wiggin said, "He and Chantal make a great team. Jim keeps the trains running."

Wiggin credits tough questions put to him about public policy by former DNR Commissioner John Shively during a job interview with his decision to go back to school and get a master's degree in public policy from Duke University. (Shively was commissioner for six years from 1994 to 2000.)

Wiggin also has a Bachelor of Science in mechanical engineering from Louisiana State University.

—KAY CASHMAN

TransCanada to become TC Energy

TRANSCANADA CORP., a company with a history in Alaska's efforts to monetize its North Slope natural gas reserves, said Jan. 9 that it has changed its name to TC Energy to "better reflect the scope" of its operations as a North American energy infrastructure firm.

The name change has to be approved at TransCanada's next annual and special meeting of shareholders.

RUSS GIRLING

"We believe the name TC Energy clearly articulates our complete business — pipelines, power generation and energy storage operations — and reflects our continued continental growth into an enterprise with critical assets and employees in Canada, the United States and Mexico," Russ Girling, TransCanada's president and CEO, said in a press release.

—KAY CASHMAN

Murkowski selected as energy chair

ON JAN. 8, THE REPUBLICAN MEMBERS of the Energy and Natural Resources Committee chose Sen. Lisa Murkowski, R-Alaska, to serve as the panel's chairman for the 116th Congress.

Murkowski has been chairman of the committee since the beginning of the 114th Congress

"Our committee has a great history of accomplishment, and I will do everything I can to keep that tradition going in this new Congress," Murkowski said. "I'm grateful to my colleagues for this continued honor and have my sights set on another productive Congress."

Serving with Murkowski on the committee for the next two years are the following Republican senators: John Barrasso, Wyoming; Jim Risch, Idaho; Mike Lee, Utah; Steve Daines, Montana; Bill Cassidy, Louisiana; Cory Gardner, Colorado; Cindy Hyde-Smith, Mississippi; Martha McSally, Arizona; Lamar Alexander, Tennessee; and John Hoeven, North Dakota.

—KAY CASHMAN

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LAND & LEASING

Hilcorp issued SDI expansion easement

The Alaska Department of Natural Resources, Division of Oil and Gas, has granted an easement to Hilcorp Alaska good for 35 years for the portion of the Satellite Drill Island in the Duck Island unit which contains "facilities and associated infrastructure in support of the Liberty Development Project."

The U.S. Department of the Interior's Bureau of Ocean Energy Management issued a record of decision for the Liberty project in October; a final environmental impact statement was issued for the project in August.

Hilcorp's plans for Liberty development include a small artificial gravel island in 19 feet of water in the Beaufort Sea, some five miles offshore, about 15 miles east of Prudhoe Bay, with a buried subsea pipeline to carry sales grade crude oil to shore, connecting with the existing Badami pipeline.

Hilcorp Alaska spokeswoman Lori Nelson told Petroleum News in an email the acreage included in the easement would be used as a staging area. Hilcorp is the operator at the Duck Island unit. The division said the annual fee for the acreage is $103,819.52.

—KRISTEN NELSON

EXPLORATION & PRODUCTION

US drilling rig count down by 8 to 1,075

The number of rigs drilling for oil and natural gas in the U.S. was down by eight the week ending Jan. 4 to 1,075.

At this time last year there were 924 active rigs.

Houston oilfield services company Baker Hughes reported that 877 rigs targeted oil (down eight from the previous week) and 198 targeted natural gas (unchanged).

The company said 66 of the U.S. holes were directional, 945 were horizontal and 64 were vertical.

Among major oil and gas producing states, Alaska and Texas were each up by two rigs.

Colorado was up by one rig.

North Dakota, Oklahoma and Pennsylvania were unchanged.

New Mexico and Wyoming were each down by one rig.

Louisiana was down by two rigs and California was down by five rigs.

Baker Hughes shows Alaska with nine active rigs, up four from a year ago.

The U.S. rig count peaked at 4,530 in 1981. It bottomed out in May 2016 at 404.

—PETROLEUM NEWS

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INDUSTRY GLOOM

Rigs down 65%

Even though the holiday season usually sees a slowdown in drilling activity, the 65 percent rig-count drop in December was the sharpest for the month since 1975.

And the stumble was not confined to the oil sands. Analysts suggested it probably extended to the Duvernay and Montney shale formations.

At this point the Canadian Association of Oilwell Drilling Contractors has made no moves to revise its forecast, which projected 6,982 wells will be drilled in 2019 — up 51 wells from 2018 — while the association said it expects the rig fleet will shrink to 522 from 580.

Loss of foreign investment

The growing despair for the longer term is being compounded by the loss of foreign investment, which Canadian energy executives say is “very worrisome.”

Grant Fagerheim, chief executive officer of Whitecap Resources, said Canadians were “absolutely, massively mistaken” if they thought the industry could survive with only Canadian investors.

That message was echoed in a letter sent two months ago from Susan Johns, a United Kingdom-based fund manager, to Prime Minister Justin Trudeau, following a similar note in October from Darren Peers, an analyst and investor at Los Angeles-based Capital Research, which operates a US$1.7 trillion fund.

Johns told Trudeau she hoped “your government will start to recognize the numerous issues that are affecting Canada’s energy sector, and do every-

The growing despair for the longer term is being compounded by the loss of foreign investment, which Canadian energy executives say is “very worrisome.”

thing in its power to support an industry which has benefited Canadian prosperity for a long time.”

Johns has been spent the past 30 years investing in Canadian junior and intermediate companies.

She said it is “hard for me to watch such a vibrant industry being strangled by regulation, carbon taxes and the inability of producers to get their product to world markets.”

Comparison to US

Alex Pourbaix, chief executive officer of Cenovus Energy, said it was “very worrisome” for him to compare the positive atmosphere in the United States.

He said the U.S. is working to streamline permit applications, while Canada “ignores those red flags,” adding “no one is required to invest in Canada.”

Pourbaix said fund managers and investors, such as Johns and Peers, “seldom disclose their investment risks and strategies” — a viewpoint shared by Precision Drilling Chief Executive Officer Kevin Neveu, who said the government does not need investor letters “to show them what is going on ... the data is there.”

Doug Suttles, chief executive officer of Encana, told an Energy Roundtable conference in the fall that government policy is making Canada an uncompetitive place to drill for oil and gas.

“Today, every well we drill in British Columbia (costs us) over C$100,000 in carbon tax just on the diesel used to drill and complete that well. In the United States, we don’t pay a dollar of carbon tax.”

Ian Dundas, chief executive officer of Calgary-based Enerplus, which relies on North Dakota for 90 percent of its production, said, “It’s easy to get really down (in Canada). We’ve let the Americans outcompete us and out regulate us and we find ourselves in this position.”

Dundas said he hopes the Canadian election expected this fall will encourage the public to discuss changes to national energy policies that have choked pipeline plans and the shipment of crude off the British Columbia coast.

National carbon tax

Undeterred by these sentiments, the Trudeau government pushed ahead Jan. 1 with its national carbon tax, which four of Canada’s 10 provinces — Saskatchewan, Manitoba, Ontario and New Brunswick — are preparing to fight in the courts. (Alberta has previously imposed its own tax on the oil sands sector).

The tax started at C$20 per metric ton, rising by C$10 a year until 2022 and will extend beyond there indefinitely. A former parliamentary budget officer estimated the tax will cut economic growth by 0.5 percent of C$10 billion in 2022.

Andrew Scheer, leader of the Conservative Party, said the federal environment ministry has provided briefings that suggest the tax will need to reach C$300 to be effective.

If he forms the government this year, Scheer said he will offer incentives to industry to improve “efficiencies” in carbon output.

Inactive well cleanup

Not content to leave matters alone, the British Columbia Oil and Gas Commission, OGC, plans to introduce regulations in April to clean up thousands of inactive wells, while Alberta and Saskatchewan say they will study similar measures.

Currently, the cost of tackling Western Canada’s backlog of abandoned sites is estimated at C$27 billion — of which the Alberta government has collected barely C$2 billion in security to protect taxpayers against these liabilities.

However, documents just released by the Alberta Energy Regulator put a price tag of C$260 billion on cleaning up its broader oil industry, a five-fold increase over previous calculations.

The B.C. OGC plan to rewrite current rules follows a Globe and Mail report that found 7,382 wells in that province, or about one-third of all wells in B.C., are inactive, a fraction of the 122,546 inactive wells tallied by the newspaper for all of Western Canada.

The Canadian petroleum industry has campaigned against fixed deadlines for a cleanup, which Tristan Goodman, a former executive with the AER, said represents a crisis in Canada’s oil and gas sector.

He said it made no sense to “send a whole group of companies into bankruptcy” by forcing them to meet their cleanup obligations.

That prospect is compounded by the fact that major companies have offloaded properties to smaller players, who are eager to squeeze the last barrel of oil or cubic foot of gas from the wells even when they are incapable of paying for remediation. (Other abandoned wells, known as orphans, have no known legal owners).●

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ANWR DISCUSSIONS

ANWR, the resolution of which would determine the legal boundary.

If the state is awarded the land, existing state leaseholders with undeveloped oil discoveries such as Sourdough and Yukon Gold, thought to hold oil pools that cross under ANWR’s current federal border, would gain valuable real estate — real estate they bid on in state lease sales and were awarded with a caveat acknowledging the boundary dispute.

There are no d-1 selections left for the state in what the feds define as ANWR, Erika Reed told Petroleum News late in the afternoon of Jan. 4 after the Jan. 6 issue of Petroleum News was released online. Reed is BLM Alaska’s deputy state director for lands and cadastral survey.

Instead, Reed said, the decision on the disputed acreage between the Staines and Canning rivers will have to wait on Interior’s Board of Land Appeals, which will take another 18-24 months. IBLA is an administrative law court within the U.S. Department of Interior.

But that’s not what’s likely to settle the border and land transfer disagreement.

A senior Interior official told Petroleum News Jan. 7 “we are engaged at the highest level with the governor and his staff on the Canning/Staines river boundary issue,” suggesting an agreement could be reached much sooner than a decision from IBLA.

Under the Alaska Statehood Act, which took effect in 1959, the federal government still owes the state approximately 5 million acres.

The acreage between the Canning and Staines rivers continues to be listed as a high priority area by the state, Marty Parsons, deputy director of the Alaska Department of Natural Resources’ Division of Mining, Land and Water, told Petroleum News in early January.

The Goodnews Bay land conveyance was accomplished through a collaborative effort between the state and BLM. A process was identified where BLM could lift a Public Land Order previously complicating the state’s ability to receive title, Parsons said.

“The difference is that no PLO needs to be lifted before the state could receive title” to the wedge of uplands between the Staines and Canning rivers, he said, meaning the conveyance could go through more quickly.

Note: The submerged lands were not withdrawn prior to statehood, Parsons said, and so are not part of the disputed acreage.

—KAY CASHMAN

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AGDC BOARD

Commissioner Jason Brune.

"Alaskans have long focused on the benefits of reduced energy costs, bringing our rich energy resources to market and monetizing our North Slope gas," Dunleavy said in a Jan. 7 press release. "Today's announcement continues those goals, while putting in place the personnel to make diligent review of the project. AGDC is tasked with a very complex mission — and I look forward to seeing how best the State can assist in moving a project forward," the governor said.

Continuing public members of the board include Dave Cruz of Palmer, David Wright of Anchorage and Warren Christian of North Pole.

New members

Prior to being named commissioner of Labor, Ledbetter held several key positions in the department, including regional manager for the Anchorage/Mat-Su economic region.

Brune most recently was senior director of land and resources for Cook Inlet Region Inc. Prior to that, he was executive director of the Resource Development Council, board president of the Alaska Miners Association, member of the State Chamber of Commerce Board and the Exxon Valdez Oil Spill Public Advisory Committee.

Smith, with more than 25 years' experience in the Alaska oil and gas and construction industries, has served as president and CEO of ASRC Energy Services and on the boards of RDC and the Alaska Support Industry Alliance.

Coffey served two terms as chair of the Anchorage Assembly. He is a business owner, attorney and longtime oil and gas advocate and previously served as chairman of the Alaska Board of Fish, chairman of the Anchorage

see **AGDC BOARD** *page 14*

Petroleum news

Oil Patch Bits

Cook Inlet Tug & Barge Announces Interim Manager

AMBER THOMAS

Cook Inlet Tug & Barge, an independently managed subsidiary of Foss Maritime Co., announced Jan. 3 that Foss Project Manager Amber Thomas has been selected as interim business operations manager for Anchorage. Beginning Jan. 2, Thomas will serve as the central point person for administrative and commercial operations, leading all shoreside activities in Anchorage and Seward.

Thomas will take on the temporary position while the search continues for a new president to replace former CITB head Ben Stevens. Stevens left CITB in December to accept a position with the office of the governor of Alaska.

Thomas, a native of Alaska, has a strong track record for success in project management since joining Foss in 2015. Her first role at Foss was to assist in the Shell offshore drilling venture in the Chukchi Sea. She also was paramount in assisting with the management of the Puerto Rico Utility Equipment Projects as well as the Puerto Rico FEMA accommodations project.

Previously, Thomas worked for ASRC Energy Services as operations coordinator — a subsidiary Native corporation of Arctic Slope Regional Corp. that provides comprehensive support to the oil and gas industry. One of her key roles with AES was to work with subsidiary companies in the contiguous United States, including Petrochem and AES Continental, to troubleshoot and streamline operations.

Thomas was raised in Utqiagvik. She graduated from the University of Idaho in 2007, where she obtained her Bachelor of Science in American Studies. Thomas is a certified associate in project management from the Project Management Institute.

GComm partners with Iridium for Certus[SM] roll out

GComm announced Jan. 7 that in early January Iridium Satellite will launch the final 10 of 80 satellites that will complete the newest LBand satellite constellation in service. In conjunction with the final launch Iridium will be rolling out Iridium Certus[SM], their new advanced multiservice platform designed to extend the reach of terrestrial and cellular infrastructure. With one terminal you can now access a range of services from multiple high-quality voice lines to the highest throughput L-band data connection available. Data speeds upon roll out will be 700 Kbps, with speeds of 1.4 Mbps anticipated sometime in 2020. The Iridium low earth orbit constellation provides 100 percent seamless coverage of the entire planet, with no weather related, or "over the horizon" issues to impact transmission reliability.

Services include, background IP data, streaming data, high quality voice, messaging, safety and location services, and global maritime distress safety system available in 2020.

The hardware associated with this service is a small, light-weight dome, approximately 14 inches in diameter weighing 7 pounds, designed for use in rugged marine and terrestrial environment, and has no moving mechanical parts for optimal reliability. Installation and setup are a simple plug and play process. Some of the hardware features include, Wi fi, 4G LTE softphone capability, in built internal PBX, and radio gateway function.

GComm, a Tier One Iridium service provider, will be participating in the roll out of the new Iridium

Certus[SM] services and hardware. For more information contact GComm visit www.g-comm.us.

Alaska teachers of excellence accepting nominations

BP said Jan. 7 that it is now accepting nominations for the 2019 BP Teachers of Excellence program, which recognizes Alaska teachers' exceptional work. In addition to honoring teachers for the 24th year, the program is also accepting nominations for unsung heroes in Alaska's schools, such as principals, counselors, teacher assistants or others.

Each year across Alaska, teachers, community members, spouses, students and others nominate hundreds of teachers who are making a difference and inspiring students. Some are nominated for their kind gestures and ability to listen. Others are nominated for helping their students build award-winning robotics. Whatever the reason, the BP Alaska Teachers of Excellence program has proven there are no shortage of great teachers in Alaska. Do you know a great teacher?

The program honors K-12 teachers and other school staff from public or private schools across Alaska who have made important contributions to education and their communities. BP will select one Teacher of the Year, to be announced at the awards ceremony in May. Educational Allies will also be announced and recognized at the award ceremony.

Since the program's inception in 1995, BP has recognized 750 Alaska teachers and still receives nearly 1,000 nominations each year. Anyone can nominate a BP Teacher of Excellence or a BP Educational Ally, by visiting BPteachers.com. The deadline for nominations is Feb. 1. For more information contact Megan.baldino@bp.com or AKBPTeachers@bp.com

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

Companies involved in Alaska's oil and gas industry

All of the companies listed above advertise on a regular basis with Petroleum News

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NANUSHUK FORMATION

of that Navy exploration, which discovered high quality oil in Nanushuk sands in the Umiat oil field, in what is now the southeastern corner of NPR-A.

Surface outcrop mapping from Umiat found the Nanushuk to become thinner and more fine-grained towards the north and east, an observation that appeared consistent with a theory that the sediments, formed from ancient river deltas, were sourced from the emerging Brook Range to the south, pouring northward into a marine basin, Mull said.

The Susie well

This particular theory in part underlay the drilling in 1966 and early 1967 by ARCO and Humble Oil & Refining of the Susie No. 1 well, in the more southerly part of the coastal plain, immediately west of the Sagavanirktok River and some distance east of Umiat. The Susie well sought two main targets: the Nanushuk and several hundred feet of shallower and younger medium to coarse-grained sandstone, upper Cretaceous and Tertiary in age, Mull said. A north-south seismic line, shot in the winter of 1963-64 by Richfield (subsequently to merge with Atlantic Refining Co. to form ARCO), had revealed an un-breached anticline in the subsurface near the Susie location, he said. As a geologist working for Humble, Mull had sat the Susie well.

Those shallower strata turned out to include sands with good oil shows but no commercial oil pools. However, underneath, instead of Nanushuk sands, came black silty mudstone for thousands of feet. At a depth of 12,900 feet the well encountered the lower Cretaceous Pebble Shale, with the Kemik sandstone appearing at 13,000 feet: These formations are older, and hence should be deeper, than the Nanushuk.

Changing geologic model

Subsequent exploration and geologic research have revealed the reason for the absence of the Nanushuk in the Susie well. It turns out that the sediments that formed the Nanushuk in the NPR-A actually flowed in from the west, and not from the south — river delta sands deposited high on the ancient basin margin formed the Nanushuk, while sand and mud layers deposited at the base of the margin formed what is now called the Torok formation. As the basin filled, the basin margin migrated from west to east, eventually coming to a halt to the east of what is now the Colville River. It is now obvious that the Susie well location is some distance east of that ultimate Nanushuk/Torok basin margin — the silty mudstones found where the Nanushuk had been expected were probably deposited far out in the deeper part of the basin.

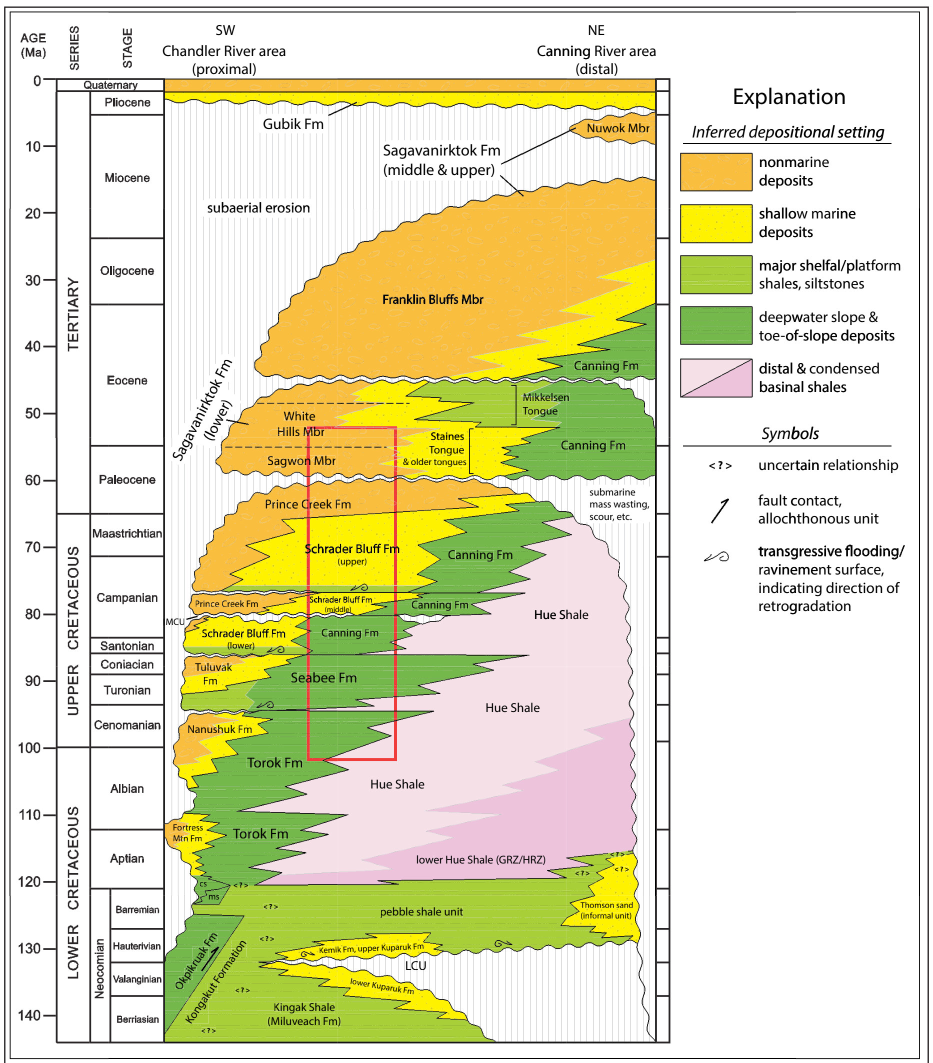

Figure 4. Chronostratigraphic column for the Colville basin, Alaska, revised from Mull and others (2003) and Garrity and others (2005). Abbreviations as follows: Fm = Formation; Mbr = Member; Mtn = Mountain; LCU = Lower Cretaceous unconformity; MCU = mid-Campanian unconformity; cs = Cobblestone sandstone of Fortress Mountain Formation (informal); ms = manganiferous shale unit (informal). The red box approximates stratigraphy exposed in map area.

On the other hand, to the south of Umiat the eastward migrating margin does merge with a region in which Nanushuk equivalent sediment did flow north from the emerging Brooks Range. Mark Myers, formerly commissioner of the Alaska Department of Natural Resources and director of the U.S. Geological Survey, commented to Petroleum News that the presence of the age-equivalent Fortress Mountain sandstone, deposited northward from the Brooks Range, does indicate Nanushuk potential to the south of the Susie well.

Prudhoe Bay discovery

The discovery of the Prudhoe Bay oil field shortly after the drilling of the Susie well caused attention to shift to the coastal region of the central North Slope, and to the reservoir potential of rocks older and deeper than the Nanushuk. The main reservoir at Prudhoe Bay is in the Triassic Ivishak formation, in what geologists refer to as the Ellesmerian sequence. Subsequently, the Kuparuk River field was discovered, with oil in lower Cretaceous sands in what is referred to as the Beaufortian sequence, above the Ellesmerian. The Nanushuk and Torok are in the Brookian sequence, the youngest and shallowest of the petroleum bearing rock sequences.

Some smaller fields, such as Meltwater, were found in Brookian reservoirs.

Re-emergence of the Nanushuk

The Nanushuk seems to have been largely forgotten until 2015, when Armstrong Oil & Gas Inc. and Repsol E&P USA Inc., taking a contrarian view of conventional North Slope exploration strategies, made the Pikka discovery to the east of the Colville River delta. Myers, who a number of years earlier had worked as a geologist for ARCO, predecessor company to ConocoPhillips, commented at the time of the discovery that the company had been aware of evidence for oil in the Nanushuk but did not realize the size of the accumulation.

The Pikka discovery, and subsequent finds in the Nanushuk at Horseshoe and Willow, have upended the North Slope oil exploration scene. After many decades, attention has returned to the Nanushuk, the rock formation that was a focus of early exploration on the North Slope. ●

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AGDC BOARD

Energy Commission and as a member of the Alaska Gasline Development Corp. Community Advisory Council.

Walker also changed board

After Bill Walker was elected governor in 2014, he removed three public members from the AGDC board — Al Bolea, Drue Pearce and Richard Rabinow, retaining John Burns, the board chair, and Cruz, all named to the board in September 2013 by then-Gov. Sean Parnell. Boles and Rabinow were former oil company executives; Pearce, a former president of the Alaska Senate, was and the first federal coordinator for Alaska natural gas transportation projects.

Legislators who were involved in the development of AGDC, established under House Bill 4 in 2013, expressed disappointment at the changes.

Walker had some difficulty getting new public members confirmed to the board.

Hugh Short, chairman and CEO of Pt Capital, and Rick Halford, a former legislator, were confirmed; Joe Paskvan, also a former legislator, was not.

Cruz, president of Cruz Cos., is the only remaining member of the original board, whose public members included John Burns, a lawyer and former Alaska attorney general; Bolea; Pearce; and Rabinow.

Merrick, secretary of Laborers' Local 341, was named to the board by Walker in September of 2015.

In November 2015 Walker dismissed Burns, replacing him with former Fairbanks North Star Borough Mayor Luke Hopkins, who, along with Walker, had been involved with the Alaska Gasline Port Authority.

In September 2016, Walker appointed David Wight, a former president and CEO of Alyeska Pipeline Service Co., to replace Halford, who did not seek reappointment, and Warren Christian to replace Hopkins, who resigned after declaring as a candidate for the Alaska Senate. Christian is president of Doyon Associated LLC, specializing in Arctic pipeline construction.

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SOURDOUGH DRILLING

2018 Area F Plan of Development, submitted Dec. 21 to the Alaska Department of Natural Resources' Division of Oil and Gas by Alaska-based Jade.

Although Oil and Gas Division Director Chantal Walsh formally told the unit working interest owners — Exxon, BP, ConocoPhillips, Colt and most recently Jade — in a letter that the POD "as submitted" does not meet the requirements set forth in regulation, that fact "in no way triggers the release of Area F acreage." Dec. 21, she noted, "remains the date of submittal" for purposes of the Point Thomson Unit Settlement Agreement with the state, which dates back to March 29, 2012.

Proposed drilling

The plan of development turned in by Jade's managing director Eric Opstad calls for targeting Brookian oil reserves, which was the kind of play found at the Sourdough prospect.

Within the Point Thomson unit, Brookian reservoirs are "generally interpreted as amalgamated lowstand channel fill and basin-floor fan deposits," the plan said, pointing out that "typically" these reservoir sands are "predominantly" found onshore at depths between 11,000 feet and 12,000 feet true vertical depth, TVD.

New seismic 3-D data was acquired over the Sourdough area by Jade during the 2017-18 winter season, which the company is currently having evaluated, the plan said.

Jade is also "seeking to access additional seismic data and has engaged a well-known consultancy to assist interpreting that data."

When that work is finished the company said it will select an "optimized" well location "to further evaluate the deliverability of the Brookian reservoir," and further delineate "both the vertical and areal extent of the oil accumulation."

The well will be drilled in the first quarter of 2020.

The well site, the plan said, will be accessed by an ice road and Jade is "involved in ongoing discussions" with Exxon to secure support from "existing unit infrastructure resources."

Jade will gather data from the vertical pilot hole such as mechanical drilling parameters, LWD data, wireline logs, sidewall and conventional cores, VSP and check-shot information or drill stem test data, the plan said.

Such information will be "used to determine the suitability of the encountered stratigraphic reservoir section for horizontal well construction. Jade feels that that the deployment of horizontal production wells is a critical element in commercializing the Point Thomson unit Brookian opportunity in Area F, as well as its adjoining areas," the plan said.

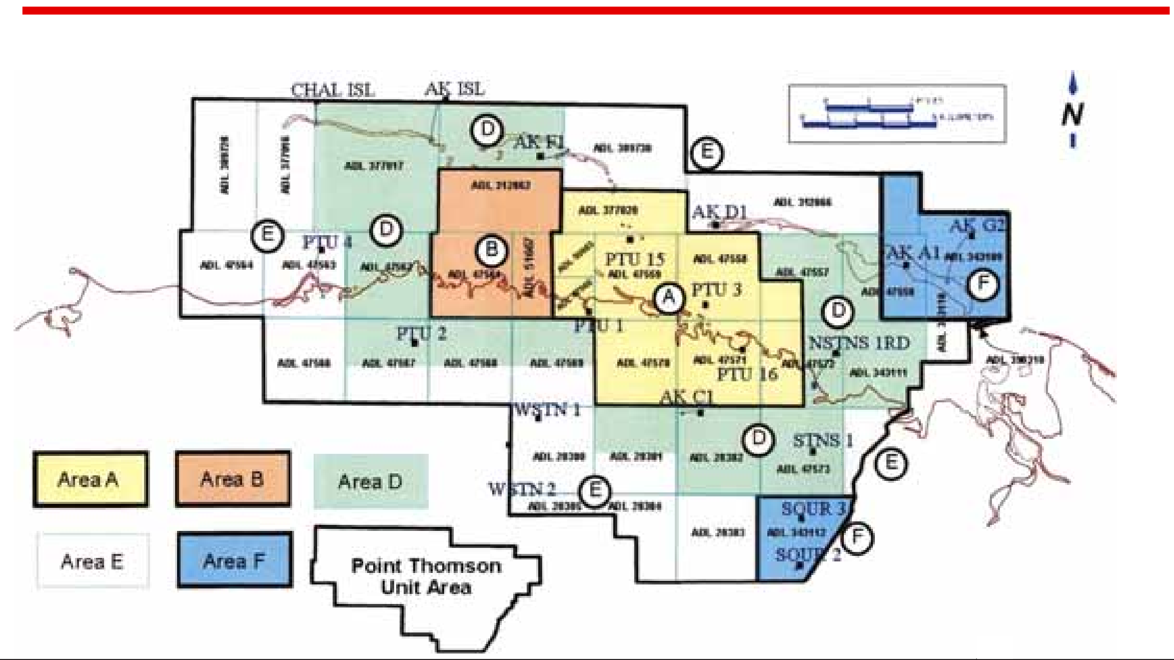
"Once a vertical pilot hole is drilled, the well will be plugged back and drilled at a high angle into the Brookian reservoir for completion and an extended production test. Production data gathered at this time would be used to analyze the economic viability of a field development program," the plan said.

At the conclusion of this evaluation the well will be plugged and abandoned or suspended.

Upon completion of drilling and extended production testing, analysis of the data "would be integrated into the Jade 3D Brookian seismic model," the plan said.

With those results in hand, a second plan of development will be prepared and submitted by Jade to DNR by Dec. 1, 2020.

Point Thomson Unit



JADE ENERGY

Sourdough & ANWR

Check out the following articles from past issues of Petroleum News in our online archive at www.petroleumnews.com to better understand the historical relationship between Point Thomson's Sourdough discovery and opening the 1002 area to oil and gas exploration and development.

- **DEC. 28, 1998:** Lawyers or Drillers?

Exxon still … didn't soften its position late last year when the U.S. Department of the Interior indicated it might be open to a "paper" oil and gas lease sale in ANWR, which would allow subsurface entry into the refuge via horizontal drilling through Sourdough/Point Thomson wells.

- **MAY 28, 2001:** State asks for production from Point Thomson unit next to ANWR by 2008

Unit operator ExxonMobil had proposed a commitment to development drilling within five years of expansion approval

- **JAN. 12, 2003:** Unlocking ANWR

Development of BP-discovered Sourdough field near refuge is key to opening the coastal plain, whether or not feds go after drainage royalties.

- **APRIL 27, 2008:** Tapping ANWR from PTU

Rejection of Point Thomson unit plan confirms state's interest in Sourdough oil discovery.

Work done to date

As part of the development plan Jade outlined work done to date, noting the Brookian reservoir in Area F has been delineated and characterized by five wells that were drilled in and around the Point Thomson unit since the mid-1970s.

Three of the wells are in the northeast corner of the unit and were summarized as follows in the plan:

- Alaska State A-1 on ADL 047556 was drilled by Exxon and reached a 14,206-feet TVD in September 1975 and was plugged and abandoned. (That data is available to the public from the Alaska Oil and Gas Conservation Commission.)

The plan of development turned in by Jade's managing director Eric Opstad calls for targeting Brookian oil reserves, which was the kind of play found at the Sourdough prospect.

- Alaska State A-2 is immediately adjacent to Alaska State A-1 and was drilled as a cutting's disposal well by Exxon in 1995 to 2,364-feet TVD and was plugged and abandoned in March 2002.
- Exxon spud Alaska State G-2 from ADL 343110 and directionally drilled the well north to reach a bottom-hole at 14,340-feet TVD within ADL 343109 in August 1983. The well was subsequently plugged and abandoned, but AOGCC granted the well extended confidentiality.

The other two wells that characterize Point Thomson's Brookian reservoir are Sourdough 2 and 3 and were summarized as follows in Jade's plan:

- BP drilled Sourdough 2 to 12,562-feet TVD in March 1994 and the well was plugged and abandoned.
- Two years later, Sourdough 3 was drilled by BP reaching 12,475-feet TVD in March 1996. The well is suspended. AOGCC granted both wells extended confidentiality.

Vintage seismic

Various 3-D seismic surveys have been acquired and interpreted over acreage in Area F, including: Point Thomson 3-D in 1989, 70 square miles, with Exxon the operator; Yukon Gold 3-D in 1994, 95 square miles, with BP the operator; and Mammoth 3-D in 1997, 13 square miles.

"Generally speaking, the quality of all these data sets are good and they have been used by the working interest owners to gain a broad overview of the Point Thomson unit Brookian reservoir," the plan said.

Jade has had "access to the Point Thomson 3D volume and has used that data set to help it characterize the Brookian opportunity at Point Thomson as well." ●

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