



page 9 Stokes named DO&G director; has been acting since October

## WSJ: Bill Armstrong and the story of the big Nanushuk oil discovery

THIS NOV. 29 HEADLINE and deck in The Wall Street Journal topped a story of the man whose launched the renaissance of the North Slope's oil industry with the huge Nanushuk discovery: "The Last Prospector: A Texas Wildcatter Is Tempted by a Final Quest. Bill Armstrong bet he could find oil in a corner of Alaska already picked over by the big companies"



Founder and CEO of Armstrong Oil & Gas, Bill Armstrong is dubbed by WSJ writers Bradley Olson and Sarah McFarlane as one of America's last oil wildcatters. They wrote he had a "hunch there was one more fortune just

see INSIDER page 8

## Furie extends Ch 11 bid deadline; inlet asset auction in progress

The deadline to submit bids on the assets of Furie Operating Alaska LLC was extended through and including Dec. 4 at 4 p.m. Eastern Time.

The extended bid deadline notice was filed Dec. 2 by the counsel to the debtors and debtors in possession.

The notice modifies the Sept. 26 court order approving bidding procedures, which establish key dates and times related to the sale auction of proposed sale of substantially all of the debtors' assets. The assets are being sold as part of a voluntary petition by Furie and its related debtors for relief under Chapter 11 of Title 11 of the United States Code in the United

see ASSET BIDS page 10

## Two 3D seismic surveys being permitted for W, E North Slope

In early December, the Alaska Department of Natural Resources' Division of Oil and Gas posted two public notices for geophysical exploration permits applied for by SAEExploration. On Nov. 7 and on Oct. 11, respectively, the company filed an application to conduct a 368 square mile Narwhal 3D seismic survey west of the central North Slope and the (up to) 891 square mile Staines 3D survey on the eastern North Slope. Both surveys will be done this winter.

Although SAE does not say which oil company(ies) the Narwhal survey is being done for, it appears to encompass part of ConocoPhillips' Narwhal prospect, which contains part of the Nanushuk reservoir and adjoins Oil Search's Pikka unit Nanushuk project on the east.

see 3D SEISMIC page 8

## Delay is Canada's LNG enemy

The message to Canada's LNG decisionmakers was blunt: Get on with the job of approving projects or rue the day.

It came in late November from Maria van der Hoeven, former executive director of the International Energy Agency, who told industry leaders in Calgary that Canada's vast global advantages — massive reserves in British Columbia, proximity to fast growing Asian markets and lower greenhouse gas emissions — will be wasted unless Canada joins the LNG expansion surge sweeping the globe.

"Don't play the victim," said the former Dutch politician.

see LNG DELAY page 8



MARIA VAN DER HOEVEN

### EXPLORATION & PRODUCTION

# All not so shiny

Jepsen: Investment in Alaska North Slope core fields rivals new fields

By KAY CASHMAN  
Petroleum News

In his presentation at the Resource Development Council's annual conference in Anchorage in November, Scott Jepsen talked about the North Slope's reemergence as an oil province due to big new oil discoveries at Pikka and Willow, expanding the depiction of the renaissance by adding the North Slope's three major producing, or core, fields — Prudhoe Bay, Kuparuk and Alpine/Colville River — to the new fields.

Furthermore, Jepsen, who is a senior vice president at ConocoPhillips Alaska, said that



SCOTT JEPSEN

JUDY PATRICK the capital investment planned for the three core fields in the next 10 years rivals that proposed for new discoveries — \$11 billion for the core fields compared to \$13 billion.

And while the three older core fields are "not the shiny new toy out there that gets so much attention," they are vital to present and future oil production in Alaska, he said.

Currently the three core fields yield "80% of the oil production that's coming from the North Slope," Jepsen said. It's "critical that the infrastructure that

see JEPSEN PRESENTATION page 11

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SERIES

### GOVERNMENT

# WOTUS clarity needed

Efforts toward definitive rules on waters of the US, but there is still ambiguity

By ALAN BAILEY  
For Petroleum News

Since the enactment of the Clean Water Act in the 1970s there has been continuing contention over the scope of federal authority to require permitting under the terms of the statute. At the core of the arguments lies a lack of clarity over the specification of the waters of the United States, or WOTUS, the waterways and water bodies that are subject to federal regulation.

And the scope of WOTUS matters, given that the need for permitting under the Clean Water Act can present significant cost and delay for projects that potentially impact U.S. waters The WOTUS scope also raises issues relating to the relative extents of

There is now pending litigation over both the 2015 and 2018 rules, with consequent uncertainty over how the rule making will end.

federal and state permitting jurisdiction.

On Nov. 20 during the Resource Development Council's annual conference, Duncan Greene, a partner in Van Ness Feldman LLP, overviewed the latest status of efforts to clarify the scope of WOTUS.

### Importance in Alaska

Greene commented on the importance of the see WOTUS CLARITY page 10

### PIPELINES & DOWNSTREAM

# One small step...

Addition of 10,000 bpd on Enbridge's Line 3 points to 100,000 by end of 2019

By GARY PARK  
For Petroleum News

Forget the stresses and strains of the Trans Mountain expansion and Keystone XL, which still have a long wait ahead to determine whether they will ever get built.

Canada's oil sands producers had cause to celebrate, if only in subdued fashion, on Dec. 1.

Enbridge started to fill the C\$5.3 billion Canadian portion of Line 3, a first step towards raising transportation capacity on the rebuilt 640 miles of right of way between Hardisty, Alberta, and Gretna, Manitoba.

That shifts attention to the US\$2.9 billion U.S. section of Line 3 from North Dakota to Wisconsin, a

Enbridge filed its regulatory application to replace the entire aging pipeline and raise capacity to 760,000 bpd from 390,000 bpd with Canada's National Energy Board (now the Canadian Energy Regulator) five years ago.

project facing another year of delays pending a resolution of regulatory issues in Minnesota.

For now, Line 3 will immediately add 10,000 barrels per day of shipping capacity out of Western Canada — enough to build hopes that the chokehold

see ENBRIDGE LINE 3 page 8

## ● LAND &amp; LEASING

# New regs allow online bid submissions

DNR says changes bring leasing into 21st century; effective Dec. 26, which means Dec. 11 sale runs under old paper-based system

By **KRISTEN NELSON**

Petroleum News

Regulation changes proposed by the Alaska Department of Natural Resources in July have been filed with the lieutenant governor's office and become effective Dec. 26, the department said in a Dec. 2 press release.

DNR Commissioner Corri Feige said the regulations allow for online lease applications, bids and lease payments, bringing the state's oil and gas leasing processes into the 21st century.

The department said the changes in Title 11 of the Alaska Administrative Code also modernize other administrative matters associated with mineral lease sales, admin-



**CORRI FEIGE**

*The revised regulations state: "Sealed bids, including bids received online, must be opened publicly" following a public notice issued in accordance with regulations.*

istration and definitions.

"The changes contained in these new regulations will empower the Division of Oil and Gas to apply modern digital and technical solutions to provide efficient leasing services to the oil and gas industry," Feige said. "It is a testament to the hard work of the people in the Division, and I'm looking forward to us taking this next step forward."

Currently bids on rights to explore, development and produce oil and gas on state land must be submitted as paper bids with a bid deposit, sealed by the bidder, delivered to the division and opened in public — a system

which, DNR said, was virtually unchanged since statehood.

With online bidding, security will be increased, DNR said, and time and expense reduced, as the requirement to prepare paper bids, obtain certified checks for bid deposits and ensure delivery to the division office in Anchorage will be eliminated.

The regulations continue to require the public opening of bids. The revised regulations state: "Sealed bids, including bids received online, must be opened publicly" following a public notice issued in accordance with regulations.

"Online oil and gas leasing is one of the biggest changes in state lease sales since the first Areawide lease sale in 1998 offered all available tracts for sale on the North Slope," said Gov. Michael J. Dunleavy. "This will mean smoother, more reliable and more attractive con-

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GOVERNMENT

# AOGCC issues rules for Hansen oil pool

Spacing exception issue settled; natural gas flaring volumes OK'd by commission; BlueCrest doesn't get extended BOP testing period

By KRISTEN NELSON  
Petroleum News

BlueCrest Alaska now has pool rules from the Alaska Oil and Gas Conservation Commission for the Hansen oil pool at Cosmopolitan, an offshore accumulation in Cook Inlet which the company is developing from an onshore pad. After hearings which began in August and were completed in October, AOGCC issued the pool rules, which define basic operating parameters for the field, on Nov. 25.

BlueCrest had been operating Hansen under AOGCC's statewide rules, which required it to submit spacing exceptions for the fishbone lateral well branches it was drilling. When the commission received 25 requests for spacing exceptions for those fishbone laterals in early June — which if granted would have resulted in 63 spacing exceptions having been issued for the Hansen wells — the commission scheduled a public hearing to establish pool rules for development and operation of the Hansen oil pool at Cosmopolitan. With pool rules, spacing exceptions are not required within the defined pool area, as long as drilling is not within 500 feet of a boundary where ownership changes, in this case the boundary of the unit.

## Cosmopolitan history

The commission said hydrocarbons were discovered at Cosmopolitan in 1967 in the Pennzoil Oil Starichkof State 1, an offshore well drilled to a depth of 12,112 feet in what the commission said was informally named the Starichkof Sand, within the lower Tyonek formation.

Phillips Alaska Inc. directionally drilled the Hansen 1 from onshore in 2001, confirming the presence of oil and followed that with a directional redrill of the Hansen 1, the Hansen 1A, which tested at rates up to 1,000 barrels per day.

Pioneer Natural Resources Alaska Inc. drilled the Hansen 1AL1 well branch from the Hansen 1A in 2007, and fracture stimulated that well branch in 2010.

Buccaneer Alaska Operations LLC,

## Adjacent surface owner issues

The Alaska Oil and Gas Conservation Commission received comments from Peter Jensen on BlueCrest's application for pool rules. Jensen owns 11 subdivision lots, some 30 acres, adjacent to the Hansen production facility pad. The commission said Jensen testified that his acreage was adversely impacted by noise, light pollution and frequent flaring events at the production facility.

The commission said in its Nov. 25 order that Jensen also expressed concern about "potential resource waste and potential impact from production and drilling operations on nearby shallow drinking water aquifers" and requested limitations on flaring and "water well surveyance to ensure drinking water is not contaminated."

On the gas flaring issue, the commission said operators are required by law to submit monthly gas disposition reports for each production facility. "AOGCC reviews these reports to determine whether resources are being wasted," the commission said, and its "analysis of reports to date from the Hansen Oil Pool does not reveal waste or excessive flaring have occurred in the Hansen development."

On the issue of water contamination, the commission found: "Additional water well surveyance should be conducted to ensure drinking water aquifers remain free of contaminants."

The commission required that by Jan. 1, 2021, "the operator shall obtain, analyze, and report the results for one water sample from each drinking water well within a one-half mile radius of the Hansen Production Facility Pad," with copies of the results provided to each surface owner and to the commission. "If a surface owner denies permission for water sampling or for disclosure of the results, the operator must document the reasonable and good-faith efforts taken to secure that permission and report those efforts to the AOGCC."

—KRISTEN NELSON

then the operator, drilled the offshore Cosmopolitan State 1 in 2013.

BlueCrest acquired 100% working interest at Cosmopolitan in 2014 and began its development program with the Hansen H-14 and Hansen H-16 wells in 2017. While the wells were fracture stimulated, the commission said production rates were low.

The company then developed "the technique of drilling multiple 'fish-bone' well branches upward through the reservoir from each primary well," with three wells drilled or redrilled since then (Hansen H-12, Hansen H16A and Hansen H-04) with 20 supplementary well branches, the commission said.

## Hansen oil pool

The pool rules define the Hansen oil pool as the hydrocarbon accumulation

common to and correlative with the accumulation in the Cosmopolitan State 1 well between 6,538 and 7,312 feet measured depth within the sections of townships 3 and 4, range 15, Seward Meridian, listed in the order.

"Eliminating spacing requirements, except for a minimum set-back distance from lease boundaries where landownership or ownership changes, will improve

ultimate recovery while protecting correlative rights," the commission said. This is the provision which eliminates the need for spacing exceptions for each of the fishbone laterals.

BlueCrest also requested a waiver of gas-oil-ratio requirements in the commission's regulations, and the commission found that waiver was necessary so the company could continue to gather data to evaluate future development options and determine viability of initiating an enhanced oil recovery project. That waiver is through Dec. 31, 2021. Prior to that the operator must submit an application for an extension of the waiver, initiate an enhanced oil recovery project or apply for a permanent waiver.

BlueCrest requested an increase in the time between blowout preventer tests from two weeks to three weeks while drilling production sections within the reservoir, telling the commission that on occasion it has had to pull out of well branches to do BOP tests, and because of the time required to get in and out of the hole the company said there were instances where it was not economic to return to drill that lateral, so production was lost because the company won't be able to tap that oil.

The commission said it found that request was not warranted.

BlueCrest also requested simplification of permit to drill requirements and the commission said that was warranted only for development well branches within the Hansen oil pool. ●

Contact Kristen Nelson  
at knelson@petroleumnews.com

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continued from page 2

## BID REGS

duct of the process that helps build the foundation of our state's oil wealth, including the Alaska Permanent Fund."

## Dec. 11 sales

DNR said the regulation changes do not apply to the oil and gas lease sales scheduled for Dec. 11.

The bid opening for those sales is scheduled for 9 a.m. in the Dena'ina Center, included are the Beaufort Sea, North Slope and North Slope Foothills areawide sales, and the Gwydyr Bay, Harrison Bay and Storms blocks within the Beaufort and North Slope sale areas.

The federal Bureau of Land Management has been livestreaming its bid openings, with the bid opening for BLM's current sale scheduled for 10 a.m. Dec. 11. ●

Contact Kristen Nelson  
at knelson@petroleumnews.com



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## FINANCE &amp; ECONOMY

# Oil price outlook from economist Ed King

Natural decline in North Slope legacy fields expected to be offset by new investment, keeping ANS production at some 500,000 bpd

By ED KING

For Petroleum News

Oil traders reacted to positive economic developments in October. Fears of falling consumption growth targets dissipated a bit as positive trade talks provided some relief. As the largest source of current and future demand, traders watch the U.S. and Chinese economies closely. Almost no positive price shocks have been able to penetrate the worries of decreasing demand since the U.S.-China trade dispute began.

It appears that some hope of a trade deal helped oil prices over the last few weeks. Brent and WTI oil traded more than \$3 higher than October. ANS posted a smaller gain of \$2.14 per barrel. The increase in the differential that opened up in October closed again in November. However, Alaska North Slope crude is still selling at a \$2 premium to Brent, which should continue as long as the sanctions in place.

ANS averaged \$64.97 in November and has now averaged \$63.72 so far this fiscal year. Given where the futures markets are currently trading, it appears the FY20 average will land between \$53.69

*So, it's starting to look like a timing issue could create a supply shortage a little over a year from now. That would mean a jump in oil prices followed by an increase in investment.*

and \$75.93 per barrel, with an average outcome of \$64.93.

However, a lot of attention seemed to turn toward a potential supply glut recently. Several projects that were sanctioned before oil prices crashed in 2014 are just on the verge of entering sustained production. By some accounts, more than a million barrels per day of new supply is slated to hit the market within the next few months.

In addition, all three major oil forecasting agencies show significant gains in shale oil production from the U.S. over the next year. With the markets already over-supplied, many analysts fear that piling on more unneeded sources will translate into a drop in prices over the next six months.

That risk is exacerbated by the fact that a few million barrels per day are

already off the market due to sanctions on Iran and Venezuela. Should those sanctions be lifted, even more surplus oil would need to find a home.

Naturally, the world's oil cartel can protect prices by making room for this new oil through production cuts. However, giving up market share to protect value can only go so far. And OPEC is already holding back a lot of production due to the growing U.S. shale supply. When oil prices crashed in 2014, Saudi Arabia protecting market share was one of the primary causes.

We won't have to wait long to find out what they will do. OPEC is scheduled to meet in December to discuss its strategy. Early indications suggest that further cuts aren't coming without some assurance that countries other than Saudi Arabia will comply.

Regardless of how things play out this winter and spring, the next leg of the commodity cycle is already visible. It comes from the fact that oil reservoirs naturally decline as reservoir pressure is depleted.

With about 100 million barrels per day of global production, oil companies need to bring over 5 million barrels per day of new production online each year just to maintain current levels. In other words, they have to run as fast as they can just to stay in place.

And so, when the market is oversupplied, it doesn't require facilities to shut down. Balance is restored by simply putting down the checkbook for a few months. Since 2014, investors have put down their checkbooks. Reserve replacement is currently at a near-record low.

In addition, active rigs in Texas and Oklahoma have been falling for several months. The number of working rigs is down 25% since last year — as investors are hesitant to pump money back into these assets right now. Those rigs that are still working are focusing on completing the backlog of unfractured wells (cutely called a "fracklog"). Completing those DUCs (drilled but uncompleted wells) have pushed U.S. production to record heights despite the falling rig count.

But, a decrease in production levels will occur if new targets are not drilled. While there are plenty of resources to be brought online, investors aren't likely to expand investment activity until prices rise. So, it's starting to look like a timing

issue could create a supply shortage a little over a year from now. That would mean a jump in oil prices followed by an increase in investment. And, any geopolitical tensions that disrupt supply could accelerate the issue.

In short, don't expect oil prices to rise a whole lot before the summer, unless something unexpected happens. But, don't mistake the current situation for the new normal. The fundamentals suggest a long-term price of about \$70.

## North Slope Production outlook

North Slope oil production appears to have averaged around 518,000 barrels per day in November. At least according to throughput report from Alyeska. That compares to 538,130 barrels per day last November.

So far this fiscal year, 72.3 million barrels have been produced from the North Slope — which works out to an average of 473,014 barrels per day. At this point last year, 74.4 million barrels had been extracted (486,527 barrels per day). Therefore, it is starting to look like the final FY20 production number will fall a little bit from FY19.

However, the mean of all the production scenarios I ran still works out to 505,319 barrels per day in FY20. Of course, that number relies on some successful drilling that might not happen, including new wells in Prudhoe and Kuparuk, targets for the new ERD in Colville River, drilling out the new pads in Milne Point and GMT, and adding wells to the now producing Mustang field.

In all, reinvestment should offset the natural decline within the legacy fields for the next three years — keeping production at right around 500,000 barrels per day. From there, things should start to improve with the additions of Pikka, Willow, and all of the other exciting new investment opportunities around the North Slope — that is, if they receive funding. Time will tell. ●

*NOTE ON THIS STORY: This article is an excerpt from the King Economics Group monthly newsletter. For more information about this article; requests for further research, analysis, or consultation; or, to express interest in hiring Ed King for a speaking engagement, send an email to ed.king@kingecon.com*



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<b>Mary Mack</b>	CEO & GENERAL MANAGER
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<b>Renee Garbutt</b>	CIRCULATION MANAGER

### ADDRESS

P.O. Box 231647  
Anchorage, AK 99523-1647

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● EXPLORATION & PRODUCTION

# Pikka unit Nanushuk project gets approval

Alaska's Division of O&G gives Oil Search the green light for the development phase of its oil field west of the central North Slope

By **KAY CASHMAN**  
Petroleum News

On Nov. 26, Oil Search Alaska received approval from Alaska's Division of Oil and Gas for the development phase of its Pikka unit Nanushuk project's plan of operations, for which the company filed its final paperwork on Nov. 1. The project is approximately 7 miles northeast of the community of Nuiqsut, west of the central North Slope.

The Nanushuk project will be targeting oil in the Nanushuk and Alpine C reservoirs, and include three drill sites (ND-A, ND-B and ND-C) with up to 151 total production and injection wells.

Infrastructure and facilities within the Pikka unit will include the Nanushuk processing facility, or NPF, infield pipelines, import and export pipelines, infield and access roads, a boat ramp, and a potable water system.

The project will also include facilities and infrastructure outside of the unit — those will be authorized under separate permits and include the Nanushuk operations pad, or NOP, a Tie-in pad, or TIP, and a continuation of roads and pipelines that are within the unit boundary.

Drill site ND-B will be used to initiate early production of at least 30,000 barrels of oil per day from the Nanushuk reservoir in 2022. Multi-phase liquids will be transported to the central processing facility 2, or CPF2, for processing in the ConocoPhillips-operated Kuparuk River unit.

In 2023 or 2024 the NPF will be operational and the early production phase will end. At this time sales-quality oil (peak of 120,000-130,000 bpd) will be transported to CPF2.

## Drill sites and facilities

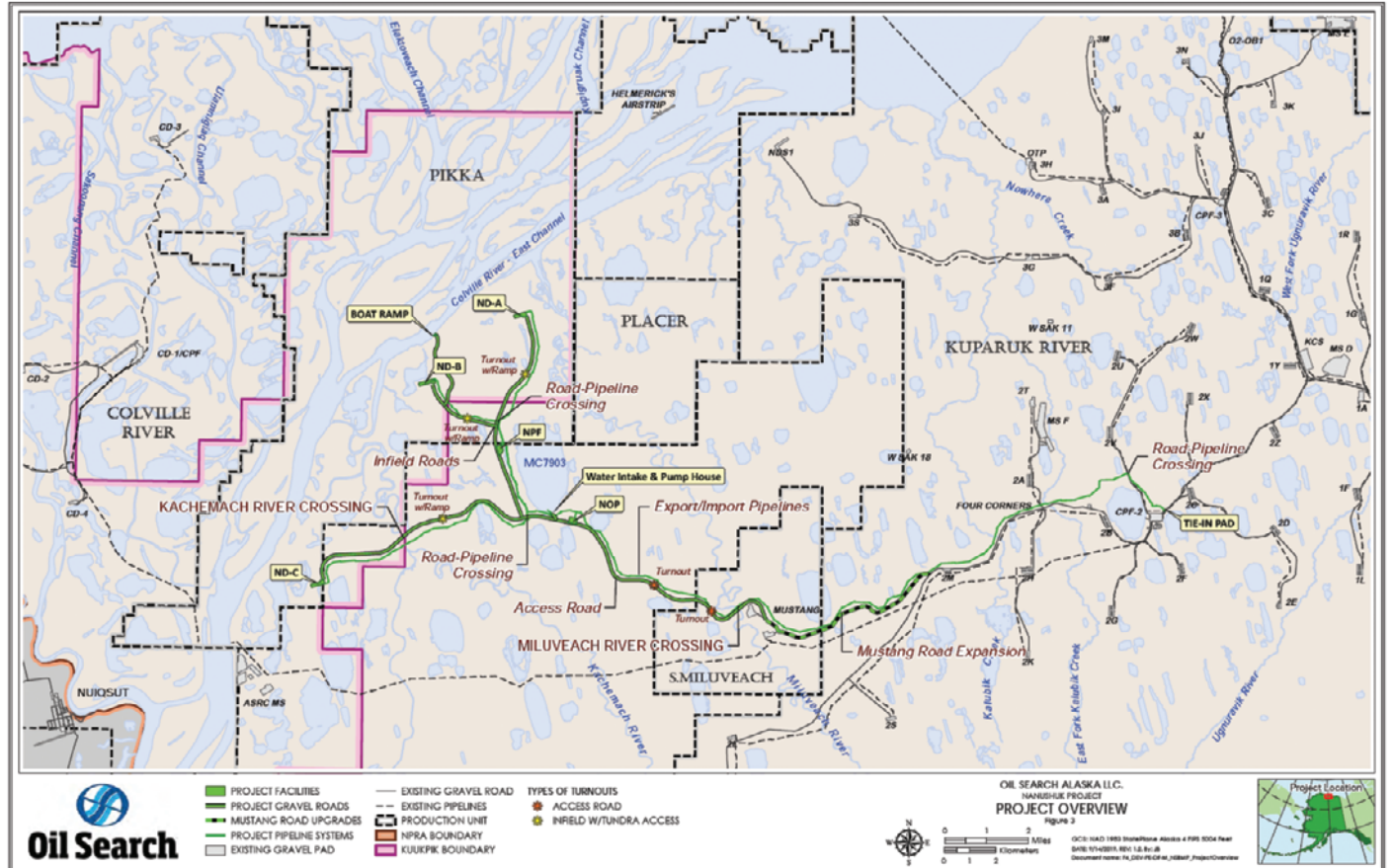
Each drill site will have drilling equipment and support facilities, including well testing equipment, well stimulation equipment, drilling mud and cement tanks, production gathering facilities, diesel fuel storage tanks, a communication tower, cold storage, emergency response equipment and drilling laydown areas.

The drill sites will have heaters to heat production fluids prior to entering the pipeline to the NPF, as well as space for temporary camps.

The NOP will support fieldwide operations and include: a 200-bed operations camp; office, warehouse and maintenance buildings; warm and cold storage buildings; water and wastewater treatment plants; communications structures; backup generators and fuel storage; and a helicopter landing pad. The NPF will include processing and utilities modules, metering and pigging facilities, power generation facilities, a truck fill station, construction material and equipment staging areas, and a central control room.

The NPF will have either a single flare or dual flares to support both high- and low-pressure safety relief systems. Additional temporary camps will be established to support construction and drilling activities. Off-site pioneer construction camps will be near the mine site on an ice pad or on an existing gravel pad, depending on available space.

The pioneer construction camps will be used until the construction camps are operational. Construction camps will be on one or more of the project gravel pads



and will remain through the startup phase, after which they will be decommissioned and removed from the site.

Drilling support camps will be on each drill site. After completion of drilling, the camps will be decommissioned and removed.

Construction support ice pads will house field offices, break shacks, envirovacs and field shops, and will stage construction equipment, vehicles, materials

and supplies until gravel pads are available.

## Fuel, waste, water and gravel

The project will require the transport of diesel and gasoline from Deadhorse to support activities during construction, drilling, and operations.

During construction, dedicated temporary storage areas for diesel and gasoline will be placed on ice pads and, once com-

plete, moved onto the project gravel pads.

Permanent diesel fuel storage tank infrastructure will be on the NPF, NOP, and/or drill sites.

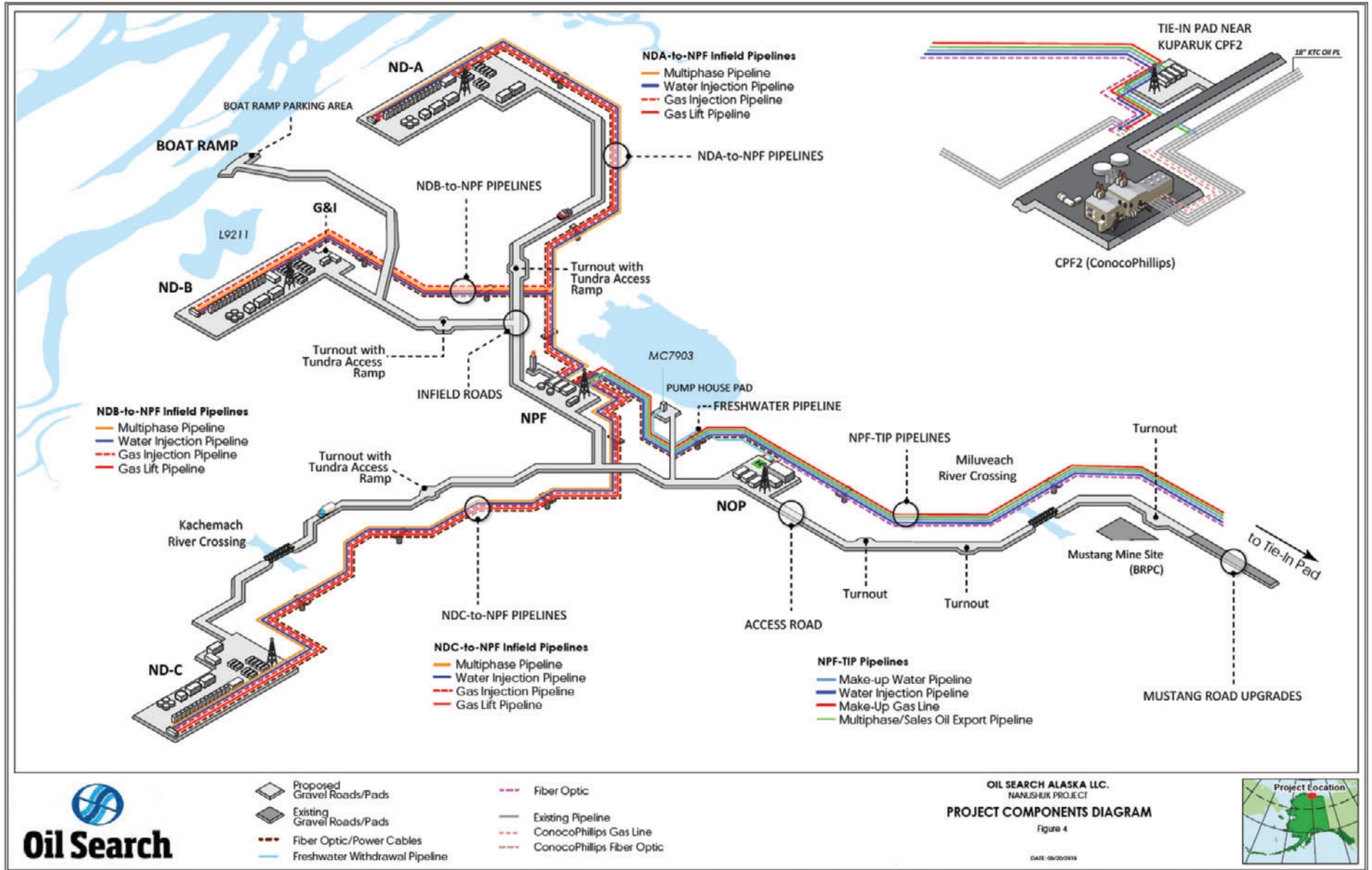
A range of wastes will be generated during construction, drilling, and operations; thus, a waste management plan will be prepared to address the types and quantities, regulatory controls and man-

see **NANUSHUK PROJECT** page 6

# THE TEAM THAT DELIVERS

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continued from page 5  
**NANUSHUK PROJECT**

agement options for solid and liquid wastes.  
 The project will require potable water

for camp use and raw lake water for construction, drilling and operations.  
 Potable fresh water for domestic use at the construction camps will be trucked from Deadhorse or other existing facilities. The primary source of fresh water for the operations camp will come from Lake

MC7903.  
 Non-potable fresh water from local permitted lakes will be used for ice road and pad construction and maintenance, and for possible hydrostatic testing of pipelines.  
 In addition, make-up water (likely seawater) will be needed for production and injection well stimulation. Pending commercial agreements and availability of supply, make-up water will likely be purchased from a third party.  
 Power generation facilities at the NPF will be gas-powered turbines. Power will be supplied to other project facilities, including drilling rigs, via power cables installed on infield and Nanushuk

pipeline horizontal support members using messenger cables.  
 Communications between project facilities will be via fiber optic cables.  
 An estimated 2.86 million cubic yards of gravel will be needed to build project facilities. It will likely come from the ASRC gravel consolidated mine site and the North Slope Borough gravel mine site F.

**Airstrips, roads and bridges**

No new airstrips will be built for the project.  
 During construction, drilling, and operations, the commercial airport in

see **NANUSHUK PROJECT** page 7

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## NANUSHUK PROJECT

Deadhorse, approximately 52 miles away, will support air transport of project personnel and small materials and supplies. Personnel and materials flown into Deadhorse will be driven to the project area via the existing road system and ice roads until the gravel access road is finished.

The NOP includes space for a helipad. During construction, helicopters will be used to support ice road layout, survey and summer cleanup efforts. These activities usually take place in July or early August and last approximately four weeks, with daily helicopter traffic during that time. Helicopters may be used in the event of health or safety emergencies over the life of the project; however, routine helicopter use is not planned.

The project includes 13.3 miles of gravel infield roads to provide all-season ground transport, as well as the 9.2-mile gravel Nanushuk access road to connect the NPF to existing infrastructure.

Gravel roads will be 24 (approximately 44 feet at the base) to 32 feet (approximately 52 feet at the base) wide at the surface but may be wider at curves to accommodate larger module transport.

Six road turnouts (three along the access road, one along the ND-A road, one on the ND-B road, and one on the ND-C road) will be built for access to project facilities during movement of large equipment, including modules and drilling rigs.

Three gravel tundra access ramps will be built at road turnouts near NDA, ND-B and ND-C for off-road travelers.

Access and infield roads will accommodate two-way traffic.

The Nanushuk access road will follow the existing Mustang access road for approximately 4.7 miles. Use of that road will require upgrades to bring it up to minimum design standards and improve the road's surface condition.

Gravel roads will parallel the pipelines for year-round access for maintenance, repair, monitoring and emergency response.

Two bridges will be built for the project: a 170-foot bridge for the access road over the Miluveach River and a 245-foot bridge for the ND-C infield road over the Kachemach River.

Drainage culverts will be designed for the infield and access roads prior to construction.

Ice roads will be used during pipeline, gravel road and bridge construction. Approximately 190 to 280 miles of ice roads are planned during the construction phase. Standard-duty North Slope ice roads will be built to support expected loads and protect the vegetation and organic soil beneath. Ice roads will be wide enough to safely accommodate two-way vehicular traffic (minimum of 20 feet), drill rig access (minimum of 30 feet) and other traffic, as required.

### Other facilities and equipment

Additional facilities and equipment include: a TIP, infield pipelines (connect the drill sites to the NPF), the Nanushuk pipeline (connects the NPF to existing infrastructure on the North Slope via the TIP), pipeline river crossings, the Nanushuk boat ramp and seasonal ice pads.

The Oliktok dock will be used for offloading sealift modules transported by barge to the North Slope.

The boat ramp will be built for launching and retrieving watercraft. This interface between the road system and the river will allow for support of Oil Search

*The project includes 13.3 miles of gravel infield roads to provide all-season ground transport, as well as the 9.2-mile gravel Nanushuk access road to connect the NPF to existing infrastructure.*

field operations, studies and emergency response as well as for community members to access traditional and subsistence use areas on the east side of the Colville River

### Rehabilitation plan

Upon completion of project activities and in compliance with permit and lease requirements, Oil Search will commence dismantlement, removal and rehabilitation, or DR&R, activities, which are generally expected to include: notification and coordination with Kuukpik Corp., the Alaska Department of Natural Resources, the North Slope Borough and other regulatory agencies to discuss specific DR&R requirements and timeframes; plugging and abandonment of wells in accordance with general industry best practices and compliance with Alaska Oil and Gas

Conservation Commission requirements; development of a restoration plan that includes required elements identified by permitting agencies; dismantlement and removal of installed equipment and infrastructure, unless coordination with landowners or agencies indicates otherwise; and enactment of restoration activities identified in the restoration plan in accordance with goals and objectives identified in the plan.

Any areas of tundra damage will be identified and discussed with the landowner to determine appropriate remediation and restoration that may be required.

Buried utility installations that are not covered by gravel fill (i.e., the roadway) will be revegetated using transplanted sprigs, cultivars or seed either gathered onsite or otherwise obtained that match the native plant species in the vicinity of the trenched area.

Revegetation work will be done by the end of the first growing season following the utility installation and will be monitored in subsequent growing seasons. Additional efforts will be made until revegetation of the site is complete.

### Jobs, training contracting

Oil Search will be working with the borough, the city of Nuiqsut and Kuukpik Corp. to provide project job opportunities for area residents. The company also intends to provide local North Slope companies the opportunity to compete for contract work pertaining to the project.

If needed, the company will assist in developing training programs for North Slope residents by working with contractors, trade associations, the Alaska Safety Alliance and Ilisaġvik College.

Oil Search and all other field personnel will be North Slope Training Cooperative trained.

Oil Search will always have trained staff on site that are familiar with project-specific subsistence, environmental, social and cultural concerns and will periodically provide awareness training and oversight to contractors and subcontractors as it pertains to their scope of work. ●

*Editor's note: See a map of the project in the pdf and print versions of this story.*

Contact Kay Cashman  
at [publisher@petroleumnews.com](mailto:publisher@petroleumnews.com)



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## EXPLORATION & PRODUCTION

### US rig count drop continues, down 1 to 802

Baker Hughes reports the number of rigs drilling for oil and natural gas in the U.S. continued to fall Thanksgiving week, with the count issued Wednesday Nov. 27, rather than Thursday, because of the holiday. The short week count was 802, down one from the previous week, and followed drops of three, 11, five, eight and 21 the previous five weeks.

In its weekly rig count the Houston oilfield services company said the active rig count was down 274 from 1,076 active rigs a year ago.

The company reported that 668 rigs targeted oil (down three from the previous week; down 219 from a year ago) and 131 targeted natural gas (up two from the previous week; down 58 from a year ago). There were three miscellaneous rigs active (unchanged from the previous week and up by three from a year ago).

The company said 53 of the U.S. holes were directional, 701 were horizontal and 48 were vertical.

Alaska was up two rigs from the previous week; Louisiana was up by one rig. Rig counts in all other states were either unchanged or down by one.

The rig counts in California, North Dakota, Ohio, Pennsylvania, Utah and West Virginia were unchanged from the previous week.

In Colorado, New Mexico, Oklahoma, Texas and Wyoming rig counts were down by one from the previous week. Texas, with the most active rigs in the country, had a count of 405.

Baker Hughes shows Alaska with seven rigs active for the short week ending Nov. 27, up one from a year ago.

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

—KRISTEN NELSON

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### ENBRIDGE LINE 3

on exports to the U.S. can be eased — setting the stage for another 90,000 bpd by the end of December.

“There’s a sense of excitement,” said Leo Golden, Enbridge’s vice president of major projects. “This is proof of what can be achieved when people come together with an open mind and a willingness to talk and to build rather than to take apart. But it’s been a very long road.”

#### Five years

Enbridge filed its regulatory application to replace the entire aging pipeline and raise capacity to 760,000 bpd from 390,000 bpd with Canada’s National Energy Board (now the Canadian Energy Regulator) five years ago.

The Canadian government issued its first approval two years later on the same day that it gave the go ahead for TMX and Enbridge’s now-defunct Northern Gateway to a northern British Columbia tanker port.

On the U.S. side, the Line 3 replacement — sold as vital to improve safety on the system while boosting capacity — was scheduled for completion in the second half of 2019, but that got stalled by changes to permitting timelines in Minnesota.

Ben Brunnen, vice president of the Canadian Association of Petroleum Producers, said any incremental market capacity is “absolutely welcomed from an upstream producer perspective.”

#### Investment revival possible

Assuming Line 3 will be fully completed, analysts suggest that day could open the door to a revival of oil patch investment in Canada.

“This is definitely the jolt that people are looking for,” said Mark Oberstoetter of the consulting firm Wood Mackenzie.

At the same time, optimism among analysts is guarded given the history of legal and regulatory barriers that have shunted pipeline expansions to the sidelines that IHS Market estimates have stretched the timeline from regulatory filings to operational startup to almost eight years.

IHS analyst Kevin Birn said that if Keystone XL and Line 3 make it out of the starting blocks, Western Canadian producers could gain an additional 400,000 bpd of pipeline space over the next year.

In addition, Enbridge is planning a 50,000 bpd addition to its Express pipeline that is due online in 2020.

Covering a planned 750 miles, Express currently carries 260,000 bpd from Hardisty to Casper, Wyoming.

These small gains are proof that gains are possible, said National Bank Financial analyst Patrick Kenney, who told the Calgary Herald that “they may be under-the-radar type expansions, but they are definitely significant.”

So long as progress can be made “on all fronts we will soon be singing a different tune about Canadian energy.”

Tristan Goodman, president of the Explorers and Producers Association of Canada, said “anything that improves market access is extremely positive (and can make a dramatic difference.”

The hope among producers is that easing the pipeline crunch will allow the Alberta government to ease its production quota, imposed to tighten the price gap between Western Canada Select (Canada’s heavy crude), and West Texas Intermediate.

#### CBR contracts

Still to be resolved is the Alberta government’s search for a buyer of the crude-by-rail contracts it inherited from the previous New Democratic Party, including service, staff and track capacity.

In late November word leaked out that Texas-based Clover Oil & Gas, which has been shipping unspecified volumes of undiluted heavy crude from Alberta to the Texas Gulf Coast since May, had surfaced as a contender to buy the C\$3.7 billion in CBR contracts that the government is eager to transfer to the private sector.

But there has been no confirmation of a possible deal from the Alberta Petroleum Marketing Commission, APMC, which is responsible for marketing the government’s royalty share of conventional crude oil and is in charge of divesting the CBR contracts.

Brent Osmond, president of Clover, said that in addition to moving crude from Western Canada to the U.S. his company brokers crude marketing transactions and any business obtained through APMC would be an extra.

Currently, the 4,400 tanker cars in the government’s portfolio can handle 120,000 bpd, compared with the overall 320,000 bpd exported under CBR in September.

A spokesman for Alberta Energy Minister Sonya Savage, without identifying any contenders, said a deal was “very, very close.” ●

Contact Gary Park through publisher@petroleumnews.com

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### INSIDER

waiting to be tapped” in Alaska, west of the central North Slope. (A hunch he has again today about the undeveloped acreage block he shares 50-50 with Oil Search on the eastern North Slope.)

The WSJ story is an interesting read, as evidenced by these excerpts:

• Armstrong, who has a dozen employees, told WSJ he “looked for gamblers, super nerds and weirdos — ‘people that don’t have any hobbies’ and spend their evenings looking at seismic data, well logs. He calls the data geoporn.”

• “Mr. Armstrong, the son of a wildcatter, grew up in Abilene, Texas, where dinner-table chatter included dry holes, bankruptcies and instant fortunes. At the local country club, he caddied for T. Boone Pickens.”

• “Mr. Armstrong found a partner to help finance the expedition. Spain’s Repsol SA, a company of kindred spirits who take exploration risks in the fracking



BILL ARMSTRONG

era. Together, they planned a number of test wells in 2012.”

• “In 2013, Repsol, Armstrong and another partner drilled the Qugruk 3 well, primarily targeting a deep layer from the Jurassic Age. They were hoping to find the equivalent of 100 million barrels of oil. ... As the wellbore dug deeper, data began to stream

into the Denver office with signs of oil. ... Feeling superstitious, Mr. Armstrong didn’t want to look over the data, worried he would jinx the find. Instead, he dribbled a basketball around his office.”

The discovery, the Nanushuk reservoir, “was gigantic,” WSJ reported.

• “In 2017, the companies announced their find, estimated to total 3 billion barrels, making it one of the biggest oil strikes in decades.”

Read the full story at <https://www.wsj.com/articles/the-last-pro prospector-a-texas-wildcatter-is-tempted-by-a-final-quest-11575049890>.

—KAY CASHMAN

Contact Kay Cashman at publisher@petroleumnews.com

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### 3D SEISMIC

The public notice and SAE’s application describe the Narwhal 3D project as being on state of Alaska, Kuukpik Inc. and federal lands south of the village of Nuiqsut “in an area west of the Kuparuk River unit including portions of the Colville River (Alpine) unit and Greater Moose’s Tooth unit.”

State lands comprise approximately 65.66 square miles of the total survey area.

SAE will be conducting operations during the tundra travel winter season with an estimated start date of Dec. 28, or as soon as the tundra is open for travel.

Their camp will remain close to survey activities and will move every three to seven days depending on the survey’s progress and snow cover.

Wireless nodes will be laid out by crews on foot and by use of rubber-tracked vehicles and/or snowmachines.

Vibroseis, a truck-mounted system that uses a large oscillating mass to put a

range of frequencies into the earth, will be used as the energy source.

#### Larger Staines survey

The Staines 3D project is on state of Alaska lands approximately 20-50 miles east of Deadhorse and more than 55 miles west of the community of Kaktovik in the 1002 area of the Arctic National Wildlife Refuge.

The area of the proposed seismic survey is west of the Staines River, with operations scheduled during this winter’s tundra travel season to begin Jan. 10.

Vibroseis will be used as the energy source using up to 12 tracked or buggy vibrators.

Wireless nodes will be laid out by crews on foot and rubber-tracked vehicles and/or snowmachines.

A mobile camp will remain close to the survey activities and will move every three to seven days depending on the survey’s progress and snow cover.

—KAY CASHMAN

Contact Kay Cashman at publisher@petroleumnews.com

continued from page 1

### LNG DELAY

“You have a very good reputation and I think in quite a few countries in Asia it will be important, not only where the gas comes from and what the price is, but how it is being produced.”

She said the risk for Canada is getting shut out of global opportunities that are being seized by plays in the Middle East, Australia, Russia and, increasingly, the United States.

In a new report, the IEA said coal to gas switching offers the prospect of “quick wins” for reducing global carbon emissions by 50%.

“If you really want to phase out all of the coal that’s still (being used) in power production that’s a huge window of opportunity where gas can play an increasing role, next to renewable,” said van der Hoeven.

However, she conceded that Canada faces regulatory opposition to pipelines, making it “more difficult to share your energy wealth with the rest of the world.”

Van der Hoeven said there is still time

**In a new report, the IEA said coal to gas switching offers the prospect of “quick wins” for reducing global carbon emissions by 50%.**

for Canada to move beyond the C\$40 billion LNG Canada project led by Shell and the C\$1.6 billion Woodfibre LNG project that is on the verge of a final investment decision.

That leaves two other well advanced proposals — the Chevron-Woodside Kitimat LNG venture and Pieridae Energy’s Goldboro LNG facility in Nova Scotia.

Van der Hoeven said environmentalists who have attached the use of natural gas to replace coal because it’s a fossil fuel are being unrealistic if they think the world can wean itself of all fossil fuels in a decade or less.

—GARY PARK

Contact Gary Park through publisher@petroleumnews.com



• FACILITIES

# Conoco applies to expand Alpine airstrip apron

By **KAY CASHMAN**  
Petroleum News

In mid-October ConocoPhillips Alaska applied for a U.S. Army Corps of Engineers permit to work in the Sakoonang channel to expand the Alpine airstrip apron in the Colville River unit west of the central North Slope, the Corps said in a Nov. 26 public notice.

The purpose of the work, which is slated to begin in first quarter 2020, is to “decongest and accommodate safe maneuvering, loading and unloading of aircraft at the existing Alpine airstrip apron,” the Corps said.

Beginning next spring, Bombardier Dash 9-Q400 aircraft will be used to shuttle personnel to and from the CD1 drill site. Current service from Lockheed C130 Hercules, Otter, Casa, DC-6s and as many as three seasonally used helicopters will continue. The expansion is needed for when multiple aircraft are at CD1 at the same time, particularly when larger aircraft are simultaneously on the ground, the Corps said.

ConocoPhillips is asking to place 14,250 cubic yards of fill material into 1.3 acres of jurisdictional palustrine emergent wetlands to expand the airstrip’s apron, with 14,000 cubic yards of clean gravel fill to be placed within a 263 by 166 feet rectangular area. Those are the dimensions for the top of pad. Wetland impact dimensions would be 299 by 174 feet. An additional 250 cubic yards of permanent erosion protection will be placed around the perimeter of the pad during the construction season to provide protection from any

*The purpose of the work, which is slated to begin in first quarter 2020, is to “decongest and accommodate safe maneuvering, loading and unloading of aircraft at the existing Alpine airstrip apron,” the Corps said.*

flooding.

ConocoPhillips’ application said an existing materials site would be utilized for extracting gravel. The product Soil-Sement will be mixed with the fill gravel to act as a fugitive dust suppressant and a soil stabilizer.

The Alpine airstrip apron expansion project will utilize other existing Alpine and commercial infrastructure as well, including camps and/or hotels during construction and operations, which eliminates the need to enlarge the CD1 pad.

The project will also use existing airstrips for transporting equipment and personnel.

ConocoPhillips’ application said it would like to complete work on the expansion by the end of 2020, and that all construction and gravel harvest will occur during the coming winter season when the soil is frozen to avoid the need for building a gravel stockpile pad.

Access to the area for construction activities will be via the existing gravel pad.

The project site is approximately 8 miles north of the village of Nuiqsut, in section 32, township 12 north, range 5 east, Umiat meridian; USGS Quad Map Harrison Bay B-2; latitude 70.3471 degrees N., longitude 150.93107 degrees W. ●

## GOVERNMENT

### Stokes named DO&G director

Tom Stokes, who has been serving as acting director of the Alaska Division of Oil and Gas since Oct. 30, has been named director, Department of Natural Resources Commissioner Corri Feige said Dec. 4.

As director, Stokes will continue to supervise exploration licensing, lease sales, unit management, permitting, royalty accounting, royalty audit, resource evaluation, commercial activities and the State Pipeline Coordinator’s Section. The division has some 99 employees.

Stokes had been serving as state pipeline coordinator prior to his appointment as acting director.



**TOM STOKES**

He was with Alyeska Pipeline Service Co. for 28 years in support, compliance and operational assignments, including director of the Valdez Marine Terminal and director of compliance.

“Tom brings an impressive combination of oil and gas industry and management experience that will serve the division and department well,” said Feige. “He’s stepping into busy and exciting times at the Division of Oil & Gas, and we look forward to continuing to support him and the dedicated and talented work force that makes the division such a tremendous asset to the state.”

Stokes earned bachelor’s and master’s degrees in business administration from the University of Southern California and the University of South Dakota, respectively. He also served in the U.S. Army as an artillery officer.

Prior to Stokes’ appointment in October, Jim Beckham served as acting director, taking over in March for former division Director Chantal Walsh.

DNR described the division’s work as managing state lands for oil, gas and geothermal exploration and development in a fair and transparent manner to maximize prudent use of resources for the greatest benefit of all Alaskans and facilitating safe and environmentally conscious operation and maintenance of common carrier pipelines.

—PETROLEUM NEWS



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## WOTUS CLARITY

WOTUS definition in Alaska, given the state's myriad water bodies. The state holds 40% of the freshwater and 60% of the wetlands in the United States, while also having unique features such as permafrost, Greene said.

The core basis of WOTUS is straightforward, in that it clearly includes navigable waters such as oceanic waters, rivers and lakes. But what about wetlands and ponds that may connect in some way to those navigable waters? And does, for example, an area of wetland become part of WOTUS if it links to a navigable waterway via an underground connection?

Federal permitting that relates to WOTUS under the Clean Water Act includes compliance with water quality standards; oil spill prevention planning; state and tribal water quality certifications; the discharge of pollutants; and dredge and fill permitting, Greene said.

### The Rapanos case

Much of the current debate over the scope of WOTUS relates back to a 2006 Supreme Court decision in what is referred to as the Rapanos case. In that case, the court issued a split decision, with the justices equally divided between two views of WOTUS, one view presented by Justice Scalia and the other by Justice Kennedy.

Scalia's test for determining whether a water body is part of WOTUS was relatively narrow and focused on the geo-

graphic setting. According to Scalia, WOTUS includes rivers, streams and lakes that stand or flow continuously, form distinct geographic features and connect to traditional navigable waters. In addition, wetlands with a continuous surface connection to a relatively permanent waterbody should be included.

Kennedy, focusing on the effect of one water body on another, took a more expansive view of WOTUS by including any water that has a significant nexus to waters that are clearly jurisdictional. The term "significant nexus" refers to the potential for a water body to impact the chemical, physical and biological integrity of those jurisdictional waters through any form of water body connection, including through subsurface groundwater, Greene explained.

### 2015 and 2018 rules

In 2015, under the Obama administration, the Environmental Protection Agency and the U.S. Army Corps of Engineers adopted a final rule for a WOTUS definition. That rule, while based on Kennedy's significant nexus test, actually went beyond the scope of Kennedy's WOTUS definition, Greene said. The 2015 rule added some categories of waters that would automatically be considered jurisdictional, regardless of whether significant nexus could be demonstrated. Also, under the terms of the rule, WOTUS would incorporate ephemeral streams that only flow during rainfall, and would include, for example, isolated wetlands and wetlands in river floodplains, Greene said.

In 2018 the Trump administration proposed a new rule redefining WOTUS. This rule, which has yet to be finalized, relies more on the Scalia test, Greene said. The rule excludes ephemeral streams and narrows jurisdiction over wetlands. There are also broader exclusions for certain types of ditch, Greene said.

There is now pending litigation over both the 2015 and 2018 rules, with consequent uncertainty over how the rule making will end. In addition, the litigation has resulted in a situation where different WOTUS standards apply in different states. In several states, including Alaska, WOTUS rules and guidance that applied before the 2015 rule was finalized still apply, Greene said. All other states, except New Mexico, are now subject to the 2015 rule, he said.

"So my guess is we probably won't really know where all this is going to end up until the Supreme Court gets another crack at defining WOTUS," Greene said.

### Unique Alaska factors

Greene also pointed out that the WOTUS specification impacts Alaska in unique ways. For example permafrost, that can have seasonal surface wetland, covers large areas of the state — sometimes, for example, a seasonal sheet water flow can establish an intermittent connection to downstream waters, he said. So, with neither of the WOTUS rules excluding permafrost areas, the state of Alaska has requested the exclusion of permafrost wetlands from WOTUS, Greene said.

"The 2018 rule would still regulate large areas of permafrost wetlands,

including large portions of the North Slope." Greene said.

Another Alaska issue relates to wetland mosaics, large areas of wetlands scattered across the landscape. The state has asked for clarification over the extent to which an agency can designate multiple wetlands within a mosaic as a single large wetland, for permitting purposes — the preamble to the 2018 rule suggests that there may be circumstances under which a large complex of wetlands may be evaluated as a single wetland, Greene said.

Forested wetlands that are typically found in southeast and coastal Alaska present another uniquely Alaska issue, Greene commented. The heavy rains typically associated with these forested areas can lead to a wetland style of vegetation and soil on hillsides or other slopes, he said. The state has commented that these areas are unlikely to be jurisdictional under the 2018 rule, because they do not typically connect with jurisdictional waters, Greene said. However, given some ambiguity in the situation, the state is seeking an explicit exclusion, he said.

So, although the WOTUS debate has intensified and moved forward in recent years, a clear definition of WOTUS remains elusive.

"We probably won't have much clarity for a while," Greene said. "In the meantime, with so many variables in flux, all we can really do is take an adaptive approach and stay nimble." ●

Contact Alan Bailey  
at [abailey@petroleumnews.com](mailto:abailey@petroleumnews.com)

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## ASSET BIDS

States Bankruptcy Court for the District of Delaware filed on Aug. 9.

The debtors listed about \$450 million in debt against assets it listed at an estimated value of less than \$50 million.

The assets primarily consist of the Furie's Cook Inlet Kitchen Lights unit offshore the town of Nikiski on Alaska's Kenai Peninsula, and natural gas production facilities including an offshore production platform and pipelines.

### Mounting debt; multiple setbacks

The company made a large natural gas find in 2011 under the name Escopeta Oil, under the leadership of then-President Danny Davis.

Furie later experienced massive cost overruns under the leadership of COO Tom Hord, on an aborted attempt to install its gas production platform in 2014, followed

*The assets primarily consist of the Furie's Cook Inlet Kitchen Lights unit offshore the town of Nikiski on Alaska's Kenai Peninsula, and natural gas production facilities including an offshore production platform and pipelines.*

by a redeployment and successful installation in 2015.

Debt ballooned, and in 2018, lender Energy Capital Partners Mezzanine Opportunities Fund A LP scheduled an April 13 foreclosure sale, which was canceled by ECP when a new agreement was presumably reached with the owners.

In March 2018, Ankura Consulting Group LLC was retained to assist Furie with interim management, and Scott Pinsonnault, a senior managing director at Ankura, was installed as interim COO of Furie.

In January 2019, hydrate plugs at Furie's onshore processing facility and in the 15-mile subsea pipeline from the offshore production platform slowed natural

gas delivery and put Furie's contract with utility Enstar Natural Gas in jeopardy. Gas output fell from 739,023 thousand cubic feet to 1,886 mcf in February. Furie claimed a Force Majeure event, citing climate conditions.

Enstar since has reached a new gas sales agreement with Furie to accommodate Furie's lower anticipated gas deliveries, but it notified the Regulatory Commission of Alaska, "Enstar continues to investigate the validity of the Force Majeure event and will continue to notify the RCA of any new material developments."

Uncertainty with Alaska state tax credit reimbursements and years of liquidity issues exacerbated the company's woes, according to the Ch. 11 first-day declaration of Pinsonnault.

Ankura and Pinsonnault continue to provide interim management of Furie during the bankruptcy proceedings.

—STEVE SUTHERLIN

Contact Steve Sutherlin  
at [ssutherlin@petroleumnews.com](mailto:ssutherlin@petroleumnews.com)

# INSPIRATIONS

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continued from page 1

## JEPSEN PRESENTATION

these fields support stays healthy,” because “the economics of the new fields are reliant” on the continued health of the core fields.

### Spending the \$11 billion

There is a “tremendous” amount of work being done at the core fields; in fact, what’s anticipated for the next decade is “pretty much on the same scale” as that planned for new discoveries, Jepsen said.

The goal of the \$11 billion (gross) in capital that will be spent through 2029 in the Colville River unit which includes the Alpine field and in the Kuparuk River and Prudhoe Bay units, is to produce an additional “380 million barrels plus or minus, in that same timeframe. Of course, we’ll have more production beyond that. This is just the production through 2029,” Jepsen said.

“We’re talking about incremental production coming out of these fields of 150,000 barrels per day from all this work,” he said.

Jepsen outlined the work in core field projects as the following: Fiord West, west of Alpine in the Colville River unit; Narwhal CD8 drill site in the Colville River unit south of Alpine; Nuna in the Kuparuk River unit; Eastern NEWS in the Kuparuk River unit; I and M pads in the Prudhoe Bay unit; and VBLX in the Prudhoe Bay unit.

He said a final investment decision has not been made on most of the projects.

### Narwhal and Fiord West

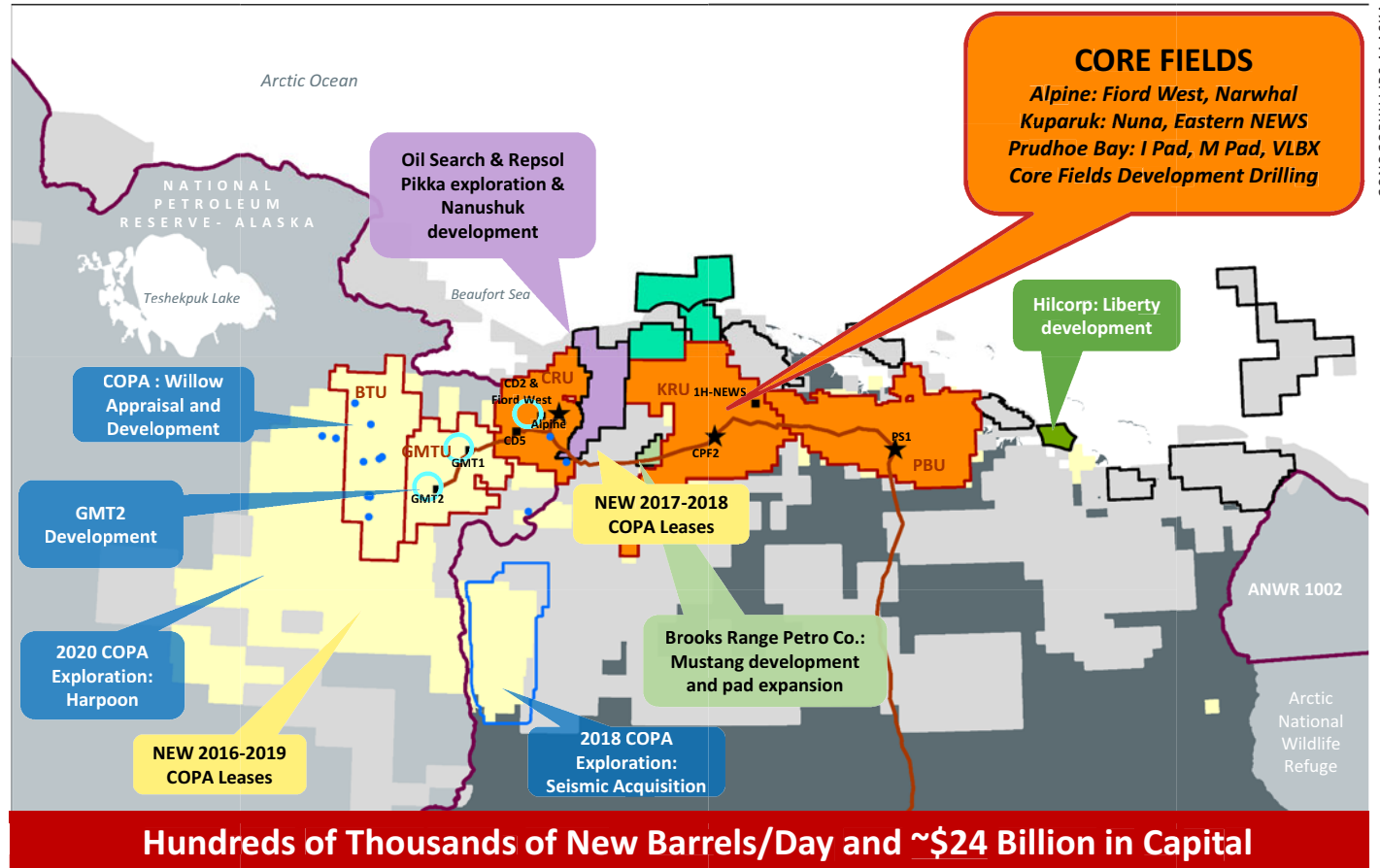
In the Colville River unit “we have the Narwhal development with production as early as 2022 from the CD4 pad; and a new pad called CD8 could come on production in 2025,” Jepsen said.

The Doyon 26 extended reach drilling rig, the largest mobile land rig in North America, is currently being reassembled in Deadhorse for use on the North Slope by ConocoPhillips.

Jepsen confirmed the ERD rig would first drill the Fiord West prospect, where the company has six wells planned from the CD2 pad starting early in second quarter 2020.

Fiord West, expected to produce 20,000 barrels of oil per day at its peak, “is an area we couldn’t access without this rig. It has been on our books for 20 years or so. We hadn’t figured out a way to do it economically or get the permits necessary to build the facilities even if it made economic sense because it’s an area (along the coast in wetlands) that’s pretty environmentally sensitive,” Jepsen said.

That changed with the high tech ERD



rig able to tap 154 square miles of reservoir versus the standard 55 square miles.

### Nuna prospect

In the northwest corner of the Kuparuk River unit, ConocoPhillips plans to develop the Nuna prospect, which it acquired earlier this year.

“We expanded the Kuparuk River unit so we could produce Nuna through the Kuparuk facilities. It makes it more cost efficient and easier to produce,” involving less new infrastructure, Jepsen said, noting the company has “about a winter’s worth of work with ... 400 people on site to get everything ready to go.”

ConocoPhillips expects to do most of that that work this winter with production scheduled for 2022.

### Unlocking more viscous oil

“And then we have Eastern NEWS, which is an extension of our successful West Sak program” in the Kuparuk River unit, Jepsen said.

In the adjacent BP-operated Prudhoe Bay unit, the Prudhoe owners (including ConocoPhillips) are “considering I pad and M pad” for viscous oil development, as well as a project “we call VBLX that is changing the recovery mechanism extending into different parts of the reservoir which will get additional production out of Prudhoe Bay,” he said.

“And of course, we’re going to have additional development drilling going on in the core reservoirs” of the three core areas.

### Improvements in technology

A lot of what ConocoPhillips is now doing on the North Slope “couldn’t be done without the breakthroughs we’re seeing in drilling technology,” Jepsen said, pointing to one breakthrough that occurred this year when the company drilled its first and record breaking coiled tubing well in the West Sak.

Retrieving difficult-to-flow, viscous oil from the unconsolidated sands of the West Sak is challenging. (BP produces viscous oil from the equivalent Schrader Bluff formation in the adjacent Prudhoe Bay unit.)

“Viscous oil ... is something that all of us — BP, Hilcorp and ConocoPhillips — have been trying to move the needle on to get production out of this huge resource,” Jepsen said.

The advantage of coiled tubing drilling is that it is “more cost-effective, more effi-

cient — it opens up more opportunities for us,” he said.

So, according to Jepsen, this past summer when ConocoPhillips drilled the longest coiled tubing well to date at 8,183 feet, and first used CTD in West Sak, it was a “big step forward in commercialization” of the viscous resource and contributes to the extra 150,000 barrels of oil per day that will come from the three core fields in the next 10 years.

So, what could go wrong?

First and foremost, an increase in oil taxes, Jepsen said. “It could put a big damper on activity.” ●

*Editor’s note: Learn more in the second part of this story in next week’s Petroleum News.*

Contact Kay Cashman at [publisher@petroleumnews.com](mailto:publisher@petroleumnews.com)

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