

Tough talk turns legal; Alberta to restrict refined products into BC

Offering a summation of the turmoil enveloping Canada's energy sector, one analyst wryly observed that while "everybody seems to be suing everybody else" that has at least been taking place "within the bounds of law and within the bounds of some measure of civility."

For anybody searching for positives in a flurry of actual and threatened litigation over federally imposed carbon taxes, offshore tanker bans, changes to federal regulatory project approvals and the ability of provinces to ship their petroleum products to other domestic or offshore mar-



JASON KENNEY

see **LEGAL MOVES** page 12

RCA finishing Railbelt electric system letter to Legislature

The Regulatory Commission of Alaska is sending a letter and accompanying documentation to the Alaska Legislature, informing lawmakers about the status of efforts towards more unified arrangements for the management and operation of the electrical system in the Alaska Railbelt. The commission has been holding a series of public meetings, reviewing the contents of that letter, and finetuning the essential messages that the commission wants to convey.

Since 2015, following a directive from the Legislature, the commission has been encouraging voluntary efforts by the utilities toward a more unified approach. During a commission public meeting on May 8, commissioners commented that, while on the

see **RAILBELT LETTER** page 14

BSEE issues final drilling safety rule, part of regulation overhaul

The federal Bureau of Safety and Environmental Enforcement has announced the release of a revised version of the drilling safety rule implemented by the Obama administration in 2016 in the aftermath of the Deepwater Horizon disaster in the Gulf of Mexico. The agency said that the new version of the rule "removes unnecessary burdens to responsible offshore development while maintaining safety and environmental protection." BSEE issued a draft version of the regulations in May 2018. The agency subsequently received more than 118,000 comments on its proposals and proceeded to review the draft rule in the light of this feedback. The new

see **BSSE RULE** page 10

Canada's carbon tax upheld by Saskatchewan Court of Appeal

Prime Minister Justin Trudeau's view of federalist powers in Canada got a qualified endorsement May 3 when the Saskatchewan Court of Appeal agreed in a 3-2 decision that a federal carbon tax is constitutional.

Chief Justice Robert Richards, as part of a 155-page verdict, said the establishment of minimum national standards for a price on greenhouse gas emissions — starting at C\$20 per metric ton on April 1 and growing by C\$10 a year over the next three years — falls under a section of the Canadian Constitution that gives Parliament the power to pass laws in the name of "peace, order and good government."

He wrote that "climate change caused by (GHG) emissions is one of the great existential issues of our time," claiming that all sides in the Saskatchewan hearing accepted the importance of lim-

see **CARBON TAX** page 15

FINANCE & ECONOMY

Entek deal closes

Dougal Ferguson takes helm; next step seismic on Nanushuk North Slope leases

By **KAY CASHMAN**

Petroleum News

Dougal Ferguson has officially taken the reins of Entek Energy Ltd. whose primary oil and gas assets are in the hottest new play in North America, the Nanushuk formation on Alaska's North Slope.

Ferguson, who has more than 25 years of experience in management positions with oil and gas companies around the world has been appointed managing director of the Perth, Australia-based independent. He was the driving force behind a sister company and its subsidiary's entry into Alaska, starting with the acquisition of



DOUGAL FERGUSON

three leases in the National Petroleum Reserve-Alaska from veteran Alaska investor and independent Paul Craig.

Elixir Petroleum and its subsidiary Emerald House, which has some of the same major shareholders as Entek, closed on the sale of those leases and 10 adjoining NPR-A leases in April to Entek.

Starting with a winter 2019-20 seismic shoot, Entek is moving forward with exploration on its 149,590-acre block, although a technical evaluation of available public data has been underway for about 18 months. (Intriguingly, in addition to results of Alaska's Division of Geological and Geophysical Surveys

see **ENTEK DEAL** page 15

EXPLORATION & PRODUCTION

New wells at Kuparuk

Conoco says 5 grassroots rotary wells, some 20 CTD wells are planned for 2019-20

By **KRISTEN NELSON**

Petroleum News

ConocoPhillips Alaska says five grassroots rotary wells are planned for the Kuparuk participating area in the Kuparuk River unit, along with some 20 coil tubing drilling wells. ConocoPhillips filed the 2019-20 plan of development for the Kuparuk River unit ConocoPhillips with the Alaska Department of Natural Resources' Division of Oil and Gas May 2 on behalf of itself as operator and working interest owners Chevron U.S.A. Inc. and ExxonMobil Alaska Production Inc.

The company said it is testing the "overlying Cretaceous Brookian Moraine" at Kuparuk and the WIOs are evaluating acreage near drill site 2S which

"Much of the operations support infrastructure will be assessed for upgrade or replacement to target another 25 years of production from the KPA and the KRU satellite fields," ConocoPhillips said.

includes the Cairn opportunity.

The POD covers the period from Aug. 1, 2019, through July 31, 2020.

Kuparuk is developed from 45 drill sites and various of those are shared with Kuparuk satellites Meltwater, Tabasco, Tarn and West Sak. In 2018 there were 833 active wells in the Kuparuk PA, 455

see **KUPARUK WELLS** page 14

LAND & LEASING

F&W has sale questions

Recommends restrictive ANWR leasing; has concerns about potential O&G impacts

By **ALAN BAILEY**

Petroleum News

Public comments released for the draft environmental impact statement for proposed oil and gas lease sales in the coastal plain of the Arctic National Wildlife Refuge include a 59-page, March 13 filing by the U.S. Fish and Wildlife Service. The agency has recommended alternative D2, the most restrictive of the alternatives proposed for the lease sale program.

The agency also listed numerous issues of concern, with recommendations for mitigation actions, regarding the potential impacts of oil and gas activities on the environment of the ANWR coastal plain.

Fish and Wildlife also questioned what it says is an incorrect assumption that 3-D seismic surveying can be conducted on the coastal plain prior to a record of decision on the EIS.

An added purpose

Under the terms of the Federal Tax Act of 2017, the provision of an oil and gas program on the so-called 1002 area of the coastal plain was made a purpose of ANWR, in addition to the refuge's environmental conservation objectives. The Bureau of Land Management, within the

see **SALE QUESTIONS** page 12

• EXPLORATION & PRODUCTION

Brooks Range applies for injection order

Company plans water injection as the primary technique for enhanced oil recovery from the Mustang field on the North Slope

By **ALAN BAILEY**

Petroleum News

Brooks Range Petroleum Corp. has applied to the Alaska Oil and Gas Conservation Commission for an area injection order that would authorize the injection of fluids into the Kuparuk oil pool in the Southern Miluvec unit, as part of the development of the Mustang oil field, on the North Slope.

Brooks Range plans to start up the Mustang field this year. According to the AOGCC application, fluids injected for reservoir pressure maintenance and enhanced oil recovery would primarily consist of seawater and produced water, but with gas also being injected. Waterflood would be the primary reservoir pressure maintenance and enhanced recovery technique. Brooks Range is constructing a pipeline to ship seawater for injection from the seawater system in

the neighboring Kuparuk River field, operated by ConocoPhillips.

Kuparuk A and C sands

According to the application, the Kuparuk oil pool in the Southern Miluvec unit occupies a continuation of the Cretaceous age Kuparuk A and Kuparuk C sands from the adjacent Kuparuk River unit. Brooks Range anticipates the drilling of 10 horizontal production wells and up to 11 horizontal injection wells as part of the initial development of the Mustang field, the application says. Some production wells may be hydraulically fractured to improve production and ultimate oil recovery.

Most of the development wells will trend north-south, parallel to a pattern of geologic faults that intersect the reservoir. Horizontal sections of wells may be up to 6,000 feet in length, with production wells alternating with injection

wells. Some further infill drilling may be needed to maximize recovery.

Modeling of the reservoir performance indicates that at some stage it may be necessary to follow water flooding with the use of gas or a mixture of gas and natural gas liquids, to further improve oil recovery, the application says. Gas would come from the Mustang field processing facilities.

Variable thickness

The application says that the Kuparuk oil pool lies in the A and C sands, within the depth interval 6,008 feet and 6,090 feet in the Tam 1A well — the sands range in thickness from zero to 80 feet in the development area. The Kuparuk A sand consists of a relatively fine-grained shallow marine sandstone overlain by the coarser grained Kuparuk C sands. The

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• FACILITIES

ASTAR program completing its outreach

DNR officials tell House Resources Committee about status of project for advancing infrastructure development on the North Slope

By **ALAN BAILEY**
Petroleum News

A program for advancing opportunities for new infrastructure development on the North Slope is nearing the end of its outreach phase, working with North Slope communities to identify potential infrastructure projects, Jeff Bruno, large project coordinator for the Alaska Department of Natural Resources Office of Project Management and Planning, told the Alaska House Resources Committee on April 26.

The program, called Arctic Strategic Transportation and Resources, or ASTAR, started in 2017, when the Legislature appropriated \$7.3 million for the project, as a consequence of the amalgamation of several projects, at a time when significant planning activity was underway in the North Slope region, Bruno said.

The overall mission is to identify, evaluate and advance opportunities to use responsible infrastructure development to enhance the quality of life and economic opportunities for communities throughout the North Slope Borough, Bruno said.

Although beefing up the transportation infrastructure is an obvious target of the program, the scope of the program encapsulates any type of infrastructure that demonstrates potential benefits to the communities, in terms of factors such as community connectivity, health, workforce development, education, support for subsistence traditions, and lowering the cost of goods and services. The project represents a collaborative effort between DNR and the North Slope Borough, but with other state and federal agencies also involved, Bruno said.

Engaging stakeholders

Work to date has focused, on the one hand, on engaging stakeholders, to build a library of potential infrastructure projects, and, on the other hand, on assessing what data are available regarding available construction resources, in particular gravel, Bruno told House Resources.

In terms of potential projects, the idea

is to identify projects and document the benefits to be gained from them. A cumulative benefits tool will then enable projects to be assessed and evaluated, leading to a second phase of the program, identifying those projects of particular value to the community. Bruno commented that the evaluation method being developed and used could be employed elsewhere in Alaska.

“First and foremost, we want to develop a process where the foundation is really built on community values and inputs,” Bruno said.

The ASTAR team is also considering resource development projects, identifying situations where there may be synergies between these projects and the projects identified by communities, Bruno said.

At this point, more than 250 potential projects have been identified and mapped, and the process of prioritizing the projects is beginning, he said.

The program also involves detailed computer-based terrain mapping. And, to assess the availability of construction materials, the ASTAR team has been locating and evaluating available data, including information about gravel sources, data from lake surveys and data from remote sensing surveys. The team is identifying data gaps with a view to potentially filling those gaps, particularly in areas where there are high priority projects.

Planning and analysis tool

And the program is developing a computer database that can capture all the results of the planning efforts, including the mapping and the list of potential community and resource development projects. The database will become a tool to support data analysis and hence enable informed decisions over future infrastructure projects.

The final round of the program will involve taking the analysis tool and data to the communities, for verification. The tool will enable project evaluation, both from the perspective of an individual community, and on a more regional basis.

DGGS data collection

Steve Masterman, director of DNR’s Division of Geological and Geophysical Surveys, told the committee that DGGS has been working with the federal Bureau of Land Management to establish a sand and gravel inventory for parts of the National Petroleum Reserve-Alaska. DGGS has been compiling an inventory of known sand and gravel resources and working with a contractor to identify and map surface features. A DGGS team plans to conduct fieldwork this summer, to verify what the features are and how they relate to sand and gravel resources. The team is mapping data from old seismic shot hole samples, noting where sand and gravel has been located in the subsurface. This summer’s fieldwork will involve drilling at locations where there appears to be good potential for finding more of these resources.

The resulting data will be fed into the ASTAR database, as well as being made available to the public through the regular DGGS publication process, Masterman said.

Finishing the funded program will involve completing the cumulative benefits analysis of the potential infrastructure projects and completing the database of information on construction resources. To date \$1.4 million of the program’s \$7.3 million budget has been spent, with

a further \$5.5 million committed to continuing program activities, Bruno said. He said that he anticipates the program being completed around June of next year.

North Slope Borough perspective

Gordon Brower, director of planning and community services for the North Slope Borough, commented on the value that the borough sees in the ASTAR program. In general, there is a lack of connectivity between North Slope villages, and the costs of goods and services are very high, he said. A lack of support infrastructure limits opportunities for people in the region.

Moreover, projects of all types on the North Slope, not just oil and gas projects, require support infrastructure, Brower said. For example, in the past the lack of infrastructure has stymied efforts to develop the large quantities of high-quality, metallurgical coal known to exist in the region, he said. A major oil discovery at Smith Bay on the Beaufort Sea coast is isolated by a lack of transportation infrastructure.

By working together on the infrastructure issues, it will be possible to accomplish many things, Brower suggested. ●

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EXPLORATION & PRODUCTION

NPR-A tundra overland travel closes

The Bureau of Land Management’s Arctic District Office said winter overland tundra travel for the National Petroleum Reserve-Alaska closed effective 12:01 a.m., May 3.

The agency said snow and weather conditions in the NPR-A were no longer adequate for winter overland tundra travel.

The state closed the eastern and western coastal areas of state land on the North Slope for off-road tundra travel April 30, and said snow pack deterioration was widespread in coastal areas with large swaths of visible vegetation.

The state’s other two tundra travel areas, the lower and upper foothills, never opened for off-road travel this year.

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• EXPLORATION & PRODUCTION

March ANS crude down 1% from February

Average of 522,334 bpd down 5% from March 2018; Cook Inlet, at 15,329 bpd, up 1.3% from February, down 1.7% from March 2018

By **KRISTEN NELSON**
Petroleum News

Alaska North Slope production averaged 522,344 barrels per day in March, 465,742 bpd of crude oil and 56,592 bpd of natural gas liquids, down 1%, 5,310 bpd, from a February average of 527,644 bpd, and down 5% from a March 2018 average of 549,874 bpd.

The drop in volumes comes from crude production, down 1.4%, 6,715 bpd, from February to March, while NGLs increased by 2.6%, up 1,405 bpd. From March 2018 to March 2019, ANS crude dropped 6.2%, while ANS NGLs increased by 6.2%.

Production data reported here comes from the Alaska Oil and Gas Conservation Commission, which provides volumes by field and well on a month-delay basis.

The largest month-over-month volume decline was at the ConocoPhillips Alaska-operated Kuparuk River field, the Slope's second largest, which averaged 104,830 bpd in March, down 2.6%, 2,752 bpd, from a February average of 107,582 bpd, and down 10.7% from a March 2018 average of 117,329 bpd.

In addition to the main Kuparuk pool,

Kuparuk produces from satellites at Meltwater, Tabasco and Tarn, and from West Sak.

The largest month-over-month percentage decline was at the Eni-operated Ooguruk field, which averaged 7,912 bpd in March, down 13.9%, 1,243 bpd, from a February average of 9,155, and down 33% from a March 2018 average of 11,815 bpd. Eni acquired Ooguruk from Caelus Alaska, subject to approvals, in January.

Other fields with declines

Badami, operated by Glacier Oil & Gas subsidiary Savant, averaged 1,817 bpd in March down 0.3%, 6 bpd, from a February average of 1,823 bpd and up 161% from a March 2018 average of 696 bpd. Savant brought a new well, B1-07, online last May. That well produced 1,120 bpd in March, accounting for 62% of Badami production.

Production at the BP Exploration (Alaska)-operated Prudhoe Bay field, the Slope's largest, averaged 273,766 bpd in March, down 0.6%, 1,541 bpd, from a February average of 275,307 bpd, and down 6.9% from a March 2018 average of 293,904 bpd. The field's crude oil production, 220,977 bpd, was down 1.4%, 3,219

bpd, from February, while Prudhoe NGLs, which averaged 52,789 bpd, increased by 3.3%, 1,678 bpd.

In addition to the primary reservoir, production volumes from Prudhoe include Aurora, Borealis, Lisburne, Midnight Sun, Niakuk, Polaris, Point McIntyre, Put River, Raven and Schrader Bluff.

Milne Point, operated by Hilcorp Alaska, averaged 22,910 bpd in March, down 0.9%, 198 bpd, from a February average of 23,108 bpd, and up 6.9% from a March 2018 average of 21,425 bpd.

ConocoPhillips' Greater Mooses Tooth, which came online in early October, averaged 12,310 bpd in March, down 1.7%, 216 bpd, from a February average of 12,526. The field is in the National Petroleum Reserve-Alaska.

Production from the Hilcorp-operated Endicott field averaged 7,313 bpd in March, down 2.6% from a February average of 7,508 bpd, but up 2.1% from a March 2018 average of 7,165 bpd. March production included 6,443 bpd of crude oil and 870 bpd of NGLs.

Northstar, also operated by Hilcorp, averaged 11,133 bpd in March, down 3.6% from a February average of 11,553 bpd but up 16.3% from a March 2018 average of 9,575 bpd. March production included 8,200 bpd of crude oil and 2,933 bpd of NGLs.

Eni's Nikaitchuq field averaged 16,527 bpd in March, down 4.2%, 717 bpd, from a February average of 17,244 and down

12.9% from a March 2018 average of 18,966 bpd.

Production up at two fields

Month-over-month production was up at two North Slope fields: ConocoPhillips' Colville River and ExxonMobil Production's Point Thomson.

Colville River production averaged 54,142 bpd in March, up 2.1%, 1,089 bpd, from a February average of 53,053 bpd, but down 16.5% from a March 2018 average of 64,847 bpd. In addition to oil from the main Alpine pool, Colville production includes satellite production from Fiord, Nanuq and Qannik.

At Point Thomson, March production averaged 9,674 bpd, up 10.1%, 890 bpd, from a March average of 8,784 bpd, and up 133% from a March 2018 average of 4,152 bpd. The field came online early 2016, with facilities geared to 10,000 bpd of condensate production, but there were issues with the facilities and the field only began regularly producing in the 10,000-bpd range at the end of last year.

Cook Inlet

Cook Inlet crude oil production averaged 15,329 bpd in March, up 1.3%, 195 bpd, from a February average of 15,134 bpd but down 1.7% from a March 2018 average of 15,597 bpd.

Hilcorp Alaska's Beaver Creek field,

see **PRODUCTION DATA** page 6

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continued from page 2

INJECTION ORDER

Kuparuk A, with its fine grain size, is generally less permeable than the Kuparuk C. Both sands have porosities of around 22%.

The oil trap is formed by a major geologic structure called the Colville Anticline. Oil is sealed in the Kuparuk sands by the overlying Kalubik shale, an extensive thick shale found in the region. Another impervious shale, the Miluveach, underlies the sands.

Although Brooks Range had originally planned to start up the Mustang field using permanent production facilities with a capacity of 15,000 barrels per day of oil, the vagaries of the oil price in recent years have caused the company to scale back the startup to the use of a small temporary facility, with production potentially ramping up to 6,000 bpd by the end of this year. Then, as revenue from the production comes in, the company anticipates scaling up the field towards a full development.

Brooks Range plans to start oil production at Mustang soon from a single well, the North Tarn 1A well. According to the company's latest plan of operations, the

company also plans to drill a lateral side-track from a partially completed well, the Mustang 1 well, and to complete the perforation and stimulation of the SMU M-02 well. Development will then proceed this year with the drilling of additional wells.

Following the initial use of the SMU M-02 for testing the performance of the well reservoir, this well will be converted to an injection well. Prior to the conversion of this well, any gas produced and not used as fuel gas for field facilities will be flared. Brooks Range has obtained an air quality permit from the Alaska Department of Environmental Conservation that allows the flaring of a certain amount of gas.

Presumably, as field development proceeds, water injection will begin. Maximum injection rates are estimated at 6,000 bpd of water and 6 million cubic feet per day of gas, the injection order application says.

Brooks Range will be the first small, independent operator to see an oil field through from discovery to production on the North Slope. ●

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• NATURAL GAS

Hilcorp plans little work in gas fields

Plans of development for 4 Kenai Peninsula fields focused primarily on maintaining production; Ninilchik may see new wells next year

By **KRISTEN NELSON**
Petroleum News

Hilcorp Alaska produced some 193 million cubic feet per day of natural gas from Cook Inlet last year, 85% of the total of 228 million cubic feet per day produced from the Cook Inlet basin in 2018.

Four of its Kenai Peninsula gas fields — Cannery Loop, Deep Creek, Nikolaevsk and Ninilchik — account for just 22% of Hilcorp’s Cook Inlet gas production, and in plans of development submitted to the Alaska Department of Natural Resources’ Division of Oil and Gas on May 1, the company’s focus at the three smaller of those fields was on maintenance of production, with one new well planned at Cannery Loop, while at the largest, Ninilchik, the company indicated that new drilling would probably be put off at least a year.

All the plans are for Aug. 1, 2019, through July 31, 2020.

Cannery Loop

The POD for Cannery Loop is the 40th for that field.

In its 39th plan Hilcorp said it would continue to evaluate oil and gas reservoirs at Cannery Loop for long-term development but did not plan any long-range development during the 2018-19 plan period.

The company said it anticipated that production at Cannery Loop would likely remain steady, although a slight decline was possible.

Hilcorp said in the 40th POD it did maintain steady production at an average of 8 million cubic feet per day at the field during the 2018 calendar year.

For the 2019 plan, Hilcorp said it is evaluating drilling the CLU No. 14 in August, a well which would primarily target the Middle Beluga with secondary targets in the Sterling sands. Hilcorp said the well would “explore farther east in the Lower Beluga and Tyonek sands than any previously drilled well at CLU,” providing “more insight of the eastern flank of the Cannery Loop structure,” information which might “lead to additional prospects to the north of the field.”

Deep Creek

This is the 16th POD for Deep Creek, which produced an average of 5.1 million cubic feet per day in 2018.

In the 15th plan Hilcorp said it planned to continue a stratigraphic test well program with two to four stratigraphic test wells, with an exploratory drilling program in 2019 based on results of the stratigraphic test wells and likely targeting the Sterling and Beluga formations.

Production from the Happy Valley participating area averaged 5.1 million cubic feet per day in 2018, the company said, with no production from Happy Valley tract operations. Hilcorp said there were no wells currently producing on a tract basis.

Hilcorp said it has completed evaluation on drilling a new HVB No. 18 well primarily targeting the Middle/Deep Tyonek sands with secondary targets in the Middle to Upper Beluga sands. The well was originally planned to be drilled in December, but is likely to be delayed, “due to bottlenecks in the KBPL gas pipeline.”

A new exploratory drilling program is still planned for 2020, based on results of stratigraphic test wells, and likely targeting the Sterling and Beluga formations.

Current production at Deep Creek will

be “maintained and improved throughout the 2019 POD period, primarily through implementation of efficiencies and optimization projects,” the company said.

Nikolaevsk

Nikolaevsk is the smallest of the fields in this group of PODs, with production from a single well averaging 500,000 cubic feet per day in 2018. This is the 12th POD for the field.

Hilcorp said its plan for 2018 was maintenance of production from the Red Well No. 1. There were no development projects at Nikolaevsk in the 2018 POD period, the company said.

Hilcorp said in its 2019 POD that it did not have any planned exploration or delineation project at the field and plans to continue production from the Red Well No. 1

Ninilchik

Ninilchik is the largest field in this group, averaging 27.9 million cubic feet per day in calendar year 2018. This is the 15th POD for the field.

In reviewing the previous plan, Hilcorp said it has identified six drilling prospects in the Grassim Oskolkoff participating area but did not expect that those wells would be drilled under the 2018 plan unless market conditions changed.

The company said it planned to drill the Pearl No. 2A from a new pad on private land outside of the unit. The well, which would be drilled into the unit, is classified as a delineation well and the company said it anticipates that production from that well would necessitate reconfiguration of both the unit and the participating area. Drilling of the 2A had been planned for 2017, but was deferred for other opportunities, the company said, and contingent on market conditions would most likely extend beyond the 2018 POD period.

Hilcorp said that based on market demand and conditions it would also consider sidetracking the existing Blossom exploratory well.

In its 2019 POD Hilcorp said that the six identified prospects in the Grassim Oskolkoff PA will not likely be drilled in

the 2019 POD period unless market conditions change but will most likely be drilled in the 2020 or 2021 POD periods.

Hilcorp said the Pearl No. 2A may be drilled in the late 2019 POD period, “contingent on market conditions, but will most likely extend beyond the 2019 POD period.”

The Blossom No. 1 may be sidetracked, based on market demand and economic conditions, but will most likely be drilled in the 2020 or 2021 POD periods.

March data from the Alaska Oil and Gas Conservation Commission show 26 producing wells at Ninilchik. Hilcorp said that during 2019 it would evaluate adding “velocity strings and/or other artificial lift

options in various wellbores to enhance production.”

The company has a workover program planned during the 2019 POD for several wells and plans to install an additional high-pressure heater-separator unit at the Paxton Pad to allow for additional throughput from the Paxton No. 8 wells. It may also install additional dehydration facilities on the Susan Dionne Pad to allow for additional throughput from Kalotsa Pad. It plans to add a water injection module at Susan Dionne Pad for produced water disposal. ●

Contact Kristen Nelson
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EXPLORATION & PRODUCTION

US drilling rig count drops 1 to 990

The number of rigs drilling for oil and natural gas in the U.S. dropped by one the week ending May 3 to 990.

A year ago the count was 1,032 active rigs.

Houston oilfield services company Baker Hughes reported that 807 rigs targeted oil (up two from the previous week) and 183 targeted natural gas (down three).

The company said 71 of the U.S. holes were directional, 873 were horizontal and 46 were vertical.

The Alaska rig count was up three from the previous week. New Mexico was up two.

Colorado, Ohio and Oklahoma were each up one rig.

The rig counts in California, West Virginia and Wyoming were unchanged.

North Dakota and Pennsylvania were each down one rig.

Texas, the most active state with 484 rigs, was down seven from the previous week.

Baker Hughes shows Alaska with nine active rigs, compared to six a year ago.


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

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EXPLORERS PREVIEW

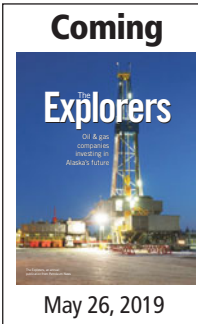
Conoco boosts capital spend in Alaska

Drills seven exploration wells in 2018-19, two from year-round pads, five from ice pads; company upbeat about 2020 and beyond

By **KAY CASHMAN**
Petroleum News

ConocoPhillips said it planned to drill six to eight exploration and appraisal wells on Alaska's North Slope toward the end of 2018 and in the first few months of 2019. Having recently discovered approximately 1 billion barrels of light, sweet oil west of the central Slope and into the National Petroleum Reserve-Alaska, the company said 75% of its prospective exploration acreage had yet to be drilled. Plans were to drill it in 2018-19 and from 2020 onward, along with the development of several discoveries.

A new ultra-extended reach drilling rig, built by Doyon Drilling for ConocoPhillips, will be delivered in 2020, initially to assist with development of the Colville River unit's Fiord West



prospect on the environmentally sensitive Beaufort Sea coast, the oil major said in September 2018. The high-tech rig will allow access to 154 square miles of subsurface from a 14-acre drilling pad.

"In 2020 we're bringing in the largest mobile extended reach drilling rig in North America and maybe the biggest in the world," ConocoPhillips COO Matt Fox said in a mid-March 2019 interview with Bloomberg anchor Alix Steel on Commodity in Chief, a program dedicated to the biggest names and news in the commodity world.

With its new drill rig ConocoPhillips will be able to "drill wells six to eight miles away from pads, minimizing the environmental imprint," Fox said.

see **EXPLORERS PREVIEW** page 7



Located about three miles east-northeast from Nuiqsut, Kuukpik 5 rig at Putu during sunset.

COURTESY OF CONOCOPHILLIPS CO. © JUDY PATRICK PHOTOGRAPHY

continued from page 4

PRODUCTION DATA

Cook Inlet's smallest, averaged 341 bpd in March, down 1.3% from a February average of 346 bpd but up 255% from a March 2018 average of 96 bpd. Production at the field kicked up late last year after Hilcorp re-drilled a well at the field.

Hilcorp's Granite Point field averaged 2,714 bpd in March, up 3.5% from a February average of 2,624 bpd, but down 7.7% from a March 2018 average of 2,942 bpd.

The BlueCrest-operated Hansen field, the Cosmopolitan project, averaged 1,562 bpd in March, up 11.9% from a February average of 1,396 bpd, and up 99.7% from a March 2018 average of 782. BlueCrest has been increasing the number of wells on production, most recently from four in February to five in March.

Hilcorp's McArthur River field, Cook Inlet's largest, averaged 4,903 bpd in March, up 1.9% from a February average of 4,810 bpd and up 4.7% from a March 2018 average of 4,681 bpd.

Hilcorp's Middle Ground Shoal averaged 1,408 bpd in March, down 1% from a February average of 1,422 bpd and down 8.8% from a March 2018 average of 1,544 bpd.

Redoubt Shoal, operated by Glacier Oil & Gas subsidiary Cook Inlet Energy, averaged 1,256 bpd in March, down 16% from a February average of 1,496 bpd, and down 4.4% from a March 2018 average of 1,314 bpd.

Hilcorp's Swanson River field averaged 1,104 bpd in March, up 3.9% from a February average of 1,063, but down 22.6% from a March 2018 average of 1,427 bpd.

Hilcorp's Trading Bay field averaged 1,462 bpd in March, up 13.6% from a February average of 1,287 bpd, but down 13.6% from a March 2018 average of 1,810 bpd.

Glacier's West McArthur River field averaged 579 bpd in March, down 16.2% from a February average of 690 bpd and down 42.2% from a March 2018 average of 1,001 bpd.

ANS crude oil production peaked in 1988 at 2.1 million bpd; Cook Inlet crude oil production peaked in 1970 at more than 227,000 bpd. ●

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EXPLORERS PREVIEW

At Willow, the largest new discovery to the west, ConocoPhillips hopes to build a new standalone production facility which will be able to handle as much as 100,000 barrels of oil per day, the company has said, but Fox said they are “unsure,” and still trying to determine just how much oil can be produced from the area, mentioning volumes of 100,000 and 140,000 bpd during the interview.

Fox was quick to point out that the 1 billion barrels of newly discovered “light, sweet” crude was “100% oil” and not oil equivalent, noting the wells all had a “high oily content,” and contained very little natural gas. The gas that was found in the wells, he said, was reinjected. (In 2018 ConocoPhillips said crude oil from Willow area wells had an API viscosity in the range of 41-44 degrees.)

When asked whether ConocoPhillips was bringing the hydraulic fracturing and well technology it employed in tight oil plays in the Permian basin, Eagle Ford and Bakken to Alaska, Fox said not really, pointing out they were dealing with “conventional reservoirs” on the North Slope that did not require the “massive hydraulic fracturing we use in the Lower 48.”



RYAN LANCE

The North Slope wells were horizontals, he said, but their “native permeability” was high enough to flow without “massive stimulation.” The wells, he noted, would be fracked, but not to the extent of horizontals in unconventional reservoirs in the Lower 48.



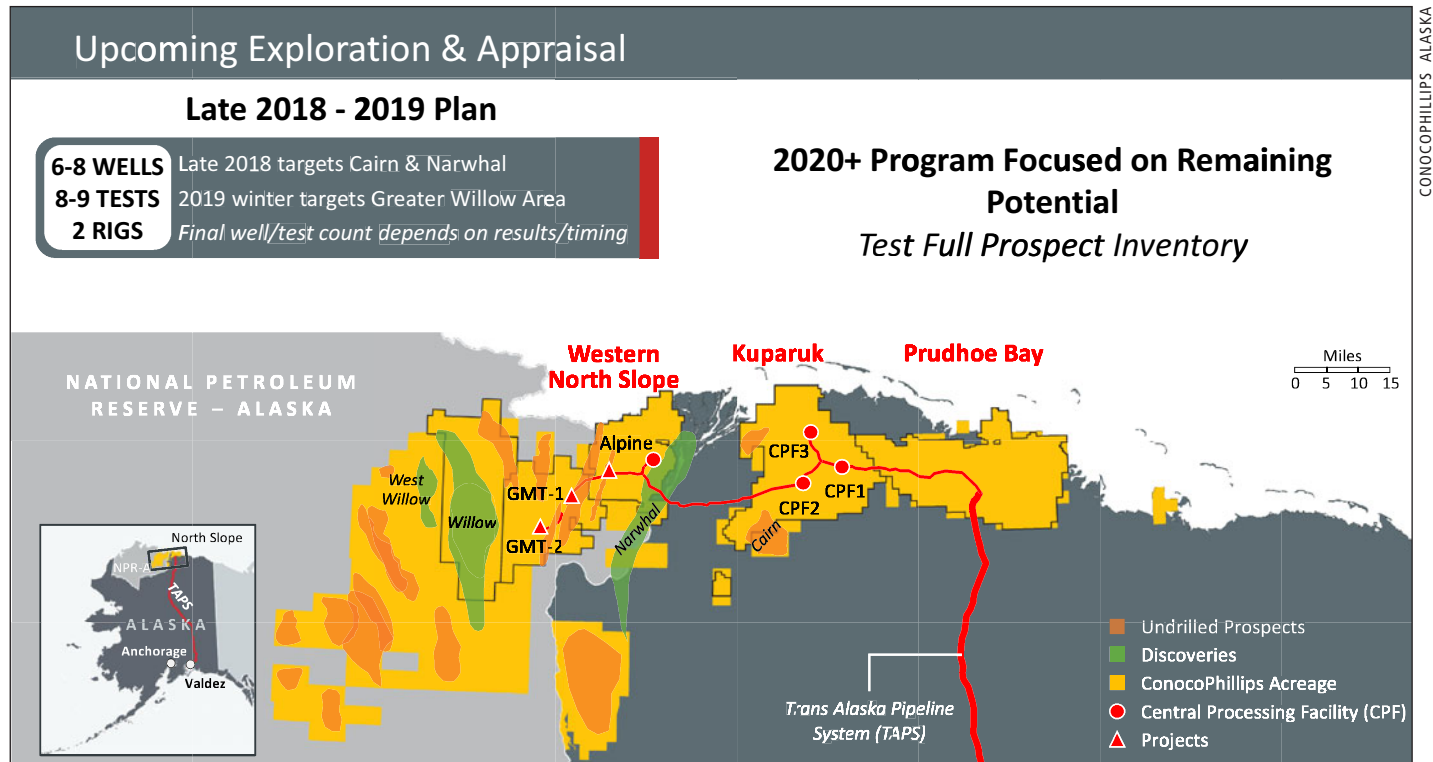
SCOTT JEPSEN

In Steel's introduction of Fox, she said the new developments ConocoPhillips was pursuing on the North Slope had a return rate of 20% at a cost that ranged from the high \$30s-to-low-\$40s per barrel.

Alaska gets larger cut of capex

Near the end of 2018, ConocoPhillips said it would increase its capital expenditure in Alaska to around \$1.2 billion for 2019. This figure, amounting to about 20% of the company's planned worldwide expenditure, compared with a capex level of approximately \$900 million in 2018 in Alaska, excluding acquisition costs.

ConocoPhillips expected its 2019 worldwide capex to be about \$6.1 billion,



close to the same level as in 2018. So, the announced boost to Alaska investment represented an increased share of the company's global expenditure, a factor that company officials have said reflected ConocoPhillips' confidence in its Alaska ventures.

The increase in expenditure came from costs related to the advancement of Greater Mooses Tooth 2, or GMT-2; higher activity levels and higher working interests in existing fields; and further exploration activity on the North Slope, the company said.

The reference to higher working interests in Alaska referred to the acquisition of Anadarko Petroleum's interests in lease holdings, mainly west of the central North Slope into NPR-A, and the acquisition of BP's interests in the Kuparuk River field and Kuparuk pipeline system.

ConocoPhillips' enlarged working interests in these assets will increase the company's share of capital expenditure.

Big spend for Willow

Company officials have indicated initial development of Willow would likely cost \$2 billion to \$3 billion, with an additional \$2 billion to \$3 billion required for full field development, which will include not only the processing facility but gravel roads, pipelines, up to five drill pads and associated infrastructure.

The behemoth at the western end of the current chain of ConocoPhillips' NPR-A developments, Willow is in the Bear Tooth unit and alone expected to peak at a rate of 100,000 bpd, with first production anticipated around 2024-25, if the project goes ahead as anticipated.

Initially, the company was looking to send Willow oil to be processed at its Alpine facilities in the Colville River unit

to the east, then through the Kuparuk pipeline system and on to the trans-Alaska oil pipeline for the 800-mile journey south to its terminus in the Port of Valdez. But after reassessment of seismic and drilling results, in mid-2018 ConocoPhillips increased the prospect's resource estimate from 300 million barrels of recoverable oil to between 400 million and 750 million barrels.

Multiple wells

The drilling results incorporated into the company's plans for Willow's development and standalone processing facility in 2018 were partly based the three-rig exploration and appraisal drilling in the winter season of 2017-18, the largest program conducted by ConocoPhillips on the North Slope since 2002.

Using the Doyon 141 rig, the company

said four “exploration and appraisal” wells were drilled in and near Willow: Tinmiaq 7 (T7), T8, T9 and West Willow 1 (WW1), involving more than 37 miles of ice road and five ice pads.

Using the Kuukpik 5 rig, one slant and vertical well was drilled and tested at the Putu prospect, Putu 2 (PT2) and P2A, directly south of the Colville River unit. The program, on ASRC and state subsurface and Kuukpik surface acreage, involved one mile of ice road and an ice pad.

At the Stony Hill prospect, directly south of P2, Stony Hill 1 (SH1), a vertical exploration well was drilled with the Arctic Fox rig. Seventeen miles of ice road and one ice pad were laid. The well was tested.

see EXPLORERS PREVIEW page 8

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EXPLORERS PREVIEW

Also, that season a 250 square mile 3-D seismic program was conducted, using a revolutionary new technology, ConocoPhillips' compressed seismic imaging, which enabled seismic data to be gathered four times faster than previously possible and produced better seismic images, Scott Jepsen, ConocoPhillips Alaska vice president of external affairs and transportation, said in September 2018.

Putu, Cairn prospects

The Putu 2 and 2A wells successfully targeted two distinctive seismic amplitude anomalies, Jepsen said.

There was a third anomaly in the Putu prospect, he said, immediately west of the two tested anomalies — the company planned to drill into this third anomaly from the existing CD-4 pad in the Colville River unit before its 2018-19 ice road campaign began.

In a presentation about the company's 2018 earnings strategy in early 2019, Ryan Lance, chairman and CEO, said ConocoPhillips was advancing construc-



Road access is one of the greatest challenges to development on Alaska's Western North Slope; ice road construction at Willow.

tion in the GMT-2 project in NPR-A and conducting another season of "exploration and appraisal" drilling on the North Slope.

He said the company had already drilled two wells in December 2018 from existing gravel pads, testing the Cairn prospect from Drill site 2S, or DS-2S, in the southwest corner of the Kuparuk River unit, and testing the seismic anomaly in the Putu prospect in a well drilled from CD-4.

The Putu prospect was in what

ConocoPhillips dubbed the Narwhal trend (informal, not geologic term), the same trend as the Pikka Horseshoe discoveries, in which Oil Search and its partners Repsol and Armstrong Energy are exploring and developing in the prolific Nanushuk formation.

Mysterious Cairn

ConocoPhillips has said very little over the years about the Cairn prospect. In the

southwestern corner of the Kuparuk River unit, Cairn was part of the Tarn oil pool, which predecessor ARCO discovered with the Bermuda No. 1 well in 1991. That well had five intervals of late Cretaceous-aged marine sandstone in the Seabee formation — from deepest to shallowest, the intervals were Iceberg, Arete, Cairn, Bermuda and C30.

Perforated in the Bermuda, the discovery well flowed at 1,900 barrels of oil equivalent per day after fracturing and produced 37-degree API gravity oil.

The Cairn interval was also present in the nearby Meltwater oil pool, which ARCO discovered in 2000 with the Meltwater North No. 1 exploration well drilled into the middle Cretaceous Seabee formation Bermuda/Cairn sands, the stratigraphic equivalent of Tarn. Meltwater went online in 2000.

ConocoPhillips and its predecessor companies, Phillips and ARCO, have talked about the Cairn gas accumulation for enhanced oil recovery within the Kuparuk unit. Government filings by the company described the Cairn interval as thinner than the Bermuda oil interval produced at Meltwater, noting the sandstone reservoirs were discrete from but analogous to the Tarn reservoir some 10 miles to the north.

In 2001 the company penetrated oil in the Cairn interval at the Tarn No. 4 exploratory well, but said the permeability was too low for economic development. Seismic data (3-D) shot a couple of years later suggested "a prospective channel feature in the Cairn interval existed in the Meltwater development area (and) ... may have improved reservoir quality" compared to the interval in the Tarn No. 4 well.

Most recently, in its application for the 2018 Kuparuk plan of development with Alaska's Division of Oil and Gas, ConocoPhillips mentioned the 2N-310 Cairn test in 2008: "The Cairn interval was tested while drilling a Tarn reservoir development well (an injector). Both gas and oil was discovered in the Cairn interval, and additional appraisal will be required to determine the Cairn development potential in this area."

But the company said, "no further exploration/delineation is planned in the Cairn or Bermuda sand intervals at this time."

That has obviously changed for the Cairn.

Seven total exploratory wells

The other promised four to six exploration wells making up the 2018-19 season were drilled using Doyon rigs 141 and 142. As of April 7, 2019, Rig 141 was on the West Willow 2 well and Rig 142 was on the Tinmiaq 13, both exploratory wells.

As of the same date, the Alaska Oil and Gas Conservation Commission, which among other things issues and tracks drilling permits, showed ConocoPhillips having completed three other exploration wells west of the central North Slope, including: Tinmiaq 10, completed March 4, 2019 (total depth 7,635 feet and true vertical depth 3,762 feet); Tinmiaq 15, completed Feb. 21, 2019 (total depth 4,052 feet and true vertical depth 4,052); and Tinmiaq 16, completed March 7 (total depth 3,950 feet and true vertical depth 3,950).

So it appeared the company will complete five exploration wells from off-road ice pads, plus the two wells it had completed from gravel pads DS-2S and CD-4, for a total of seven wells — all classified as exploratory by AOGCC, although ConocoPhillips referred to them as a mixture of exploration and appraisal wells. ●

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FINANCE & ECONOMY

EIA oil price forecast up \$5 per barrel

US drilling activity expected to increase based on higher prices, with production expected to average 13.4 million bpd next year

By **KRISTEN NELSON**
Petroleum News

The Brent crude oil spot price averaged \$71 per barrel in April, the U.S. Energy Information Administration said May 7, an increase of \$5 from March and just below the April 2018 price, and the agency has increased its forecast for the annual average for both this year and next.

“In the May Short-Term Energy Outlook, EIA increased its forecast for average Brent spot prices in 2019 and 2020 by about \$5 per barrel,” EIA Administrator Dr. Linda Capuano said in a statement on the May STEO release. “The increase accounts for near-term tightness in oil markets and increasing supply disruption risks in several oil-producing companies.”

EIA is now forecasting an average of \$70 per barrel this year and \$67 in 2020, both about \$5 per barrel higher than the April forecast, attributed to both increasing supply disruption and tighter expected global oil market balances.

The 2018 Brent average was \$71 per barrel.

April saw the fourth consecutive monthly increase in crude prices, which were approaching six-month highs near the end of the month, EIA said. Supply risk was heightened April 22, when the U.S. notified eight countries which had sanction waivers to import Iranian crude and condensate that those waivers would not be extended past their May 2 expiration.

EIA said it expects increased production from Saudi Arabia, the United Arab Emirates, Kuwait and Russia “to largely backfill the lower Iranian production, though these countries will likely wait until their June meeting to make any decisions regarding production increases.”

Higher prices also reflect increased geopolitical risk, the agency said, noting that unrest within Venezuela “contributes to a highly uncertain situation that could immediately disrupt the remaining oil production there.” Even if there are no additional disruptions in Venezuela, EIA said it forecasts that country’s production will continue to see significant declines through 2020.

“EIA expects some tightness in global oil

markets during the second and third quarters of 2019, but anticipates that growing production in the United States and key OPEC countries will ensure that global supplies continue to meet demand moving forward,” Capuano said.

The agency said recent oil price increases and expected higher prices through 2020 are expected to contribute to increased drilling in the U.S., with the expected U.S. crude oil production forecast up 300,000 bpd from April and expected to average 13.4 million bpd in 2020. EIA said the higher 2020 production “is the result of higher forecast prices in 2019 that have a lagged effect on production.”

Crude oil production in the Organization of the Petroleum Exporting Countries is expected to average 30.3 million bpd this year, down 1.7 million bpd from 2018. EIA said it expects OPEC production to fall by 400,000 bpd to an average of 29.8 million bpd in 2020, with Venezuela and Iran accounting for most of the OPEC output declines, which EIA expects to be partially offset by other OPEC members.

Global oil demand is expected to outpace supply this year, but in 2020, global liquid fuels supply is forecast to rise 1.9 million bpd, with 1.5 million bpd coming from the U.S.

“EIA continues to forecast that U.S. dry natural gas production will reach new



LINDA CAPUANO

“EIA expects some tightness in global oil markets during the second and third quarters of 2019, but anticipates that growing production in the United States and key OPEC countries will ensure that global supplies continue to meet demand moving forward.”

—EIA Administrator Dr. Linda Capuano

records in 2019 and 2020. The forecast indicates that this year will mark the first time U.S. production will exceed an average of 90 billion cubic feet per day,” Capuano said.

The Henry Hub natural gas spot price averaged \$2.64 per million British thermal units in April, EIA said, down 31 cents from March, with prices falling due to warmer-than-normal temperatures across much of the U.S.

Strong growth in U.S. natural gas production is expected to put downward pressure on prices in 2019 and 2020, the agency said, with Henry Hub spot prices expected to average \$2.79 per million Btu this year,

down 36 cents from 2018, and to average \$2.78 in 2020.

The forecast of 90.3 billion cubic feet per day this year would be an increase of 6.9 bcf from 2018, with production expected to grow to an average of 92.2 bcf per day in 2020.

EIA said April 2019 was the second-warmest April in 23 years and it estimates that the relatively warm temperatures, “combined with ongoing increases in natural gas production, contributed to the largest injection of natural gas into U.S. working storage in April based on historical data going back to 1976.” ●

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EXPLORATION & PRODUCTION

Investigative technologies for Alaska geology

On May 31, in conjunction with the 2019 Alaska Oil and Gas Association Conference, the state Geologic Materials Center and the Alaska Geological Society are holding a technical breakout session in the GMC in Anchorage. The focus of the session will be the potential for new investigative technologies and machine learning systems to better assist geologists and resource companies to meet the challenges of interpreting Alaska geology. Entry is free and lunch will be provided.

In the morning, starting at 9:30 a.m., there will be a series of talks covering a range of topics, from the use of newly available 3-D seismic data for a better understanding of Nanushuk-Torok oil reservoirs, to the use of machine learning from shallow soil samples in the prediction of potential reservoirs. Topics also include the automated scanning of fine-scale rock properties and the automated logging of rock properties in the Nanushuk.

In the afternoon there will be presentations of rock cores in the GMC collection, including cores from the Nanushuk formation at Umiat, and from wells in the National Petroleum Reserve-Alaska. There will also be an opportunity to tour the GMC, which holds a massive collection of rock samples and other geologic material, mostly acquired in conjunction with resource development in the state.

Further information is available from the GMC.

—ALAN BAILEY

AOGCC OKs disposal ops extension at Aspen

The Alaska Oil and Gas Conservation Commission has approved a limited extension of commercial disposal operations at the Aspen No. 1 well, as the operator, Plugging Inlet LLC, continues plugging and abandonment work on a group of Cook Inlet wells requiring P&A after the Aurora bankruptcy.

In a May 1 order the commission said Plugging Inlet had requested an extension of a previously issued and now expired order which authorized limited duration, commercial disposal, water only injection in the Aspen No. 1 well. The current approval is through Oct. 1, 2019, or when Aspen 1 is plugged and abandoned or when the operator for the well changes.

In December, the commission said, it approved an extension to Oct. 1, 2019, to plug and abandon Plugging Inlet operated wells associated with the Aurora bankruptcy.

Wastes authorized include those from pre-bankruptcy Aurora wells Three Mile Creek 1, 2 and 3 — now operated by Cook Inlet Energy. The commission said Nicolai Creek wells and tank 129 contents have already been disposed of into Aspen 1 and no ongoing Nicolai Creek wastes are permitted. Nicolai Creek is operated by Amaroq.

Numerous conditions are attached to the approval, including daily recording of wellhead pressures and training personnel on requirements of the 100 pounds per square inch pressure limitation.

The commission also approved limited commercial Class II oil field waste disposal for waste fluids associated with the bankruptcy of Aurora, but only for Plugging Inlet-operated wells — Aspen 1, Lone Creek 1, 3 and 4, Kaloa 2, Moquawkie 1, 3 and 4, Simpco Moquawkie 1 and 2 — and Cook Inlet Energy-operated wells — Three Mile Creek 1, 2 and 3.

—KRISTEN NELSON

continued from page 1

BSEE RULE

final rule is the result.

Offshore drilling safety

The rule applies to offshore oil and gas drilling on the federal outer continental shelf, and not to onshore drilling. The Obama administration also introduced a further set of regulations that apply to offshore drilling in the Arctic — BSEE has been reviewing those regulations.

“Today’s final rule puts safety first, both public and environmental safety, in a common sense way,” said Secretary of the Interior David Bernhardt when announcing the release of the new rule on May 2. “Incorporating the best available science, best practices and technological innovations of the past decade, the rule eliminates unnecessary regulatory burdens while maintaining safety and environmental protection offshore. Under President Trump’s leadership, America is a leader on energy resulting in greater security and economic prosperity.”

“BSEE’s review has been thorough, careful, and tailored,” said BSEE Director Scott Angelle. “Free of undue regulatory burden while ensuring that operators conduct outer continental shelf activities in a safe and environmentally responsible manner, today’s rule will fuel and sustain responsible energy exploration and production of America’s outer continental shelf.”

Opposition from enviros

Environmental organizations have a different perspective, claiming that the Trump administration is compromising protection of the environment in the interests of boosting the oil industry.

“Gutting the few offshore drilling safeguards established in wake of the BP Deepwater Horizon disaster is reckless and wrong,” said Oceana campaign director Diane Hoskins. “The president is putting industry cost-savings ahead of safety just weeks after the anniversary of the worst oil spill in U.S. history. Today’s announcement is a major step backward in offshore drilling safety. Our government shouldn’t be catering to the demands of the oil industry at the expense of public and environmental safety.”

Changes and additions

BSEE said that the final rule leaves unchanged 274 of the 342 provisions in the original rule, and that the agency has added 33 new provisions to improve OCS operations. The agency also said that it has reviewed the rule in relation to all 424 recommendations from 26 reports

The Obama administration also introduced a further set of regulations that apply to offshore drilling in the Arctic — BSEE has been reviewing those regulations.

that were issued in response to the Deepwater Horizon disaster and has determined that none of the changes to the rule contravene any of the recommendations.

The agency said that changes include limiting the number of connection points to a well blowout preventer; requiring a connection point on a blowout preventer for a remote operated vehicle; improving the required functionality of rams used to close off an out-of-control well; and specifying a testing methodology that will extend the lifespan of a critical blowout preventer component.

Core provisions

The official notice that BSEE is filing in the Federal Register says that revised regulations continue to include the core safety and environmental protection provisions from the regulations originally issued in 2016. As an example of an undue regulatory burden in the original rule, the notice cites regulations for real time onshore monitoring of offshore drilling operations.

Oceana deplored what it characterizes as “drastic reductions in the frequency, duration and oversight of blowout preventer testing,” the weakening of real-time onshore monitoring requirements, and the removal of a requirement that the government must authenticate and approve third-party organizations that evaluate offshore drilling safety.

Benefits for industry

BSEE’s official notice says that industry will benefit from the new regulations through the reduction of compliance costs and improved regulatory certainty. Resulting savings can be deployed for more productive purposes such as new capital investments, the notice says.

“This revised well control rule will help to further manage risks and better protect workers and the environment,” said Erik Milito, vice president of upstream and industry operations for the American Petroleum Institute. “The revision strengthens the rule and enhances a robust regulatory framework to ensure updated, modern and safe technologies, best practices, and operations.”

—ALAN BAILEY

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Wolfpack Land Company is Offering 4,761 Acres of Prime Mineral Interest Ownership in the Kenai, Alaska Area for Oil and Gas Leasing

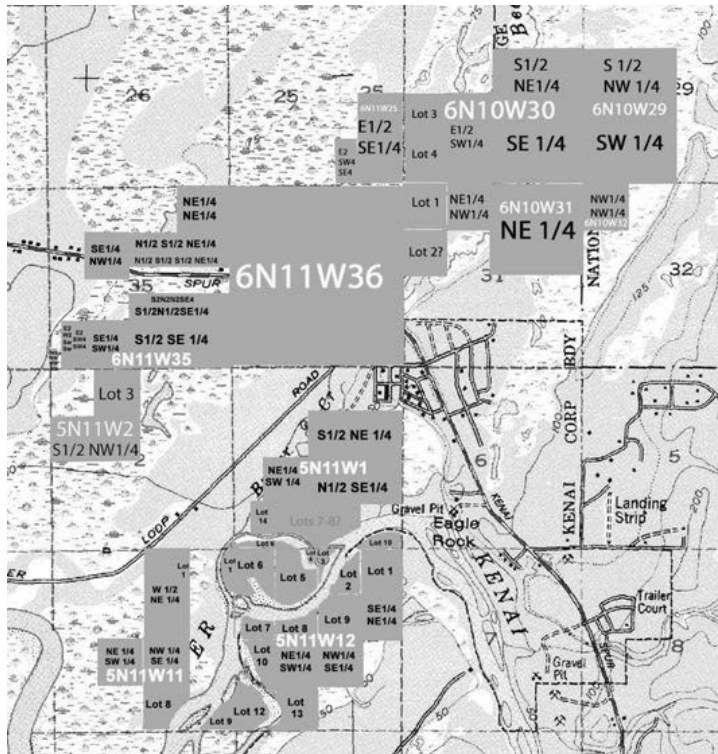
Beaver Loop Road Area

Township 5 North, Range 11 West (Surveyed)
 Section 1, Lots 6-8, 10, 14, S1/2NE1/4, N1/2SE1/4, NE1/4SW1/4;
 Section 2, Lots 3 and 6, S1/2NW1/4.
 Section 11, Lots 1, 8, 9, W1/2NE1/4, NW1/4SE1/4, NE1/4SW1/4;
 Section 12, Lots 1-13, NE1/4SW1/4, SE1/4NE1/4, NW1/4SE1/4.
 Containing 1,063.51 acres, more or less.

Township 6 North, Range 10 West (Surveyed)
 Section 29, SW1/4, S1/2NW1/4
 Section 30, Lots 3 & 4, E1/2SW1/4, SE1/4, S1/2NE1/4
 Section 31, Lots 1 & 2, NE1/4NW1/4NE1/4
 Section 32, NW1/4NW1/4
 Containing 947.98 acres, more or less.

Township 6 North, Range 11 West (Surveyed)
 Section 25, E1/2SE1/4, E1/2SW1/4SE1/4
 Section 35, NE1/4NE1/4, N1/2S1/2NE1/4, N1/2S1/2S1/2NE1/4, SE1/4NW1/4, E1/2SW1/4SW1/4, E1/2W1/2SW1/4SW1/4, W1/2SW1/4SW1/4SW1/4, SE1/4SW1/4, S1/2SE1/4, S1/2N1/2N1/2SE1/4, S1/2N1/2SE1/4.
 Section 36, All
 Containing 1,105 acres, more or less.

Aggregating 3,116.49 acres, more or less.

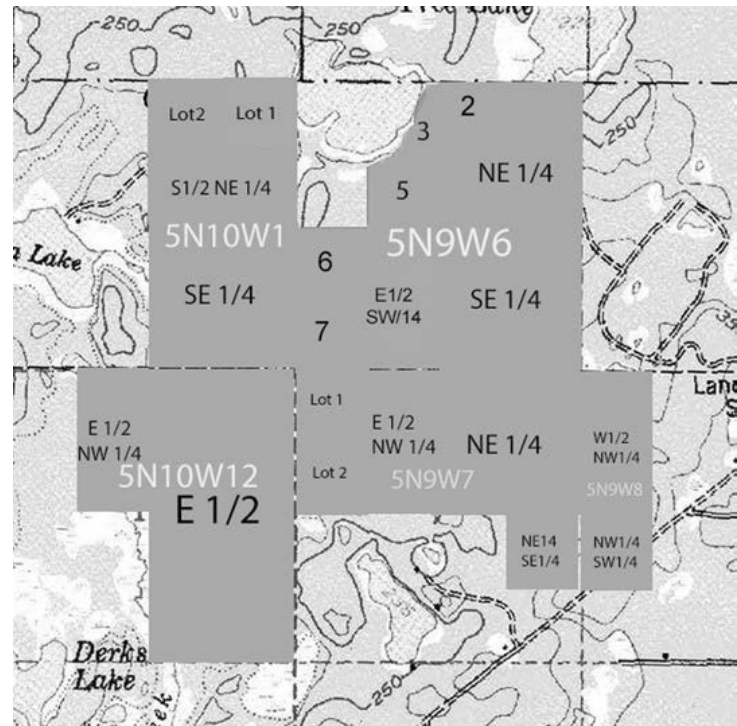


Robinson Loop Road Area

Township 5 North, Range 9 West (Surveyed)
 Section 6, Lots 2, 3, 5-7, SW1/4NE1/4, E1/2SW1/4, SE1/4;
 Section 7, Lots 1, 2, E1/2NW1/4, NE1/4, NE1/4SE1/4;
 Section 8, W1/2NW1/4, NW1/4SW1/4.
 Containing 926.23 acres, more or less.

Township 5 North, Range 10 West (surveyed)
 Section 1, Lots 1, 2, S1/2NE1/4, SE1/4;
 Section 12, E1/2, E1/2NW1/4.
 Containing 718.96 acres, more or less.

Aggregating 1,645.19 acres, more or less.



These fee mineral rights have significant known hydrocarbons on or very near them. This prospect is not in a remote area. Everything is road accessible, winter and summer, with easy access to oilfield suppliers. Seismic data available.

Terms: \$3,000/acre, 25% royalty.

For more details contact Wolfpack Land Company, Houston, Texas, at jim5thgn@outlook.com, jim@applecapital.net, or (907) 394-9148.

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SALE QUESTIONS

Department of Interior, has been assigned the task of managing and organizing a lease sale program for the coastal plain and, ultimately, the task of overseeing any oil and gas activities that result from a lease sale. Fish and Wildlife, another agency within Interior, manages environmental conservation in the refuge and has been participating in the EIS development.

By contrast, the National Petroleum Reserve-Alaska, at the western end of the North Slope, is not a wildlife refuge and is entirely managed by BLM.

In its comment filing Fish and Wildlife said that it is required to manage ANWR in a manner consistent with all purposes of the refuge, including the need for fish and wildlife conservation, the need to meet the obligations of international treaties relating to natural habitats, and the need to support subsistence use by local communities, in addition to accommodating the new oil and gas program.

Alternative D2

The agency said that alternative D2 includes recommendations that the agency had made during the preparation of the draft EIS. The alternative would help maintain the quality of the rivers in the

refuge and is the most consistent of the alternatives with regard to the Endangered Species Act and the Marine Mammal Protection Act, the agency said.

In order to protect biological and ecological resources, alternative D2 would place some parts of the coastal plain off limits to oil and gas leasing — just over 1 million acres of the 1.5 million acres of the 1002 area would be offered. And, to mitigate impacts on caribou summer habitat, the alternative would place timing restriction on oil and gas operations in 204,700 acres. Surface operations would be banned on 708,600 acres. Restrictions on surface use would apply to 123,900 acres. And activities in all parts of the area would require specific approvals, rather than be subject to standard terms and conditions.

In its filing, Fish and Wildlife asked for more explicit recognition of its role as the land and surface estate manager for ANWR, with a recommendation that BLM should be required to consult with Fish and Wildlife regarding any oil and gas activities that impact surface resources, to reach consensus decisions on actions such as plan approvals and the issuance of permits.

The agency expressed particular concern about the need to protect polar bear denning habitat. Although a lease sale in itself has no environmental impact, the issue of oil and gas leases would grant rights to activities with surface impacts.

Lessees need to understand that, to ensure compliance with the Endangered Species Act and the Marine Mammal Protection Act, there would need to be restrictions on activities that overlap with bear denning habitat and denning activities, Fish and Wildlife said.

Seismic surveying

Fish and Wildlife also questioned what it says is an incorrect assumption that 3-D seismic surveying can be conducted on the coastal plain prior to a record of decision on the EIS. The potential surveying has a bearing on environmental impacts considered throughout the EIS document, the agency said. Moreover, the analysis in the EIS may significantly underestimate the area of land potentially impacted by the surveying, and the timing of the surveying is uncertain, the agency said.

The Tax Act requires each lease sale to offer at least 400,000 acres of the highest hydrocarbon potential for leasing. But there is no clear definition of what is meant by acreage of highest hydrocarbon potential, Fish and Wildlife commented.

The agency also raised concerns about the potential for industrial activity to introduce invasive species into ANWR, arguing that there should be more specific stipulations for how the introduction of invasive species should be prevented, or how the unwanted species should be removed if accidentally introduced. In addition, the

EIS needs to further address the potential impacts of the changing Arctic environment, including the effect of the melting of the permafrost and ice wedge degradation on infrastructure in the region.

Spill response plans

More specific stipulations for required oil spill prevention and response plans are needed, including requirements for the availability of adequate spill response capabilities, Fish and Wildlife said.

Other issues that Fish and Wildlife has raised include the need to protect rivers officially designated as “wild and scenic”; the value of effective cross referencing to information in other EIS and planning documents relating to Arctic Alaska; a requirement that all environmental impact data obtained in conjunction with development activities should be provided to BLM and to Fish and Wildlife; and the need for an assessment of the potential impact of industrial activities on other permitted activities in the region, such as commercial hunting, fishing and recreation.

Fish and Wildlife’s document continues with more than 50 pages of comments on specific stipulations and on required operating procedures for industrial activities set out in the draft EIS. ●

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LEGAL MOVES

kets that assessment was as much as anyone could hope to extract.

The flare-ups gathered intensity in the immediate aftermath of Jason Kenney’s swearing in as Alberta premier on April 30 as he delivered on his major election campaign promises, starting with his proclamation of Bill-12, a law that gives Alberta the right to reduce or halt shipments of petroleum products into British Columbia.

It’s viewed as a potential retaliation against B.C. for stalling the proposed Trans Mountain pipeline expansion by issuing only 300 of 1,200 permits needed for the project.

BC fuel from Alberta

Currently, up to 80% of B.C.’s fuel comes from Alberta, with only 10% delivered by ship or barge from the U.S. Pacific Northwest, a source that is steadily being strained by demand in Washington state. Other refined products are imported from a variety of countries.

The B.C. government of Premier John Horgan promptly countered Kenney’s action by announcing it will test Alberta’s

constitutional right to impose limits on allowable daily volumes of petroleum products (including gasoline) that can be shipped from Alberta, the method of shipment and point of export, and the length of time a license is in effect.

B.C. Attorney General David Eby said his government’s “materials are all prepared” to file an immediate legal challenge.

He is confident a court will face a straightforward decision because a provision in the Canada’s Constitution prevents provinces from restricting the flow of refined products between provinces, ignoring B.C.’s own claims that it can prevent the flow of Alberta crude to tanker terminals in Vancouver.

Alberta’s previous New Democratic Party government passed Bill-12 a year ago, but did not proclaim it into law, preferring instead to keep the measure in reserve.

Kenney, in a newspaper column published in Calgary, Edmonton and Vancouver, insisted Alberta now has the power to get “full value for our resources



JOHN HORGAN

should circumstances require.”

“The impetus for (Bill-12) is to alleviate the resource backlog that has been exacerbated by delaying TMX (the Trans Mountain expansion).”

He wrote that his government “wants to cooperate with B.C. and other provinces whenever we can. But we will never be afraid to stand up for Alberta when we must ... we are showing that we are serious about protecting Canada’s vital economic interests.”

‘Bluster’

Andrew Weaver, leader of the B.C. Green Party, whose three elected representatives in the B.C. legislature keep Horgan in power, accused Kenney of “bluster,” saying any move to turn off the taps would affect deliveries to Washington state refineries.

He said any “turn off the taps” move by Kenney would also affect shipments to Washington state refineries, putting Alberta in conflict with the North American Free Trade Agreement and with oil companies who have signed refined product contracts.

B.C. Liberal leader Andrew Wilkinson wrote an open letter to Prime Minister Justin Trudeau, Horgan and Kenney urging them to meet with Indigenous leaders and resolve their differences on the energy issue and “hammer out a plan for a path forward” within 60 days.

He said Kenney’s “posturing” and Horgan’s “divisive rhetoric” could significantly increase gasoline prices at the pumps from current levels of almost C\$1.80 per liter in some B.C. municipalities.

‘New Sheriff in Town’

While those battle lines were being established, Kenney started spreading his “New Sheriff in Town” message, starting with an appearance before a Senate committee on Bill C-69, which proposes sweeping changes to environmental assessments of major resource projects, but dubbed by the industry as a “no pipelines bill,” while Canada’s Environment Minister Catherine McKenna said the legislation is aimed at a “one project, one review” approach that will accelerate the processing of applications for C\$500 bil-

lion worth of projects over the next decade.

However, Kenney said Bill C-69 and Bill C-48, that would ban oil tankers off the northern coast of B.C., are a “full frontal attack” on Alberta’s economic lifeline by singling his province out for special attention, and are a “blatant violation of the (Canadian) Constitution,” which gives provinces ownership and control over the development of their resources.

He said the latest polls show that 50% of Albertans are unhappy with how they have been treated by the federal government and are open to discussing the grounds for separation from the rest of Canada.

Emissions also an issue

The Kenney government has indicated it also intends to remove a legislated cap of 100 million metric tons a year of greenhouse gas emissions from oil sands mining operations (the current level is estimated at 70 million metric tons and few in the industry believe the GHG output would ever reach 100 million metric tons).

Draft regulations by the Canadian government would exempt “in situ” oil sands projects (those powered mostly by natural gas-generated steam) from federal environmental assessments if Alberta retained its proposed GHG cap on oil sands mines.

That inflamed Alberta’s new Energy Minister Sonya Savage, who told reporters: “You can’t exempt (from regulation) something you don’t have the right to regulate in the first place. That’s preposterous.”

Kenney also had his first meeting since being elected with Trudeau, in what gave every appearance of being a chilly encounter, though the two leaders said they were looking for points of agreement.

The best they could manage was affirmation of the need to grow national employment.

“We both share a basic goal — the creation of jobs and higher incomes for Canadians,” said Kenney, while Trudeau said, “we agree on the need to create jobs in Alberta and across the country.”

Those were tame asides to the conflict that is rapidly shaping up around them.

—GARY PARK

Contact Gary Park through
publisher@petroleumnews.com

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Northern Solutions receives ConocoPhillips award

Northern Solutions LLC recently said that it is a recipient of the 2018 ConocoPhillips Supplier Recognition Award program in the category of doing business better. Only four such awards are given globally each year.

Northern Solutions was presented the award at its Anchorage location on April 16 by Joe Marushack, president of ConocoPhillips Alaska.

Northern Solutions provided engineered, tested and manufactured tools to ConocoPhillips specifications, reducing time and risk in coiled tubing drilling rig operations and providing a safer exit technique. Northern thus contributed to reducing overall cost of supply for Alaska North Slope crude.

"As a born and bred Alaskan company it's a privilege to earn this distinction," said Candice English, owner and CEO of Northern Solutions. "Accomplishing projects on time and within budget is why we're still in business after 13 years."

Ten companies are honored annually for exhibiting exceptional leadership in observance of ConocoPhillips's SPIRIT values. Awards are given in two areas: focus on execution and doing business better.

ConocoPhillips business units around the world generated nominations internally, with winners chosen by a cross-functional committee of senior managers.

For more information and a full list of recipients visit <http://www.conocophillips.com/news-media/story/conocophillips-announces-winners-of-2018-supplier-recognition-award-program/>



COURTESY NORTHERN SOLUTIONS

service all year," said Lynden Air Cargo President Rick Zerke. "Lynden Air Cargo has been delivering freight in Alaska for many years, and we know the challenges and terrain. We handle oversized loads and small packages alike with our scheduled service and flag stops to points in the Alaskan Bush. We can arrange the right flight to get cargo delivered to practically any village or city in the state." Lynden Air Cargo's scheduled service to St. Mary's and Emmonak will begin and end in Anchorage. In addition to fish and general cargo, Lynden will carry bypass mail in and out of the two areas in its commercial C-130 aircraft.

Lynden Air Cargo also offers scheduled year-round service from Anchorage to Bethel, Nome and Kotzebue and flag stop service to other remote points in Alaska. Flights to Bethel are scheduled Tuesday through Saturday and to Nome and Kotzebue on Tuesdays, Thursdays and Saturdays. For more information on these services visit www.lynden.com/lac, or call 907-243-7248.

Alaska West Express named safest truck fleet for 2018

Alaska West Express said April 30 that it received the 2018 Alaska Safe Truck Fleet of the Year Award from the Alaska Trucking Association at the association's annual meeting in April. Alaska West Express also received the award in 2016, 2014 and 2013. The carrier was recognized for its safety performance in 2018, including accident frequency rates, compliance, safety and accountability scores, and OSHA recordable injuries.

The ATA sponsors this prestigious safety award with ConocoPhillips to recognize and reward carriers who operate safely on the highway and in the workplace. CSA is a major safety measurement and reporting initiative of the Federal Motor Carrier Safety Administration.

"This award demonstrates the dedication and hard work of our entire team of transportation professionals," said Alaska West Express President Eric Badger. "Our drivers, maintenance personnel, operators, dispatchers, supervisors, managers and administrators all share in this success. Their efforts to continually identify safety improvements in our extremely challenging conditions is the cornerstone of our program. The safety of our people, the environment and our equipment is our most important objective each day."

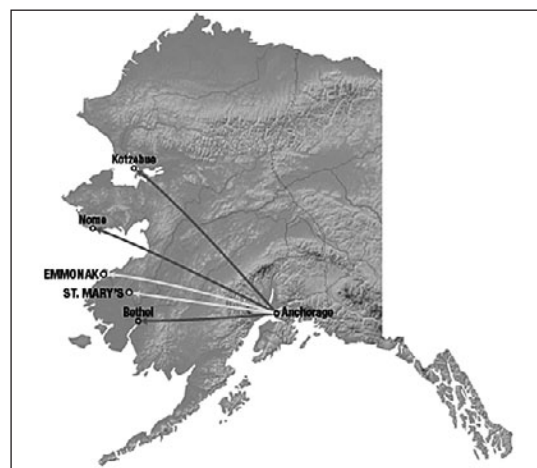
"Alaska West Express clearly demonstrates to themselves, their management and the general public that the trucking industry can and does operate safely. Safety is our number one priority. ATA is proud that Alaska West Express is a member" said Aves Thompson, executive director of the Alaska Trucking Association.

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 September.



COURTESY ALASKA WEST EXPRESS

Lynden Air Cargo expands service in Western Alaska



COURTESY LYNDEN AIR CARGO

Lynden Air Cargo said April 23 that it is expanding its scheduled service points in Alaska to include St. Mary's and Emmonak.

Beginning April 30, Lynden will offer year-round scheduled air freight service on Tuesdays and Fridays to better serve customers and to support local industries in the Western Alaska region.

"We have traditionally served these areas with charter service to support seasonal fishing operations, but we are now proud to offer regular and reliable airfreight

Companies involved in Alaska's oil and gas industry

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Alaska Dreams		Doyon Anvil		Nature Conservancy, The	
Alaska Frac Consulting LLC		Doyon Associated		NEI Fluid Technology	
Alaska Frontier Constructors (AFC)		Doyon Drilling		Nordic Calista	
Alaska Marine Lines	7	Doyon, Limited		North Slope Telecom	
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Alaska Rubber & Rigging Supply Inc.		Fairweather		NRC Alaska	
Alaska Steel Co.	4	Flowline Alaska		Oil Search	
Alaska Textiles		Fluor		Pacific Power Group	10
Alaska West Express	7	Fugro		PENCO	7
Alpha Seismic Compressors		G-M			
American Marine	7	GMW Fire Protection		Petroleum Equipment & Services, Inc.	12
Arctic Controls		Greer Tank & Welding		PRA (Petrotechnical Resources of Alaska)	2
ARCTOS Alaska, Division of NORTECH		Guess & Rudd, PC		Price Gregory International	
Armstrong		ICE Services, Inc.		Q-Z	
AT&T	16	Inspirations		Raven Alaska – Jon Adler	
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Carlile		Lynden Logistics	7	TOTE – Totem Ocean Trailer Express	
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		Mapmakers of Alaska		Wolfpack Land Co.	11
		Maritime Helicopters		<i>All of the companies listed above advertise on a regular basis with Petroleum News</i>	

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KUPARUK WELLS

producers and 378 injectors. Production from the Kuparuk PA in 2018 averaged 80,000 barrels per day of oil (110,893 bpd for the Greater Kuparuk Area, which includes the satellites), 18 million standard cubic feet per day of natural gas and 57,000 bpd of water.

ConocoPhillips said that an 11-well coiled tubing drilling program in 2018 generated a peak incremental oil rate of some 3,300 bpd. Six West Sak wells were also drilled in 2018.

A non-rig wellwork program including slickline, electric line and service coiled tubing jobs added some 11,500 bpd of gross oil in 2018. And miscible injection continued in 2018 with natural gas liquids from the Greater Kuparuk Area at five drill sites.

2019 Kuparuk plan

The drilling program in the 2019 POD includes five grassroots rotary wells in the Kuparuk PA and some 20 CTD wells; no additional drill sites to access Kuparuk A and C sands are planned during this POD period.

For enhanced recovery, imports of NGLs from Prudhoe Bay recommenced in September, increasing the availability of NGLs for blending with gas for miscible injectant, allowing for an expanded EOR program. Drill sites 1B, 1C, 1D, 1E and 2C have been previously targeted and will continue to receive MI, the company said. Drill sites at Central Professing Facility 2 will become additional targets.

In 2018, ConocoPhillips said, Kuparuk received an average of 64 million cubic feet per day of MI injection, with an oil rate from EOR estimated at some 9,400 bpd.

NGLs are expected to be received from Prudhoe until 2022 and until the cessation of those imports the primary expected gas injection fluid for the majority of Kuparuk is MI, with a long-term plan of following that with a lean gas chase. The injection of lean gas following the ramp down of EOR will allow for recovery of a portion of NGLs trapped as part of the EOR process and maintenance of liquid rates in high water cut producers as gas cycles through the reservoir from injectors to producers.

ConocoPhillips said gas handling limits with gas lift compressors will continue to constrain GKA production. "Gas capacity debottlenecking continues to be studied as part of the facility management plan," the company said.

Water handling has often been another constraint on oil production and several facility projects are being evaluated to restore and enhance water injection at each of the CPFs.

Facility projects

ConocoPhillips noted that electronic equipment at

Kuparuk "is becoming obsolete at an increasing rate as manufacturers introduce new equipment and no longer wish to support older equipment."

The company said process control systems are among those which will continue to be upgraded as existing equipment "becomes obsolete and no longer maintainable."

Fire and gas systems have already been upgraded at the CPF and at the seawater treatment plant, the company said, and drill site upgrades are ongoing.

Large capital expenditures may be required as turbines driving the water injection pumps and power generation equipment become obsolete, and transmission lines, substations and other electrical equipment in the field is approaching expected end of life.

"Much of the operations support infrastructure will be assessed for upgrade or replacement to target another 25 years of production from the KPA and the KRU satellite fields," ConocoPhillips said. The company noted that some of the large infrastructure projects in the past have included upgrading and refurbishing portions of the Kuparuk camp and office.

Exploration

ConocoPhillips said the "overlying Cretaceous Brookian Moraine" is currently being tested at Kuparuk "to evaluate for productivity and waterflood performance." The 3S-611 and 3S-612 wells, a producer-injector pair, were drilled late last year and are "providing reservoir performance data in addition to the original pilot wells drilled in 2015."

In early 2020 two additional well pairs are planned "to further de-risk waterflood performance."

"Coupled with results from special core analyses, this dynamic data will guide future plans for the Moraine."

The WIOs are evaluating 17,920 acres adjacent to KRU drill site 2S, in the southern portion of the unit, awarded to ConocoPhillips in late 2017, which includes the Cairn opportunity.

The 1H-Ugnu-401 well was brought back online in April. It had been shut-in in 2016 due to electric submersible pump problems. ConocoPhillips said it is working through ESP troubleshooting to determine if higher oil production rates can be achieved.

Meltwater, Tabasco, Tarn

The Meltwater PA is being developed from DS 2P, the most southernly portion of Kuparuk. There were 16 active wells in 2018, 10 producers and six injectors, with an average oil production rate of 700 bpd. The field was returned to MI in November after the resumption of NGL imports. ConocoPhillips said MI is expected to last until this summer, "at which point the injection line will be fully converted to water injection, which is the service expected for the

remainder of the field life."

The company said further development opportunities at Meltwater are being analyzed and could include coiled-tubing drilling sidetracks or producer to injector conversions.

Tabasco had seven active wells in 2018, ConocoPhillips said, six producers and two injectors, and averaged 1,200 bpd in 2018. The major recovery mechanism at Tabasco is waterflood. No further exploration or delineation drilling is planned for this POD period.

Tarn had 65 active wells in 2018 at two drill sites, 39 producers and 26 injectors. Average production for the year was 6,900 bpd.

Tarn was returned to miscible water alternating gas flood following the resumption of NGL imports.

ConocoPhillips said the use of hydraulic jet pumps has resulted in production increases of some 10%.

Ten wells have been converted to MWAG injectors and other future conversions will be considered, the company said.

Reservoir characterization efforts completed in the Tarn area in 2017 and 2018 include development of a thin-bed petrophysical model for the Tarn-Meltwater areas and re-mapping of the field. Last year, construction began on a reservoir model which "will enable the evaluation of the field's remaining development." ConocoPhillips said the analysis would continue in 2019.

West Sak, NEWS

West Sak is developed from eight drill sites. In 2018 there were 123 active wells, 56 producers and 67 injectors. Average West Sak PA and NEWS PA combined production was 22,700 bpd.

The 1H NEWS development project was completed in 2017 and 2018, including expansion of existing DS 1H, drilling of four multilateral production wells, 11 vertical/slant injection wells and recompletion of an existing wellbore into injection service.

During 2019, the company said, West Sak operations will focus on the 3R drilling program where the plan is to expand the drill site to accommodate nine new wells, a project which would include formation of the North West Sak PA, incorporating the 3R development wells that have been producing under tract operations.

ConocoPhillips said new drill sites are possible for West Sak and NEWS.

The Eastern NEWS, ENEWS, oil pool is being evaluated for development opportunities, with the evaluation "heavily dependent on the results seen from other viscous development opportunities the company is currently exploring." ●

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RAILBELT LETTER

one hand the utilities have demonstrated a willingness to work together and have made significant progress on several fronts, voluntary efforts have thus far failed to result in any institutional change.

The overall intent is to minimize the cost of electricity for consumers, while maintaining an acceptable level of supply reliability. The idea also is to facilitate access to the system for independent power producers.

One particular concern is that an initiative by Chugach Electric Association, Municipal Light & Power and Matanuska Electric Association to institute a protocol known as merit ordered economic dispatch came to an abrupt halt in October 2018, because of complications arising from the proposed purchase of ML&P by Chugach Electric. The idea of economic dispatch is that utilities will make continuous use of the cheapest available power generation across the electrical grid — the three Southcentral utilities had identified the possibility of more than \$16 million in potential cost savings from this type of power pooling arrangement.

Having had since 2015 to proceed with voluntary efforts, the time has now come for the commission to work with the Legislature to develop actions that will institutionalize merit ordered dispatch, Commissioner Robert Pickett commented during the May 8 meeting.

The commissioners did, however, express a note of caution that those actions, and the next steps to be taken, need to be carefully thought through, to build on the progress that has been made without undoing what has already been achieved.

And Commission Chair Stephen McAlpine expressed concern that, although the commission now needs to work with the Legislature and the state administration to develop steps to institutionalize the power pooling arrangements, the

commission does not have all the information relevant to a full understanding of what has happened.

At the point when the Southcentral utilities put their economic dispatch initiative on indefinite hold, the utilities had agreed on the business arrangements for the power dispatch procedures and appeared to be almost ready to put the procedures into effect. They commented that the protocols that they had developed could be applied for other Railbelt utilities, thus opening the possibility of extending the power pooling arrangements across other parts of the grid.

Commissioner Antony Scott commented that an effective next step might be to figure out how to start instituting economic dispatch through the formation of an Anchorage-based power pool, given that the three Southcentral utilities had been on the verge of achieving this arrangement.

The utilities have made significant progress towards another of the objectives that the commission had recommended in 2015: the institution of a consistent set of reliability standards for the Railbelt grid, and the formation of an electric reliability organization to oversee the operation of the grid and mandate the use of the standards.

In April 2018, following a major amount of work, the utilities filed a consistent set of standards. Since then the utilities have been working to develop a set of cyber and physical security standards to add to those standards. In October of that same year the utilities filed a memorandum of understanding for the formation of the Railbelt Reliability Council, or RRC, an entity that would enforce the reliability standards; enforce system-wide interconnection protocols for the grid; conduct system-wide integrated resource planning; and evaluate the economic dispatch of power generation in the system.

The RCA has concerns over whether it has the necessary statutory authority to regulate the RRC and has suggested statutory language that could resolve this problem. The commission also seeks statutory authority to approve integrated resource plans for the electrical system, and for the pre-approval of major upgrade projects in the system. In

response, the Alaska House of Representatives has introduced a bill to the Legislature.

Pickett said that ensuring the implementation of an appropriately regulated electrical reliability organization is the most important of the commission's recommendations to the Legislature. Meanwhile the commission will use its existing authority to enforce the consensus standards that have been developed.

The other component of grid unification that the RCA recommended in 2015 is the formation of a transmission company to operate the transmission grid. A so-called transco could simplify and improve the economics of using the transmission system by introducing a single transmission rate; implementing non-discriminatory grid access; and providing a mechanism for the funding of grid upgrades.

After some initial optimism in 2015, there was a succession of announcements and delays over the years regarding transco formation. Ultimately, in February of this year the Alaska Railbelt Transmission LLC, or ART, an electricity transmission company for the Railbelt grid, applied to the commission for a certificate of public convenience and necessity. But two of the Railbelt utilities, Chugach Electric and MEA, have chosen not to participate in the new company.

As part of its communication to the Legislature over the Railbelt grid issue, the RCA is also expressing concerns over its capacity to handle the workload involved in the evolving requirements for regulating the electrical system. In particular, inflexibility in the state administration's job classifications makes it difficult to assign appropriately skilled staff to the required roles — it may prove necessary to hire consultants to fill resulting skill gaps, the commission is telling the Legislature.

—ALAN BAILEY

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ENTEK DEAL

research being public, there is high resolution 3-D seismic data associated with Nanushuk/Torok exploration available to the public from the Alaska Department of Natural Resources.)

On trend with Willow

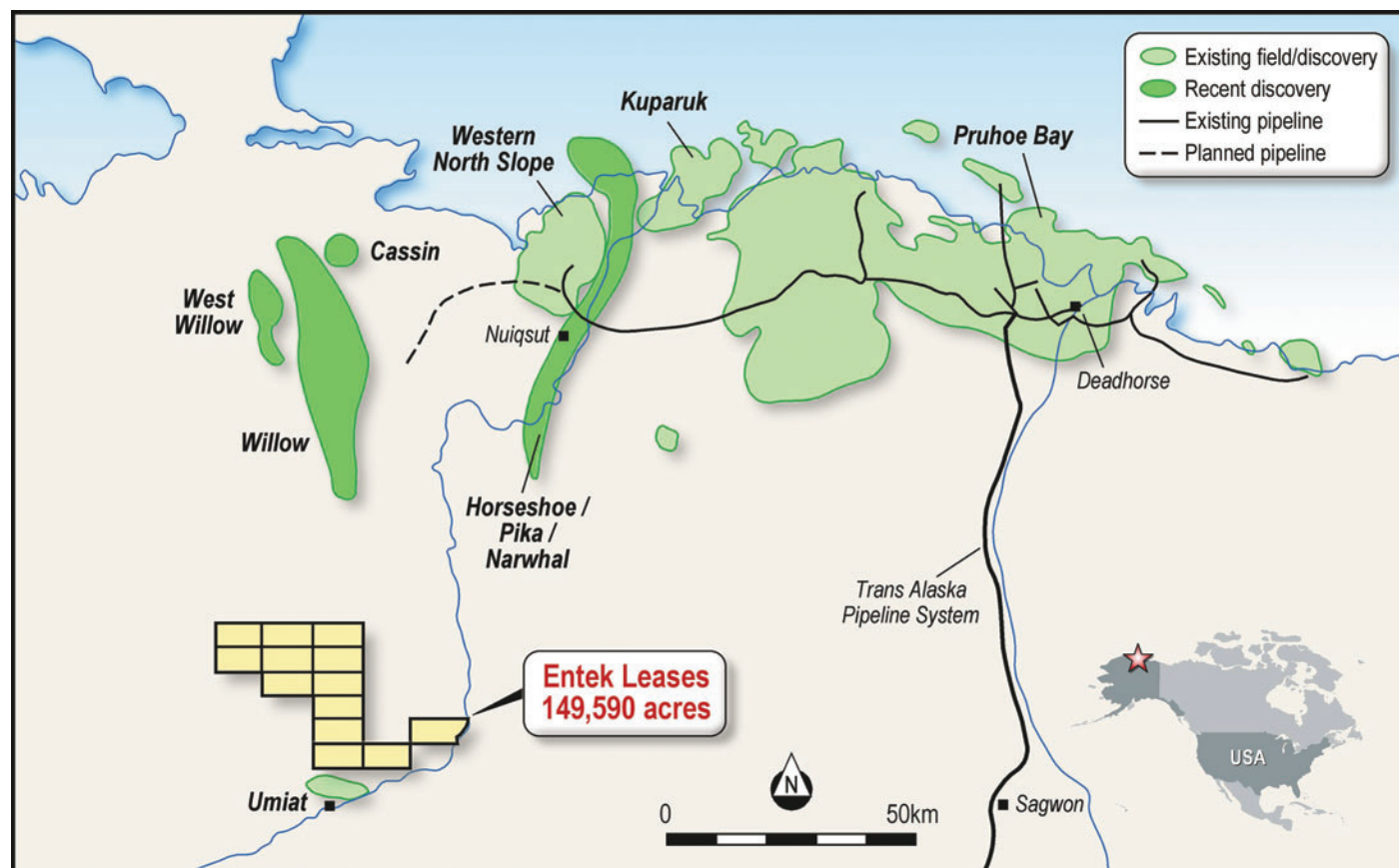
Dubbed Project Peregrine, Entek's acreage stretches between the Umiat oil field on the south "on trend" with ConocoPhillips' Willow oil prospect to the north, Ferguson told Petroleum News in a May 7 interview.

ConocoPhillips has largely focused its exploration and appraisal budgets in 2018 and 2019 on Willow, its largest new discovery to the west of the Colville River in NPR-A. The company is planning a stand-alone production facility for the field, expecting to bring it online in 2024-25 at 100,000-140,000 barrels a day.

In a mid-March 2019 interview with Bloomberg anchor Alix Steel on Commodity in Chief, ConocoPhillips COO Matt Fox said the 1 billion barrels of newly discovered "light, sweet" crude in the area was "100 percent oil" and not oil equivalent, noting the wells all had a "high oily content," and contained very little natural gas. The gas that was found in the wells, he said, was reinjected. (In 2018 ConocoPhillips said crude oil from Willow area wells had an API viscosity in the range of 41-44 degrees.)

Biggest dinotherm in the world

In recent year several large oil discoveries have been made in the Brookian Nanushuk and Torok formations west of the central North Slope, the youngest of the major petroleum bearing rock sequences in the region.



COURTESY ENTEK

Essentially, the sediments in the Nanushuk and Torok were laid down in what geologists term a clinothem, a system of sedimentary deposits that build out from land into a marine basin. But according to state and federal geologists this particular clinothem is the largest of its type found anywhere in the world, containing more than 1 million cubic kilometers of sediment and having a vertical relief of at least 2 kilometers. The sediments were deposited in a basin on the north side of the then-emerging Brooks Range.

A recent oil and gas assessment of NPR-A west of the Colville River where Entek has its leases dramatically boosted technically recoverable undiscovered oil reserves in the area. Conducted by the U.S.

Geological Survey and based only on a re-evaluation of the resource potential of the Nanushuk and Torok, USGS increased potential undiscovered NPR-A oil reserves from a few hundred thousand barrels in 2010 to 1.7-21.8 billion barrels in late 2017, with a mean estimate of 8.8 billion barrels.

Got in on ground floor

"It's exciting to have gotten in on the ground floor ... of the Nanushuk," Ferguson said. "The formation was pretty much overlooked."

He admitted there is always risk in exploration.

But, Ferguson said, "you've got to be in it to win it."

Like other Nanushuk explorers and

developers such as Bill Armstrong, Repsol and Oil Search, another ASX-listed independent, Entek will eventually be looking for a bigger partner.

"We might raise the money for the seismic program on our own, but we'll have to bring in a larger partner for drilling," Ferguson said.

Entek reported cash of approximately \$2 million and no debt or substantial expenditure commitments in its first quarter quarterly, after having paid out essentially \$2 million in leasing fees and to Elixir for the Alaska acreage.

Peter Stickland has been appointed non-executive chairman of Entek. ●

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CARBON TAX

iting those emissions.

The other two judges in the majority vote joined Richards in rejecting the Saskatchewan government's argument that that the tax was being applied unevenly across Canada and would deal a crippling blow to that province's vital agricultural and small business sectors.

Saskatchewan Premier Scott Moe said his government will meet the deadline of June 3 to file an appeal to the Supreme Court of Canada, backed by an offer of help from Alberta Premier Jason Kenney.

Alberta has a carbon tax of C\$20 per metric ton introduced by the previous administration of Rachel Notley, but Kenney campaigned in April to move quickly to dump that

Quebec has yet to take its own stand, but if it sides with Ontario, Alberta, Manitoba and Saskatchewan, as well as New Brunswick, that would represent six of Canada's 10 provinces and 29.3 million of the national population of 37.3 million.

tax and fight any effort by Trudeau to impose his own tax.

Andrew Scheer, leader of the federal Conservative Party, said the "job-killing" Trudeau tax "isn't a plan to lower emissions."

"It's just another cash grab."

Ontario Premier Doug Ford, who is also challenging the federal tax, said the Saskatchewan ruling is just the beginning of a showdown over the tax that he and Moe are

confident will see the Trudeau Liberals defeated in a federal election scheduled for October.

Manitoba has filed papers in the Federal Court of Canada in its own challenge.

Quebec has yet to take its own stand, but if it sides with Ontario, Alberta, Manitoba and Saskatchewan, as well as New Brunswick, that would represent six of Canada's 10 provinces and 29.3 million of the national population of 37.3 million.

Federal Environment Minister Catherine McKenna hailed the Saskatchewan ruling as a "victory for Canadians," putting Ford, Kenney and Moe in the same category as U.S. President Donald Trump in their view of climate change.

—GARY PARK

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