

page 5 Accumulate to drill; says breakeven believed below \$40 for Yukon Gold

Regenerate wins in tied Yukon Gold bid with Bachner; Beckham acting DOG director; Thar's oil in them thar rocks!

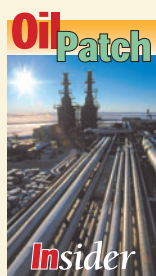
88 ENERGY ALASKA'S SUBSIDIARY

Regenerate Alaska expanded its Yukon Gold acreage from 14,194 gross contiguous acres to approximately 16,114 acres recently when it was declared high bidder on a 1,920-acre adjacent lease following a tie bid in the November state of Alaska areawide lease sale.

Both Regenerate and long-time Alaska lease speculators J. Andrew Bachner and Keith C. Forsgren tied with bids of \$26.11 per acre.

Bidders were invited to submit new bids "not lower than the

see INSIDER page 9



AGDC: refocus on AKLNG economic hurdles under new administration

Under new leadership provided by the Dunleavy administration, plans have changed at the Alaska Gasline Development Corp. Interim AGDC President Joe Dubler told a Senate Finance subcommittee Feb. 27 that the focus at AGDC is now to determine if the Alaska LNG project could meet economic hurdles without undue execution risk. If we can't do it economically then it doesn't make sense to do it at all, Dubler said.



JOE DUBLER

But we're not winding down the corporation, he told the AGDC board March 6 in a discussion of what steps AGDC

see AGDC FOCUS page 8

GVEA requests tariff filing stay for wind farm and cogeneration

Fairbanks electricity utility Golden Valley Electric Association has asked the Regulatory Commission of Alaska to order a stay on GVEA's need to respond to a tariff request from Eco Green Generation LLC for a proposed new system for the generation of electricity and heat in the Fairbanks area.

Eco Green, in collaboration with Alaska Environmental Power, proposes building a wind farm at Delta Junction and a series of propane-fueled cogeneration units that would generate electricity, along with heat for the heating of buildings. The idea is that a control system would interlink the wind farm with the propane generators, so that the propane genera-

see TARIFF FILING page 10

Winx well penetrates its targets; wireline logging to be done

Following a succession of releases giving a blow-by-blow account of the drilling of the Winx No. 1 exploration well on the North Slope to the east of the Colville River, on March 6 88 Energy Ltd. announced that the well had reached its total depth of 6,800 feet. During the course of the drilling the well penetrated target horizons in the Nanushuk and Torok formations. Oil shows were encountered in both formations. 88 Energy said that the plan now is to start wireline logging in the well, to test prospectivity ahead of possible production testing. The logging was expected to start on March 6.

An Australian consortium of companies — 88 Energy Ltd.'s

see WINX WELL page 12

EXPLORATION & PRODUCTION

Wells need checking

AOGCC orders BP to recover well casings from at least 4 Prudhoe Bay wells

By ALAN BAILEY

Petroleum News

Following a review of well integrity issues relating to permafrost subsidence in the Prudhoe Bay field, the Alaska Oil and Gas Conservation Commission has ordered BP, the field operator, to recover the casings and production tubing from at least four wells in the field linked to recent well integrity incidents.

In a Feb. 28 order the commission told the company that it must use the recovered steel well tubing to further assess the causes of the incidents and any impacts of permafrost subsidence on the condition of the wells. In a March 5 email, BP spokeswoman Megan Baldino told Petroleum News that

BP also told the commission that, with the advent of high-precision GPS equipment, the company had been monitoring the exact surface elevations of well heads in the field since 2011.

BP is working with AOGCC to comply with the agency's order.

Three incidents

The AOGCC inquiry follows three recent loss of well integrity incidents in the field. Two of these incidents, in April 2017 and December 2018,

see WELL CHECKS page 12

NATURAL GAS

CINGSA order is out

RCA declines gas storage facility pre-approval request for reliability upgrades

By ALAN BAILEY

Petroleum News

The Regulatory Commission of Alaska has turned down a request by Cook Inlet Natural Gas Storage Alaska for pre-approval of the technical prudence of some proposed modifications to the CINGSA gas storage facility on the Kenai Peninsula. CINGSA has proposed the modifications to enhance the reliability of the facility by eliminating some single points of failure.

The idea was that, by obtaining pre-approval of the justification for the work, CINGSA would reduce the risk of spending money on the modifications and then being prohibited by the commission from recovering the estimated \$41 million cost through the rates that CINGSA charges its customers

CINGSA wants to drill two new wells, to reduce a high level of dependence on a single well that now accounts for about 44 percent of the deliverability of the facility's five wells.

for gas storage services.

CINGSA wants to drill two new wells, to reduce a high level of dependence on a single well that now accounts for about 44 percent of the deliverability of the facility's five wells. The company also wants to install an additional gas dehydration train and install a new turbine gas compressor.

see CINGSA ORDER page 11

NATURAL GAS

LNG shuffle goes on

Seven gas producers, accounting for 20% of Canada's gas output, form consortium

By GARY PARK

For Petroleum News

Another of British Columbia's hoped-for LNG projects has gone up in smoke, leaving only one survivor from the wreckage out of more than 20 active proposals only three years ago.

But out of the ashes a fresh scheme is taking shape involving a partnership of three identified companies and seven other natural gas producers, representing a combined 20 percent of Canada's gas output and 40 percent of gas byproducts such as propane, butane and ethane.

The latest venture is led by Seven Generations Energy, Peyto Exploration and Advantage Oil & Gas, who are targeting LNG shipments that are

The consortium hopes to start operations by 2026, by which time LNG demand is forecast to outstrip supply. To achieve that target the partners would need to make a final investment decision by mid-2021.

endorsed by gas producers in British Columbia and Alberta.

Although the other seven players were not identified, Canadian Natural Resources, Canada's leading producer, and Encana, the third-largest producer, said they had not been involved in any negotiations.

see LNG SHUFFLE page 10

• NATURAL GAS

Revised ASAP gets Corps, BLM approval

In-state gas line project, the Alaska Stand Alone Pipeline, gets approval for final supplemental environmental impact statement

By KRISTEN NELSON

Petroleum News

The U.S. Army Corps of Engineers and the U.S. Department of Interior Bureau of Land Management on March 4 signed a joint record of decision for the Alaska Stand Alone Pipeline's final supplemental environmental impact statement.

ASAP is a project of the Alaska Gasline Development Corp., an independent public corporation of the state.

"This Joint Record of Decision and the federal permits for ASAP demonstrate ratification of the environmental and engineering aspects of a trans-Alaska natural gas project and support AGDC's efforts to bring Alaska's North Slope natural gas to market," AGDC said in a March 4 statement. "Because ASAP and Alaska LNG share a common path for 80 percent of Alaska's LNG pipeline route, this permit and the underlying data will help the Alaska LNG project efficiently advance through the federal permitting process."

The federal agencies said the ASAP project would

The federal agencies said the ASAP project would include a 733-mile long natural gas pipeline from Prudhoe Bay on the North Slope to the Enstar distribution system near Big Lake, and a 30-mile lateral line to Fairbanks.

include a 733-mile long natural gas pipeline from Prudhoe Bay on the North Slope to the Enstar distribution system near Big Lake, and a 30-mile lateral line to Fairbanks. ASAP is designed to provide affordable natural gas from the North Slope to Alaskans and is designed to bring natural gas to Fairbanks and Anchorage, the state's major population centers, as well as to other communities along the route.

The Corps published a final EIS for ASAP in October 2012, but in July 2014 it received a revised application permit application from AGDC identifying material sites, access roads, supporting infrastructure and proposed revisions to the project to increase efficiency. The Corps pre-

pared a draft and final SEIS in compliance with the National Environmental Policy Act. The final SEIS was published in the Federal Register June 22, 2018.

AGDC will receive a Department of Army permit for discharge of dredged and fill materials into waters of the U.S. Compensatory mitigation is required.

The project requires a 299-mile right of way through federal lands which will be authorized by BLM. ASAP also crosses more than 400 miles of state land.

ASAP is the current version of the bullet line, envisioned in the early 2000s as a way to deal with what was then a projected shortfall in natural gas in Cook Inlet, and the high costs of fuel in the Interior.

More recently AGDC has characterized ASAP as a backup plan, should a larger project not be built. Currently AGDC is pursuing the Alaska LNG project, which would move large volumes of natural gas to Cook Inlet where it would be liquefied for sale and shipment as LNG. ●

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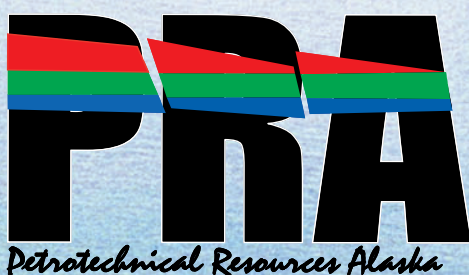
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• EXPLORATION & PRODUCTION

January ANS up marginally from December

Production averaged 537,493 bpd, up 0.4 percent from 535,255; largest increases from Nikaitchuq, Milne Point, Greater Mooses Tooth

By KRISTEN NELSON
Petroleum News

Alaska North Slope production — crude oil and natural gas liquids — averaged 537,493 barrels per day in January, up 0.4 percent from a December average of 535,255 bpd, but down 1.3 percent from a January 2018 average of 544,305 bpd.

Crude averaged 481,178 bpd, natural gas liquids 56,316 bpd, compared to January 2018 when crude averaged 491,865 bpd and NGLs 52,438 bpd (crude down 2.2 percent, year-over-year, NGLs up 7.4 percent, with the largest increase in NGLs, 8.5 percent, at the BP Exploration (Alaska)-operated Prudhoe Bay field, the Slope's largest and longest producing field).

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

Nikaitchuq

The largest month-over-month increase was at Eni's Nikaitchuq field, which averaged 18,375 bpd in January, up 99.6 percent, 9,170 bpd, from a December average of 9,205, but down 3.9 percent from a January 2018 average of 19,117 bpd. This increase is a return to a more normal level of production at Nikaitchuq, where production started to drop last summer, reaching a low of 6,553 bpd in November when there were only 10 wells operating. By December, the number of wells producing crude was back up to 26 wells at the field (25 this January), compared to 27 in January 2018.

Eni told the Alaska Department of Natural Resources' Division of Oil and Gas in July that the subsea flowline between the Spy Island drill site and Oliktok Point needed to be repaired and said it would use a push-pull methodology to install a 10-inch repair sleeve within the 14-inch produced fluids line, with shutdown of the flowline and Spy Island wells projected for 30 to 45 days during the repair.

When the field was down to 10 producing wells in November those wells were all on the Oliktok Point pad.

Milne Point, Greater Mooses Tooth

At the Hilcorp Alaska-operated Milne Point field, January production averaged 22,385 bpd, up 6.2 percent, 1,311 bpd, from a December average of 21,075 bpd, and up 9.7 percent from a January 2018 average of 20,407 bpd.

The other major month-over-month increase was at ConocoPhillips Alaska's Greater Mooses Tooth in the National Petroleum Reserve-Alaska, where production began in early October. In January the

field averaged 12,077 bpd, up 9.6 percent from a December average of 11,023 bpd. The new field is currently producing from two wells.

The Hilcorp-operated Northstar field averaged 11,890 bpd in January, up 6.3 percent, 699 bpd, from a December average of 11,191 bpd, and down 0.6 percent from a January 2018 average of 11,962 bpd. Production included 8,768 bpd of crude and 3,122 bpd of NGLs.

Badami, operated by Glacier Oil and Gas subsidiary Savant Alaska, averaged 2,323 bpd in January, up 25.6 percent, 473 bpd, from a December average of 1,850 bpd and up 230.1 percent from a January 2018 average of 703 bpd. Badami production began to increase substantially last May when the B1-07 well came online; in January that well alone accounted for 1,604 bpd, 69 percent of the field's production.

The Hilcorp-operated Endicott field averaged 7,518 bpd in January, up 1.1 percent, 84 bpd, from a December average of 7,434 bpd and down 3.4 percent from a January 2018 average of 7,786. Endicott production included 6,583 bpd of crude and 935 bpd of NGLs.

Month-over-month declines

The largest per-barrel month-over-month decline was at the ConocoPhillips-operated Kuparuk River field, which averaged 105,984 bpd in January, down 4.6 percent, 5,063 bpd, from a December average of 111,047 and down 8.9 percent from a January 2018 average of 116,280 bpd.

In addition to the main Kuparuk pool, Kuparuk produces from satellites at Meltwater, Tabasco and Tam, and from West Sak.

ConocoPhillips' Colville River field averaged 53,527 bpd in January, down 5.9 percent, 3,352 bpd, from a December average of 56,879 bpd and down 19.3 percent from a January 2018 average of 66,308 bpd.

In addition to oil from the main Alpine pool, Colville production includes satellite production from Fiord, Nanuq and Qannik.

Point Thomson, operated by ExxonMobil Production, averaged 9,490 bpd of condensate in January, down 11.5 percent, 1,235 bpd, from a December average of 10,725, but up 452.7 percent from a January 2018 average of 1,717 bpd. The field came online in April 2016 with facilities capable of producing 10,000 bpd of condensate. The company has had technical problems with compressors at the field, required for reinjection of natural gas into the high-pressure field. Production was down over the summer and appeared to normalize in the 10,000-bpd range in November.

Eni's Oooguruk field, acquired from Caelus Alaska at the beginning of the year,

averaged 9,336 bpd in January, down 5.8 percent, 573 bpd, from a December average of 9,909 and down 29.2 percent from a January 2018 average of 13,191 bpd.

Prudhoe Bay, operated by BP Exploration (Alaska), averaged 284,588 bpd in January, down 0.1 percent, 330 bpd, from a December average of 284,918 bpd and down 0.8 percent from a January 2018 average of 286,834 bpd. Production volumes include an average of 232,329 bpd of crude and 52,259 bpd of NGLs.

In addition to Prudhoe oil, production from the Prudhoe Bay field includes other pools: Aurora, Borealis, Lisburne, Midnight Sun, Niakuk, Polaris, Point McIntyre, Put River, Raven and Schrader Bluff.

Cook Inlet

Cook Inlet production averaged 15,048 bpd in January, down 7 percent, 1,139 bpd, from a December average of 16,187 and down 5 percent from a January 2018 average of 15,832 bpd.

Hilcorp's Beaver Creek field averaged 482 bpd in January, down 33.4 percent, 241 bpd, from a December average of 723 bpd but up 447.2 percent from a January 2018 average of 88 bpd. Hilcorp did a re-drill, the 5RD2 well, which came online in November, kicking up production in that month to 904 bpd from an October average of 71 bpd.

Hilcorp's Granite Point averaged 2,674 bpd in January, down 1 percent, 28 bpd, from a December average of 2,702 bpd and down 11.6 percent from a January 2018 average of 3,025 bpd.

Hansen field, the Cosmopolitan project, operated by BlueCrest, averaged 1,425 bpd in January, down 6.5 percent, 98 bpd, from a December average of 1,523 bpd and up 356.7 percent from a January 2018 average of 312 bpd. The field is currently producing

from three wells; in January 2018 there was only one well in production at the field; by February there were two wells; a third came on in September. This January BlueCrest had three wells in production at the field.

Hilcorp's McArthur River field, Cook Inlet's largest, averaged 5,151 bpd in January, down 1.3 percent, 65 bpd, from a December average of 5,216 bpd and down 1 percent from a January 2018 average of 5,205 bpd.

Middle Ground Shoal, another Hilcorp field, averaged 1,449 bpd in January, down 0.3 percent, 5 bpd, from a December average of 1,453, and down 7.4 percent from a January 2018 average of 1,565 bpd.

Redoubt Shoal, operated by Glacier Oil and Gas subsidiary Cook Inlet Energy, averaged 981 bpd in January, down 25.1 percent, 328 bpd, from a December average of 1,310 and down 22.9 percent from a January 2018 average of 1,272 bpd.

Hilcorp's Swanson River field averaged 1,053 bpd in January, down 16.3 percent, 204 bpd, from a December average of 1,258 bpd and down 34.2 percent from a January 2018 average of 1,600 bpd.

Trading Bay, also operated by Hilcorp, averaged 1,382 bpd in January, up 1.9 percent, 26 bpd, from a December average of 1,357 and down 22.3 percent from a January 2018 average of 1,779 bpd.

West McArthur River, operated by Glacier subsidiary Cook Inlet Energy, averaged 451 bpd in January, down 30.1 percent from a December average of 646 bpd and down 54.2 percent from a January 2018 average of 986 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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• UTILITIES

MEA worried about transmission company

Izzo writes to RCA saying that ART's certificate application is premature and that a due diligence review needs to be done first

By **ALAN BAILEY**
Petroleum News

Tony Izzo, CEO of Matanuska Electric Association, has filed a letter with the Regulatory Commission of Alaska, expressing MEA's concerns about a new Railbelt electricity transmission company, Alaska Railbelt Transmission LLC, or ART, that has recently filed with the commission for a certificate of public convenience and necessity.

As previously reported in Petroleum News, ART wants to take over the planning, operation, maintenance, upgrading

and financing of the electricity transmission network that spans the Railbelt region. The idea is to gain efficiencies from unified operation of the system and to facilitate the financing of future grid upgrades.

Izzo said that, while MEA remains committed to the concept of having a single transmission company to operate the grid, the ART concept is deficient and premature. The company's certificate



TONY IZZO

request should be rejected, Izzo wrote.

MEA has been working cooperatively with the other Railbelt electric utilities on the transmission company concept, Izzo wrote. However, after an initial presentation of the certificate application and other ART documentation on Dec. 7, MEA had proposed a due diligence review of the ART plan. And, when none of the other utilities expressed interest in participating in this study, MEA embarked on the study by itself, indicating that the due diligence review should be complete by April.

Certificate application filed

Nevertheless, Homer Electric Association, Municipal Light & Power, Golden Valley Electric Association, the City of Seward and American Transmission Co. have formed ART and have filed the certificate application. American Transmission Co., or ATC, a Wisconsin transmission company, has been assisting the Railbelt utilities in figuring out how a transmission company could be implemented in the Railbelt.

ART is a for-profit company, with ATC as its largest shareholder. Revenues would come from fees charged for use of the transmission system.

Chugach Electric Association, the other Railbelt electric utility, has also not yet signed up for ART involvement — it is still conducting its own due diligence prior to seeking board approval for its participation in the new company.

MEA has several concerns about ART, including its funding mechanism, and its status with regard to the operation of some transmission assets such as the assets used for the transmission of power from the Bradley Lake hydropower facility on the Kenai Peninsula. In addition, Chugach Electric is in the process of purchasing ML&P: Currently ML&P is a partner in ART, while Chugach Electric is not. Izzo also said that MEA believes that there are better business models for the transmission company than the model advanced by ART. ●

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CORRECTION

Enstar gas supply sources

Articles about the interruption of Furie Operating Alaska's gas supplies for Enstar Natural Gas Co. in the Feb. 3 and Feb. 24 issues of Petroleum News incorrectly stated that Buccaneer Alaska supplies some gas to Enstar. Although the Enstar tariff does list a Buccaneer gas supply agreement as part of the utility's firm gas supplies, that contract was taken over by AIX Energy after Buccaneer went out of business in 2014.



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EXPLORATION & PRODUCTION

US drilling rig count down 9 to 1,038

The number of rigs drilling for oil and natural gas in the U.S. was down by nine the week ending March 1 to 1,038.

Last year at this time there were 981 active rigs.

Houston oilfield services company Baker Hughes reported that 843 rigs targeted oil (down 10 from the previous week) and 195 targeted natural gas (up one).

The company said 67 of the U.S. holes were directional, 911 were horizontal and 60 were vertical.

Among major oil and gas producing states, California was up by three rigs and Louisiana was up by one.

Colorado and Pennsylvania were unchanged.

New Mexico, North Dakota and Wyoming were each down by one rig.

Alaska and Oklahoma were each down by two rigs.

Texas, the most active state with 503 rigs, was down five from the previous week.

Baker Hughes shows Alaska with 11 active rigs, the same number as 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

Accumulate to drill; -\$40 for Yukon Gold

Permits in place to drill two Icewine wells in search of conventional oil next year; 88 Energy looking for farm-in partner

By **KAY CASHMAN**
Petroleum News

The busiest of 88 Energy Alaska Inc.'s companies during the North Slope's winter off-road drilling season of 2018-19 was Captivate Energy Alaska Inc. with the Winx 1 exploration well.

The coming year, spring 2019 through spring 2020, looks to be a little busier, involving a different one of three of 88E's North Slope acreage blocks, specifically drilling two wells for conventional oil with a new farm-in partner at Project Icewine and looking for a farm-in partner for a work program for Icewine's unconventional HRZ source rock resources.

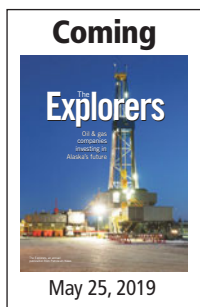
First a little background.

88 Energy Alaska is a subsidiary of Australian independent 88 Energy Ltd., a West Perth-based ASX and AIM listed firm. In addition to Captivate, 88E's Alaska arm has two other fully owned subsidiaries doing business in the northernmost state — Accumulate Energy Alaska Inc. and Regenerate Alaska Inc.

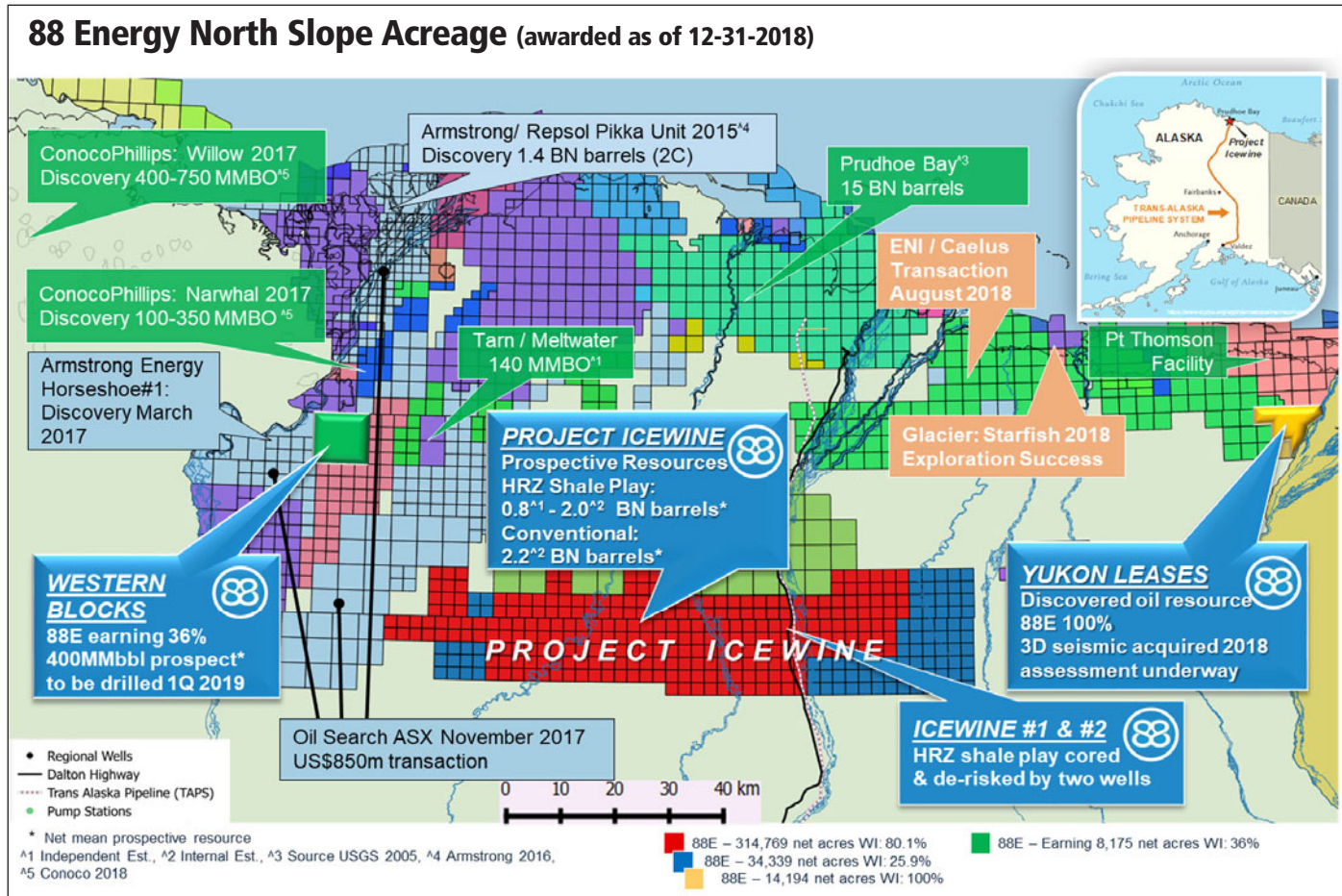
In its 2018 annual report released in February, 88E touted the state of Alaska's leasing program, noting the primary term for leases is now 10 years with a 16.5 percent royalty. The company also spoke of recent North Slope exploration successes as more and more missed oil is found and the resultant entry of new players such as Oil Search, one of Australia's leading oil companies.

"Bill Armstrong (who brought in Oil Search as a partner), one of North America's most successful explorers has described the source rocks of Alaska as unbelievably rich and prolific, having generated and expelled about 1.5 trillion barrels of oil. Yet only a small fraction of that 1.5 trillion barrels has been found, leaving vast potential remaining to be discovered. Almost all the remaining fields in Alaska are stratigraphic traps rather than anticlines and require a subtler exploration approach, which 88E is pursuing as it targets reservoirs adjacent to those same source rocks," 88E's Chairman Michael Evans wrote in the annual report.

88E's top executive in Alaska is Anchorage-based general manager of operations Erik Opstad, a state of Alaska



ERIK OPSTAD



certified professional geologist, who has worked the North Slope for 34 years, including a stint with BP in various roles and as a principal and general manager of Savant Alaska.

Morocco to Alaska

In late 2014 and early 2015, the young Tangiers Petroleum swapped the warm waters off Morocco for Alaska's onshore Arctic, changing its name to 88 Energy during the same period.

In November 2014, Tangiers joined forces with Burgundy Xploration, the agent and high bidder on almost 87,000 acres in the state of Alaska's North Slope areawide lease sale that year. Tangiers took an 87.5 percent interest in the leases, which the partners named Project Icewine, today operated by Accumulate.

Since that time 88 has expanded Icewine to approximately 525,000 gross contiguous acres (349,108 net).

Both the Dalton Highway, providing year-round operational access, and the 800-mile trans-Alaska oil pipeline run through the leases, which lie south of the Prudhoe Bay unit.

Yukon Gold expands

The company diversified its North Slope portfolio in 2017 by successfully bidding on 14,194 gross contiguous acres on state land on the eastern North Slope, adjacent to the ANWR 1002 area. The Yukon Gold Block included an historic oil discovery, the Yukon Gold 1 exploration well. Operated by Regenerate, 88E

holds a 100 percent working interest in this acreage.

In a state areawide lease sale in November 2018 Regenerate bid on an additional contiguous lease of about 1,920 acres, which brought its Yukon Gold position to approximately 16,114 acres.

Third block to west

In June 2018, 88E picked up a third acreage block, referred to internally as its Western Block, entering into an agreement with Great Bear Petroleum Ventures II LLC (now merged with newcomer

see **EXPLORERS PREVIEW** page 6

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continued from page 5

EXPLORERS PREVIEW

Pantheon Resources Plc) to acquire the majority working interest in four state leases — ADL 391718, 391719, 391720 and 391721.

Also subject to the agreement was a consortium involving Captivate, Otto Energy Ltd. and Red Emperor Ltd.

The agreement included drilling the Winx 1 exploration well on a lease to the east of, and adjacent to, the Horseshoe 1/1A well lease, a 2017 oil discovery by operator Armstrong Energy and partner Repsol.

Horseshoe extended the proven Nanushuk play fairway some 20 miles south of the Pikka unit where the initial discovery had been made.

“Internal modelling suggests that break-even development price is now less than \$40 a barrel.” —88 Energy, Yukon Gold development next to ANWR 1002 area

In payment the consortium had to provide a performance bond to the state of Alaska for \$3 million; drill the exploration well by May 21, 2019; free-carry Great Bear for a 10 percent working interest for the initial test well; cover all associated costs such as permitting, an 11-mile ice road, an ice pad, and production testing; as well as pay Great Bear \$1 million.

The consortium also gave Great Bear, now Pantheon, a back-in right to acquire an additional 10 percent working interest prior to the spud of the initial test well by paying the pro rata share of all costs of the initial test well, including all associated costs, or if exercised within six months of completing the initial test well by paying 200 percent of the pro rata share of all costs.

Otto said it is covering 25 percent of the well costs to earn a 22.5 percent working interest in the leases. 88E's Captivate has a 36 percent interest and Red Emperor 31.5 percent. If Pantheon chooses to exercise its option to increase its ownership to 20 percent, those percentages will change.

Activity at Icewine, conventional

88E's Accumulate is pursuing both conventional and unconventional oil resources at Icewine. The Icewine 3-D seismic survey (approximately 480 km², or 185 square miles) targeting conventional resources was completed in March 2018 identifying several large prospects and leads previously identified on 2-D.

In August 2018, a revision of Icewine's conventional portfolio was announced “with multiple leads promoted to drillable prospects,” 88E said, noting a gross mean prospective resource, unrisks, of 2 billion barrels across the Icewine acreage (1.5 billion barrels net); an increase of 50 percent from the previous estimate.

In its year-end 2018 report 88E said Project Icewine 3-D “seismic inversion data was substantially complete at year end with discrete three-dimensional geobodies

delineated in the Schrader topset play and the Torok slope and basin floor fan play. The 3-D seismic inversion calibrated by updated rock trending models highlighted better than anticipated reservoir potential within the Torok.”

Permitting is in place to drill two exploration/appraisal wells in the winter drilling season of 2019-20.

The Project Icewine conventional portfolio farm out campaign started in mid-2018 with a data room opening. 88E said it expected to announce a new partner in the first half of 2019.

Activity at Icewine, unconventional

The Icewine 1 well in 2015 and the follow-up appraisal Icewine 2 well in 2017, both drilled from the Franklin Bluff gravel pad off the Dalton Highway, yielded positive results for unconventional oil and gas.

Rock core from the Icewine 1 well demonstrated a “liquids rich resource play” in the HRZ, a prolific North Slope oil source rock.

88E said the partners believe Icewine 2 results supported potential economic viability of the HRZ source rock play “and are within the range of outcomes achieved at other early stage unconventional plays, despite not achieving a flow rate that is representative of the capability of the reservoir.”

Work at Icewine 2 included acquisition of a more sophisticated logging suite to complement the core obtained from Icewine 1. Results from the well “provided the requisite data to confidently design a horizontal well with a multi-stage stimulation that can access the entire height of the formation,” 88E said in July 2018.

Icewine 2 was suspended to allow future use of the wellbore, including a horizontal sidetrack with multi-stage stimulation.

Oil and gas service company Baker Hughes was then engaged, “bringing global experience from both long-standing and burgeoning unconventional plays to provide integrated geological, structural, petrophysical, and geomechanical interpretations for evaluation of the HRZ shale” source rock, 88E said.

Baker Hughes has recommended several new state-of-the-art lab tests to augment the current body of work.

88E launched a farm-out process in third quarter 2018 that is expected to yield announcement of a third partner to fund a work program for unconventional oil and gas by the end of third quarter 2019.

Activity at Yukon Gold

Yukon Gold, on state land adjacent the border of the ANWR 1002 area, includes an historic discovery well, the Yukon Gold 1 drilled by BP in 1993. Per the state of Alaska, recoverable reserves are 120 million barrels of oil. (In its 2018 annual report 88E said, “Provisional 3-D seismic mapping delineated 90 million barrels of oil of prospective oil resource to the company, net mean unrisks.”)

In March 2018, Regenerate awarded a seismic contract to SAExploration to acquire 100km² (roughly 39

“The 3-D seismic inversion calibrated by updated rock trending models highlighted better than anticipated reservoir potential within the Torok.” —88 Energy, Project Icewine

square miles) of 3-D seismic, over the Yukon Gold leases. The fast-tracked seismic acquisition was completed April 1, 2018.

The data allowed an assessment of the volumetric potential of the untapped Yukon Gold oil discovery, as well as the broader lease position.

Processing and mapping were done to assess the resource associated with three sand bodies. The largest of these was the Cascade prospect, which 88E said contained approximately 92 percent of the “preliminary mapped resource” on the Yukon leases. The up-dip portion of the prospect was clearly identified as a channelized feature and is likely to contain thicker sands of higher quality, 88E said.

Cascade was “interpreted to have been intersected in a down-dip distal location by the vintage Yukon Gold 1 oil discovery well.” That well also “discovered two oil saturated sands in the Canning formation with porosities exceeding 18 percent,” 88E said, noting a Brookian turbidite fan play, with additional prospectivity mapped with 3-D seismic within the Staines tongue topset play.

“Up until the recent commissioning of infrastructure at the nearby Point Thomson gas/condensate/oil field in 2016 (operated by ExxonMobil), an accumulation of this size and location would have been considered stranded,” 88E said. “Internal modelling suggests that break even development price is now less than \$40 a barrel.”

In-house evaluation continued through 2018. Plans for the next year, spring 2019 through spring 2020, have not yet been announced.

Western Block drilling

Technical evaluation and 3-D seismic interpretation of the Western Block by Otto identified an oil prospect in the successful Nanushuk formation, leading 88E's Captivate and its partners to test an extension of the play's fairway with the Winx 1 well in first quarter 2019, four miles east of Horseshoe 1/1A.

The well targeted stacked Brookian and deeper objectives with a gross mean unrisks prospective resource of 400 million barrels of oil, 88E said.

“The Western Block transaction represents a significant opportunity for 88E shareholders to gain exposure to one of the most prospective oil plays available globally,” David Wall, managing director of 88E, said when the deal with Great Bear was announced.

On March 4, Otto's Matthew Allen told Petroleum News there “are no forward plans for 2020 at this stage.” ●

Note: All sums in the above article are in U.S. dollars.

Contact Kay Cashman
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• GOVERNMENT

Fighting a regulatory threat in Canada

Provinces, industry wage rearguard battle against federal legislation they say would add to delays, shrink investment in country

By GARY PARK

For Petroleum News

Alberta, Saskatchewan and Newfoundland — Canada's three oil-rich provinces — and the energy industry are waging a last-ditch campaign to smother what many view as the most sweeping, aggressive and threatening federal legislation in recent decades.

But their hopes of overhauling Bill C-69, the Impact Assessment Act, which now rests with Canada's largely powerless, appointed Senate, face a deadline of May 9 to propose substantive changes to legislation which has undergone 136 amendments since it was introduced in the elected House of Commons just over a year ago.

The legislation fulfills a campaign promise by the Liberal government of Prime Minister Justin Trudeau to rewrite the balance between resource development and protection for the environment.

NEB would be replaced

It would replace the National Energy Board with a Canadian Energy Regulator, which would be required to take additional factors into account, including contributions to sustainability and impacts on climate change, Indigenous communities, public health and the economy, causing some to label the bill as "anti-pipeline."

A study by the C.D. Howe Institute, an independent think tank, said the bill risks "significantly prolonging the assessment process," instead of the government's declared goal of speeding up reviews and making their approval criteria clearer for oil and gas extraction projects, mines, pipelines and power lines.

The institute said the legislation "looks likely to worsen Canada's present disease" of plummeting capital investment for major resource ventures which has "plunged" by roughly C\$100 billion in 2017 and 2018, when 37 projects worth C\$77 billion were cancelled.

Annual capital spending on energy projects was down C\$50 billion in 2018, from a peak in 2014.

C.D. Howe said that the changes would open the door to regulatory hearings for thousands of well-funded inter-

It also warns that elected legislators would have the final say on almost every project, unlike the existing regime which confines final cabinet approval to those projects that are found to have significant environmental impacts.

veners, "prolonging the assessment process."

Final say to legislators

It also warns that elected legislators would have the final say on almost every project, unlike the existing regime which confines final cabinet approval to those projects that are found to have significant environmental impacts.

In her appearance before a Senate committee, Alberta Premier Rachel Notley rolled out a series of proposed amendments, arguing that "we can't swap one broken system for another ... we can't build trust with more investor uncertainty."

She told reporters her government does not want to see investments in major petrochemical projects "caught up in duplicative regulatory regimes that scare away the investors we have worked so hard to attract."

Notley called for a "hard limit" of 730 days for projects to undergo agency assessments, instead of current procedures that often last four years or more.

Tim McMillan, president of the Canadian Association of Petroleum Producers, the industry's lead lobby group, said CAPP and the Alberta government are concerned that the federal government wants to expand its reviews into areas of provincial oversight, such as in-situ oil sands developments, gas-fired power generators, refining and upgrading facilities, provincial pipelines or offshore exploratory drilling.

Newfoundland Premier Dwight Ball said Bill C-69 "will increase the regulatory burden, costs and timelines without enhancing environmental outcomes." •

Contact Gary Park through publisher@petroleumnews.com

PIPELINES & DOWNSTREAM

RCA OKs Alpine-Brooks Range connection

The Regulatory Commission of Alaska said March 1 that it has approved an application filed by Alpine Transportation Co. for a connection permit for the Brooks Range Petroleum Corp. Southern Miluveach crude oil sales line to the Alpine Pipeline.

Alpine Transportation had requested approval by March 1 — and in lieu of that, had requested a temporary connection permit by that date.

The Brooks Range 6-inch sales line is an estimated 0.2217-mile line, running from the processing facility at the Mustang pad in the Southern Miluveach unit to a tie-in to the common carrier Alpine Pipeline near Kuparuk River unit drill site 2S.

Alpine Transportation estimated the cost of the tie-in at \$1.05 million, which will be paid by Brooks Range. Operating expenses related to the new connection equipment are some \$20,000 per year and will be included in the pipeline's rates.

RCA said Alpine Transportation and Brooks Range entered into a connection agreement in January 2018. The application for connection filed Nov. 16 is granted, as is the request for approval of connection agreement filed at the same time.

—PETROLEUM NEWS

ALTERNATIVE ENERGY

FERC issues EA for Igiugig hydrokinetics

The Federal Energy Regulatory Commission has issued an environmental assessment for a proposed in-river turbine electrical power generation pilot project for the village of Igiugig, near the western end of Lake Iliamna in southern Alaska. The EA, which comes in response to a FERC license application by Igiugig Village Council, has determined that the project would not significantly impact the quality of the human environment and does not, therefore, warrant the development of an environmental impact statement.

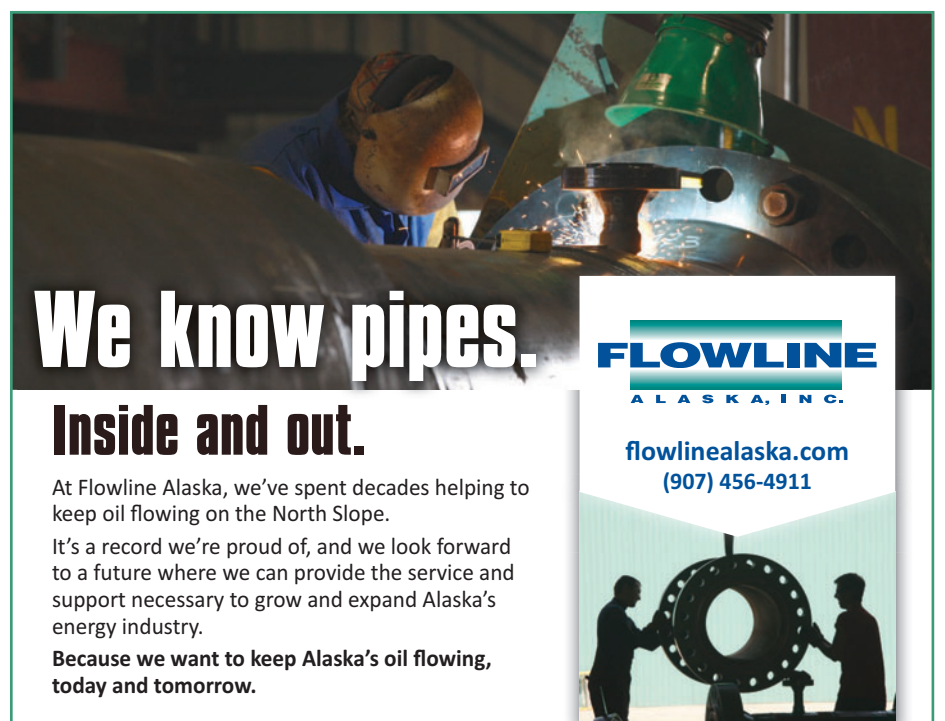
The proposal, which follows the testing of a hydrokinetic system in the village in 2014 and 2015, would involve the placement of underwater turbine generators with helical shaped turbine blades, anchored to the bed of the fast-flowing Kvichak River. Igiugig is situated adjacent to the river.

Ocean Renewable Power Co., a firm that specializes in hydrokinetic power generation systems, has been assisting Igiugig with its hydrokinetic venture. The company built and installed the prototype device used for the testing, with funding assistance from the U.S. Department of Energy.

The pilot project now planned would involve two phases. Phase one would entail installing a single turbine in the river in late June 2019. This device would be operated and monitored for a period of up to 12 months. The results of this testing would lead to a decision on whether to proceed to phase two. Phase two would expand the system by installing a second device in the river. Each of the turbine generators would have a 35-kilowatt rating.

The aim is to reduce the amount of fuel that the village has to purchase each year for its diesel power generators. Diesel fuel has to be delivered to the village by air or barge during the summer, for storing in a tank farm. The FERC EA says that, given the cost of the pilot project, the power from the project would cost considerably more than the village's current power supply. However, these costs are not indicative of costs that may be associated with future projects, the EA says.

—ALAN BAILEY





continued from page 1

AGDC FOCUS

will take next while making fiscally responsible reductions to align AGDC with the mission.

AGDC is reinitiating the stage-gate process, with stops at certain points in the timeline and decisions at those points on whether to move forward, Dubler told the board. Spending will be refocused on the core parts of the process, with the aim to complete the Federal Energy Regulatory Commission process. And on the technical side, he told the board, AGDC is recommitting to the original Alaska LNG project of a 42-inch pipeline as what makes the most economic sense, with transmission lines from Prudhoe Bay and Point Thomson, a three-train LNG plant at Nikiski and in-state offtake points.

As for a final investment decision, Dubler said that looks to be about two years out with FEED, front-end engineering design, needing to be completed first.

On the technical side, that team is looking at the design to see what could lower the total installed cost for the project, improving project economics, he said.

As for a final investment decision, Dubler said that looks to be about two years out with FEED, front-end engineering design, needing to be completed first.

On the commercial side, the economic model and financing options and strategies are under review.

Dubler said the proposed model was 75 percent investment by a single firm, but AGDC now feels that's too much investment by one firm and wants to diversify and expand investment.

He said updated costs and assumptions are being used to assess the project's economic viability; when such a study was done three years ago, the project wasn't viable.

And AGDC is continuing to foster commercial relationships with potential LNG buyers. Dubler said AGDC has heard concerns about changes in management and board membership and has been reassuring potential buyers.

AGDC

Created to study the feasibility of an in-state line from the North Slope, the

Alaska Stand Alone Pipeline, AGDC's purpose changed in 2014 to representing the state's interest in the Alaska LNG project, Dubler told the Senate Finance subcommittee. AKLNG was the producer-led effort to get natural gas to Fairbanks and Anchorage, and market LNG internationally.

The ASAP and AKLNG projects were funded in advance, he said, and annual appropriations were not needed. In 2016 the producers turned AKLNG over to the state and AGDC continued to work on both projects for the next two years. The ASAP project received a joint record of decision March 4 (see story in this issue).

In January newly elected Gov. Mike Dunleavy replaced four board members, Dubler said, and brought him onboard to refocus the corporation to determine if the project could meet economic hurdles without undue execution risk.

Dubler said he's looking at where the corporation is and where the project is, evaluating both technical and economic issues. If viable, AGDC will solicit world-class partners for FEED, front-end engineering and design.

The FERC process is underway, Dubler said, with the draft environmental impact statement originally expected in

February, and now rescheduled.

If the project doesn't look viable, we'll wind it up, Dubler said, close the corporation down and return remaining funds to the state's general fund.

AGDC will be in Juneau March 27 to provide a full status report on the project to the Resources Committee as required by law, he said.

The draft EIS is now scheduled for June, FERC said, with issuance of a notice of availability of the final EIS on March 6, 2020, followed by a 90-day federal authorization decision deadline of June 4, 2020.

FERC delay

FERC said in a Feb. 28 statement that its staff had revised the schedule for the completion of the EIS for AGDC's Alaska LNG Project. The previous schedule, issued Aug. 31, had indicated Nov. 8, 2019, would be the date for issuance of the final EIS for the project, but FERC said, "the forecasted schedule was based upon AGDC providing complete and timely responses to any data requests."

In partial responses to the data requests filed in January and February, AGDC said it would provide all remaining data in stages through July. "As a result, staff has revised the schedule for issuance of the EIS," FERC said, with the revised schedule based on AGDC meeting its commitment to provide data by the dates it has set.

The draft EIS is now scheduled for June, FERC said, with issuance of a notice of availability of the final EIS on March 6, 2020, followed by a 90-day federal authorization decision deadline of June 4, 2020.

The anticipated final order issuance had been Feb. 6, 2020, FERC said.

After issuance of the FERC notice of schedule change, AGDC said in a statement:

"FERC's comprehensive analysis of Alaska LNG now includes more than 150,000 pages of environmental and engineering data, including responses to more than 1,700 FERC queries submitted since AGDC initiated this permitting process twenty-two months ago. Previous FERC scheduling changes accelerated the permitting calendar, and we believe that today's revision does not affect the prospects for Alaska LNG. We look forward to working with FERC to complete this process and obtain the permits required to bring Alaska's North Slope natural gas to market."

Budget changes

Dubler told the subcommittee the proposed operating budget for fiscal year 2020 was a decrease of about \$250,000, with \$107,000 coming out of the corporation's travel budget. Dubler said the reduction in travel isn't expected to impact its business.

There is also a \$143,000 reduction to lease expenses. Dubler said the Houston office has been closed and the staff there cut to two, who will be working from home. At its Anchorage headquarters in the Calais Building, AGDC is giving up the entire sixth floor and consolidating onto the second floor. He said the Houston office was cleared out in January and AGDC has an agent attempting to sublease the space. Most of the sixth floor at the Calais Building has already been vacated he said, and AGDC has given notice on the board room on that floor.

—KRISTEN NELSON

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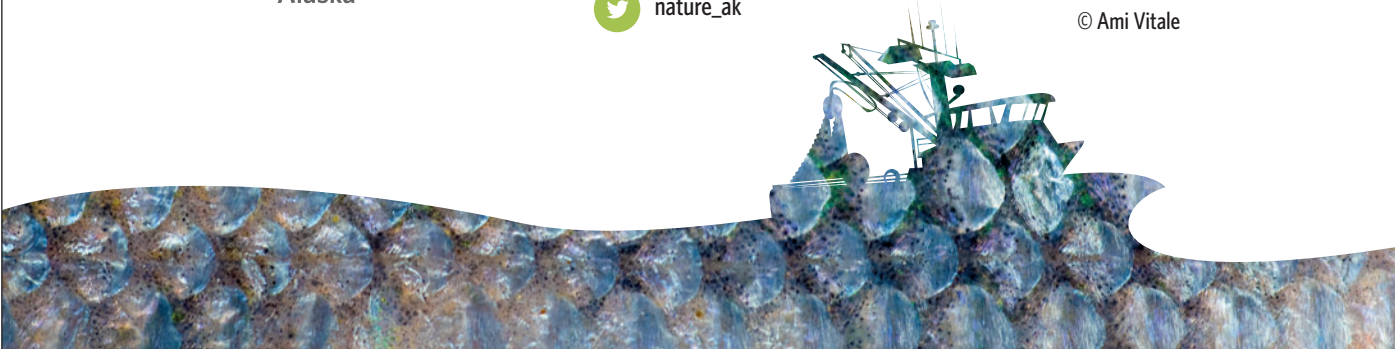
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INSIDER

original bids” by the state Division of Oil and Gas, which resulted in Regenerate winning with an offer of \$54.62 per acre compared to \$34.22 offered by Bachner and Forsgren.

The Yukon Gold leases include an historic oil discovery, Yukon Gold 1 exploration well, drilled by BP in 1993.

—KAY CASHMAN

Beckham named acting DOG chief

AS FIRST REPORTED BY SUZANNE DOWNING in Must Read Alaska on March 5, James “Jim” Beckham, deputy director of the state of Alaska’s Division of Oil and Gas, has been named acting director following the March 1

planned departure of Chantal Walsh on March 1.

Per Downing, (<http://mustreadalaska.com/oil-and-gas-division-has-beckham-as-acting-director/>) the Alaska “Department of Natural Resources will recruit and hire a new division director in the weeks ahead.”

As reported in Oil Patch Insider in Petroleum News’ Feb. 17 issue, Walsh left for personal reasons, as she is needed at Petrotechnical Resources of Alaska, or PRA, a consulting firm she and her husband Tom Walsh co-founded in 1997. The Must Read Alaska story was confirmed by Dan Saddler in a March 5 email to Petroleum News.



JIM BECKHAM

Saddler, DNR legislative liaison/communications director, said, “Jim will serve as acting director until such time as DNR starts the recruitment process, probably within a few weeks. Until the permanent job is advertised and recruitment begins, I can offer no thoughts on whether he is interested in, or being considered for, the permanent job.”

—KAY CASHMAN

Thar’s oil in them thar rocks!

THE JANUARY ISSUE of the Alaska Geological Society’s newsletter includes an article by long-time Alaska geologist Robert Blodgett about the presence of small

see INSIDER page 11

Petroleum news

Oil Patch Bits

Fluor awarded contract for recommissioning project

Fluor Corp. announced Feb. 26 that it was awarded an engineering, procurement and construction management services contract by SABIC for the recommissioning of its polyphenylene ether resin plant in Bergen op Zoom, the Netherlands. Fluor will book the undisclosed contract value in the first quarter of 2019.

“We are pleased to support SABIC with this important recommissioning project at the Bergen op Zoom site where Fluor has more than 30 years of experience of providing innovative solutions to the client,” said Simon Nottingham, president of Fluor’s Energy & Chemicals business in Europe, Africa and the Middle East. “Fluor’s proven track record in brownfield projects and construction-driven execution will minimize disruption at this complex operations site and provide cost and schedule certainty.”

SABIC announced the project last year, in response to high global customer demand for its unique NORYLTM resins, based on PPE resin technology. NORYL resins are SABIC’s proprietary family of modified compounds. Recommissioning the Bergen op Zoom PPE resin facility will provide customers with a second source of NORYL resins globally and affirms SABIC’s commitment to the European market and global customers who specify their NORYL resin material needs from Europe. When operational, the Bergen op Zoom facility is expected to add more than 40 percent global capacity over a 2017 baseline.

The 14-month project began in January 2019 led by Fluor’s Bergen op Zoom office and will be supported by Fluor’s Cebu office in the Philippines.



COURTESY FLUOR

Keel laid for new Foss Maritime tier IV vessel

Foss Maritime said Feb. 27 that it is continuing its ongoing fleet expansion program with the keel laying of the first of its new class of ASD 90 tugboats. Construction of the first of four Tier IV ASD 90 Tractor Tugs being built for Foss Maritime began with a keel laying at Nichols Brothers Boat Builders of Freeland, Washington.

In a ceremony on Feb. 25 the vessel keel was laid and welded before NBBB, Foss and other representatives and guests. The keel laying also marks the implementation of a new production line at NBBB, which will improve efficiencies to meet the accelerated four-boat order.

The ceremony began with NBBB welding a silver dollar into the keel, an old nautical tradition. This was followed by comments by representatives of both NBBB and Foss.

“The new tugs are designed to upgrade our fleet and improve the company’s ability to provide timely harbor and port services to a variety of customers,” said John Parrott, president and CEO of Foss Maritime. “By offering lower maintenance down time, greater operating efficiencies and lower emissions, these new tugs help expand our nearshore and offshore capabilities.”

Foss has an order for four of the new class of ASD 90 tugs, with an option for an additional six. Designed by Jensen Maritime Consultants of Seattle, and based on Jensen’s Valor tugboat design, the vessels will meet Tier IV standards, using high-efficiency catalytic after-treatment technology to reduce emissions.

Foss plans to operate the tugs on the U.S. West Coast, performing ship-handling duties within ports and harbors. Delivery of the first four vessels will begin in winter 2020.



COURTESY FOSS

Companies involved in Alaska’s oil and gas industry

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continued from page 1

LNG SHUFFLE

Operations by 2026

The consortium hopes to start operations by 2026, by which time LNG demand is forecast to outstrip supply. To achieve that target the partners would need to make a final investment decision by mid-2021.

The idea of producers joining forces has been under consideration for two years since a series of major LNG proposals started crumbling, said Cameron Gingrich, director of gas services at Solomon Associates.

However, he warned that new greenhouse gas emission rules being floated by the British Columbia government that would require future LNG projects to be powered by electricity rather than gas-fired plants could make a project uneconomic.

Gingrich said he was not surprised when ExxonMobil and its subsidiary Imperial Oil cancelled their LNG plans after the new emissions plan was announced, choosing instead to work on an LNG project in Texas.

No solo LNG ventures

Darren Gee, chief executive officer of Peyto, told the Financial Post that no one company is so large that it can consider a solo LNG venture.

He said the new partnership is hoping to revive one of British Columbia's mothballed ventures and eventually attract a larger partner with "enough capital to fund construction. We (the 10 producers) wanted to get the ball rolling."

The consortium has hired Greg Kist, president of the failed C\$36 billion Petronas-led Pacific NorthWest LNG proposal, as a consultant to explore options.

Also abandoned recently was the C\$28 billion, two-phase Aurora LNG project operated by Nexen, a subsidiary of China National Offshore Oil Corp., which was awaiting a verdict on a British Columbia environmental assessment certificate, allowing it to start construction and start shipping up to 25 million metric tons a year by 2025.

Commodity analyst Martin King of GMP FirstEnergy said he was not surprised by the string of failures given the collapse of world LNG prices to US\$6 per million British thermal units when proponents were counting on capturing US\$14-\$18.

AltaCorp Capital data showed that Alberta gas was selling for only C\$2.28 per thousand cubic feet, compared with C\$11.88 in Japan.

Western Canadian gas prices have also faced worsening discounts in recent years compared with U.S. benchmarks at Nymex and Henry Hub, but there is a strong belief that an LNG export project on the British Columbia coast could secure a multiple of those prices in Asia.

Steelhead LNG delayed

The latest plan to stumble was Vancouver-based Steelhead LNG, which "ceased current project work" on its Vancouver Island project called Kwispaa LNG.

Steelhead Chief Executive Officer Nigel Kuzemko said the timing for a final investment decision, originally scheduled for 2020, has been delayed indefinitely.

He said Steelhead has now shifted its focus to building a natural gas pipeline from northeastern British Columbia gas fields to Vancouver Island.

Kuzemko said that if the pipeline attracts support from First Nations along its route there might be chance to revive Kwispaa.

Steelhead formed a partnership two years ago with the Huu-ay-aht First Nation and only four months ago announced applications had been filed with the British Columbia and Canadian environmental assessment agencies, having already obtained National Energy Board licenses to export 24 million metric tons a year.

In an open letter the Huu-ay-aht leadership said uncertainty around pipeline development in Canada has raised concern among industry participants and in financial markets. But the First Nation said it remains committed to creating employment and generating revenue opportunities for its community. ●

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TARIFF FILING

tors would counterbalance the fluctuating wind output, thus enabling the delivery of a firm and constant supply of electricity into GVEA's electricity grid. The propane systems would be colocated with buildings that would use the generated heat.

Cheap propane would come from Canada by barge and rail, Eco Green has said.

Qualifying facility

Eco Green claims that its proposed system would constitute a qualifying facility under the federal Public Utilities Regulatory Policies Act, or PURPA. As a qualifying facility the planned system would be entitled to a documented tariff from GVEA. And, so, Eco Green has applied to GVEA for a tariff while also applying to FERC for confirmation of qualifying facility status for the planned system. GVEA has petitioned the Federal Energy Regulatory Commission to turn down Eco Green's application.

GVEA is questioning whether the proposed system would, in fact, be a qualifying facility and wants to wait until FERC rules on the matter, before expending time and money on developing a tariff. The utility said that Eco Green has filed for tariffs for two different proposals in less than two months. GVEA had stopped work on preparing a tariff for the first proposal when it discovered that Eco Green had not applied to FERC for certification. Bill Rhodes, manager of Eco Green, has told Petroleum News

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that his company had applied for certification, but that the application had run aground, because the FERC application process could not technically handle two different types of power generation.

Eco Green has now applied to FERC in relation to its second project proposal using application procedures that the company understands will now work.

Larger scale proposal

In its RCA filing GVEA said that Eco Green's second proposal is for a much larger scale of system than the first. There would be 21 project components spread over 170 miles. The nameplate capacity of 147.8 megawatts would roughly equate to GVEA's average load, and the ability to deliver 100 megawatts of firm power would have a dramatic and disruptive impact on the utility's operations. The preparation of a tariff would entail considerable work, GVEA told the commission.

Rhodes has told Petroleum News that the upscaling of the project came in response to requests from civic leaders for heat for schools and government facilities. And an upscaling of the cogeneration system enables more wind power to be counterbalanced and hence firmed up, he added.

GVEA questions certification

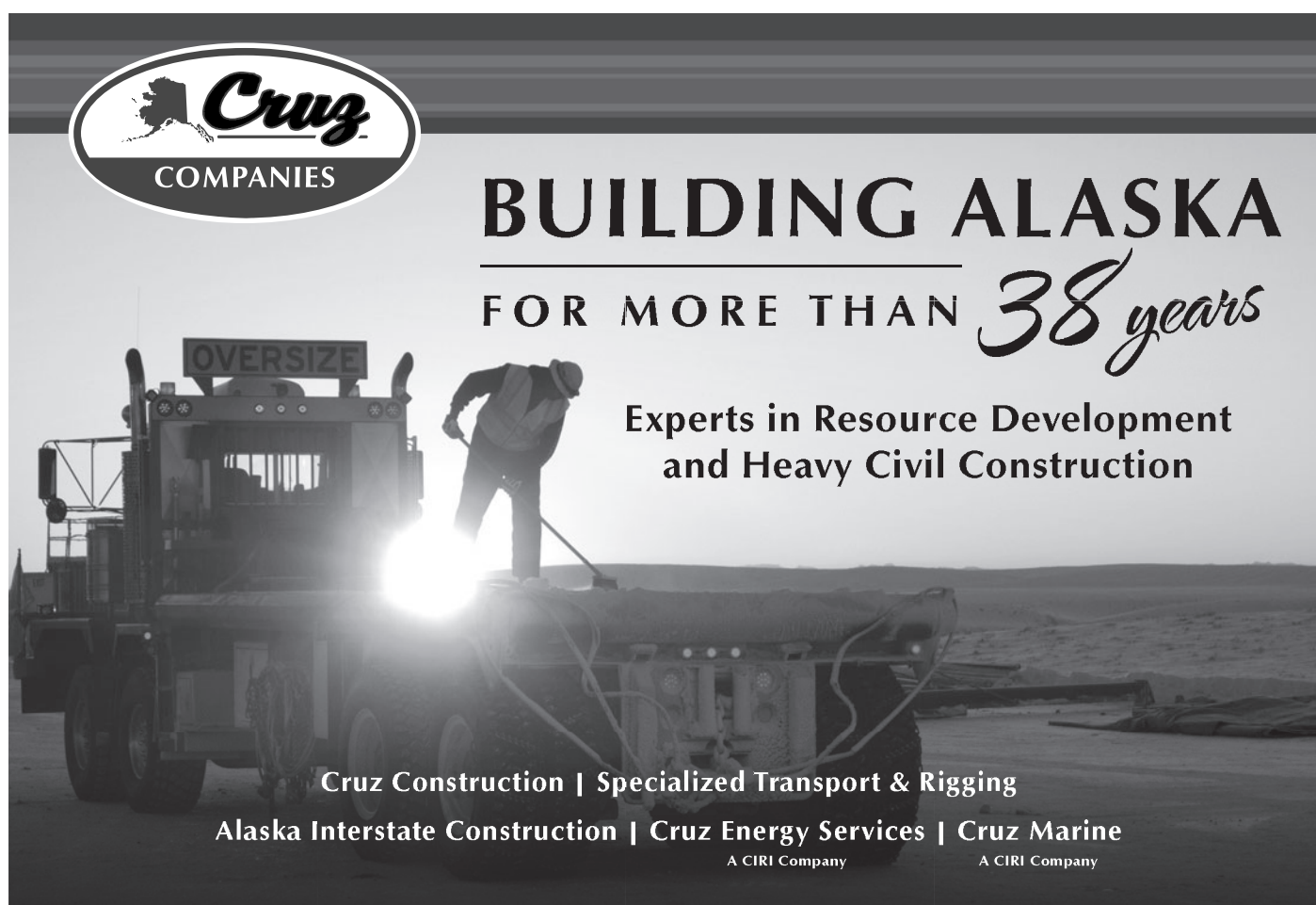
GVEA questions from several perspectives the certification of the proposed system as a qualifying facility. In particular, the system could be viewed as a series of generating facilities rather than a single facility, the utility told the RCA. The FERC certification criteria for wind farms and cogeneration systems are different. Moreover, to be a qualifying facility, output from the system must be for industrial, commercial, residential or institutional purposes, rather than simply for sale to an electric utility, GVEA argued. GVEA also questioned Eco Green's capability to build and operate a system of the envisaged scale.

Rhodes told Petroleum News that the specifications for the wind farm and the propane cogeneration units fit within the FERC parameters for a qualifying facility and that PURPA places no upper limit on the amount of cogeneration power that can be offered to GVEA. Thus each generation site, including the wind farm, would qualify under PURPA, as would the combined system, Rhodes said.

In terms of the credibility of the project, Rhodes commented that a power purchase agreement based on GVEA's avoided costs would be viable and that Alaska Environmental Power already has 10 years of experience of operating a wind farm, presumably referencing the company's existing smaller wind farm at Delta Junction.

—ALAN BAILEY

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CINGSA ORDER

Mixed response to proposals

Of the facility's customers, only Homer Electric Association has expressed outright opposition to the CINGSA proposal — HEA told the commission that, given CINGSA's track record of reliable and uninterrupted services since the facility went into operation in 2012, the upgrades are unnecessary. Chugach Electric Association and Municipal Light & Power have taken a neutral stance, neither opposing nor supporting the proposals. However, these two customers and the state attorney general's office of Regulatory Affairs and Public Advocacy argued that pre-approval of the technical prudence of the upgrades would not include pre-approval of the prudence of the cost of the project, nor of any mechanism for recovering that cost through gas storage rates: Any resulting rate increase would require separate RCA approval, after the project is completed.

Enstar Natural Gas Co. has supported the proposals. However, the commission expressed caution about Enstar's position, given that the utility is an affiliate of CINGSA and operates the storage facility on CINGSA's behalf. And, especially given that no other utilities had requested the CINGSA modifications, pre-approval of the modifications is not warranted, the commission determined. Instead, the commission recommended that CINGSA should offer enhanced reliability services through an open season, giving an opportunity to those utilities that want enhanced reliability to sign up while not burdening other utilities with additional costs.

However, the RCA did pre-approve one item in the package of proposed facility upgrades: a modification to one of the facility's wells to deal with a problem associated with water accumulation in the well, causing the well to be shut in. This upgrade is supported by CINGSA's customers and does not represent the addition of a new, redundant feature to the storage facility, the commission said.

Warehousing of gas

CINGSA enables gas and power utilities to warehouse gas during periods when they are able to obtain more gas than they actually need at the time. The utilities can then use this stored gas during periods of high gas and power demand, to meet any shortfall in gas supplies from gas producers. The storage facility also enables the deliverability rate of gas to be boosted, when heating and power use peaks during severe winter cold.

Gas is stored in what used to be a subsurface sand reservoir of the Cannery Loop gas field, south of the city of Kenai. The facility has five wells for the injection and retrieval of stored gas. Two compressors powered by reciprocating engines pump gas into the storage reservoir. A gas dehydration train removes water from retrieved gas, so that utility grade gas can be delivered into the gas transmission pipeline network.

Usage pattern

According to CINGSA's latest plan of development, filed with Alaska's Division of Oil and Gas on Feb. 26, monthly volumes of gas injected into storage in 2018 ranged from about 90 million cubic feet in January to 950 million cubic feet in August. Some gas was injected each month. Some gas was also withdrawn each month. Withdrawals ranged from about 57 million cubic feet in July to about 1 billion cubic feet in January.

CINGSA has previously suggested that the pattern of injection and withdrawal indicates that the utilities are using the storage facility for many purposes, rather than just the warehousing of excess summer produced gas for winter use.

RCA critique

As part of its critique of CINGSA's upgrade proposal, the RCA said that, besides CINGSA, there are other providers of gas deliverability in the Cook Inlet region, including gas producers, some of which have their own gas storage facilities. Moreover, the precedent agreements and associated service agreements for the CINGSA facility, agreed with the facility's customers, did not envisage the

construction of redundant features, such as additional wells beyond the original five-well design, nor of the installation of a second dehydration train. And there is no clause in storage service agreements or the tariff obligating CINGSA to enhance its facilities, the RCA said.

In addition, the definition of firm storage services in the CINGSA tariff is couched in terms of priorities over other service types, and not in terms of the service availability, the RCA commented. To justify a need for some unilateral change to CINGSA's services, it would be necessary to demonstrate that gas supply conditions or customers' reliance on those services have changed in a manner that warrants the modification. And it appears that the Cook Inlet gas supply situation is no worse than it was when CINGSA started up, and may even be better, the RCA said.

No compelling evidence

In terms of CINGSA's proposal to install a redundant dehydration train, RCA said that the company had failed to present compelling evidence that its current dehydration arrangements are inadequate. And, in response to CINGSA's proposal to drill two redundant wells, the RCA commented that to date the storage facility had never had to supply gas at the facility's maximum supply capacity. Moreover, CINGSA has not demonstrated that the facility's most productive well is likely to fail, such that two redundant wells are needed, the RCA said.

Nor does the installation of an additional gas compressor unit appear justified, the commission said.

"In conclusion, we are not convinced that CINGSA well performance is either so compromised, so outside the bounds of original expectations, or is so vitally necessary today, that a new standard of enhanced reliability is needed," the RCA said.

On the other hand, if an individual storage customer determines a need for improved security of service, that customer could request and pay for additional delivery service provisions, for which it would have right of use, the commission said. ●

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INSIDER

shelly fauna in the earliest Cambrian strata along the Beaufort Sea margin northwest of the ANWR 1002 area.

They appear to represent the earliest evolutionary experiments amongst sponges, mollusks, brachiopods, echinoderms, halkieriids and other faunal groups, Blodgett said. The earliest shelly fauna that existed before the appearance of trilobites later in the Early Cambrian, they are also referred to as the pre-trilobite fauna.

"Small shelly fauna have only just recently been recognized in a basement complex of Cambrian and possibly latest Neoproterozoic rocks present in the subsurface of an east-west trend of six wells along the Beaufort shoreline just west of the 1002 area," Blodgett said. "This trend represents a westward thinning wedge of Cambrian age orthoquartzites, clastic and carbonate (mostly dolostone) rocks that form the basement of what was termed 'The Six

Sisters' wells" by Blodgett and Steve Sutherland in a 2018 paper.

To read the rest of the article or for membership information contact the Alaska Geological Society, P.O. Box 101288 Anchorage AK 99510, or check on the web at <http://www.alaskageology.org>.

—KAY CASHMAN

Nuiqsut, enviros, sue over exploration

THE NATIVE VILLAGE OF NUIQSUT, Alaska Wilderness League, Center for Biological Diversity, Friends of the Earth, Natural Resources Defense Council and the Sierra Club are suing the U.S. Bureau of Land Management and the Department of the Interior in federal court over BLM's approval of ConocoPhillips Alaska's 2018-19 winter exploration program in the National Petroleum Reserve-Alaska.

The suit says BLM failed to fulfill National Environmental Policy Act requirements when it approved the winter 2018-19

winter exploration program for ConocoPhillips.

The suit asks for a declaratory judgment that defendants' approval of the winter exploration program was "arbitrary, capricious, and/or not in accordance with law" and asks that the record of decision approving the winter exploration program be vacated and that further exploration activi-

ties in NPR-A be enjoined "until BLM has complied with the requirements of NEPA."

Meredith Kenny, spokeswoman for ConocoPhillips Alaska, told Petroleum News in an email that the company's "winter exploration program is partially complete and remains in progress."

—KRISTEN NELSON



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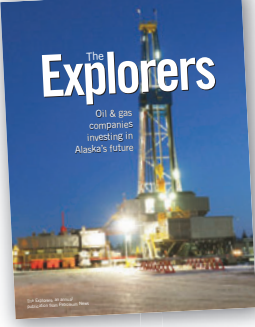
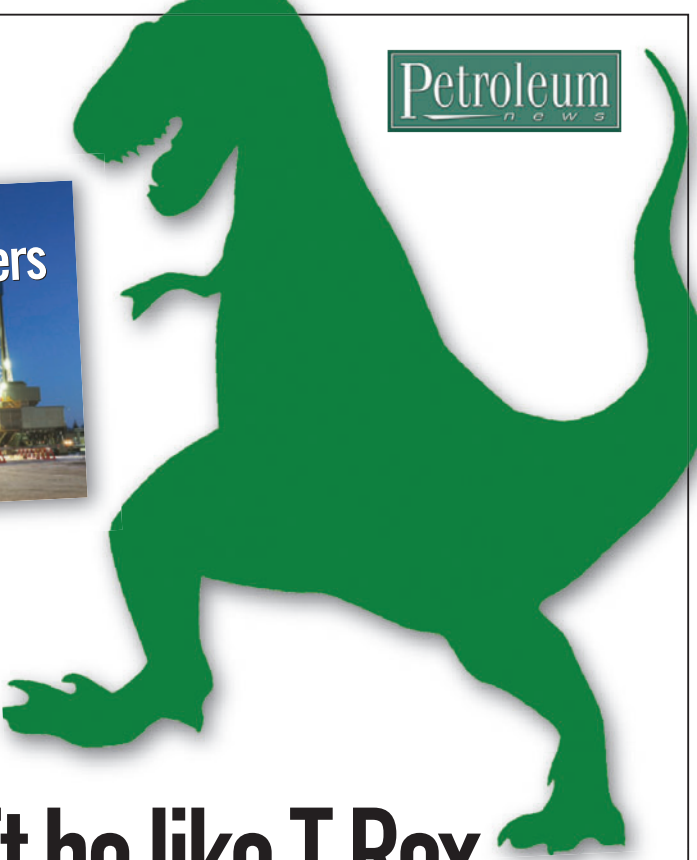
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WINX WELL

subsidiary Accumulate Energy Alaska Inc., Otto Energy and Red Emperor Resources — are drilling the well, with Great Bear Petroleum as the operator of record, although Accumulate is actually overseeing drilling.

Following major oil finds in the Nanushuk and Torok in recent years, these formations have become a focus of recent exploration. The Winx well is located close to the Pikka/Narwhal trend where some of the recent discoveries have been made. The well is situated about four miles east of the Horseshoe 1/1A exploration well, where Armstrong Energy discovered oil in the Nanushuk in 2017.

A March 1 release from 88 Energy indicated that the well had penetrated one “zone of interest” in the Nanushuk at depths between 4,460 and 4,530 feet. This zone exhibited weak to moderate oil shows but a potentially high water saturation. The findings appeared to represent the lower end of

commerciality, but further analysis is being conducted to fully evaluate the situation. Also, the well penetrated rocks called turbidites in the shallower Seabee formation, but found no oil shows there, the release said.

Primary Nanushuk target

A March 4 release said that drilling had continued through the primary Nanushuk target at depths between 4,667 and 4,901 feet, continuing down into the Torok. Penetration of the Nanushuk target resulted in elevated amounts of mud gas associated with oil shows. Data obtained from the drilling thus far is encouraging, especially since it appears comparable with data from “a nearby successful Nanushuk well,” the release says.

Red Emperor also expressed a tone of cautious optimism.

“These initial observations and interpretations, whilst encouraging, should be treated with some caution as additional data and analysis are required for further assessment and validation,” Red Emperor wrote in a March 4 release.

Torok target

Red Emperor said that the well had encountered the Torok at a depth of 4,913 feet and had penetrated a secondary target in the Torok at a depth of 6,052 feet. That target consisted of “topset sequence 4 sandstones.”

Well penetration of the Torok target resulted in elevated levels of mud gas, associated with oil shows and an elevated resistivity response from logging while drilling.

The planned wireline logging program will evaluate the potential of the Torok target as well as the Nanushuk. Otto Energy said that the logging should take about 10 days to complete. Depending on the results of the logging, the partners in the drilling project will decide whether “to proceed to stimulate and test the most prospective of the Nanushuk primary targets,” the March 4 88 Energy release said.

—ALAN BAILEY

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WELL CHECKS

involved wells on drill site 2, in which the wellheads rose, striking the structure of the wellhead housing. In both cases the resulting damage to the wellheads caused surface leakage of oil and gas. In the third incident, in March 2017, an injection well failed during mechanical integrity testing, with permanent damage to the casing string and, again, the release of fluids from the well to the surface.

During an AOGCC hearing on Feb. 13 BP presented evidence regarding the nature of the well failures and reviewed how the company’s well integrity program operates.

Subsidence induced stress

BP told the commission that the April 2017 incident, which involved the 02-03B well, resulted from the subsidence of the permafrost around the well bore, caused by the melting effect of warm fluids in the well. The well is of an unusual three-casing design, with the base of the surface casing in the permafrost. The subsidence-induced stress on the casing had caused the surface casing to detach and then rise upwards. At the time of the hearing the company had not completed its investigation of the December 2018 incident, but this incident, involving the 02-02A well, a well of the same design as the 02-03 well, appears to have the same cause and effect.

But although the 02-03 well was in use at the time of its wellhead failure incident, the 02-02 well had been shut-in for more than 12 years.

Retrieval and examination of the failed casing string from the March 2017 incident indicated that ice plugs had deformed and broken the well tubing, BP told the commission.

Subsidence monitoring

BP also told the commission that, with the advent of high-precision GPS equipment, the company had been monitoring the exact surface elevations of well heads in the field since 2011. This monitoring had revealed some surface subsidence at six pads, four of them in the west-

ern part of the field.

Following its investigation of the April 2017 incident, BP shut in 14 wells that have the same three-casing design as the well that failed.

“The small number of wells with this design are monitored in real-time, remain shut-in and their flowlines and wellhouse structures have been removed to prevent recurrence,” Baldino told Petroleum News. “BP remains committed to operating Prudhoe Bay in a safe, reliable and compliant manner.”

The company also investigated nine other wells with surface conductor bases in or close to the base of the permafrost, opting to shut in four of these wells on the basis that it was not possible to be certain of the wells’ safety.

The AOGCC said that BP is conducting studies into permafrost thaw behaviors on its well pads and plans a geotechnical study of drill site 2, to gain a better understanding of permafrost loading on well casings.

Well integrity management

As part of its findings, the AOGCC told BP that that the company’s well integrity management may not be sufficient to identify two-casing wells at risk from subsidence. Essentially, although the company has found no evidence that wells of this type are at risk of failure, the company has no evidence, either, that permafrost subsidence will not cause catastrophic failure, the commission wrote.

Moreover, although BP has developed a model for the failure of the 02-03 well, that model includes untested hypotheses and assumptions. For example, there are uncertainties regarding the significance of the placement of surface casing relative to the permafrost, the comparison of subsidence loads on different casing diameters, and the impact of different rock sequences with different rock properties in the permafrost zone, the commission wrote.

The AOGCC also wrote that the fact that the 02-02 well failed, despite having been shut in, demonstrates the shortcomings of BP’s model for the well failures.

Evidence needed

And, although BP’s understanding of the 02-02 well failure is incomplete, the planned abandonment proce-

dures for this well will prevent the company from recovering further evidence for gaining more insights into the well failure mechanism, the AOGCC wrote.

The AOGCC also said that, although there are slip joints in the surface casings of the two drill site 2 wells that failed, to accommodate some level of thaw related subsidence around the wells, there were no good engineering records regarding the design capabilities of these joints — the wells in question are old wells drilled during early development of the field. The commission also commented that, in the absence of wellhead subsidence measurements prior to 2011, there is the possibility of unknown, earlier subsidence that could have placed unknown stresses on the Prudhoe Bay well casings.

Well interventions ordered

In the light of its findings, the AOGCC has ordered BP to conduct some well interventions in 2019, to recover production tubing and various casings and conductors from at least two of the three-casing wells, including the 02-02 well and other wells that will be determined through negotiations between the commission and BP. The company must also, within the 2019-20 well plugging and abandonment schedule, conduct rig interventions on at least two wells with two-casing designs, to enable an understanding of the effects of well surface casing subsidence. The target wells for this work will be selected by AOGCC in consultation with BP.

Permit applications for the well work must include specifications of data acquisition and analysis to be performed — there are deadlines for reporting on the results of the work. And the commission wants BP to issue its report on its findings from the well 02-02 incident by March 15.

The commission has also spelled out specific plugging techniques to be used for the 14 wells flagged for plugging and abandonment following the Prudhoe Bay well integrity incidents. Further well abandonment requirements may also be issued after a review of the results of the mandated well interventions, the AOGCC wrote. ●

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