Two targets at Putu

Conoco well, sidetrack south of CRU target separate ‘western,’ ‘eastern’ prospects

By ERIC LIJOI
For Petroleum News

ConocoPhillips Alaska Inc. is targeting two prospects with its Putu exploration program. The proposed directional Putu No. 2 well and vertical Putu No. 2A sidetrack will penetrate and evaluate two separate prospects, the local subsidiary of the global independent exploration and production company revealed in recent permitting filings.

The Putu No. 2 well will “evaluate the reservoir and hydrocarbon potential of the western prospect, provide control for picking core point for the Putu well in mid-December. Some 40 years after the start of oil production from Alaska’s North Slope, Alaska oil needs to be able to compete in global oil markets if the industry is going to continue to thrive in the coming decades, Damian Bilbao, BP Exploration (Alaska) vice president, commercial ventures, told the

Bilbao: Alaska needs to compete; resources exceed potential demand

Some 40 years after the start of oil production from Alaska’s North Slope, Alaska oil needs to be able to compete in global oil markets if the industry is going to continue to thrive in the coming decades, Damian Bilbao, BP Exploration (Alaska) vice president, commercial ventures, told the Resource Development Council’s annual conference on Nov.

CIRI Wind requests new connection

CIRI Wind LLC, a subsidiary of Cook Inlet Region Inc., has requested interconnection with Chugach Electric Association for a proposed addition to a CIRI-operated wind farm on Fire Island, offshore Anchorage, Chugach Electric told the Regulatory Commission of Alaska in a Nov. 14 filing. The existing wind farm, with 11 wind turbines and an output capacity of 17.6 megawatts, went online in September 2011.

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OK on Nenana drilling

Doyon board approves plan for 4th exploration well in basin for summer 2018

By ALAN BAILEY
Petroleum News

The board of Doyon Ltd. has sanctioned the drilling of a fourth exploration well, the Totchaket No. 1 well, in the Nenana basin, the Native regional corporation for the Alaska Interior has announced. The drilling will take place during the summer of 2018.

The drilling targets are prospects identified from a 64-square-mile 3-D seismic survey that Doyon conducted last winter in the more northerly part of the basin, James Meery, Doyon vice president for lands and natural resources, has told Petroleum News. The prospects lie in a combination of state of Alaska leases and Doyon owned subsurface. Doyon plans to drill the well to a depth of about 12,500 feet, penetrating the Grubstake, Sanctuary and Healy Creek formations.

Mery also commented that amplitude anomalies in the seismic data suggest the presence of hydrocarbons — natural gas or possibly light oil — at

A great NS opportunity

Armstrong geologist comments on Pikka project, involvement of Oil Search

By ALAN BAILEY
Petroleum News

The discovery and development of a major oil play concept on the North Slope.

As previously reported in Petroleum News, Oil Search is purchasing a 25.5 percent interest in the Pikka unit and adjacent exploration acreage and 37.5 percent interests in the Horseshoe block to the south. Oil Search also has an option to purchase all of Armstrong’s interest in the acreage by June 30, 2019.

And the Pikka development appears to mark the emergence of a whole new oil play concept on the North Slope.

BSEE approves Nikaichuq North

The Bureau of Safety and Environmental Enforcement has approved an application by Eni U.S. Operating Co. for a permit to drill an extended reach exploration well into the Nikaichuq North prospect in federal leases on the outer continental shelf of the Beaufort Sea. Eni hopes to start drilling the well in mid-December.

Success with this winter’s drilling could lead to the drilling

see NIKAI CHUQ NORTH page 15

see BILBAO AT BEX page 15

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see NUNAVUT page 17
State OKs BlueCrest’s Cosmo drilling plan

By KRISTEN NELSON
Petroleum News

The Alaska Division of Oil and Gas has approved BlueCrest Alaska Operating LLC’s fourth plan of development for the Cook Inlet Cosmopolitan unit. The division received the 4th POD for Cosmopolitan in late September (see story in Oct. 8 issue of Petroleum News) and approved the plan Nov. 28.

For the 4th POD period, which covers 2018, BlueCrest plans to drill at least one new well or sidetrack and evaluate production of the H14 and H16 wells drilled in 2016.

The company’s plan for the 3rd POD, which covered this year, was to drill up to five onshore wells or laterals from the Hansen onshore pad. The company said that during the 3rd POD it completed construction of the BlueCrest Rig No. 1 at the Hansen Production Facility. “We currently have the largest most powerful operating rig in Alaska,” BlueCrest said.

Under the 3rd POD BlueCrest spud the H16 well Nov. 29, 2016, and successfully drilled it to 22,810 feet measured depth. The rig was released to move to the H14 lower lateral well March 11.

BlueCrest completed a frack job on the H16 well and began production, which in September was 330 barrels per day from that well.

The H14 lower lateral was spud March 22 and completed May 13 at a depth of 23,415 feet MD but the company ran into difficulties setting liner and ultimately drilled three sidetracks before completing the well to 22,300 feet MD in September.

BlueCrest had planned to drill as many as five oil production wells or laterals as part of the 3rd POD and did drill two wells and three laterals, although only two were productive.

4th POD

In its approval letter for the 4th POD the division said that as of June the Cosmopolitan unit has produced 111,000 barrels of oil and 16,422 thousand cubic feet of natural gas, with 2016 average production of some 136 barrels of oil and 439 mcf of natural gas per day.

BlueCrest said it will need some revisions to an approved permit to drill for the H12 because of changes to the completion package, and plans to file for drilling permits for the H16 upper lateral and H16 exploratory lateral late this year or in early 2018.

BlueCrest will also be evaluating results of the H14 lower lateral and H16 lower lateral, both targeted to the Hemlock, in determining its path forward.

The company said it would like to drill and complete a test of the Starichkof zone, and said that prior to completing evaluation of wells drilled this year it believes the H16 upper lateral into the Starichkof zone is the best candidate.

“Given the complexity of the well completions, it is reasonable for BlueCrest to carefully evaluate its well design and drilling and completion techniques before drilling the next well,” the division said in approving the 4th POD.

Contact Kristen Nelson
knelson@petroleumnews.com
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1-800-955-9556
I n an upbeat talk on Nov. 15 during the Resource Development Council’s annual conference, Alaska Department of Natural Resources Commissioner Andy Mack provided his insights into a recent increase in North Slope oil production and the potential for more production in the future. Mack also commented that he sees the export of natural gas from the North Slope as being important in the future of Alaska’s oil industry.

Mack complemented the DNR team that manages what he characterized as a world-class resource base in the state. He also praised the “tremendous effort” that went into creating the “world-class resource base in the state.” He also commented that he sees the export of natural gas from the North Slope as being important in the future of Alaska’s oil industry.

Mack commented on the availability of industry and we can’t be more excited about what we’re seeing,” he said.

Future opportunities

DNR has been spending a great deal of time trying to understand the future opportunities for oil production, both considering production from state lands and considering opportunities in federal territory, Mack said.

On state lands, a number of developments are being planned or are underway. For example, ConocoPhillips has announced that production has begun at its I1 NEWS development in the Kuparuk River field, and planned development in the Pikka unit, near the Colville Delta, could result in a major production uptick.

“We want to push the permits there to achieve production there as quickly as possible,” Mack said in reference to the Pikka development, commenting that the payday for the state does not arrive until royalties appear from oil production.

For federal land, Gov. Walker sent a letter to Interior Secretary Ryan Zinke, prior to Zinke’s visit to Alaska in May, requesting a re-opening of the management plan for the National Petroleum Reserve-Alaska.

“We think there are some opportunities that are not available in the current plan,” Mack said.

Although the state is very excited about the upcoming NPR-A lease sale, the present management plan only allows leasing in around half of the reserve’s 23 million acres.

“We think there are some areas that are not as sensitive to wildlife and subsis- tence concerns that should be opened up,” Mack said. “We’re working through that and taking a very active role.”

The state is also playing an active role in current efforts to open the coastal plain of the Arctic National Wildlife Refuge for oil and gas exploration, he said.

The outer continental shelf

In a current court case the state is also supporting the federal administration in its defense of President Trump’s order cancelling President Obama’s withdrawal of the Chukchi Sea and much of the Beaufort Sea from future oil and gas leasing. In addition to the Arctic outer continental shelf being a region where it is possible to conduct business safely, development in the region is extremely important to the state, Mack said. And the Outer Continental Shelf Lands Act gives the state of Alaska a financial and legal interest in the more nearshore areas of the OCS, through, for example, the Liberty field that Hilcorp plans to develop in federal waters.

While the offshore Northstar field straddles both state and federal waters, Liberty will be the first field entirely on federal lands of the Arctic OCS and a model project, by which other projects on the federal OCS will be judged, Mack said.

“It is a very strong project that has been put together by a very deft team,” he said, praising the owner companies for the project, in which BP and Arctic Slope Regional Inc. are partnering with Hilcorp.

Seismic data

Mack also commented on the availability of high quality seismic data, including modern 3D seismic, through the Division of Geological and Geophysical Services’ Geologic Materials Center. This data have been obtained from companies in conjunction with state production tax credits for the

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Promising situation for Alaska oil & gas

DNR commissioner reflects on recent uptick in oil production and potential for future oil and gas development on the North Slope

by ALAN BAILEY

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### Alaska Rig Status

<table>
<thead>
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<th>Rig Owner/Rig Type</th>
<th>Rig No.</th>
<th>Rig Location/Activity</th>
<th>Operator or Status</th>
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<td>Spartan 151</td>
<td>Stacked Seward</td>
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<td>Randall Heights jack-up</td>
<td>Nikiski, OIL dock</td>
<td>Furie</td>
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<td>Granite Point, Well GP2-13R02</td>
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<table>
<thead>
<tr>
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<th>Rig No.</th>
<th>Rig Location/Activity</th>
<th>Operator or Status</th>
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<tr>
<td>Akita</td>
<td>TSM-7000</td>
<td>Racked in Norman Well, NT</td>
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*Issued by Baker Hughes since 1944

**Mackenzie Rig Report**

The Alaska - Mackenzie Rig Report as of November 29, 2017. Active drilling companies only listed.

**Baker Hughes North America rotary rig counts**

<table>
<thead>
<tr>
<th>Country</th>
<th>Nov. 22</th>
<th>Nov. 17</th>
<th>Year Ago</th>
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Highest/Lowest

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*Issued by Baker Hughes since 1944"
Joint development agreement preliminary

By KRISTEN NELSON
Petroleum News

The joint development agreement signed Nov. 9 in Beijing envisions Alaska working with major Chinese entities to come to an agreement for Chinese participation in Alaska LNG. Signatories for the state were Gov. Bill Walker and Keith Meyer, president of the Alaska Gasline Development Corp. Chinese signatories were the president of China Petrochemical Corp., known as Sinopec, the vice chairman of CIC Capital Corp. and the chairman of Bank of China Ltd.

The agreement was released Nov. 21 at a press availability where Walker provided background on what led to the China agreement, stressing the importance of market involvement in the agreement, and Meyer gave an overview and noted that a lot of work will be required to finalize agreements for Chinese participation in the Alaskan LNG project.

Introductory statements in the agreement note that Alaska is interested in commercializing the natural gas on the North Slope and the Chinese companies “have expressed their preliminary interests in the development of Alaska LNG” because of the potential for huge growth of natural gas consumption in China.

The state, through AGDC, is the sole owner of the project and will be developing the system with one or more strategic partners in countries which consume LNG.

Scope of work

The JDA says the parties will work together on a scope of work defined in the agreement, including the opportunity for delivering 75 percent of the LNG produced from Alaska to China “at a cost-based and stable price utilizing the benefits of strategic financing and investment,” strategic financing opportunities and a transparent investment model.

The agreement notes that there is an opportunity for Sinopec to be involved in engineering, procurement, construction and project management and in the project’s overall development.

But AGDC would remain in control, Meyer said, and as with construction of the trans-Alaska oil pipeline, while large construction firms would have construction oversight, they would use Alaska firms and labor.

continued from page 4

MACK ADDRESS

surveying. Some of the data can be tied to state leases, while other was collected from regions such as the NPR-A and the nearshore waters of the Beaufort Sea.

“We as a state are going to use that information to leverage interest in state acres,” Mack said.

Strategic infrastructure

The state administration is also taking steps to promote the construction of strategic infrastructure, especially roads, on the North Slope. Rather than the top-down approach that the state has used in the past to address this issue, this time around the state has talked to the North Slope communities and the North Slope Borough mayor, seeking community ideas and asking for opportunities to work together, Mack said. As a consequence, DNR has formulated an agreement and the Legislature has appropriated some funding, he said. Strategic infrastructure can be really helpful in supporting access to remote locations such as Smith Bay, Mack said, referencing the site of a major oil discovery by Caelus Energy.

North Slope gas

Mack also commented that an October 2015 order by the Alaska Oil and Gas Conservation Commission, approving an expanded offshore of natural gas from the Prudhoe Bay field, had represented a recognition that the economics of North Slope gas are rapidly changing. After many stops and starts for North Slope gas pipeline projects it is now time to think critically about how to take gas from Prudhoe Bay, Mack said.

“The best way to increase more oil production is to build a gas pipeline,” he said.

Contact alan.bulir
at alanb@petroleumnews.com

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Signs of San Diego Bay porphyry

Balboa Bay where a copper-gold-molybdenum-silver anomaly east of the property, and an area near Balboa Bay on the eastern side of San Diego Bay. The soil samples were collected over three rock samples and 173 soil samples during the summer program on the Alaska Peninsula. Geologists collected 37 grab samples during the step in understanding the porphyry copper-gold potential of this project. Early results from 13 holes drilled into Zackly confirm the high-grade gold-copper mineralization in this skarn deposit on the Star-Pol project. Millrock Resources Inc., which owns a 10.74 percent interest in PolarX, executed the 2017 drill program at Zackly. Millrock Resources Inc., which owns a 10.74 percent interest in PolarX, executed the 2017 drill program at Zackly. This year's 13-hole drill program at Zackly included 11 holes designed to validate previous drill intersections and better define the deposit. In addition to the stellar grades, PolarX said some of this year's holes cut mineralization over significantly wider intercepts than their historic twins. These results will help underpin a revision of the historical copper and gold resource to Australian Joint Ore Reserves Committee (JORC) mineral reporting standards, which is similar to National Instrument 43-101 standards in Canada. Results from eight holes are pending and the updated mineral resource for Zackly is slated for completion early in 2018. PolarX, which acquired Stellar earlier this year, has combined it with the neighboring Caribou Dome copper property and renamed the merged properties the Alaska Zackly Range project. Millrock Resources Inc., which owns a 10.74 percent interest in PolarX, executed the 2017 drill program at Zackly.

Stellar drilling tops expectations

PolarX Ltd. Nov. 23 reported that assays from the first five holes drilled at Zackly confirm the high-grade gold-copper mineralization in this skarn deposit on the Stellar property. Significant results from the first five holes include: 14.5 meters of 2.5 percent copper and 2 grams per metric ton gold from a depth of 34.9 meters; 5.3 meters of 2 percent copper and 2.7 g/t gold from 9.7 meters; and 3.5 meters of 3.9 percent copper and 2.2 g/t gold from 99.1 meters. PolarX said these grades exceed those from historical drilling. A historical resource for Zackly outlines 1.54 million metric tons grading 4.5 g/t (218,944 ounces) gold and 2.9 percent (66.9 million pounds) copper. This year’s 13-hole drill program at Zackly included 11 holes designed to validate previous drill intersections and better define the deposit. In addition to the stellar grades, PolarX said some of this year’s holes cut mineralization over significantly wider intercepts than their historic twins. These results will help underpin a revision of the historical copper and gold resource to Australian Joint Ore Reserves Committee (JORC) mineral reporting standards, which is similar to National Instrument 43-101 standards in Canada. Results from eight holes are pending and the updated mineral resource for Zackly is slated for completion early in 2018.

Early results from 13 holes drilled into Zackly confirm the high-grade gold-copper resource previously outlined at this volcanicogenic massive sulfide deposit at PolarX’s Alaska Zackly Range project.

Rich stores of high-grade metals such as Trilligy Metals’ Arctic deposit in Northwest Alaska highlight Alaska’s world-class mineral endowment and the need for additional infrastructure across the Last Frontier.

Matter of perspective

International mine financier shares outsider view of Alaska mining sector

Alaska’s mining sector is in a global competition for mining investment, making it critical for the state to tout its strengths and address its weaknesses if it wants to attract the capital needed to expand the industry. During a presentation at the Alaska Miners Association fall convention, Doug Silver, a portfolio manager for Orion Mine Finance, provided an international financier’s perspective of Alaska mining sector’s strengths and where it could be doing better.

“I have the privilege of working in the world of international mine finance, and my firm puts up international financier’s perspective of Alaska mining sector’s strengths and where it could be doing better. “Which is critical, this is what the Lower 48 does not have,” he said.

Alaska Native advantage

Silver sees the Alaska Native Claims Settlement Act and the resulting Alaska Native corporations as another Alaska advantage.

“This is an edge Alaska has,” he said of Alaska Natives’ well organized and straightforward business approach to mining.

He said, however, this favorable view is not widely shared by the international finance community due in part to the reputation of First Nations groups in neighboring Canada.

“Canada’s Indigenous People are always doing things that are not necessarily helping business,” Silver said.

He said small bands of First Nation peoples in Canada have derailed major mining projects, which adds risk for firms looking to invest in mines.

“We can’t have to go through nine different levels of First Nations approvals to want to invest somewhere,” the mine financier explained.

Silver said many of his contemporaries have the unfounded view that Alaska has similar issues.
The author
The author Curt Freeman, CPG #6901, is a well-known geologist who lives in Fairbanks. He prepared this column.

By CURT FREEMAN
Special to Mining News

Turnaround lifts mood as miners gather

Sources of investment in exploration shift in Alaska, while the state’s producing mines boost output on strength of higher prices

F or the first time in five long years, the mood at the recently held Alaska Miners Association Convention in Anchorage was buoyant, the result of a slow but steady turnaround on mineral investments in the state.

Additional new corporate interest in the state emerged during the past 30 days, and sources of exploration funds coming to Alaska continue to shift, with estimates for 2017 suggesting that 62 percent of this financing comes from Canadian concerns, 18 percent from U.S.-based concerns and a surprising 20 percent from Australia.

Strong base metals prices are contributing to profitable production from the Red Dog and Greens Creek mines, while stable precious metals prices support strong mining operations at Fort Knox, Pogo, Kensington and Greens Creek. The short and long-term view of most of the industry is a slowly strengthening industry demand for Alaska’s raw materials.

One final sure sign of a turnaround: At the recent RBC Annual Senior Gold Conference, several gold producers played down any significant interest in new mergers or acquisitions, making us think they are all looking for just that sort of opportunity!

Western Alaska

COPPERBANK RESOURCES CORP. announced additional results from a 13 diamond-drill-hole, 3,690-meter, 2017 drill program on its 100-percent-controlled Pyramid copper prospect near Sand Point. Significant results include hole 17PY035 intersected 179.5 meters of 0.37 percent copper; and hole 17PY036 intersected 114 meters of 0.31 percent copper grading 0.75 percent silver. Nine holes have been drilled within the 700 x 1,000-metre magnetic high at Hill 1835, which remains open both laterally and at depth. Porphyry-style mineralization is associated with potassic and pervasive sericite alteration, within horn-felided sedimentary rocks that are cut by porphyritic dikes and sills.

COPPERBANK RESOURCES CORP. announced third-quarter 2017 results from the Fort Knox mine near Fairbanks. The mine produced 101,041 ounces of gold at a cost of $564 per oz in the three months that ended Sept. 30, compared with 110,396 oz of gold at a cost of $743/oz in the year-previous period. Production decreased slightly compared to the same period a year ago, largely due to lower amounts of tonnage placed on the heap leach pad. Operating costs decreased year over year due to a decrease in operating waste mined and lower contractor costs as the site began to transition to the completion of more maintenance functions in-house. The mill treated 3,228,000 metric tons of ore grading 0.88 grams-per-metric-ton gold with a mill recovery of 81 percent. The heap leach saw additions of 6,088 million metric tons of ore, grading 0.26 g/t gold.

FREESTYLE VENTURES LTD. reported results from its 2017 drilling program on the Shorty Creek copper-molybdenum-gold prospect near Livengood. Significant results from the Hill 1835 prospect include hole SC17-01, which returned 360 meters grading 0.24 percent copper, 0.07 g/t gold and 4.04 grams per ton silver, hole SC17-02, which intersected 339 meters grading 0.30 percent copper, 0.05 g/t gold and 5.72 g/t silver, and hole SC17-03, which intersected 105.2 meters grading 0.27 percent copper, 0.05 g/t gold and 7.53 g/t silver.

Interior Alaska

KINROSS GOLD CORP. announced final production results for the first 2 years from the date of exercise of the option, a further 21 percent interest through spending an additional US$1 million on exploration over the first 2 years from the date of exercise of the option, and a further 19 percent interest through spending an additional US$2 million on exploration in years three and four from the date of the exercise of the option. Quantum can continue to fund the projects through to completion of a bankable feasibility study, at which point if AK Minerals decides not to contribute proportionately, its interest will dilute to a minimum 15 percent and a 2 percent net smelter return payment royalty.

Contact North of 60 Mining News:
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Phone: 907.229.6289 • Fax: 907.522.9583

North of 60 Mining News is a weekly supplement of the weekly newspaper, Petroleum News.
First step taken to curb Interior abuses

Compromising General’s finding that the Eastern Interior Land Management Plan is a ‘rule’ means that the plan can be set aside

By J. P. TANGEN
Special to Mining News

A

lthough the Bureau of Land Management has been developing land management plans for decades, in past those plans have had two qualities that made them tolerable. First, they were relatively easy to live with and second, they were reasonably understandable. There can be no doubt, however, that the earlier plans violated unequivocal provisions of the Alaska National Interest Lands Act against restrictive land management practices on the public domain.

During the past decade, the noose has tightened around the neck of Alaskans who seek to develop resources on federal land. The number of new federal mining claims versus the number of new state claims is a sad testament against the United States continuing to own up to two-thirds of Alaska.

The discrepancy in new mining locations is not solely attributable to land management practices. The regulatory quagmire that has developed regarding the regulation of mining is also to blame. The offensive against mining is not unique to Alaska, but it still hits Alaska hard.

Far fewer bureaucrats within the BLM have advanced credentials relating to regulating mining than those trained in past. Many of them have not developed the knowledge and experience to ensure that resource development on federal land is circumscribed and ultimately extinguished.

A statute called the Congressional Review Act, long forgotten and rarely used, has been employed to force regulatory agencies to conform to the law. Under the CRA, when an agency has developed regulations for new programs or to protect a title, the plan can be set aside and the law overturned.

Bureaucrats whose plans have developed regarding the regulation of mining is also to blame. The offensive against mining is not unique to Alaska, but it still hits Alaska hard.

The plan ought to be disqualified for several reasons; first it violates ANILCA by imposing restrictive management burdens on enormous tracts of federal land. We were clearly promised in ANILCA that there would be no more such restrictions, nonetheless, BLM has blatantly disregarded this statutory mandate.

Second, the magnitude of the plan is a major reason to be concerned. It affects four separate planning areas: the White Mountains Planning Area (over 1 million acres), the Fortymile Planning Area (about 1.3 million acres), the Fortymile Planning Area (nearly 1.9 million acres) and the Dranigik Planning Area (about 2.4 million acres) – in the aggregate over 2.5 percent of the federal land in the state.

Finally, the position of the U.S. Department of the Interior regarding BLM’s plan is not clear. When the Comp-Gen requested Interior’s views on the plan, the department could not respond due to the lack of a “more competent leadership team.” In other words, defining the BLM’s recommendation was not an Interior priority.

We can only hope that the Alaska delegation to Congress will promptly turn its attention to causing a joint resolution disapproving the plan to be forwarded to President Trump and that he will sign it into law. Readers of this column should consider recommending this to the Alaska delegation and get friends and neighbors to do so as well. We have a golden opportunity to quash this obnoxious land management plan.

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A third reason for disapproving BLM’s plan is that it is a monument to abuse of the land management process. To be sure, the planning process was ostensibly “transparent” inasmuch as a variety of stakeholders including the Alaska Miners Association had the opportunity to comment; but the magnitude of the plan, including the environmental impact statement and the numerous appendices was a mammoth pill to swallow – far too voluminous for the average prospector or placer miner to deal with.

It is encouraging that this is the second time in recent weeks the Comp-Gen has concluded a land management plan to be a CRA rule. In October, he also issued an opinion that the Draconian 2016 Amendment to the Tongass National Forest Land and Resources Management Plan was also a rule. Resolutions of disapproval are currently pending in Congress.

Happily, as of this writing, the U.S. Department of the Interior regarding BLM’s plan is not clear. When the Comp-Gen requested Interior’s views on the plan, the department could not respond due to the lack of a “more competent leadership team.” In other words, defining the BLM’s recommendation was not an Interior priority.

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FREEMAN

is pegged at 51,000-53,000 oz. On the exploration front, drilling in the third quarter targeted the Deep 200 South, East Ore, Gallagher and the Upper Plate zones. Exploration drilling on the Deep 200 South Zone extended the 200 South Bench mineralization south of current resources. Drilling on the East Ore, Gallagher and Upper Plate zones upgraderd and expanded the known resource. Previous drilling on the East Ore, Gallagher and Upper Plate zones also delivered strong results.

Significant intercepts in the East Zone included 75.1 oz/t silver, 0.16 oz/t gold, 5.32 percent zinc and 2.67 percent lead over 9.5 feet in an area without previousy identified resources and another drillhole intercept 11.6 oz/t silver, 0.09 oz/t gold, 5.2 percent zinc and 2.5 percent lead over 32.3 feet. Surface drilling was completed on targets in the Gallagher, East Ore and 5250 zones. Drilling on the Gallagher Zone intersected mineralized sheared veins and breccia intervals of up to 100 feet thick containing higher-grade intervals of 1.5 feet to four feet wide that have up to 15 percent zinc and 4.0 oz/t silver. This mineralized structure appears to be the same Klaus Shear identified within the mine workings east of the Gallagher fault. The mineralized Klaus Shear now extends 1,500 feet west of the mine and over 3,000 feet north to south. Drilling successfully intercepted the main mineral zone of the 5250 Zone over 2,000 feet south of the known resource showing promising alteration at the contact.

CONSTANTINE METAL RESOURCES LTD. reported additional assay results for four drill holes from resource expansion and upgrade drilling at the AG Zone at its Palmer volcano-calicogenic massive sulfide deposit near Haines. A total of 10,185 meters were drilled as part of the recently completed dual focus resource expansion and regional exploration drill program. The 2017 program included 10 holes for 3,221 meters at South Wall, 13 holes for 4,993 meters at the AG Zone, three holes for 1,006 meters at the Cap prospect, and six geotechnical holes totaling 1,499 meters. Drilling at AG Zone has continued to successfully define the zone with step-outs along strike and to depth for the discovery initial holes. Significant new results include 30.5 meters grading 7.3 percent zinc, 0.2 percent lead, 0.1 percent copper, 6 grams-per-metre-tonne silver, 0.1 g/t gold from hole CMR17-92, 7.8 meters grading 6.69 percent zinc, 0.81 percent lead, 0.11 percent copper, 34.6 g/t silver, 0.26 g/t gold from hole CMR17-99, 41.3 meters grading 5.79 percent zinc, 0.15 percent lead, 0.14 percent copper, 9.2 g/t silver, 0.05 g/t gold from hole CMR17-96 and 127.6 meters grading 0.98 percent zinc, 0.32 percent lead, 0.04 percent copper, 184.2 g/t silver, 0.4 g/t gold from hole CMR17-94. Collectively, the drill-defined strike length is 225 meters, a vertical dip length of 275 meters and all sides are open to expansion. Mineralization consists of stacked stratabound zones, including a high-grade silver-gold upper zone, and a zinc-rich lower zone. The additional drilling also has shown that most of the AG Zone occurs on the steep, relatively planar limb, of a large-scale fold structure. Mineralization is stratigraphically correlative with high-grade surface prospects located hundreds of meters along trend to the northwest (Waterfall and CAP) and southeast (JAG).
Native corporations need to do more to market the unique opportunity of doing business with Alaska’s First People. “It is not that the corporations are tough, it is the corporations aren’t differentiating themselves from their Canadian counterparts, who are setting the perception about what it is like to work with Native corporations,” he said.

Two weaknesses

When it comes to attracting mining dollars, Silver said Alaska mining has two weaknesses – sparse infrastructure and the controversy surrounding the Pebble Mine project in Southwest Alaska.

From a financial perspective, infrastructure is a major factor for a mine investor trying to pencil out development and operations costs versus a potential return. “Don’t underestimate infrastructure – it is absolutely huge when we make decisions about where we want to invest,” he said.

Silver said Canadian governments do a much better job at developing the infrastructure needed to attract mining investments. For example, Quebec is investing heavily into Plan Nord, a major infrastructure project aimed at supporting the natural resources extraction sector in the northern reaches of the province. This 25-year plan is expected to foster more than C$80 billion in energy, mining and forestry investments and result in some 20,000 jobs a year for the duration.

Silver said the Northwest Transmission Line, an industrial-grade power line that runs through the Golden Triangle region of northwestern British Columbia is another example of a Canadian jurisdiction’s commitment to mining infrastructure. “In B.C., they put at C$700 million powerline up through the center of the province so they could drop the (electrical) costs from C90 cents per kilowatt-hour to C15 cents,” he said. “You don’t think that makes them competitive?”

The mine investor said the lack of access in Alaska is something the government should address. “There is no question this is an issue, and it is an issue that is easy to fix – build roads, build bridges,” Silver said. “This is what governments are supposed to do,” he added.

Silver said the bad publicity surrounding Pebble causes second thoughts in the minds of investors who are weighing the risks of investing in Alaska mining. “Pebble is causing more image problems and media problems for Alaska than anything else and it needs to be fixed,” he said.

Silver said it does not matter so much to the investment community what is decided on Pebble as long as the issue is resolved by the people who live here. “I think Alaskans should figure out whether they want Pebble – not the federal government and not the international investment community,” he said.

Nothing to do with Alaska

While Silver gives Alaska a pretty good grade overall, he cautions the next wave of mining investments could be slow coming. The mine finance manager said this measured flow has “nothing to do with Alaska,” but is a product of a more cautious approach by global mining companies and banks. Silver said the Northwest Transmission Line, an industrial-grade power line that runs through the Golden Triangle region of northwestern British Columbia is another example of a Canadian jurisdiction’s commitment to mining infrastructure. “In B.C., they put at C$700 million powerline up through the center of the province so they could drop the (electrical) costs from C90 cents per kilowatt-hour to C15 cents,” he said. “You don’t think that makes them competitive?”

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AOGCC reduces fine to Tolsona Oil & Gas

By KRISTEN NELSON
Petroleum News

The Alaska Oil and Gas Conservation Commission has reduced a fine imposed in May on Tolsona Oil and Gas Exploration LLC from $380,000 to $32,000, citing steps the company has taken since the fine was imposed to comply with AOGCC regulations and the fact that the company now proposes to plug and abandon the Tolsona 1 well, the cause of the fines.

The commission cited numerous violations by Tolsona and said those violations were of requirements the agency imposed when it approved Tolsona’s request to suspend the Tolsona No. 1 well, including the company’s failure to provide pressure reports, failure to afford AOGCC inspectors the opportunity to witness pressure tests and failure to install a required pressure gauge.

Tolsona requested reconsideration of the commission’s May decision and a hearing was held Sept. 12.

Communication issues

The commission had made numerous efforts to get information from Tolsona on the suspended Tolsona well in the Copper River basin prior to issuance of the May order, including a notice of the proposed order.

In a June 23 response to the commission’s order the company said “immediately upon receipt of the Order, Tolsona performed a comprehensive internal investigation, which revealed numerous deficiencies in Tolsona’s communication, both internally and with the AOGCC.”

Tolsona said those deficiencies were caused by changes to personnel, loss of experienced technical capacity, failure to create internal communication redundancy and a lack of oversight in communication.

The company told the commission it had remedied equipment deficiencies and communication issues.

In its Nov. 29 final order, the commission reviewed the basis for its finding of violations or noncompliance with regulations, as well as its attempts to communicate with the company.

Tolsona response

After the commission issued its May order, the company’s CEO called to say the company had not received the notice of proposed enforcement action. In response the commission supplied copies of the notice and signed certified mail receipts and Tolsona initiated an internal investigation.

The required pressure gauge was installed June 1 and on June 15 Tolsona provided notice to the commission so that inspectors could witness wellhead pressure readings. This was the first time, the commission said, that Tolsona had provided the required notice.

On June 23 Tolsona submitted a request for reconsideration of the civil penalties.

Commission’s conclusion

The commission said there is no dispute that the violations occurred, and said Tolsona has implemented steps to ensure compliance will occur in the future.

“Tolsona’s demonstrable disregard for regulatory compliance precludes any finding that it acted in good faith,” the commission said. While there were serious violations there was no injury to the public, but the absence of any effort by the company to correct the violations “and the need to deter such behavior weigh strongly in the penalty imposed.”

The commission said steps Tolsona has taken to ensure compliance for future work, and the company’s statement that it plans to plug and abandon the Tolsona 1 well, “warrant reduction of the proposed civil penalties.”

The reduced penalties include $60,000 for failure to install appropriate gauges on all annuli on the Tolsona 1 well and $32,000 for failure to provide monthly pressure reports on the well.

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Sasol pulls out of $14B US gas-to-liquids plant

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Few oil prices and a volatile market are prompting a South African energy and chemical company to drop plans for an $11 billion to $14 billion U.S. plant to convert natural gas to liquid fuels and to pull out of Canadian shale.

"Sasol will not invest in further greenfields gas-to-liq-

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ABR A 1

Air Liquide Engineering & Construction wins contract

Air Liquide Engineering & Construction recently signed a new agreement with Cargill for engineering and supply of a world-scale biodiesel plant in Wichita, Kansas. The state-of-the-art biodiesel plant is planned to start operation in January 2019 and will produce 60 million gallons of biodiesel per year.

The agreement is another step in the long term partnership between the two companies. Air Liquide Engineering & Construction has already built six biodiesel plants for Cargill worldwide.

Air Liquide Engineering & Construction's leading edge Lurgi biodiesel technology offers a complete oleochemical production chain and provides customers with a range of plant options designed to maximize efficiency, improve the quality of the product, help to minimize operating costs and environmental footprint.

Domenico D’Elia, vice president and chairman of Air Liquide Engineering & Construction, said, “We are delighted to sign a new agreement with our long standing customer Cargill. This is yet another proof of the competitiveness of our most advanced and best performing biodiesel technology. We extend our leadership in Europe and Asia in this field and our ambition is to achieve the same result in the Americas.”

Carr joins US Bureau of Ocean Energy Management

The U.S. Bureau of Ocean Energy Management said it has hired Megan Carr, Ph.D., as the supervisor of the Alaska region’s resource evaluation office, where she will supervise a team of about 20 geologists and geophysicists.

Carr is a certified professional geologist and comes to BOEM with more than 15 years of experience in the environmental sciences, geological sciences and academia. She holds a bachelor's degree in geology, with focus on hydrologic modeling, from Baylor University; and a master's in environmental science with focus on soils and natural resource management, also from Baylor. Her Ph.D. is in geophysics from the University of Tennessee, with her dissertation concentrating on how to quantitatively combine data sets for improved subsurface imaging and discriminating targets of interest.

Carr is a triathlete who also volunteers as the service unit manager of Alaska Girl Scouts, where she supports the development of 56 troops in South Anchorage and leads her own troop of 8th-grade girls.

Oil Patch Bits

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VenDenburg emphasized Armstrong’s confidence in Oil Search as a reliable company that has been in business since 1929 and involved in some major projects in Papua New Guinea.

“So they have some staying power,” VanDenburg said.

Despite not committing that the company is involved with ExxonMobil and Total in two major liquefied natural gas operations in Papua New Guinea, as well as being operator of all of the producing oil wells in the country, Armstrong has enjoyed a long-term relationship with Oil Search through employee connections. Oil Search has long experience of handling the logistics of working in remote and rugged environments. The company is not shy about involvement in really big, long-term projects, enjoys a proven record in safety and environmental responsibility, and has an excellent track record in working with local communities, VanDenburg said.

“For all those reasons we think they’re truly a perfect fit for the Nanushuk project,” he said.

Armstrong in Alaska

VanDenburg characterized Armstrong Energy’s latest venture at Pikka as the latest of a series of Alaska initiatives resulting from the often counter-conventional thinking of the company’s founder, Bill Armstrong. In 2001 Armstrong, in his first foray into Alaska, began exploring for oil on the North Slope, despite universal advice that the region was the solely domain of major oil companies. The upshot was the discovery of the Oooguruk and Nikaichug fields, now owned and operated by Caelus Energy and Eneko, VanDenburg said.

After developing the North Fork gas field in the southern Kenai Peninsula, in 2006 Armstrong returned to the search for North Slope oil, disregarding conventional wisdom at the time of an oil price crash, and during a frenzy by industry to chase shale gas in the Lower 48. A partnership between Armstrong and Repsol drilled 19 wells and acquired three 3-D seismic surveys. The result has been the Nanushuk discovery, with published recoverable oil reserves of 1.2 billion barrels of oil, VanDenburg said.

Multi-billion dollar investment

The plan is to develop the project, a multi-billion dollar investment, through the drilling of about 146 wells from three drill sites on the east side of the Colville River. The development will involve the construction of about 15 miles of pipeline and 25 miles of road. A central processing facility will handle field production, projected at some 120,000 barrels per day. The development primarily targets the Nanushuk reservoir but is expected to also result in production from a reservoir found in Alpine C sands, VanDenburg said.

“This is a very large project and will create a lot of jobs for the state,” he said, adding that engineering design work and support for North Slope operations would bring jobs to Anchorage.

Major new play

And the Pikka development appears to mark the emergence of a whole new oil play concept on the North Slope.

The thick sands that form the initially discovered reservoir at Pikka can be traced along a zone more than 40 miles in length. So, defying convention to drill close to the discovery, Bill Armstrong ordered the drilling of the Horsehoe well about 21 miles to the south, at the southern tip of the reservoir sand system, VanDenburg said. There, with that well discovering the same sand and oil charge as at Pikka, it became possible to confirm the existence of one large oil field, with potential extending from a few hundred to 10 billion barrels of oil in place, he said.

“When you’re chasing fields of that size, it changes everything,” VanDenburg said.

Moreover, the same geology extends for hundreds of miles across the National Petroleum Reserve-Alaska, with 46 prospects identified on just one seismic line, he said. ConocoPhillips has been able to repeat success in the oil play in its Willow discovery in the northeastern NPR-A. And there is much more out there, VanDenburg said.

Fields such as Pikka and Willow, together with other discoveries in the new play, can make a material difference to the declining trend of North Slope oil production that started in 1988, he said.

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Armstrong in Alaska

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NENANA DRILLING
several levels in the subsurface. “We see multiple prospects at several horizons,” Murray said.

Doyon is particularly focused on finding oil but thinks that the basin also holds substantial volumes of gas. The seismic anomalies have the potential to be a game changer for the corporation, Murray said.

East of the Tanana

The planned drill site lies east of the Tanana River, north of where the Nenana River flows into the Tanana and 10 to 12 miles west of the Parks Highway. Murray said. Rather than building a substantial, all-season road to the site, summer access to the site will primarily be by river, supported from the town of Nenana 20 miles to the south by barge and crew boat. A small, less than one-mile access road will connect a barge landing on the Tanana to the gravel drill pad. The pad, road and barge landing will be constructed during the winter.

Doyon has still to determine which drilling rig to use for the project and is evaluating a couple of options, Murray said.

In addition to the promising seismic results, wells that Doyon has previously drilled have encouraged the Native corporation in its exploration efforts, Murray said. The Numivak No. 2 well, drilled in 2013, penetrated several hundred feet of gas-saturated sand, but the gas pressure was too low for commercial production.

Doyon concluded that the prospect’s hydrocarbon trap had failed at some time in the past. However, the gas did include propane, a finding that provided evidence for a thermal rather than biogenic origin for the gas and, hence, the possibility of gas in the basin. And then the Toghotthele No. 1 well, drilled in 2016, encountered several dozen oil shows, indicating that oil had moved through the subsurface at some time in the past.

Convenient location

The Nenana basin, a large sediment-filled basin southwest of the city of Fairbanks, is conveniently located near the road and rail transportation corridor between Southeast Central Alaska and the Interior, thus making the basin an attractive target for potential oil or gas development.

The hour-glass shaped basin has a relatively shallow saddle in the middle, the Taku Imaging team of Nenana, and deeper sub-basins to the north and south. Doyon has previously drilled three wells in the basin, all on the central saddle, at locations into which Doyon hoped hydrocarbons had flowed from deeper sections of the basin. The deepest sub-basin is in the north, where Doyon now plans to drill. Basin reservoirs in this area are thought to be sufficient to subject coals, the likely hydrocarbon sources, to temperatures and pressures conducive to the formation of oil. Prior to last year’s 3-D seismic survey, Doyon conducted 2-D surveys in the northern part of the basin in 2012 and 2014. The 2014 survey also revealed some direct hydrocarbon indicators, Murray said.

The new drilling targets are adjacent to the hydrocarbon kitchen in the north. The seismic hydrocarbon indicators also point to other prospects that could become drilling targets in the future, Murray said. In addition, while the leakage of hydrocarbons in potential traps to the south may be related to the uplift of the rocks in that area, the northern part of the basin appears relatively undisrupted, he said.

Gas for Fairbanks?

Doyon says that, had the trap for the reservoir penetrated by the Numivak No. 2 well not failed, the reservoir could have delivered some 150 billion to 180 billion cubic feet of natural gas, enough gas to supply Fairbanks for more than 25 years. Success at Totahket No. 1 could result in a similar size of gas resource, Doyon says.

As part of a Doyon news release announcing the Totahket drilling decision Murray commented on the potential impact of the Alaska Industrial Development and Export Authority’s Interior Energy Project on Doyon’s efforts in the Nenana basin. As part of the IEP, Interior Gas Utility in Fairbanks is about to decide on whether to agree to purchase Pentex Natural Gas Co. from AIDEA, a deal that would provide IGU with a liquidified natural gas supply from the Cook Inlet basin and would be funded through an AIDEA financing, including a loan with a 50-year term.

“Although our primary target is oil, our gas prospects are greater,” Murray said. “So it is unfortunate timing to see the Interior Gas Utility ready now to commit to a course of action with AIDEA which will tie Fairbanks for at least a generation to imported LNG by truck at much less favorable price projections. This potential IGU purchase also eliminates the option for use of future Nenana gas as well as foregoing future opportunities to tap into any North Slope gas export line.”
BILBAY AT RDC

15. Moreover, continuing efficient operations in the North Slope oil fields can help the economics of export- ing natural gas from the Slope, by reducing the unit cost of supply of the gas, Bilbao said.

Currently, Alaska accounts for less than 1 percent of worldwide oil production, a figure that represents a substantial drop from the 5 percent of world pro- duction that came from the state in the mid-1980s, Bilbao cautioned.

**Resources exceed demand**

Bilbao said that currently there are about 2.5 trillion barrels of known worldwide oil resources that could be produced using exist- ing technologies. But the projected worldwide oil demand between 2010 and 2050 only amounts to about half of that volume. So, to be sold in the future oil market, oil will need to be competitive on price.

“You’d better be sure that the price of your oil, delivered to market, is less than everybody else’s,” Bilbao said. “That’s why we continue to focus on how do we make Alaska’s oil as competitive as possible.”

He said that BP sees global oil demand rising but then flattening out around 2030 to 2035. Despite a continuing debate about the possible impact of electric car use on that demand, BP does not envisage market penetration by these vehicles having a substantial impact on oil usage. Even a 100-fold increase in electric car adoption beyond the current worldwide level of about 1.2 million vehicles would only reduce oil demand by about 1 mil- lion barrels per day from a projected demand of about 102 million barrels per day in 2055, Bilbao said.

**SB 21 impact**

In terms of Alaska’s competitiveness in the global oil

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DELCAMBA GOES ON

of a second extended reach well next winter, BSEE says that Eni is conducting the drilling in partnership with Shell.

Eni will drill the well from an existing drill pad on the artificial Spy Island, a part of the operating Nikaitchuq oil field in state nearshore waters of the Beaufort. The federal Nikaitchuq North leases lie in the Harrison Bay Block 6423 unit, immediately north of the state leases.

The idea is to test for new resources that can be added to the reserves for the Nikaitchuq field, and to enable increased production at the field. Eni has said that the existing production facilities can handle production rates significantly higher than at present.

“Responsible resource development in the Arctic is a critical component to achieving American energy dominance,” said BSEE Director Scott Angelle when announcing the permit approval. “BSEE is committed to working with our Alaskan Native and industry partners by taking a thoughtful and balanced approach to oil and gas exploration, development and production in the Arctic.”

“BSEE Alaska Region staff conducted a thorough and complete review of Eni’s well design, testing procedures and safety protocol,” said Mark Fesmire, BSEE Alaska Region director. “Exploration must be conducted safely, and responsi- bly in relation to the Arctic environment and we will continue to engage Eni as they move forward with drilling its exploratory well.”

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CONTACT: ALAN BAILEY
No. 2A sidetrack to evaluate “the eastern prospect,” although information gained from the first well could prove sufficient. The descriptions “western” and “eastern,” and the fact that the well is directional while the sidetrack is vertical, suggest a simple geography difference between the two prospects. Depths will reveal whether the wells are also targeting different formations.

The Putu program is an effort to expand development of the Colville River unit to the south, into a region that has intrigued ConocoPhillips and others for more than a decade.

A well and sidetracks drilled in the area in 2008 by Brooks Range Petroleum Corp. encountered hydrocarbons in several different formations. The state drilled the Putu well last winter but said that it delayed the project to accommodate the concerns of local communities. The company plans to access the site by ice road.

ConocoPhillips originally intended the drill the Putu well last winter but said that it delayed the project to accommodate the concerns of local communities. The state required the company to drill at least one well this year to keep from losing the acreage.

After months of regulatory deliberations, the Department of Natural Resources approved an expansion of the unit in August 2017 to include the Putu acreage to the south. The approval required ConocoPhillips to drill one well in 2018 and one by 2020. The two-well program planned for this winter, if completed, would satisfy both commitments.

The Alaska Division of Oil and Gas is taking comment on the plan through Dec. 22.

Accommodations

Given the proximity of the program to Nuiqsut, ConocoPhillips is incorporating some unusual features into what would otherwise be a fairly typical exploration program.

The company plans to drill the well and the sidetrack this coming winter from an ice pad to be constructed on an island between the main and Nechelik Channel in the Colville River Delta, some 2.8 miles west of Nuiqsut. The 640,000-square-foot ice pad (800 feet by 800 feet) is planned for on ADL 390674 and will include a temporary camp capable of housing approximately 65 people. The company plans to access the site by ice road.

ConocoPhillips plans to power its drilling operations using six Tier 4 diesel generators located on a 40,000-square-foot ice pad (200 feet by 200 feet) located one mile north of the drilling site and connected back to the rig using a 13 kV transmission line encased in a 25-foot wide and 25-inch thick block of ice. The offsite generator and associated transmission line will also power the work camp, which will have a back-up diesel generator in case of power outages, equipment malfunction or other emergencies.

The ice-encapsulated power line will be distinct and separate from the ice road used to accommodate truck traffic to the drilling pad. The power line will be housed in a special ice-encapsulated casing where it crosses beneath the existing Alpine Resupply Ice Road.

The atypical system is intended to alleviate the impacts of the drilling program on nearby Nuiqsut, according to ConocoPhillips. The company said it is also developing a special “lighting plan” for the project to reduce the amount of lighting visible from the village.

The exploration program is planned for surface land owned by the Kuukpik Corp. The two parties have entered a surface use agreement, according to ConocoPhillips. The relevant subsurface land is jointly owned by the state and Arctic Slope Regional Corp.

ConocoPhillips expects drilling operations to run from mid-January to mid-March 2018, with testing in the first half of April and demolition by the end of the month. The company warned that the unpredictability of tundra openings could alter the schedule.