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The weekly mining newspaper for Alaska and Canada's North

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EXPLORATION

Bold moves pay off

Exploration ramps up on Millrock gold, copper properties in Alaska, BC

Exploration ramps up on Millrock gold, copper properties in Alaska, BC. Read more in North of 60 Mining News, page 7.

Drilling starts for 1H NEWS

Drilling in ConocoPhillips' 1H NEWS development in the Kuparuk River unit began in the week of Aug. 7, ConocoPhillips spokeswoman Natalie Lowman has confirmed to Petroleum News. The new development targets the production of viscous oil from the northeastern sector of the West Sak formation in the unit, using wells drilled from the Kuparuk 1H drill site. ConocoPhillips anticipates the $460 million project will result in peak production of 8,000 barrels of oil per day.

see **NEWS DRILLING** page 14

Doyon studying Nenana prospects

Doyon Ltd is identifying new oil and gas leads in the Nenana basin from 3-D seismic that the Native corporation shot earlier this year, James Mery, Doyon's senior vice president for lands and natural resources, told Petroleum News in an Aug. 14 email.

"The exceptional data quality from last winter's 64-square-mile 3-D seismic program coupled with our initial interpretation and review has resulted in the identification of several

see **DOYON LEADS** page 15

Draft EIS out for Liberty project

The federal Bureau of Ocean Energy Management issued the draft environmental impact statement for Hilcorp Alaska LLC's Liberty project Aug. 17.

Publication of the DEIS opens a 90-day public comment period, extending through Nov. 18.

The DEIS and instructions for commenting are at www.boem.gov/liberty.

Hilcorp is proposing a small gravel island in federal waters of

see **LIBERTY EIS** page 16

FINANCE & ECONOMY

Nuna royalty expires

State declines to extend 2015 royalty relief decision; company intends to re-apply

By ERIC LIDJI
For Petroleum News

A royalty modification at the Nuna development will expire at the end of September.

The pending expiration forces operator Caelus Energy Alaska LLC to either reapply at some future point in its development of the North Slope field or revise economic models.

The company had sought a two-year extension to its agreement with the state. The extension would have given the company until Sept. 30, 2019, to meet the final two work commitments requirement by the agreement: spending at least $260 million on facilities at the development and beginning sustained oil production from the Torok formation.

The Alaska Department of Natural Resources determined that it did not have the authority to grant the extension but welcomed a new application from the company.

The Alaska Department of Natural Resources determined that it did not have the authority to grant the extension but welcomed a new application from the company.

Caelus Energy Alaska spokesman Casey Sullivan told Petroleum News that the company

see **NUNA ROYALTY** page 16

LAND & LEASING

DNR terms accepted

ConocoPhillips agrees to state conditions for adding Tofkat leases to CRU

By ALAN BAILEY
Petroleum News

On Aug. 11 ConocoPhillips accepted stipulations set by the Alaska Department of Natural Resources for the expansion of the Colville River unit to include leases that were in the former Tofkat unit, company spokeswoman Natalie Lowman has informed Petroleum News. Petroleum News understands from DNR that the acceptance of the stipulations will enable the unit expansion to go ahead. Arctic Slope Regional Corp. anticipates concurring with the unit expansion, Ty Hardt, ASRC director of communications, has told Petroleum News. ASRC has ownership interest in the land involved.

The bonus bid replacement payments represent compensation to DNR in lieu of lease sale bonus bids, had the department offered the leases in an oil and gas lease sale rather than giving ConocoPhillips the opportunity to drill in the leases.

Denial reconsideration

On Aug. 1 DNR issued a decision, saying that it had reconsidered a February ruling denying ConocoPhillips' application for the unit expansion. In the reconsideration, DNR Commissioner

see **TERMS ACCEPTED** page 15

GOVERNMENT

Bonding changes proposed

AOGCC workshop on proposed changes raises concerns; another requested

By KRISTEN NELSON
Petroleum News

The Alaska Oil and Gas Conservation Commission held a workshop in early June on proposed changes to the bonding required in its regulations.

Commissioner Cathy Foerster, then commission chair, discussed the reasons for proposed changes with House Resources in February. She said with new and smaller companies coming to Alaska, the state no longer has the luxury of dealing with large publicly traded companies with large balance sheets and long track records — companies that have a hard time sneaking away in the dark of night.

In 2016 two operating companies in the state went bankrupt, Foerster said, which has the potential to leave the landowner holding the bag for plugging and abandonment liability.

Both AOGA and ConocoPhillips requested that the commission hold additional workshops on the bonding issue.

She said the commission was considering changing its bonding requirements and would probably spend the summer, fall and winter letting all affected parties be heard through public meetings and hearings.

AOGCC subsequently proposed regulatory changes for bonding, and held a workshop on the

see **BONDING CHANGES** page 14

● ALTERNATIVE ENERGY

AEA authorizes Battle Creek diversion

Modification to Bradley Lake hydropower facility on Kenai Peninsula expected to add 10 percent to power production capacity

By ALAN BAILEY

Petroleum News

During its Aug. 10 meeting the board of the Alaska Energy Authority passed a resolution approving the development and financing of the Battle Creek diversion project, a project designed to increase the power output from the Bradley Lake hydropower facility in the southern Kenai Peninsula. Meltwater from the Battle Glacier in the mountains at the southern end of the peninsula flows down Battle Creek. By diverting some of this water into Bradley Lake it will be possible to raise the level of the lake and thus place more energy behind the Bradley Lake dam, Kirk Warren, AEA chief operating officer, explained to Petroleum News. The result will be an approximately 10 percent increase in the power production capacity of the Bradley Lake powerhouse.

The cost of this power will be close to the lowest in the Railbelt, and will become lower later in the project's life, Warren said.

"It's 100 years of stably priced, low cost power for the Railbelt, without all of the risk and uncertainty and vulnerability associated with other sources of fuel," said Katie Conway, AEA government relations and outreach efficiency manager.

Warren commented that the stability and predictability of the cost of power from Bradley Lake renders planning decisions for the Railbelt power system easier to make.

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● GOVERNMENT

Hughes: More AKLNG specifics needed

Wasilla Republican says getting Senate post opened chance to capture seat on Resources Committee, is enjoying first year on panel

By STEVE QUINN
For Petroleum News

Sen. Shelley Hughes has long wanted to be on the Resources Committee. During her four years in the House, most of the majority's seats went to veterans like Mike Hawker, Craig Johnson, Kurt Olson and Paul Seaton. With her move to the Senate, where members are half the number as the House, her chances improved.

Hughes, a Palmer Republican, says she enjoyed being in the mix of resource development discussions during her first year in the Senate. No longer a member of the Senate majority, Hughes says she isn't sure what the change holds for her, but her views still closely align with the majority. Hughes shared her thoughts on recent developments such as House Bill 111, Interior Secretary Ryan Zinke's visit and what may lie ahead for the AKLNG project.


SEN. SHELLEY HUGHES

Petroleum News: While this isn't your first term, it is your first term on the Senate Resources Committee. Why did you look to get on the committee?

Hughes: Well, five years ago I first come to the Legislature, and I was interested from the onset in resources because it was so vital to everything about Alaska, who we are and why we can move forward as a state. It's important to families and livelihoods; after all it's the basis for our becoming a state. I was trying to come up to speed early on, even in the House sought a seat. It was near to impossible as a newcomer to get on. Even people who had been in four to six years, the seats would be taken up before they had a chance. So, I'm thrilled to have an opportunity to have a chance on the Senate with fewer people. I had been a strong advocate to promote responsible development.

As far as the first year goes, there was a lot of listening and learning. I do feel like I was trying to track things so it wasn't brand new. Even prior to becoming a legislator, I did make the effort to attend certain conferences and meetings to have a good understanding going in. Even though there were a lot of things I felt I was learning for the first time, there was much that was familiar at the same time.

There are members who have been on for a long time. There's always a way to ask members and find out what something means. I'm not shy about doing that in between meetings as well. Speaking to the experts in the field, I've never hesitated with that. So I sought the seat because it's important for the state to move forward with its resources. It's fundamental to our future and the welfare of our state.

Petroleum News: So is it what you expected?

Hughes: As far as the first year, I know we'll talk about HB 111 and the gas line, I will say the confirmation process was interesting with DNR and the AG, and what to expect in addition to the development of oil and gas on our mining and timber, plus in regard to public access like Klutina Road issue is one of great interest to me. I'm trying to dig in and understand the agreement, not just for that road, but for the statewide ramifications going forward. My understanding in digging into it is that was a winnable case. Why did the administration try to go another route? Will we face similar situations down the road where we are put in a positon where we are going to have to settle and come up with agreements? It's going to end up costing Alaskans access to certain places where they are going to have to pay. So that was another interesting aspect.

I know you want to talk about oil and gas, but the fisheries aspect, that's a big deal in our area. I have friends who commercial fish, so this is not a diss on those who make their livelihood that way, but I have some concerns over how the rest of Alaskans can access that resource in a fair manner. It's becoming a hot-button issue in our area.

Q AND A

Another reason I wanted to be on the committee is I believe we have hardly scratched the surface when it comes to mining in this state. I believe we are at a time and a place where there are doors of opportunity for advancing some resource development in a way we haven't been able to for some time. When Secretary Zinke was up here, his discussion was the administration wants to move forward using the phrase energy dominance as opposed to energy dependence. That is a signal that they really want to move forward. We need to be in sync with that. I don't know we are completely in sync in a couple of areas.

The (Walker) administration is focused on the gas line. I'm concerned we will miss opportunities with other resource development. We need to get in sync with Zinke. That's kind of a catch phrase. The mining potential in this state is huge. Even coal, strangely enough. I know prices have dropped and I understand why, but there is a developing technology whereby coal can be burned emission free. We are at the very, very beginning of that technology. We know technology is exponential as it evolves: If there are units that can burn coal 100 percent cleanly, at some point that will be available and could be a real game-changer with energy. Whereas Asia and some of those locations are slowing down on coal, we may see a resurgence in the need for coal. Alaska holds more than the total combination of coal in the Lower 48. I'm not giving up hope for that, either.

We've got a number of developing mines and if we get in sync with where the federal government wants to go — some of these projects take years and years and years — I believe we can advance some of these projects more quickly. You've got Donlin, Livengood and Bokan Mountain. Those are really important considering the recession we are facing at present.

I realize we're talking about oil and gas, but mining and timber are really important too. It's a way to diversify our economy. That's why you're seeing all the pressure as far as changes in the oil and tax regime over the years. The more we diversify, the less pressure we put on that area. Hopefully, the more growth and development we'll see oil and gas industry.

Petroleum News: Well let's talk about HB 111. What are your thoughts on the process and result that took nearly 181 days to achieve?

Hughes: It was one of those things where I cringe thinking we had to address it. Yet again another change which is not good as far as planning and having a stable policy environment at the same time. I cringe yet at the same time we couldn't afford doing what we were doing. We were the only tax regime doing that in the U.S., possibly globally. It just was not affordable. To come up with what we did, there is good and bad. For some of the smaller companies, it's a tough hit. Some folks refer to the statute and say companies should have known, but when these discussions happened early on, and we were flush with revenue, that's not how they went into it, so it makes it tough for some companies. I hope they can ride it out and make it work. It was one of those spoonful of medicine bills that you didn't like but we knew we had to do.

Petroleum News: Are there any sections of the bill that give you pause? I know some didn't care for the ring fencing.

Hughes: Ring fencing does go against free-market principles, but we are dealing with the state's role and responsibility to develop the resources in the best interest of the state. That makes things a little different. Normally with ring fencing, let the company do what they want, but we have a responsibility to for the best interest of the state, so I kind of understood. That was one of the ways to bring the bill to the floor. I pushed back pretty hard the prior year (HB 247), but on these cashable credits we just could not do that in the present fiscal environment. We had to take some of the bad with the good. A lot of smart people in the industry will have the wisdom and forethought with some of the changes as much as it makes us all cringe.

The private sector has taken a substantial hit. The oil industry in particularly has taken a hit. It's troubling to me that the public sector seems to want to convince the public they have also taken as large a hit. A lot of it is smoke and mirrors. The public sector has not taken the hit. That is one of things that I'm trying to highlight and help Alaskans, even the silent majority, wake up to the fact. Not only have some tried to hit the oil industry up for more — and I know there's an effort among some Democrats to go back in the working group and try to convince everyone that we need to raise taxes on the oil industry, but in addition to that there will be pressure in individual Alaskans and families to draw revenue from their wallets as well.

I believe there is smoke and mirrors with some of

see HUGHES Q&A page 13

● UTILITIES

AIDEA approves IGU funding

Board increases reimbursement to utility for the work involved in seeking new natural gas supply for Fairbanks and Interior

By **ALAN BAILEY**

Petroleum News

During its Aug. 10 meeting the board of the Alaska Industrial Development and Export Authority approved an increase to $345,000 in funding to the Interior Gas Utility, to cover the utility's costs incurred in trying to establish a new gas supply from Cook Inlet for Fairbanks and the surrounding Interior. The funding comes from the capital budget for the Interior Energy Project, or IEP, a project to bring an increased supply of affordable natural gas to Fairbanks and its surrounds. During its June 29 meeting the AIDEA board had approved $150,000 in capital funding for IGU — the new resolution increased that funding to $345,000.

The funding comes in the wake of a misunderstanding between AIDEA and IGU over the appropriate use of an AIDEA Sustainable Energy Transmission and Supply, or SETS, loan for the IEP. IGU has been engaged in several tranches of work as part of the IEP, including negotiations with Cook Inlet gas producers for a new gas supply. The utility had assumed that it could use SETS funding for its work but AIDEA says that, under the terms of legislative authority for the use of the loan, the scope of work fundable under the loan cannot currently be changed to include the activities that IGU has been conducting. Instead, to keep the IEP moving forward, AIDEA is allocating IEP capital funding to IGU's efforts.

Project components

In addition to acquiring a new gas supply from Cook Inlet, the overall plan for the IEP involves expanding a liquefied natural gas facility near Point Mackenzie on the Cook Inlet; ramping up the transportation arrangements for shipping LNG to Fairbanks; expanding the LNG storage facilities in Fairbanks; and building out the gas distribution network in Fairbanks. AIDEA currently owns Pentex Natural Gas Co., the owner of the LNG plant, the LNG trucking operation and Fairbanks Natural Gas, a utility that supplies gas to customers in central Fairbanks.

The intent is that IGU will ultimately purchase Pentex, thus enabling Fairbanks Natural Gas and IGU to consolidate their operations, an arrangement that can improve efficiency in gas distribution and achieve economies of scale. Funding for the IEP comes from a combination of a state capital appropriation, a SETS loans and AIDEA bonds.

Gene Therriault, AIDEA's IEP team leader, told the board during its Aug. 10 meeting that, to help resolve the IGU funding issue, he had asked IGU to segregate its costs into three categories: costs associated with negotiating a gas supply, costs associated with figuring out how to integrate the two Fairbanks gas utilities and costs associated with due diligence for the IGU purchase of Pentex. The new capital funding will only be used for the first of those categories, the gas supply. And, having checked out IGU expenses that fall into that category, $345,000 is appropriate funding for that work, Therriault said.

Depends on gas supply

At this stage, the key issue that has emerged for the IEP is the establishment of a Cook Inlet gas supply at a price that will encourage Fairbanks businesses and residents to convert from oil-fired heating of their buildings to the use of natural gas. In addition to the need for a workable gas price, the gas supply contract needs to allow for flexibility in supply volumes, given the considerable uncertainty over future Fairbanks gas demand. Gas consumers will need to be motivated to spend the money necessary to convert their existing heating systems to the use of gas.

The original concept for the IEP involved the development of an LNG plant on the North Slope, to enable Fairbanks to establish a gas supply from the Slope. In anticipation of the gas supply becoming available, FNG and IGU began using AIDEA SETS funding to build out the gas supply infrastructure in Fairbanks. But, in 2015, after it had been determined that the original North Slope plan was not viable, the state Legislature passed House Bill 105, a bill that enabled the IEP to consider a broader range of gas supply options. The upshot was the current project for obtaining gas from the Cook Inlet basin.

HB 105 requirements

But HB 105 required the AIDEA board to approve an IEP plan that includes an identified source of gas, the cost of the various components of the gas supply chain and the expected delivered price of gas in Fairbanks before additional use can be made of the SETS funds. Work on the Fairbanks distribution infrastructure stopped. And, following advice from the state's Department of Law, AIDEA informed IGU that the utility cannot use SETS funding to offset costs incurred in connection with activities such as seeking a viable Cook Inlet gas supply.

Therriault told the AIDEA board that ultimately IGU's due diligence costs could be rolled into the final project costs for the merging of the two Fairbanks utilities and that the financial arrangements that have now been made will enable IGU to remain solvent.

"So we think we have proposed something that is reasonable from both sides, to get past the current accounting problem that we have between the two entities," Therriault said, referencing the misunderstanding between AIDEA and IGU over the use of SETS funds.

Project activities

Pentex is taking delivery of some new large-capacity LNG trailers to beef up its LNG transportation arrangements. However, work associated with expanding Pentex's LNG plant is currently on hold, pending resolution of the gas supply issue. The AIDEA board is allowing access to some capital funds for the detailed engineering of expanded LNG facilities in Fairbanks, in anticipation of an expanded gas supply for the city — there is some urgency in moving ahead with the storage project, because potential state tax credits for LNG storage construction sunset on Jan. 1, 2020.

One potential factor in pushing up natural gas demand in the Alaska Interior is the passage this year by the Alaska Legislature of Property Assessed Clean Energy, or PACE, legislation. The PACE system can enable businesses to obtain low-cost financing for energy conversions. Therriault said that the Alaska Energy Authority is currently working with communities to figure out how best to implement PACE in Alaska. He also commented that some businesses and light industrial companies in Fairbanks have expressed to him an interest in converting their facilities from oil to gas heating, in particular to enable the removal of underground oil storage tanks.

Gas rate increase

During its Aug. 10 meeting, the AIDEA board also approved new gas pricing for FNG's existing customers — in June the utility had proposed a 3 percent gas rate increase. Dan Britton, president of FNG, told the board that there had been no public comments on the proposal. After AIDEA purchased Pentex in 2015 it was able to reduce FNG's gas rate by 13.5 percent for residential customers.●

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NATURAL GAS

AGDC moves ahead with marketing LNG

By KRISTEN NELSON

Petroleum News

The Alaska Gasline Development Corp. continues to move forward with permitting for the Alaska LNG project and with marketing Alaska's gas, focusing on Asian markets. AGDC took over the Alaska LNG project at the end of last year after the North Slope producers declined to move the project forward at that time.

Alaska LNG has an advantage over projects proposed for Oregon and western Canada, AGDC President Keith Meyer told the corporation's board at an Aug. 10 meeting. The proposed Oregon LNG project, like Canada, has a big pipeline to build — those are big pipeline projects and nobody wants those pipelines, he said.

Alaska, on the other hand, is a pipeline project with an LNG facility — and this is a pipeline that everyone wants, Meyer said.

Dave Cruz of Anchorage, the board chairman, noted that AGDC was founded by the Legislature to bring gas to Alaskans, because of a potential natural gas shortfall in Cook Inlet. That potential shortfall hasn't been resolved, he said, and gas to Fairbanks hasn't been resolved. And there is no plan for gas in the rest of Alaska.

Alaska LNG is essential for the state's economy Cruz said, with a 90-year natural gas supply available based on known reserves — a supply that would change the state.

Marketing moves ahead

Alaska, on the other hand, is a pipeline project with an LNG facility — and this is a pipeline that everyone wants, Meyer said.

Lieza Wilcox, AGDC's vice president, commercial and marketing, reviewed marketing efforts for the project. AGDC has executed 17 confidentiality agreements with companies in six markets, she said, with six of those agreements executed since the June board meeting.

AGDC is conducting meetings to provide more detailed commercial and technical information, Wilcox said.

Proposed letters of intent have been transmitted to entities which have signed confidentiality agreements, she said. AGDC has a previously announced memorandum of understanding with Korea Gas Corp., signed in late June.

Wilcox said AGDC has one letter of intent executed by the counterparty and under review, and drafts in active review by 13 parties in several countries.

Five of the executed confidentiality agreements are with entities in China, with review of the letters of intent underway and a third set of in-country meetings planned to discuss the letter of intent drafts.

There have been two additional trips to Japan since the June board meeting, she said, and commercial activity has narrowed to the most interested companies — five to date.

LNG hubs may develop in Southeast Asia, she said, with LNG receiving terminals to which Alaska could be a supplier.

Capacity solicitation

Wilcox said capital solicitation for AKLNG started June 15 and responses are due Aug. 31, with prospective foundation customers receiving rights and prices to reserve capacity on the system.

North Slope producers and other qualified third parties have been invited to participate, she said.

The capacity solicitation will determine the initial size of the project.

AGDC also continues to market directly to LNG buyers and will reserve transferrable capacity on the system.

Wilcox said the corporation will enter into negotiations for tolling agreements with those responding to the capacity solicitation.

AKLNG would have separate tolling agreements for the gas treatment plant on the North Slope, the pipeline and the liquefaction facility.

Options include those owning gas holding tolling capacity on all three facilities; wellhead gas purchasers holding capacity on all three facilities; and an in-state aggregator holding tolling capacity on the gas treatment plant and the pipeline — and providing natural gas for in-state users.

Both the gas owners and those buying gas at the wellhead would provide LNG to markets. ●

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BATTLE CREEK

"They know what that cost of energy is going to be not only five years from now but 10 years from now and 20 years from now," Warren said.

Design and engineering work for the project has already been carried out and the focus now is on preparing the plans to be ready for construction bids. Construction costs are estimated at about $46 million. AEA is looking at several possible funding options for the work but hopes to cover most of the costs through the issue of New Clean Renewable Energy Bonds, a form of low-cost bonding designed to finance renewable, clean energy projects administered by the Internal Revenue Service. Bonds would be paid off using revenues from power sales from the hydropower facility.

The cost of this power will be close to the lowest in the Railbelt, and will become lower later in the project's life, Warren said.

Funding to date on the Battle Creek diversion project has come from the state and from the Railbelt electricity utilities. The state has contributed $3 million from an AEA grant to the Alaska Railbelt Cooperative Transmission and Electric Co. and $500,000 in the form of an AEA Renewable Energy Fund grant. Four utilities, Chugach Electric Association, Matanuska Electric Association, the City of Seward and Homer Electric Association, have contributed $1.2 million in funding. An additional $1.17 million has come from the Bradley Lake Renewal and Contingency Fund, a fund to which all Bradley Lake participants contribute.

Warren said that work in clearing the roadway required for the project will start soon, using existing project funding, to avoid construction delays next year, given timing restrictions for the clearing work that result from state regulations for the protection of bird nesting. Construction for the diversion should start next spring and take a couple of years to complete, Warren said.

Owned by AEA

The Alaska Energy Authority owns the 120-megawatt Bradley Lake facility, which is operated under contract by Homer Electric Association and managed by a committee consisting of representatives of the Alaska Railbelt electricity utilities.

The modifications to the hydropower system will involve constructing a new diversion on the west fork of upper Battle Creek, and laying a 1.7-mile buried pipeline and 1,000-foot canal to carry the diverted water to Bradley Lake. The existing hydropower system has a 125-foot-high dam that raises the natural level of Bradley Lake by 100 feet, with water entering the lake coming from the upper Bradley River and a diversion on the upper Nuka River. A 18,610-foot-long tunnel carries water from Bradley Lake to a powerhouse with two 45-megawatt generating units, on the shore of Kachemak Bay, about 22.5 miles northeast of the town of Homer.

A diversion management plan will ensure an adequate flow of water in Battle Creek below the Bradley Lake diversion, once the diversion is in operation.

The Federal Energy Regulatory Commission approved the Battle Creek diversion design in September 2016. Gaining FERC approval for the project took several years to accomplish. ●

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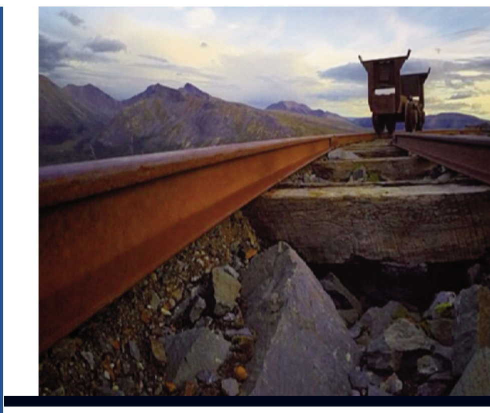
North of 60 Mining News



page 8 Alexco gets closer to restart at high-grade silver mine in Yukon

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NEWS NUGGETS

Compiled by Shane Lasley

PEBBLE LIMITED PARTNERSHIP

Crews return to camp after field work at the Pebble Mine project. The 2017 field program is focused on collecting the additional environmental and engineering data to finalize permit applications for this world-class copper project in Southwest Alaska.

Readying Pebble for permitting

Northern Dynasty Minerals Ltd. Aug. 11 reported that it is working toward the finalization of the design concept and necessary documentation to initiate permitting for its Pebble Mine project in Southwest Alaska. This work includes a field program to collect additional environmental baseline data for proposed infrastructure such as access routes, port and ferry landing sites with the objective of characterizing the existing conditions for engineering design and permitting purposes. Wetland mapping of the proposed mine site and the project's supporting infrastructure areas will also be conducted. At the same time, the engineering team is focused on investigating a number of project alternatives in order to finalize the permit application package for Pebble. The engineering work includes the consideration of smaller mine concepts, including site layouts and waste management facilities; alternate ore treatment options; transportation corridor to the south of Lake Iliamna, including road and ferry options; facilities associated with the new transportation corridor; a port facility on Cook Inlet, southeast of Lake Iliamna; water treatment plants; and a gas-fired power plant and associated gas line. This engineering work, along with the supporting field program, is targeting the preparation and submission of a complete permitting package under the federal National Environmental Policy Act. Alongside its engineering and field work, the Pebble Partnership, owned by Northern Dynasty, is carrying out stakeholder engagement activities in Alaska to advance and strengthen relationships with Alaska Native partners and broader stakeholder groups, as well as people in political and regulatory offices in Juneau and Washington D.C. "Through our numerous stakeholder initiatives, the company seeks to create a science-based project design more responsive to stakeholder concerns that bring benefits to local residents, businesses and Alaska Native village corporations, and energizes the economy of Southwest Alaska," Northern Dynasty penned in its second quarter financial report. Over the past 16 years, roughly US$762 million has been invested in the geological, environmental, engineering and other work needed to prepare the world-class Pebble mine project for permitting. Northern Dynasty's near-term goals are to secure a project partner(s) with the financial resources to contribute to permitting, building and operating a world-class mine at Pebble; and initiate federal and state permitting in 2017.

More 2017 drilling at Pyramid

CopperBank Resources Corp. Aug. 14 announced plans to expand its 2017 drill program at the Pyramid copper-gold-molybdenum project on the Alaska Peninsula. The company had already expanded the originally planned 1,500-meter initial phase of drilling by adding a second rig. Following a site visit by CopperBank's technical team and consultants from SRK

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MILLROCK RESOURCES INC.

Millrock Resources is managing a roughly 3,000-meter drill program aimed at the upgrading and potentially expanding the historical gold-copper resource at the Stellar property in Southcentral Alaska to modern standards.

EXPLORATION

Bold moves pay off

Exploration ramps up on Millrock gold, copper properties in Alaska, BC

By SHANE LASLEY

Mining News

With roughly US$5 million of exploration being carried out on its projects in Alaska, British Columbia and Mexico this year, Millrock Resources Inc. is beginning to reap the benefits of the upswing in the mining sector.

GREG BEISCHER

"During the industry downturn, Millrock moved boldly to grow its property portfolio," said Millrock President and CEO Greg Beischer. "Now that metal prices and investor sentiment have improved, we are ramping up exploration efforts significantly."

This ramp up of exploration includes 2017 field programs at the Liberty Bell and Stellar projects in Alaska; Oweegee Dome and Willoughby projects in northern British Columbia; and La Navidad and El Picacho projects in Mexico.

Stellar drilling

The biggest exploration program slated for this year is being carried out on the Stellar gold-copper project in Southcentral Alaska.

Earlier this year, Millrock traded its ownership of Stellar to facilitate a deal that merged Stellar with Caribou Dome, a high-grade copper property immediately to the east.

In exchange for Stellar, Millrock gained a 10.6 percent stake in Coventry Resources, an Australia-based junior that now owns both Stellar and Caribou Dome.

The main deposit at Copper Dome hosts 2.8 million metric tons of total resource (measured, indicated and inferred) averaging 3.1 percent (190 million pounds) copper.

Numerous other high-grade copper targets have been identified along an 11-mile stretch of Caribou Dome, prospects that trend onto the neighboring Stellar claims.

The Stellar claims cover the Zackly copper-gold skarn deposit, which hosts a historical resource of 1.54 million metric tons grading 4.5 g/t (218,944 oz) gold and 2.9 percent (66.9 million lb) copper.

Bringing these two assets together provides Coventry a roughly 22-mile-long stretch of highly prospective ground just north of the Denali Highway.

Upon completion of a three-company deal to merge the neighboring properties– which also involved Vista Minerals, another Australian explorer that was earning rights on the Stellar property – and raising roughly AU$5.5 million to explore them, Coventry is now in the process of changing its name to Polaris Minerals Ltd.

Millrock, which has decade of experience exploring Alaska and knows the Stellar property well, is managing the 2017 program. This work is expected to include 3,000 meters of drilling primarily focused on drilling in around the Zackly deposit with the aim to upgrade the historical resource to JORC standard, the Australian equivalent of the NI 43-101 standards in Canada.

"We've got pretty high-grade gold-copper historic resource in the ground at Stellar and we're going to re-drill that to bring it up to modern resource standards. Additionally, we'll use a second drill to test the geophysical conductors along strike," Beischer told Resource Digest.

The second rig could expand upon the high-grade copper and gold.

Millrock and Polaris are also hoping to get drill to Mars, a large copper-gold prospect at the western edge of the property and right next to a promising copper prospect on the Caribou Dome side of the merged land package.

see **MILLROCK MOVES** *page 8*

NORTHERN NEIGHBORS

Compiled by Shane Lasley

ALEXCO RESOURCE CORP.

An ore cart rests outside a portal of one of the historic mines in the Keno Hill Silver District. From 1914 to 1989, miners recovered roughly 219 million ounces of silver from this legendary silver mining district in the Yukon. Since buying the district in 2006, Alexco has outlined a number of high-grade silver deposits there.

Alexco nears decision on Keno Hill restart

Alexco Resource Corp. Aug. 10 reported it has budgeted C$11.9 million for exploration and development expenditures ahead of a decision on resuming production at its Keno Hill silver mine in the Yukon. "Alexco is fully engaged on site operations and a plan to move steadily forward in preparation for a final production decision at Keno Hill," said Alexco Chairman and CEO Clynt Nauman. In March, the company published a preliminary economic assessment that outlines an operation at the re-opened Keno Hill Mine that would produce 25.1 million ounces of silver, 77.3 million pounds of zinc, 67 million lb of lead and 4,870 oz of gold over eight years. This PEA is centered on the Flame & Moth deposit at Keno Hill but includes ore from the Bermingham, Bellekeno, Lucky Queen and Onek deposit. These deposits would provide the mill with 1.02 million metric tons of material averaging 843 g/t over the mine-life considered in the assessment. Alexco has budgeted C$3.2 million for a 12,000-meter surface drill program to further explore potentially mineralized structural targets in the immediate vicinity of the Bermingham, a high-grade discovery with 868,000 metric tons of indicated resource averaging 628 g/t (17.3 million oz) silver. The surface drilling is more than half way complete and results are expected in the fourth quarter. Alexco has also applied for permits to carry out an underground exploration program at Bermingham this year. If permitted, the company plans to drive a 600-meter decline to provide access for roughly 5,000 meters of underground infill and confirmation drilling of the high-grade indicated resource. The objective of the program is to upgrade the existing inferred resources to indicated and upgrade existing indicated resources to measured. This roughly $8.7 million program includes purchasing and rebuilding underground equipment.

TMAC makes headway; hires experienced COO

TMAC Resources Inc. Aug. 14 said its first drill program at the Boston deposit, located in the southern portion of its Hope Bay project in Nunavut, has cut high-grade gold mineralization over wide widths. Dr., Chief Executive Officer of TMAC, stated, "Since acquiring the Hope Bay Project in 2013, we have focused on Doris and patiently waited to initiate a major exploration campaign at Boston until we had the Doris mine in commercial production. Having achieved that effective June 1, we recommissioned the Boston camp located about 60 kilometers south of the Doris complex and initiated our first drilling program there this summer," said TMAC CEO Catharine Farrow. T Boston hosts 3.71 metric tons of measured and indicated resources averaging 9.2 grams per

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Petroleum news

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MILLROCK MOVES

Kinross at Liberty Bell

As drilling gets underway at Stellar, Millrock and Kinross are considering targets for a 2018 drill program at the Liberty Bell, a road assessable gold project about 70 miles southwest of Fairbanks.

In March, a subsidiary of Kinross Gold entered into an option to earn a 70 percent joint venture interest in Liberty Bell by investing US$5 million on exploration over a five-year span, as well as paying Millrock management and advance royalties over the same period.

Situated on the north side of the Alaska Range in the Bonnefield Mining District, Liberty Bell is prospective for skarns, which often host high-grade concentrations of gold and copper, and porphyry copper-gold, which are typically lower grade but much larger.

A small gold-rich skarn deposit with striking geological similarities to the high-grade Peak zone gold deposits being advanced by a partnership between Royal Gold and Contango Ore on their Tetlin property near Tok is already known to exist at Liberty Bell.

This year, the partners carried out a preliminary geochemical exploration program at Liberty Bell that included the collection of 1,600 soil samples, plus stream sediment and rock samples.

Results from this work will be used to narrow targets for a drill program being considered for next year.

Golden Triangle exploration

Millrock is currently gearing up for drilling at Oweegee Dome and Willoughby, two of the company's four mineral prperties in British Columbia's Golden Triangle.

In June, the company optioned these two copper and gold properties to Sojourn Ventures Inc., a Vancouver, B.C.-based junior.

To earn full ownership of both properties, Sojourn must issue the 4.14 million shares to Millrock over the next two years and complete C$4 million of exploration on the property over the next three years.

If Sojourn fully exercises its option for full ownership of Oweegee Dome, Millrock would own roughly 15 percent of Sojourn's shares.

Millrock will retain a 1.5 to 2 percent net smelter return royalty on the properties.

"Historically Millrock has made exploration agreements primarily with major mining companies. However, we anticipate that shares of junior gold exploration companies will do well in the coming years," Beischer said.

Sojourn raised more the C$1 million to fund exploration on these northwestern B.C. properties

"(I)t looks like our new partner Sojourn Ventures has raised, actually oversubscribed, financing for work that will be done on our Golden Triangle British Columbia project so we're going to execute the exploration on behalf of Sojourn. In fact, we've already got a team mobilizing and we'll be in the field in the Golden Triangle next week," said Beischer.

Sojourn plans to invest roughly C$300,000 this year on initial exploration at Oweegee Dome, a gold-copper property about 50 miles northeast of Stewart.

Past exploration at Oweegee Dome includes airborne geophysics, ground sampling and drilling. One hole drilled there in 2007 cut 138.7 meters averaging 0.189 g/t gold and 0.074 percent copper, including a 17.1-meter section that averaged. 0.468 g/t gold and 0.11 percent copper.

Sojourns 2017 program, which will be managed by Millrock, will include stream sediment sampling, mapping, and prospecting around conductive zones identified by geophysical surveys.

This program will narrow targets for drilling planned for 2018.

Sojourn is investing another C$200,000 on initial exploration at Willoughby, a high-grade gold property about 16 miles northeast of Stewart.

Willoughby has a long exploration history including two phases of drilling. Highlights from historical drilling there includes 20.5 meters averaging 24.99 g/t gold and 184.22 g/t silver; and 2.9 meters of 383 g/t gold and 213.6 g/t silver.

Millrock's exploration team will focus this year's work on prospecting the margins of glaciers that have receded substantially since the last exploration effort in 2008.

Growing Mexico portfolio

As exploration picks up in the north, Millrock continues its project generator strategy with the addition of two new gold projects in Mexico – La Navidad and El Picacho gold projects.

Both of these projects are located in Sonora, a northern Mexico state where Millrock has built a large portfolio of properties.

Right after acquiring La Navidad, Centerra Gold Inc. entered in an option to earn an 80 percent interest in the project.

An exploration program being carried out this summer includes soil sampling, geological mapping and geophysical surveys ahead of an expected drill program this fall.

A similar program is being carried out at El Picacho, which has been named a "designated project" under the terms of a strategic alliance agreement between Millrock and Centerra.

Millrock anticipates that Centerra will want to drill one or both of these projects later on this year, adding to an encouraging year for the project generator.

"With a number of exploration programs in place for the second half of 2017, we are excited and encouraged to see that the work and determination we had put in throughout the downturn is paying off," Beischer added. ●

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NORTHERN NEIGHBORS

metric tons gold (1.1 million ounces) gold, of which roughly 870,000 oz are contained in the B2 zone. The best 2017 hole drilled so far at Boston, TMB0001, cut 22.3 meters averaging 15.3 grams per metric ton gold, in the B2 zone. The objective of the ongoing drill program at Boston is to provide further understanding of the geological controls on gold mineralization and demonstrate the potential to add significant high-grade gold ounces to the Boston Mineral Resource base at shallow depths.

Additionally, TMAC said ongoing drilling at Doris below the dyke, or Doris BTD, continues to intersect high grade gold over mineable widths and the underground development there confirms the continuity of the ore bearing structures at depth. The company plans to develop BTD zone to facilitate the planned doubling of the mill at Hope Bay to 2,000 metric tons per day. The mill reached commercial production on June 1, but poor recoveries have hampered the ability to reach full operating capacity. "The characteristics of the Doris ore have been in line with expectations and are not the cause of any complications in the plant recoveries," Farrow said. "Recently, increased throughput and improved availability of the plant have provided sufficient plant stability to focus on improving recoveries and we continue to make technical advancements. The slower than expected ramp up has resulted in fewer ounces of gold being produced than planned and we now expect to sell between 50,000 and 60,000 ounces of gold in 2017."

The company has also hired Gil Lawson, a mining engineer with 31 years of experience, as chief operating officer. Lawson's three decades of experience includes work in the Timmins and Red Lake gold mining districts in Ontario, which are very similar to Hope Bay gold. He has managed two start-up operations – Goldcorp Inc.'s Musselwhite Mine in Ontario and De Beers Canada Ltd.'s Snap Lake Mine in the Northwest Territories. "Gil's extensive start-up experience at Musselwhite and Snap Lake, plus his experience working in Canada's Arctic – leading engineering and mine planning departments for a major gold mining company, operating gold mines and processing plants in geological environments similar to ours at Hope Bay – will enable us to complete the ramp up and optimization at Doris," said Farrow.

PRETIUM RESOURCES INC.

Since this first gold pour in late June, the Brucejack Mine has operated smoothly and Pretium Resources is ramping up the grade of ore being fed to the mill at this high-grade gold mine in northwestern B.C.

Smooth mine start at Pretium's Brucejack

Pretium Resources Inc. Aug. 10 reported a smooth ramp up of operations at it Brucejack gold mine in northwestern British Columbia. During commissioning in June and grade ramp-up in July a total of 25,392 ounces of gold were produced from low-grade stockpiles, development muck; plus ore introduced to the mill in July. Construction and mechanical commissioning at the mine is substantially finished, and the demobilization of construction and contract crews is nearly complete. The permanent operations team has now assumed full management of the mine, and all of the main operating units in the mill are now fundamentally performing as expected. In July, the process plant at Brucejack operated near nameplate capacity, processing an average of 2,699 metric tons of ore per day, which is 99.9 percent of the 2,700-metric-ton-per-day nameplate capacity. With the achievement of commercial production, the grade of the ore introduced to the mill was increased with a focus on optimizing recoveries in the gravity and flotation circuits. Gold-silver doré is now being produced and flotation concentrate is being bagged. As the grade of ore has ramped up, doré and flotation concentrate production has increased and gold-silver inventory has accumulated and gold sales have begun. During the grade ramp-up in July, 16,882 oz of gold were produced from stockpiles, development muck and the introduction of stope ore. Underground development continued to advance through the second quarter and subsequently reached design-level production. Long-hole drilling is currently drilling off stopes at a rate of approximately 235 meters per day. Currently six stopes are operational, four stopes are available for drilling and an additional 17 stopes are in various stages of being developed.

In June, Pretium raised C$5 million to fund a 2017 regional grassroots exploration program designed to follow-up on the results from the 2016 program. This work began with prospecting, sampling and mapping approximately 20 kilometers (12.5 miles) east of the Brucejack Mine with the aim of generating targets for drilling later in the program.

Dolly Varden cuts new high-grade silver zone

Dolly Varden Silver Corp. Aug. 15 reported that drills have tapped a new zone with the potential to expand the Torbit deposit at the company's namesake project in the Golden Triangle of northwestern British Columbia. Intersected in hole DV17-058, this new zone of silver mineralization has all the mineralogical signatures of the Dolly Varden-Torbrit Horizon but is located in host rocks of the footwall of the Moose-Lamb Fault, whereas the Torbrit deposit is hosted in the hanging wall. This Lower zone intercept in DV17-058 returned 16.1 meters (13.19 meters true thickness) averaging 269 grams per ton silver, with small amounts of zinc and lead. Additionally, 300 meters to the north, DV17-057 cut 22 meters (18.02 meters true width) of Torbit mineralization averaging 14.6 g/t silver. Dolly Varden said this new discovery may represent a deeper offset, or parallel deposit. "A new discovery in this historic mining camp is exactly what we have been hoping for and we are proud of our exploration team," said Dolly Varden President and CEO Gary Cope. The company said the this year's 5,000-meter drill program on the Dolly Varden property is ahead of schedule and on budget, and it is considering expanding the program to 12,000 meters.

K2 Gold expands Wels

K2 Gold Corp. Aug. 10 reported results from 11 holes drilled at the Wels Gold property near the Alaska border in western Yukon. Highlights from the drilling include 28.5 meters of 2.37 grams per metric ton gold in hole DDH17-06; and 12.5 meters of 5.08 g/t gold in DDH17-07. The company said this year's drilling has confirmed the presence of a shallow, well defined gold mineralized body starting at shallow depths, located within a broader halo of lower grade gold. The mineralization is hosted by a pervasive east-west trending structural zone within non-magnetic granite. The widest high-grade gold zone is Main Saddle, a 10- to 30-meter -thick mineralized body that has been traced for roughly 125 meters along strike. Visible gold has now been identified in three of the 15 holes drilled at Saddle. In addition, two new higher grade zones have been identified: South Saddle, a new 1.5- to 4.5-meter-wide zone parallel to Main Saddle; and North Saddle, a less defined zone 50 meters north of Saddle. K2 said additional soil sampling confirmed the anomalous nature of the three main zones at Wels – Saddle, North Ridge and Southwest Spur – and identified new target areas in the western portion of the property. ●

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NEWS NUGGETS

Consulting (Canada) Inc., the company has decided to add a second phase of drilling to the program. "There were a number of professional geoscientists and engineers present to carefully consider the historical drilling results, the effectiveness of the current phase one drill program, and the rationale to expand and continue drilling," said CopperBank Executive Chairman Gianni Kovacevic. Pyramid hosts 122 million metric tons of inferred resource averaging 0.41 percent copper, 0.1 grams per metric ton gold and 0.021 percent molybdenum. CopperBank, however, is treating this resource as a historical and hopes to update it with a current minerals resource following the expanded 2017 exploration program. CopperBank plans to complete a C$750,000 private placement fund the second phase of drilling. ●


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● EXPLORATION & PRODUCTION

North Slope snow season shortening

As the snow pack melts earlier and forms later, snow has been covering the tundra for ever shorter durations in recent years

By ALAN BAILEY
Petroleum News

The duration of the annual period when snow covers the North Slope of Alaska has been becoming progressively shorter, according to a paper published by a group of scientists in the Bulletin of the American Meteorological Society. The length of the snow season is important both for local North Slope residents and for the oil industry, which depends on the snow cover protecting the Arctic tundra when conducting off-road exploration and development. The findings come mainly from observations made near Utqiagvik (formerly Barrow).

Began in 1970s

A trend towards the earlier melting of the winter snowpack began in the mid-1970s, with the date of the disappearance of the snow cover receding at an average rate of 2.86 days per decade between 1975 and 2016, the paper says. The date on which snow begins to accumulate at the beginning of the winter has become later at an average rate of 4.6 days per decade over the same time period. On the other hand, exceptionally short snow seasons in 2015 and 2016 dominate the average trend for the shrinking season length since 1975, a factor that suggests the need for some caution in interpreting the data.

It appears that the timing of the snow melt is particularly related to the flow of relatively warm air northward from the North Pacific Ocean. The timing of the fall freeze-up seems related to warm air in the lower atmosphere, with sea-ice conditions appearing to strongly influence temperature patterns at Utqiagvik. There is no obvious correlation between the depth of the snow cover and the timing of the snow melt, the paper says.

The authors of the paper suggest that temperature and atmospheric circulation anomalies in the North Pacific may help with the statistical forecasting of the spring snow melt, while variations in the summer sea ice melt may help anticipate the timing of the arrival of the winter snowpack.

Lengthened snow-free season

Taken together, the earlier snow melt and later freezeup have combined to cause a dramatic increase in the length of the snow-free season. This phenomenon proved particularly notable in 2016, in which year the duration of the snow-free period was 45 percent longer than the 1975 to 2015 average, the paper says.

A key tool that the scientists are using to monitor the timing of the North Slope snow cover is the measurement of electromagnetic radiation — snow on the ground reflects radiation, while uncovered tundra tends to absorb the radiation. In addition to using this technique near Utqiagvik, a mobile observatory near Oliktok Point on the coast of the central North Slope has demonstrated a similar snowmelt pattern to that at Utqiagvik since 2013. Moreover, correlations with radiometric data collected at Sagwon and Franklin Bluffs, inland to the south of Prudhoe Bay, support the likelihood that data collected at Utqiagvik is representative of regional conditions, the paper says.

Natural variation

There has, however, been significant natural variation in the snow season timing across the years: The third earliest snow melt date on record happened as long ago as 1902, although 2016 holds the record for the earliest melt date. But eight of the 10 earliest melt dates have occurred since 1990, the paper says.

Curiously, the egg-laying habits of a species of cormorant found near Utqiagvik correlate statistically with the snow melt timing determined from radiometric measurements — egg laying has trended earlier, in near lockstep with the snow melt, the paper says. ●

ENVIRONMENT & SAFETY

Court turns down methane rule hearing

The U.S. Court of Appeals for the District of Columbia has turned down a request for an en banc hearing of the appeal over the Environmental Protection Agency's proposed deferral of implementation of a new rule placing limits on methane and some other emissions from new or modified oil and gas facilities. In early July a panel of three D.C. Circuit Court judges upheld an appeal against EPA's deferral rule. Some intervenors in the case, including the American Petroleum Institute, subsequently petitioned for an en banc hearing, which would have involved all of the justices in the court, and not just the panel of three. However, on Aug. 10 the court turned down the petition.

The rule in question, introduced by the Obama administration, required industry compliance by June 3. But in April Scott Pruitt, the new EPA administrator, said that he was staying the compliance requirement by 90 days — petitioners from the oil and gas industry had requested reconsideration of the rule. And on June 16 EPA announced for public comment a proposal to extend the stay for two years, to enable a review of the entire rule. That proposal has now been rejected by the court. Pruitt has argued that, because the public had not been given the opportunity to comment on some regulations within the Obama-era rule, the rule could be reconsidered. However, the D.C. Circuit Court has disagreed, saying that the public had in fact been given ample opportunity to comment on all of the issues encapsulated by the final version of the rule.

Pruitt has argued that, because the public had not been given the opportunity to comment on some regulations within the Obama-era rule, the rule could be reconsidered.

—ALAN BAILEY

Oil Patch Bits

Fluor's phosphate megaproject begins production

Fluor Corp. announced Aug. 10, that the Ma'aden Wa'ad Al-Shamal Phosphate Co.'s Umm Wu'al phosphate project in Saudi Arabia has started production of ammonia, merchant-grade acid and fertilizer. Fluor is providing overall program management services for this $8 billion megaproject, in addition to engineering, procurement and operations and readiness services for various scopes.

"As part of Saudi Arabia's Vision 2030, this world-class project will have a long-lasting impact on the region, as it diversifies the country's economy and creates local job opportunities for citizens," said Tony Morgan, president of Fluor's mining and metals business. "After less than four years from the start of the execution phase, we are proud to have partnered with Ma'aden to bring this facility to production. We look forward to continuing our partnership with Ma'aden in developing their next phase of mining projects in Saudi Arabia through our recently signed memorandum of understanding."

Production has begun on diammonium phosphate fertilizer, merchant-grade acid and ammonia. Phosphate serves as a key element in fertilizer for agricultural crops. As one of the largest integrated phosphate fertilizer plants in the world, the facility will help meet global food supply needs by delivering 3 million metric tons per annum of diammonium phosphate and nitrogen, phosphorous and potash fertilizers.

With a peak site workforce of 28,000 from more than 50 nationalities, Fluor implemented its world-class safety programs, including its Life CriticalSM program, to support the project. As a result of these programs, the project has achieved more than 46 million consecutive work hours without a lost-time incident.

MWSPC is a joint venture between The Saudi Arabian Mining Co., The Mosaic Co. and Saudi Arabia Basic Industries Corp.

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HUGHES Q&A

what's been done. It's troubling and disturbing to me. Part of what I'm trying to do is make sure Alaskans get the real scoop. When the governor says he's cut the budget 44 percent, most of that has been the capital budget. Of the operating budget that's been reduced, if you factor in additional money we've brought in through designated funds, the federal fund category, and other category. Bringing those other categories up is not a bad thing, but you have to give the true story. When you look at the operating budget with what we've reduced in the one area with UGF and what we've increased in the other three areas, it's really a 3 percent to 4 percent reduction in the operating budget. Not 44 percent. When somebody on the street hears the state has cut 44 percent of its budget, people think, "oh my gosh, no wonder they need to tax us, no wonder they need to tax the oil companies." That's something that I'm working to correct. It's only been a net 3 to 4 percent operating budget.

That's a nice little start but there is more work to do. I think that is an important message for Alaskans to know. Do they only want to cut the operating budget a few percentage points and go ahead to start paying taxes and hit up the oil industry? I don't think Alaskans do. I think if they knew the true numbers they would say, "Hey, wait a minute."

I know that's a long answer to your original question, but it's something that is often not talked about in conjunction with the oil industry and looking at taxes for the oil industry. I think where we are with the operating budget and the state budget overall, has the public sector taken its share of the adjustment? I think the oil industry has taken a hard hit. I don't think the public sector has taken much of one except in the capital budget.

Petroleum News: HB 111 also called for the formation of a working group to further examine the state's tax system. There is no specific outline for who is to serve on that group. Would you like to be part of that group?

Hughes: That was a noticeable feature. A lot of people assume the chairs of the respective resources committee would head it up. That's a natural structure. I would like to be on it, of course. I'm not in the majority any more so I don't know how that will play into it. I don't know whether I will have the seat on Resources much longer. And Gary Stevens had to make some changes because he's running for Lt. Governor (ultimately, he stepped down as LB&A chair).

"The (Walker) administration is focused on the gas line. I'm concerned we will miss opportunities with other resource development. We need to get in sync with Zinke." —Sen. Shelley Hughes, R-Palmer

It's going to be hard with the number 13 in the majority. It really increases people's workloads. It will be interesting to see how that falls into place and where everybody lands. There could be quite a bit of movement in order to fix all that. I do believe my vote in Resources has been consistent and would align with the Senate majority's position. That would have to come from them. From my perspective, it does. But it could be there will be some movement, so I don't know if I'll be on it. I don't know how it will be structured as far as who will have a seat on it.

Rep. Tarr and Rep. Josephson very much wanted the working group so that the conversation about raising oil taxes could be analyzed and discussed. It could be looked at, but I don't have a sense from folks in the Senate that there would be the support for doing that. Unless they have some really, really new information coming forward. As I listen to the consultants during the HB 111 process, I was not hearing indication of moving toward that.

Petroleum News: Let's switch to AKLNG. What are your general observations of where things stand with the project?

Hughes: First, (AGDC Board Chair) David Cruz is a longtime friend. I've known him 20-plus years, probably closer to 30 years actually. I have a lot of respect for him. I know there have been a lot of people who have put a lot of effort into the project. I have not been convinced as you've heard from many others that it's economic at this point. As far as the recent news being granted federal tax exempt status, that's good news. It's limited good news. There are definitely parameters in three different ways as I see it. The corporation wouldn't have to pay federal taxes. We aren't assured the debt that would be issued would be tax exempt. I'm sure you're aware of that. It would be project dependent and the mix of the public private ownership, plus the degree of public benefit derived. That's a big one. That could make a difference in the financing. The letter to the IRS wasn't public. We don't know whether foreign investment would alter that or even undo the federal tax status. We don't have that investment. Also, this isn't really all of the sudden making it economic. Yes, it's good news in the right direction, but it's limited in scope at this point. Do I want us to have an economic gas line, yes. But do I want us to spend $45 billion on something that is not going to be economic? No. So I think we need to proceed cautiously.

We are supposed to know this fall whether it's going to be a green light or red light. I haven't heard that we are going to get that real clear message as I had hoped. I was someone who thought the funding for the gas line, we should have held some of it back. About $50 million wasn't scheduled for use in the current fiscal year. If for instance the Trump administration wanted to partner and there was forward momentum, we could have re-appropriated that at some point. I'm not anti-gas line ever. It just has to make sense. I don't see that it makes sense. When three private partners pull out, it gives me pause. Understanding what's happening globally and knowing there are a lot proposed projects, I just need to know more.

Petroleum News: What would you like to hear next from the administration or AGDC on the gas line?

Hughes: I would like to hear something definitive instead of pushing down the road. Dave Cruz told me that by this fall they would know if it's a green light. It's been a while since I've spoken with him. I haven't heard anything clearly that they will stay with that schedule.

Petroleum News: You spoke of Ryan Zinke's visit a while back. What are your takeaways from his time here a few months ago? Did his visit give you additional optimism?

Hughes: Definitely. Considering our state of affairs here in Alaska and that we are in a tough period of challenges, it is incredibly excellent that at the federal level things are moving forward as far as resource development. As I talked about earlier, we have to seize the moment, capture the opportunity and get in sync with where the federal administration is willing to go and how they might be able to open doors as far as reducing some of the barriers. This goes across the board and all types of resources. I think it is a great time having a federal administration on board with these types of things instead of fighting us. The problem is we need to have a state administration who also gets on board and isn't just hyper focused on the gas line. That's my fear: are we losing time and opportunity because we are hyper focused on the gas line? I hope not. ●

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BONDING CHANGES

proposed changes June 6.

Oil and gas company participants at the workshop included the Alaska Oil and Gas Association and ConocoPhillips Alaska, both of whom followed up their workshop participation with lengthy written comments to the commission. While other companies participated in the workshop, they did not submit comments, although AOGA members include most of the state's operating oil and gas companies.

Proposed changes

The commission currently requires bonding "in the amount of not less than $100,000 to cover a single well or not less than $200,000 for a blanket bond covering all of the operator's wells in the state," unless the operator can demonstrate that for a single well "the cost of well abandonment and location clearance will be less than $100,000."

Proposed regulatory changes require that bonds or security "must be in the amount that the operator demonstrates to the commission's satisfaction is sufficient to ensure all wells can be properly plugged and abandoned in accordance" with commission regulatory requirements.

The proposed regulation says that within a year of the effective date of the regulations the operator must apply to the commission in writing and receive its concurrence on the bond amount — and would be required to apply and receive concurrence every five years thereafter or when significant changes are made to the operator's existing development, when the designated operator for a well changes or upon the commission's request.

For exploratory wells, the proposed regulations require that when an operator applies for a permit to drill it must submit "a written application with the estimated costs to properly plug and abandon the wells and properly clear the sites," and provide a revised application of bonding amounts every year until "the wells are properly plugged and abandoned and the commission has approved the location clearance."

Bonding would be based "on the estimated cost to abandon all existing and potential wells that could be drilled from the operator's developments and the cost to clear all of the operator's sites" along with "detailed supporting information so that the commission can determine if the amount is reasonable."

AOGA concerns

In a July 25 seven-page letter to AOGCC Chair Hollis French, Joshua Kindred, environmental counsel to AOGA, cited both high level and specific concerns. He said that while "AOGA agrees that it is prudent to reevaluate" bonding requirements to ensure the state is adequately protected from risk, AOGA is concerned that the "draft bonding regulation represents a 'solution' that far exceeds the risk."

Kindred said that commission staff acknowledged in the workshop that the vast majority of Alaska operators were financially responsible and that over three decades there were only a handful of incidents where the commission's existing bonding regulations resulted in tangible harm to the state.

"AOGA believes that it would be worthwhile to consider those incidents and determine whether a more narrowly tailored approach would have provided sufficient protection without adversely impacting the industry as a whole," he said.

The proposed regulation would "dramatically increase" bonding costs, he said, and "would invariably chill investment, thus decreasing recovery of Alaska's oil and gas resources."

AOGA also said the commission's regulations already allow it to increase the amount of required bonds, because they specify amounts "not less than" $100,000 for single wells and $200,000 for multiple wells, an approach consistent with that taken by the federal Bureau of Land Management and by other states.

With risks to the state different for every operator, AOGA said it would be better to provide the commission with flexibility in bonding "to review risks and deal with operators who are financially distressed or whose past actions indicate a risk of non-compliance," and said BLM uses that approach, allowing bonding to be tailored for wells or operators with indications of greater risk.

ConocoPhillips Alaska

ConocoPhillips Alaska is not a member of AOGA, and Shon Robinson, the company's manager of drilling and wells, provided four pages of comments to the commission on the proposed bonding changes.

He said ConocoPhillips does not oppose updating bonding requirements, but does oppose the language proposed by AOGCC prior to the workshop.

"It is important the AOGCC not adopt a program that unduly increases the administrative burdens borne by both the AOGCC and well operators in connection with bonding, such as the proposed requirement to estimate the abandonment cost for each particular well," Robinson said. "Instead, the AOGCC should continue to allow for an appropriate blanket bond, while also allowing for adjustments to be made, in particular circumstances on a case-by-case basis."

He said AOGCC staff said at the workshop that inflation since bonding amounts were last amended in 1999 have diminished the value of the bonds, citing that as the key reason for changes. While ConocoPhillips does not dispute inflation, Robinson said, "we see a substantial disconnect between that stated reason and the changes that have been proposed," and the company recommends that AOGCC use its existing discretion to update the bond amounts "without proceeding with a new rulemaking."

Robinson said ConocoPhillips opposes requiring abandonment cost estimates for each well, which he said "would increase the work required by the agency staff and well operators, and would increase the costs and uncertainty associated with bonding."

Standardized bonding amounts, "consistent with past practice and current regulations, best serves the balance between burden and benefit," he said, adding that the commission could chose to group standardized amounts in categories, giving as examples treating onshore wells differently from offshore wells or remote exploration wells differently from "development wells accessible from gravel."

ConocoPhillips also encouraged the commission to continue to allow blanket bonds, saying they play an important role in ensuring proper well plugging and abandonment "without posing an undue obstacle to drilling new wells."

The company also encouraged AOGCC to limit bonding to wells, not including pads or other facilities, and noted that landowners and other regulators sometimes impose bonding or other security requirements, and said pad remediation governed by the Alaska Department of Natural Resources and well abandonment governed by BLM were examples of bonding requirements addressed by other agencies.

Future workshops requested

Both AOGA and ConocoPhillips requested that the commission hold additional workshops on the bonding issue.

AOGA encouraged a discussion of alternative approaches to bonding regulations in a future workshop.

ConocoPhillips said it "urges the AOGCC to re-consider its approach to the bonding updates in light of the comments received" at the June 6 workshop, propose new language and hold another workshop.

As this issue of Petroleum News went to press, no further workshops had been scheduled by the commission. ●

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NEWS DRILLING

First oil from the development is planned for later this year, Lowman said.

The development has involved the construction of a nine-acre extension to the existing 1H site, as well as surface facilities to support four new pentalateral production wells and 15 injection wells, Lowman said. The surface facilities include a new pipe header, wellhead infrastructure, modules, tanks and tie-ins to the existing pipeline infrastructure. A pentalateral well has five lateral wells extending horizontally from a main well bore.

Permitting of the 1H NEWS development began in February 2014, with ConocoPhillips approving the funding for the development in early 2015.

Technical challenges

Retrieving difficult-to-flow, viscous oil from the unconsolidated sands of the West Sak is challenging. Over the years ConocoPhillips and BP, which produces viscous oil from the equivalent Schrader Bluff formation in the adjacent Prudhoe Bay unit, have honed the techniques required for viable viscous oil production.

Techniques that originally involved the use of hydraulic fracturing combined with downhole pumps have evolved over the years into an approach in which multilateral, horizontal production wells thread through the reservoir sands, and in which downhole pump designs have evolved. Injector wells drive oil into the producers. Water has been used as the injection fluid, although in 2016 ConocoPhillips obtained approval from the Alaska Oil and Gas Conservation Commission for the use of a viscous reducing water-alternating-gas injection technique.

Given the technical difficulties involved in viscous oil production, economically viable production may also be challenging in an era of relatively low oil prices. However, ConocoPhillips and the other Kuparuk working interest owners feel confident that the 1H NEWS development will prove profitable.

"Despite low oil prices, this is a project that ConocoPhillips and its co-owners believe is a viable investment," Lowman said.

—ALAN BAILEY

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INTERNATIONAL

Spill off Kuwait estimated at 34,000 bbl

An analysis of satellite imagery by a U.S.-based nonprofit organization suggests at least 34,000 barrels of oil have leaked out during a spill off the coast of Kuwait.

Authorities have yet to definitively identify the source of the leak, though they initially suspected it came from a tanker.

West Virginia-based SkyTruth says satellite photos from the day of the spill off southern Kuwait show it spread over a distance covering 50.5 square miles.

In a blog post Aug. 16, SkyTruth also noted a pipe-laying ship was transiting through the area at the time of the spill. Authorities have yet to definitively identify the source of the leak, though they initially suspected it came from a tanker.

The leak was discovered Aug. 11.

Authorities in tiny Kuwait, an OPEC member home to the world's six-largest estimated oil reserves, said they discovered another leak Aug. 15.

—ASSOCIATED PRESS

EXPLORATION & PRODUCTION

US drilling rig count drops by 5 to 949

The number of rigs drilling for oil and natural gas in the U.S. decreased by five the week ending Aug. 11 to 949.

A year ago, just 481 rigs were active.

Houston oilfield services company Baker Hughes said 768 rigs were targeting oil (up three from the previous week) and 181 targeting natural gas (down eight).

Among major oil- and gas-producing states, California and New Mexico each increased by one rig.

Texas lost seven rigs and Louisiana decreased by one.

Alaska, Arkansas, Colorado, North Dakota, Ohio, Oklahoma, Pennsylvania, Utah, West Virginia and Wyoming were all unchanged.

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

—ASSOCIATED PRESS

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TERMS ACCEPTED

Andrew T. Mack said that DNR would approve the expansion if ConocoPhillips accepts some new stipulations involving drilling commitments and the payment of bonus bid replacement fees. ConocoPhillips has now accepted those stipulations.

The bonus bid replacement payments represent compensation to DNR in lieu of lease sale bonus bids, had the department offered the leases in an oil and gas lease sale rather than giving ConocoPhillips the opportunity to drill in the leases.

In a letter to Mack, ConocoPhillips said that it views the outcome of the DNR reconsideration of its previous denial of unit expansion as representing "the best opportunity for this area to be timely developed in a safe and environmentally responsible manner." The company said that, while it accepts the stipulations, it does not agree with what is stated in some sections of the decision document. However, it is not necessary to resolve those disagreements at this time, ConocoPhillips said.

Great interest

The leases at issue are of great interest, given that the drilling in 2008 of the Tofkat No. 1 well and its sidetracks by Brooks Range Petroleum indicated the presence of oil in several horizons, including rocks of the Nanushuk formation, a formation related to recent major oil discoveries in the same general region of the North Slope.

Complicating the leasing arrangements for the Tofkat acreage is the fact that land within the acreage underlies surface land belonging to the village of Nuiqsut. ASRC, the Native regional corporation for the North Slope, correspondingly owns an undivided interest in the subsurface, along with state subsurface ownership. Under an executive agreement formed a number of years ago between the state and ASRC, the state has the executive right to conduct lease sales for the acreage and to take certain other actions. The state has a statutory obligation to make its land available in lease sales but, under the terms of the executive agreement, the state also must consult with ASRC.

Under terms of a unit expansion decision that Mack issued in November, ConocoPhillips was to have drilled the Putu No. 1 well in the leases by June of this year. However, Mack withdrew the unit expansion approval in February when it became evident that ConocoPhillips was not going to meet that drilling requirement. ConocoPhillips said that the drilling delay related to concerns expressed by Nuiqsut community leaders.

Resolving differences

But ASRC has remained keen that ConocoPhillips should continue to be allowed to drill. In June 2016 the Native corporation, independently from DNR, assigned its interests in the acreage to the company. The new DNR decision, which ConocoPhillips has now accepted, represents a resolution of the disagreement between DNR and ASRC.

The new DNR stipulations for the unit expansion require ConocoPhillips to drill a well in the expansion acreage by May 31, 2018. Then, to continue to hold the leases in the unit, the company must make a $3 million bid replacement payment and drill a second well, at least into the Nanushuk. Testing of that well must be completed by May 31, 2020. A continuation of the leases in the unit then requires ConocoPhillips to make a further bid replacement payment of $4 million and to incorporate a development plan for the leases in a Colville River unit plan of development. ●

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DOYON LEADS

new and additional leads, compared to what we had expected," Mery said. "We are encouraged by this positive development with our Nenana basin program."

The corporation had anticipated using the 3-D seismic to refine a couple of leads identified from 2-D seismic data gathered in the northern part of the basin in 2016. The idea was to refine a prospect with the intention of drilling a well, perhaps as early as the winter of 2018. However, given the time required to assess the new insights available from the 3-D data, Doyon, together with its partner Cook Inlet Region Inc., now anticipates making a drilling recommendation and decision by mid-November 2017, with a view to drilling in the summer of 2018 or the winter of 2018-19, Mery said.

"With these new data there is not enough time to conduct the deliberate data interpretation and evaluation necessary for good decision-making," Mery said in reference to the earlier drilling plan.

Three wells drilled

Doyon has already drilled three wells in the Nenana basin, a large sediment-filled trough southwest of the city of Fairbanks, as part of an exploration program, seeking oil and gas in the basin. Those three wells, the Nunivak No. 1, the Nunivak No. 2 and the Toghotthele No. 1, are all in the central part of the basin, where Doyon had hoped to find oil or gas that had flowed into a reservoir rock from a deeper source. The depths attained in the deeper sections of the basin are thought appropriate for the rocks to reach temperatures high enough for oil and gas to form.

In the event, although the wells failed to discover economically viable oil or gas pools, the wells did find ample evidence for an active petroleum system in the basin. In addition to natural gas in the form of methane, the wells encountered so-called "wet gases," such as propane, butane and pentane. These materials typically indicate the presence of a petroleum system conducive to the formation of oil. The Toghotthele No. 1 well, drilled in 2016, found multiple oil shows in a situation where it appeared that oil had migrated through the rocks without becoming trapped to form a significant oil pool.

The new seismic data are revealing the structure of a deeper section of the basin, to the north of the three existing wells. Abundant coal seams in the basin are thought to be the primary source of hydrocarbons. The characteristics of the coal appear to be conducive to the formation of oil as well as gas.

The Nenana basin is conveniently located near the road and rail transportation corridor between Southcentral Alaska and the Interior, thus making the basin an attractive target for potential oil or gas development.

—ALAN BAILEY

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NUNA ROYALTY

will "most certainly" re-apply for royalty modification at some point in the future.

Asked whether the loss of royalty modification for the time being threatened the viability of the project, Sullivan responded by email, "There are many factors that determine our development decisions. Those include but aren't limited to confidence in a sustained price of oil, the cost of conducting business in Alaska and favorable tax and regulatory policies. The Nuna project was put on hold for many of the aforementioned factors but specifically the ongoing low commodity price and instability in oil tax policy."

Sullivan added that Caelus believes that Nuna "could be an integral part of Alaska's production profile over the next 40 years" and, if developed, would "produce hundreds of jobs, millions of barrels of oil and billions in tax and royalty revenue for Alaska."

He also noted that the Department of Natural Resources, in its original 2015 decision, confirmed that while the Nuna project was economically challenged without royalty modification, it would, if pursued, be economically beneficial to the state and its resident.

Requesting relief

Caelus inherited the Nuna development project in late 2013 and early 2014, when it acquired the North Slope assets of former operator Pioneer Natural Resources Alaska Inc.

Caelus quickly expressed enthusiasm in pursuing the project, which involved building a new drilling pad and associated facilities at Oliktok Point to develop an accumulation in the Torok formation estimated to contain between 75 million and 100 million barrels.

Caelus inherited the Nuna development project in late 2013 and early 2014, when it acquired the North Slope assets of former operator Pioneer Natural Resources Alaska Inc.

After closing on the deal and studying the project in greater depth, Caelus determined that it would need some form of state assistance to make the $1.4 billion project economic. The company asked the state to modify the royalty structure on the project.

With the application coming during the transition between the Parnell and Walker administrations, the royalty modification request quickly became a political dilemma for both the outgoing and the incoming administrations. In particular, Rep. Les Gara asked the Parnell administration to leave the decision for the Walker administration, and claimed that existing provisions in the state fiscal system favored the Nuna project.

In a decision from January 2015, acting Natural Resources Commissioner Marty Rutherford agreed with Caelus that the project was challenged without royalty modification and reduced the royalty rate until Caelus recovered certain upfront costs.

The deal lowered the usual 12.5 percent royalty rate to 5 percent on oil produced from the Torok formation from five leases associated with the Nuna development. The relief would remain in effect until Caelus earned approximately $1.25 billion from the project.

In return for the royalty reduction, the state required Caelus to sanction the Nuna development by March 31, 2015, start its spending program by Sept. 30, 2015, and spend at least $260 million and begin sustained production by Sept. 30, 2017. The state also required Caelus to provide public project updates after bringing the project online.

Early start

Caelus fully sanctioned the Nuna development in early 2015 and subsequently completed several major infrastructure projects, including the Nuna Drill Site 1 and access road. The company also began permitting a second pad, should it later decide to expand the project.

But in early 2016, the company suspended its ongoing drilling program at the Oooguruk unit and reduced its Alaska workforce by 25 percent in response to low oil prices.

The suspension also impacted the timeline of the Nuna project. The company shifted the estimated startup date to "2018 or later" from an earlier date of September 2017.

Around that time, in March 2016, Caelus submitted a confidential request to the state, asking for a two-year extension for the final two work commitments. The company cited "the continued low oil price environment and continuing uncertainty around HB 247," the tax credit reform measure promoted by Gov. Bill Walker, as reasons for the request.

In the request, Caelus Energy Alaska Senior Vice President Matt R. Musselman noted that the company had spent $110 million on the project in 2015. The majority of the budget went toward the construction of the 22.5-acre Nuna drilling pad with some going toward the engineering and fabrication of production modules. The company still needed to spend approximately $250 million in advance of drilling operations and production.

The company had hoped to also complete a seven-mile pipeline connecting the Oooguruk Tie-in Pad to the Nuna drilling pad but had to postpone the project for financial reasons.

The company remained committed to the project and intended to resume construction work "as soon as possible," but "it has become clear that a 2017 startup is impossible."

In the coming year, the company expects to continue design, engineering and procurement work and ongoing geologic studies with the goal of a "2018 or later" startup. Plans also include an ongoing evaluation of "facility construction schedule and cost in light of oil price and tax structure environment," according to the company.

In an April 2016 decision, then-Division of Oil and Gas Director Corri Feige wrote that the state did not feel it had the authority to extend the deadlines — in part, she implied, because of the internal departmental evaluation and the public review portion of the original decision. "However, the DNR fully appreciates the impact of the current market conditions and the extent of the company's investment and commitment to (the) Nuna Development project, and will be open to consider a new Royalty Modification application from Caelus, of the company chooses to apply again, taking into account the current commercial environment and forward-looking investment plans," Feige wrote.

Going forward

Even after the setback, Caelus has continued pursuing the Nuna project.

In the recently completely development year, the company continued refining its cost estimates and assessing the overall commercial viability of the project based on drilling and engineering results and on permitting requirements, according to a plan of development. In the coming year, the company expects to continue design, engineering and procurement work and ongoing geologic studies with the goal of a "2018 or later" startup. Plans also include an ongoing evaluation of "facility construction schedule and cost in light of oil price and tax structure environment," according to the company.

Asked about the cost of a royalty modification application, Sullivan replied, "The royalty modification is a rigorous and thorough process that in the case of Nuna took the greater part of a year to get to the finish line. That being said, royalty modification remains a critical arrow in the state's quiver to encourage new oil developments to come online." ●

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LIBERTY EIS

the Beaufort Sea five miles off the coast in Foggy Island Bay, some 20 miles east of Prudhoe Bay.

BOEM said the 9-acre island would have a pipe-in-pipe subsea pipeline to deliver oil to shore, connecting to the Badami pipeline.

The agency said Hilcorp's project design includes numerous measures to mitigate potential impacts. Mitigation measures which the federal government would require will be determined during the National Environmental Policy Act review process and Endangered Species Act consultations.

(See full story in Aug. 27 issue of Petroleum News.)

—KRISTEN NELSON

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