There is excitement in the air, and not just in Alaska, over recent oil discoveries on Alaska’s North Slope.

During an April 25 presentation to the Alaska Senate Finance Committee, Paul Decker, resource evaluation manager for Alaska’s Division of Oil and Gas, commented on recent trips by Alaska Department of Natural Resources staff to promote Alaska’s oil and gas resources.

“We’ve recently come back from Houston on the second of two outreach trips, this one for the American Association of Petroleum Geologists national meeting,” Decker said. “Our booth was literally humming. There was an audible buzz.”

Decker was particularly referring to major new discoveries in the North Slope’s Brookian sequence of rocks, including Armstrong and Repsol’s Nanushuk development in the Pikka unit; ConocoPhillips’ Willow discovery, also in the Nanushuk; and the discovery by Caesal Energy of a major oil resource under Smith Bay.

His comments came as part of an overview of the outlook for North Slope oil development.

Pikka and Willow

Decker said that, in their project, Armstrong and Repsol had drilled more than 13 wells in the Pikka unit and had very methodically explored and delineated some very interesting discoveries in the Nanushuk and in older Jurassic-age Alpine sands. The recent drilling of the Horseshoe Nos. 1 and 1A set out to find a mining company to continue the hunt “for exploration opportunities that come around neighbors and governance authorities,” said Decker.

New exploration opportunities

The exploration during the first year and at least the next six years will be crucial to the project’s future success, Decker said. In its current production forecast, the operators expect 2017 production of 110,000 to 115,000 barrels of oil per day, with production during the first quarter, a six percent drop compared to the previous quarter.

The operators also expect to increase the condensate production from the Initial Participating Areas of the Prudhoe Bay unit, despite another planned drop in drilling.

The operator of the most productive unit in Alaska performed a surprising feat in 2016, increasing oil production from the Initial Participating Areas while decreasing drilling.

In a plan of development submitted in late May, the operators reported a slight uptick in gross tonnage, with 127 gross tons processed during the first quarter, a 17 percent increase over the same period a year ago. This bump in gross tonnage reflects improvements in the facility’s processing rate, but it also reflects the increasingly complex nature of the oils produced from the area’s older fields.

The operators are using the Icewine program to target both the most promising existing oil-bearing areas and new ones.

Icewine No. 2 is situated along the trans-Alaska oil pipeline.

The company is using the Icewine program to target both conventional prospects in the region as well as unconventional opportunities, primarily in the HRZ shale.

The Icewine No. 2 project is the second exploration program on the North Slope this winter. Armstrong Energy Inc. recently completed the Horseshoe exploration program.

Chugach cancels Snow River project

Chugach Electric Association has cancelled its project for the development of a new hydroelectric facility on the Snow River on the Kenai Peninsula. Snow River flows into Kenai Lake through the mountains on the east side of the Seward Highway.

The 70.9-megawatt powerhouse would have required the construction of a dam on the river and the formation of a 15-mile long reservoir.

Chugach Electric had seen the project as a means of further diversifying its power supplies into sustainable energy sources. But the proposal at Snow River met with a barrage of opposition from people concerned about the potential impacts of the project on the Snow River area and on the Kenai River watershed. So, after meetings with government and non-gov-
House considers deferral of bonding law

Statute requires an oil company to purchase surety bond to protect suppliers but DCCED says developing regulations is challenging

By ALAN BAILEY
Petroleum News

The Alaska House is considering a bill that would defer until Jan. 1, 2019, the implementation of new statutes requiring oil and gas companies operating in Alaska to obtain a surety bond or deposit an equivalent amount of cash when obtaining a state business license. The statutes were introduced in 2016 as part of House Bill 247, the bill that reformed the state’s system of oil and gas production tax credits. But the Alaska Department of Commerce, Community and Economic Development says that developing regulations to implement the statutes is proving more difficult than expected and that more time is needed, to ensure that workable regulations are in place when the statutes become law.

Protect small companies

The idea behind the bonding requirement is to protect small Alaska service companies from having to refund to secured creditors money received for services rendered, moorage and other services to Buccaneer were told to repay money they had received for services rendered, after the bankruptcy filing. The bonding requirement is for $250,000. The particular concern is small oil companies that may have marginal financial resources for projects that they undertake.

The poster child for the problem being addressed is the bankruptcy of Buccaneer Energy Ltd., a small Australian company that was active in the Cook Inlet but went bankrupt in 2014. Although, prior to its bankruptcy, Buccaneer had paid some of its service companies and suppliers for services provided, after the bankruptcy filing the court ordered these companies to refund the some of the payments, to the benefit of Buccaneer’s secured creditors. This refund requirement caused considerable hardship for the small-scale service companies impacted.

On April 24 Rep. Paul Seaton, sponsor of the deferral bill, House Bill 229, commented to the House Labor and Commerce Committee that Buccaneer, in particular, had enjoyed significant state support through Alaska Industrial Development and Export Authority financing for the jack-up drilling rig that the company had used in Cook Inlet. Yet people who had supplied fuel, water, moorage and other services to Buccaneer were told to repay money they had received for services rendered.

Seaton said.

Surety bonds

The bonds would work in a similar manner to the surety bonds commonly associated with licenses for professional occupations, except that a bond would be associated with a business license rather than with an occupational license. Under the terms of the statutes, the bonds would only apply to oil and gas companies that are not currently producing oil and gas — a company’s bonding requirement would be released once the company starts producing oil or gas in commercially viable quantities. And a pecking order for recovering funds from a bankruptcy surety bond favors fund recovery for the types of services that small businesses typically supply.

Fred Parady, deputy commissioner of DCCED, told the committee that his department had spent the past six months trying to develop workable regulations for the new statutes.

“We did not foresee the complexities that are involved in implementing these bonding requirements.” Parady said, adding that his department remains fully committed.
Coughlin: Oil taxes are overly complex

North Pole Republican cites consultants observations on state's complex oil tax regime, adds any changes cannot come all at once

By STEVE QUINN
For Petroleum News

S enate Resources Committee Vice Chair John Coughlin has been in office, first in the House then in the Senate, for 18 years and debates over oil taxes seem to be the norm even for a tenure as long as his. The North Pole Republican’s committee is fresh off re-writ- ing HB 111, the House’s effort to rework oil tax credits and a portion of the how rates get calculated. Coughlin discussed his views of ACES and the historical perspective of the state’s efforts to establish a consistent regime.

Petroleum News: You’ve been in office 18 years. So how do you approach oil tax debates, which have been a part of your term almost each of the last 12 years?

Coughlin: The good thing about Alaska is that we have good geography and good geology, both. And the geology has made us a producer of oil pretty significantly. The challenge is we are so far away from market. Everybody knows that. Building a pipeline to haul oil to market was a national decision. It wasn’t about Alaska; it was a national decision. There was a huge environmental debate. We supplied oil to the United States — up to about 24 percent of the nation’s oil. So, we’ve always been noticed by national groups. But we are probably the place for environmental concerns and have proven ourselves very well to be fair. We have done it as good as we can around the world.

Meanwhile, the big field, Prudhoe Bay and then finally Kuparuk, began to be the only fields being developed because they were the prize. The marginal fields, even Kuparuk back in the ELF days, were getting very low tax rates and very low royalty rates. So we figured we had better re-think our gross-based tax system because it wasn’t incentivizing new production, or even new production. So, we went into the PPT system because it wasn’t incentivizing new production, and one element is the cash credits and the operating loss carry forward. We have done it as good as we can around the world.

Petroleum News: At that time, there were some pretty stark changes going on elsewhere in the world, weren’t there?

Coughlin: All of that was happening while national oil companies were coming into their own all over the world. At the time PPT was a hot discussion, remember peak oil was the hot discussion at the same time. We were trying to figure out how to get best value and still diversify our fields. Along came a governor who thought we should use cash credits to do that. Under the ACES plan, we credited what we thought was going to be a diversification. In fact it did, but it incentivized spending rather than production.

So we had to go to how do we reset the agenda to incentivize new oil so that we can get that value. The credits were not bringing the value. They were bringing part of our spending, but not bringing new oil. Under Gov. Parnell, we went into a production-based, net-based system that has proved to be workable.

Our price environment under ACES was contemplating the high end of $80 (a barrel). Low and behold it went up to $140. We harvested cash like we never did before, but we became painfully aware of that we were also the last place in the world that anyone wanted to invest under those conditions. We had to reset our incentives — that is our credits — while still trying to incentivize produc- tion. We were figuring the low of $60 to the high of $120. Surprise, surprise we touched off $27 barrel of oil for a week.

Then it stayed in the 30s and 40s then finally back up in the 50s during the whole discussion of how do we those credits. What we found out was we couldn’t afford the cash flow of credits under the circumstances of low oil prices and our floor that turned into a gross tax became the great harvester at the low end but we couldn’t afford the cash outlay to incenti- tivize new production the way we agreed under a medi- um to high price range.

Petroleum News: So you’re still trying to find a sweet spot?

Coughlin: Just like the oil companies laid off thou- sands of people and changed the investment strategy. Alaska has to follow suit on its investment strategy in the oil fields. Add that to those who feel like oil compa- nies should be paying more in our environment where we are strapped to those who say no we just can’t afford to incentivize at the level we have been doing.

Here we are in 2017, we are arguing over should we raise taxes, change our tax structure and not pay the cash credits or should we stay from now on we can’t afford the cash credits. The Senate is landing on let’s march down so that we don’t pay cash credits to the level we have been doing but we still allow companies to harvest value for the investment.

Our consultants told us there is no place in the world that incentivizes by paying cash. They always incen- tives being made whole in investment risk. Those are things we learn in Alaska. The oil companies rightfully pick on us about changing our tax policy but they only have a modicum of credibility in their complaint because they also have to react to a very volatile mar- ket and a world market that changes their business model almost year by year. So they change their busi- ness model and because we are agreeing to be involved with them in business, diversification or not, we have to change our business model in a low cash environ- ment.

So I have some sympathies for the oil companies because we have the same pain they have to deal with, but ours is much more public. We have to deal with the press that always goes to the extreme, positive or nega- tive. They have deal with headlines that scare investors, we have to deal with headlines that scare voters. It’s the same field in many ways, but ours is very public and our argument is laid out very openly. Investors they meet without that kind of attention. I’m sympathetic with them but they are less sympa- thetic with us. We are the sovereign and we are sup- posed to be stable. We are a single commodity payday in Alaska with oil being the main payer. We are trying to diversify that by using earnings from the Permanent Fund. If the people own the resource and have to own how it’s distributed, they get to be part of the debate. A lot of people would like it to be a democratic populous, but the reality is you’re in a democratic repub- lic, and you elect representatives to come and try to figure those things out.

This happens to be a bicameral Legislature with a governor and a court system. It’s served Alaska well since statehood.

I think a lot of people are getting tired of the debate and would rather throw out the system than answer the debate. I’m a believer in our system. I believe our demo- cratic republic, the system of government we have, is totally appropriate, especially when you see other places that are oil provinces all over the world that have to deal with bombs and tribal warfare. We are actually pretty good. The debate being done as contentious as it is, it’s probably not that inordinate.

Petroleum News: Two things were discussed during Senate Researches that some believe were criteria or drivers toward the current version of HB 111 and one was it less complicated?

Coughlin: That goes to the question of our oil tax sys- tem and one element is the cash credits and the operat- ing loss carry forward. We decided that we would use the operating loss carry forward and the cashable cred- its as a way to answer a cash flow problem, not a fun- damental tax rewrite. The House wanted to go to a fun- damental tax re-write, but they made it more complex. Our consultants told us that we have one of the more, hands down, one of the most complex tax systems in the world. It would be nice to re-write it, but we are not going to do it on extended sessions going into the 120th day. We can answer the question can we afford to invest the level we are investing in a field that brings us so much value. For those we agreed to go into partner- ship with, it would be wrong for us to pull back so dra- matically that we left them with no value of what we’ve drawn them into. So allow them to write off on their taxes and their ability carry your losses forward so when they get to production, it’s probably the right approach.

Petroleum News: Do you think at the end, you’ll have something that is durable at a broader price
EPA delays methane emissions rule

Agency staying compliance date to allow reconsideration of regulations that petitioners say were not available for public comment

By ALAN BAILEY
Petroleum News

Presumably as part of a general review by the Trump administration of Obama-era greenhouse gas regulations, the Environmental Protection Agency is delaying the implementation of a new rule which places limits on methane and some other emissions from new or modified oil and gas facilities. The oil and gas industry had been required to comply with the rule by June 3 but on April 19 Scott Pruitt, the new EPA administrator, sent a letter to petitioners who had objected to the rule, saying that he was staying the compliance date by 90 days. The petitioners, from the oil and gas industry, had requested a reconsideration of the rule and, in some circumstances, a stay of certain provisions within the rule.

In his letter Pruitt said that the petitioners had raised at least one objection to monitoring requirements which were in the final rule but which had not been available for comment during the rule’s public comment period. The EPA is convening a proceeding for reconsideration of this component of the rule, Pruitt said.

The petitioners have also raised other issues that meet the requirements for justifying a rule reconsideration, however, the 2016 methane regulations apply to some new emissions sources, including hydraulically fractured oil wells. The Alaska North Slope was exempted from the routine monitoring of certain types of equipment.

Pruitt said. These issues include provisions for approval of an alternative means of emission limitation and the inclusion of low-production wells within the scope of the new regulations. The public was not given an opportunity to object to these provisions, or certain aspects of the proposed rule that was published for public comment. Pruitt said.

Opportunity for notice and comment

In doing this the EPA will provide an opportunity for notice and comment on issues raised in petitions that merit reconsideration under the terms of the rulemaking procedure of the Clean Air Act. That section of the act allows reconsideration of rules or procedures which have been finalized but which a petitioner can demonstrate could not feasibly have been commented on during a public comment period. However, the agency is not addressing other requests for reconsideration that do not meet the standard required for reconsideration under the terms of the act. Pruitt also said that his letter does not address the merits of any issues raised in the petitions.

A full-scale rewrite or retraction of the regulations, beyond the review and reconsideration that EPA is now carrying out, would presumably require the use of the same formal rule making procedure, including a public comment period, as was used for implementing the regulations.

The methane emissions regulations that were introduced in the new rule apply to some new emissions sources, including hydraulically fractured oil wells. The Alaska North Slope was exempted from the routine monitoring of certain types of equipment. And the regulations do not apply to offshore operations.

EXPLORATION & PRODUCTION

USGS opens hydrate high-pressure lab

The U.S. Geological Survey has opened a new laboratory for studying the characteristics of methane hydrate core samples that are maintained under high pressure conditions. The USGS Hydrate Pressure Core Analysis Laboratory is located in the USGS Woods Hole Coastal and Marine Science Center, the agency has announced.

In addition to maintaining the pressure of the cores, refrigeration at the lab maintains the cores at appropriate low temperatures. The idea is to be able to investigate the properties of the hydrates when in similar pressure and temperature conditions to those that exist in the naturally occurring hydrate deposits from which the cores were obtained. Special containers are used to transport the cores to the laboratory at the appropriate pressure and temperature conditions.

Methane hydrate, a solid material consisting of methane molecules trapped in a lattice of water molecules, is stable within a certain range of relatively high pressures and low temperatures. The material occurs in huge quantities below permafrost and on or below the ocean floor in many parts of the world. With methane being the primary component of natural gas, scientists are interested in the possibility of using some methane hydrate deposits as a source of natural gas for fuel.

Scientists at the new laboratory have been analyzing hydrate samples gathered from sediments in the Bay of Bengal, offshore India, the USGS said. In a recent talk to the Alaska Geological Society, Tim Collett, a USGS methane hydrate expert, said that research using hydrate pressure cores was providing new insights into the permeability of natural hydrate reservoirs, the permeability being a key parameter in the practicalities of producing gas from the hydrates.

—ALAN BAILEY

USGS
Pressure Core Analysis Laboratory
March 2017

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**Substantial expansion of Arctic**

Trilogy Metals Inc. April 25 reported that the Arctic deposit at its Upper Kobuk Mineral Projects in Northwest Alaska now contains 2.4 billion pounds of copper and 3.4 billion lb of zinc in the indicated resource category, a roughly 40 percent increase for both metals. At a 0.5 percent copper-equivalent cut-off grade, the Arctic deposit is estimated to contain 36 million metric tons of in-pit indicated resources averaging 3.07 percent (2.4 billion lb) copper, 4.23 percent (3.4 billion lb) zinc, 0.73 percent (581 million lb) gold, 0.63 grams per metric ton (728,000 oz) gold and 47.6 g/t (155 million oz) silver. “The resource is not sensitive to cut-off grade or metal prices at the ranges investigated, since a 300 percent increase in cut-off grade results in less than a 1 percent decrease in contained metal at higher average grades. That is a robust deposit,” said Trilogy Metals President and CEO Rick Van Nieuwenhuyse. Additionally, this volcanogenic massive sulfide deposit hosts 3.5 million metric tons of inferred resources averaging 1.71 percent (131 million lb) copper, 2.72 percent (210 million lb) zinc, 0.6 percent (47 million lb) lead, 0.36 g/t (29,000 oz) gold and 28.7 g/t (933 million oz) silver. Trilogy Metals has budgeted US$7.2 million for a 2017 work program that will focus on finalizing a prefeasibility study on developing an open-pit mine at Arctic. Additionally, South32 Ltd. is investing roughly US$10 million on exploration of Bornite, a high-grade copper deposit about 16 miles south of Arctic. During the first quarter, ore from Qanaiyaq pit was introduced to supplement ore from Qanaiyaq, the new pit at Red Dog. During the first quarter, a six percent drop compared to the same period last year. The company attributed this drop to challenges of processing the higher grade but more complex Aqqaluk ore in coming years. As a result of the lower performance was adversely affected as these ores are metallurgically more oxidized ore becomes available. As less oxidized ore becomes available a larger percentage will be added to supplement the declining grades of Aqqaluk ore in coming years. As a result of the lower recoveries and unplanned downtime from the challenges of processing Qanaiyaq ore, Teck has lowered its 2017 zinc production guidance for Red Dog to 475,000 to 500,000 metric tons. The mine produced 583,000 metric tons of zinc last year. The company expects Red Dog to produce 110,000

**Quaterra options Groundhog**

Junior to begin exploring for large copper deposit just north of Pebble

By SHANE LASLEY

**Exploration**

Drilling has outlined roughly 56.8 billion pounds copper, 70.4 million ounces gold, 3.4 billion lb molybdenum and 343.6 million oz silver in measured and indicated resources. Quaterra Resources has the option to earn up to a 90 percent interest in Groundhog, a promising early stage copper exploration project just a few miles to the north.

There are good indications that large porphyry copper deposits may be found beyond the borders of the Pebble property held by Northern Dynasty Minerals Ltd. Quaterra Resources Inc. has cut a deal on Groundhog, one of the most promising of these prospects in this area of Southwest Alaska known for its world-class copper potential. “The Groundhog project offers the potential to discover a major deposit in an established porphyry belt,” said Quaterra Chairman and CEO Tom Patton. To get a better idea of this potential, Quaterra plans to carry out a US$1 million exploration on the property this year.

**Reasonable terms**

The 40,000 acres of state mining claims that make up the Groundhog property blanket the northern extension of a structural zone hosting a number of porphyry prospects, including the massive Pebble copper-gold-molybdenum deposits about three miles south of the Groundhog boundary. Alaska Earth Sciences, an Anchorage-based geological consulting firm, discovered the Groundhog prospect and Kennecott Exploration Inc., a subsidiary of Rio Tinto, explored the property for about five years prior to pulling out of Alaska in 2014. Following Kennecott’s departure, Alaska Earth Sciences formed a partnership with Kijik Corp., the Alaska Native village corporation forondal, the nearest community to Groundhog. This partnership, Chuchuna Mineral Company, set out to find a mining company to continue the exploration of the promising asset. Quaterra Resources cut a deal with Chuchuna that provides the exploration company the option to earn a 90 percent interest in Chuchuna in exchange for US$5 million in exploration and US$3 million in cash payments over a five-year period. This includes a minimum of US$1 million for exploration during the first year and at least US$500,000 in each of the next four years. Each year, Quaterra has the option to terminate the agreement and the US$3 million cash payment to Chuchuna is due until the end of the option. If Quaterra does complete the option, Chuchuna would hold a 10 percent joint venture interest in Groundhog and a 1.75 percent net smelter return royalty on the property. Quaterra would have the option to buy half of this NSR for US$2.5 million.

While Quaterra has explored in Alaska before, in recent years the company has focused on Yerrington, a large copper project in Nevada. With copper prices on the rise and mining markets recovering, Quaterra President and CEO Gerald Prosalendis said the explorer has been on the hunt “for exploration opportunities that come with large-scale potential, credible partners, community support, valuable data, and that can be acquired on reasonable terms.” Quaterra leadership believes Groundhog and the deal it cut to acquire the Southwest Alaska copper project meets these criteria. “With this deal, Quaterra has partnered with a local exploration team that has demonstrated previous exploration success, and with a village corporation that is grounded in the local community and has built strong relationships with its surrounding neighbors and governance authorities,” Patton said.
Skeena examines staged GJ-Spectrum mines

Skeena Resources Ltd. April 20 published results from a preliminary economic assessment that investigates the potential of combined development of its Spectrum and GJ properties in the Golden Triangle of northwest British Columbia. The Spectrum-GJ PEA includes open-pit mines at and the, which is about 14 kilometers (10 miles) to the northwest. The economic study calls for starting with a 10,000-metric-ton-per-day mine at the porphyry copper-gold Donnelly deposit on the GJ site of the project; ramping up to 20,000 metric tons per day in year six, when mining of the porphyry gold-copper Central zone deposit at Spectrum begins, and reaching 30,000 metric tons per day in year 12. The PEA was based on an updated resource estimate for both deposits. The Donnelly deposit hosts 215.2 million metric tons of indicated resource averaging 0.26 percent (1.24 million ounces) gold and 1.9 g/t (13 million oz) silver. Spectrum hosts 31.2 million metric tons of indicated resource averaging 0.1 percent (67.7 million lb) copper, 0.94 g/t (940,000 oz) gold and 2.6 g/t (2.64 million oz) silver. Additionally, Spectrum hosts 29.8 million metric tons of inferred resource averaging 0.12 percent (76.4 million lb) copper, 0.47 g/t (450,000 oz) gold and 1.4 g/t (1.34 million oz) silver. This is enough resource to support 25 years of mining, according to the plan laid out in the PEA. Under base case price assumptions – US$2.75/lb copper, US$1.25/oz gold and US$17.75/oz silver – the PEA estimates this operation would return a post-tax present value (8 percent discount) of $314.1 million, an internal rate of return of 20.6 percent and a payback on initial investment of 4.2 years. This project has net capital expenditures of $2.16 billion and benefits the company from the presence of existing infrastructure on or adjacent to the project area, including grid hydro-power and road access with 10 kilometers (six miles) of the planned processing plant site. The company said there are plenty of areas to improve and expand this project, including resource expansion, centrally-locating the processing plant and mine tailings storage, and adding a carbon-in-leach plant for improved gold recovery.

Auryn has big plans for Nunavut in 2017

Auryn Resources Inc. April 20 reported that it has begun mobilizing fuel and supplies for an extensive summer exploration program at its Committee project. This project has initial capital expenditures of C$216 million and benefits the company from the presence of existing infrastructure on or adjacent to the project area, including grid hydro-power and road access with 10 kilometers (six miles) of the planned processing plant site. The company said there are plenty of areas to improve and expand this project, including resource expansion, centrally-locating the processing plant and mine tailings storage, and adding a carbon-in-leach plant for improved gold recovery.

Forecasts brighten for Alaska mining

Exploration spending projected to exceed US$75 million in 2017, while miners line up additional investment for coming season

By CURT FREEMAN
For Mining News

With winter programs winding down and summer efforts rapidly ramping-up, it is becoming clear that 2017 will be a much more vigorous year for the Alaska mining industry than the 2013 to 2016 period.

For example, my internal estimates are already pushing $75 million for exploration activity alone and a significant number of projects that have announced exploration plans have not yet announced budgets for 2017, so that number is likely to rise.

Company announced that it has identified a new high-grade gold deposit located along the development track with Donlin Gold leading the way with advanced permitting, and projects like Livengood, Arctic, Bokan, Graphite Creek, Palmer, Bokan-Dotson, Niblack, Black Summit and Lucky Shot moving along the advanced exploration to development trajectory. And if there is any doubt about the appetite of producing companies for high-quality assets, their interest has been made evident by recent acquisitions by Kinross and SoutherResources in Alaska, as well as acquisitions of advanced projects in Yukon Territory by the likes of Goldcorp, Newmont, Barrick and Agnico-Eagle. It is time once again too saddle-up!

Western Alaska

NOVAGOLD RESOURCES INC. released first-quarter financial results and updates for its flagship Donlin gold project, 50 percent-owned with BARRICK GOLD on land leased from Calista Corp. The partners and the U.S. Corps of Engineers made progress with permitting designed to advance the project to final environmental impact statement, anticipated to be filed in early 2018. In addition, the project completed an updated preliminary jurisdictional wetland determination, continued developing a compensatory wetland impact mitigation plan, and moved forward on issuance of major state permits. The company also opened a docket for a special permit to construct the natural gas pipeline through the Pipeline and Hazardous Materials Safety Administration. The company continued its stakeholder outreach programs on multiple fronts.

GRAPHITE ONE RESOURCES INC. reported that its Graphite Creek project was included among the infrastructure projects introduced to testimony by the U.S. Senate Energy and Natural Resources Committee as being one of Alaska’s most significant development and infrastructure projects. State Geologist Steve Masterman noted that natural graphite is a “supply critical mineral” with no current domestic production source. The project’s anticipated 16-mile, all-weather access road and power-generating facility will bring important energy and infrastructure components to this part of Alaska. The project’s planners also are exploring opportunities to locate their graphite reprocessing facility in Alaska, which would be an additional boost for local employment and economies.

NORTHERN DYNASTY MINERALS LTD. announced that its wholly-owned subsidiary, Alaska-based PEBBLE LIMITED PARTNERSHIP, has received a miscellaneous land use permit from the Alaska Department of Natural Resources for its Pebble copper-molybdenum-gold project. Among other requirements, the permit contains provisions requiring performance guaranty in the amount of $US2 million related to any potential reclamation liability arising out of permitted activities. The company indicated that will be advancing a program of work in 2017 to prepare the project to initiate permitting under the Federal Clean Water Act and the Federal National Environmental Policy Act.

REDSTAR GOLD CORP. reported the start of its spring 2017 exploration program, commencing with a detailed surface geophysics program at the Shumagin gold project near Sand Point. Previous exploration expanded the drilled strike length of the Shumagin zone by 600 meters, to about 950 meters, and highlighted the strong continuity of high-grade mineralization along strike and at depth. The ground-based geophysical program will test the potential southwest extension of the Shumagin system and assist in defining new drill targets. Geophysical surveys will be immediately followed by a 5,000-meter core drilling program. The thickest brecia bodies and highest gold-silver grades within the Shumagin zone are localized along north-south trending syn-mineral dila- tation zones that are part of a major regional structural corridor that crosses Unga Island from coast-to-coast, a distance of over 9.5 kilometers.

COPPERBANK RESOURCES CORP. reported that it is planning to conduct additional work at its Palm project which could be a high-grade molybdenum-gold project on lands on the Alaska Peninsula owned by The ALEUT CORPORATION. The company hopes to complete 1,000 meters of drilling in mid-2017 with an estimated budget of US$750,000. The company’s objective would be to drill step-out holes from the current resource and to depth in advance of infill drilling planned for 2018. The program is focused on expansion of high-grade resources around hole PV11-16.
NORTH OF 60 MINING

APRIL 30, 2017

Editor's Note
Sad and disturbing news came from South32, which announced in early April that it will cease spending on exploration, engineering and permitting efforts, a third of that in the past 10 years. The company is planning a larger and more significant new sulfur emission requirement.

Alaska Range

WHITE ROCK MINERALS reported it has commenced its first mineral resource estimate at its Red Mountain lead-zinc-silver-copper-gold project in the Bonnifield District. The efforts will focus on the two nearby volcanogenic massive sulfide prospects, Red Mt. and West Tundra Flats.

An independent review of the 127-hole, 19,180-meter database on the project recommended additional confirmation sampling of a representative number of drill intervals in both deposits and over a wide time span of drilling extending from the 1970s through the 1990s. Following completion of this effort, it is determined that the drilling database is reliable enough to permit the resource to be compiled under Australian industry standards. The resource estimate is expected to be published before the end of May. Following release of this first estimate, the company plans to begin field work on the highest-priority targets adjacent to Dry Creek and West Tundra Flats. These high-priority targets are geo-physical conductors located within zones of anomalous surface geochemistry that are indicative of proximal volcanogenic massive sulfide mineralization. The proposed field work will include surface geochemical sampling and ground geophysics to define drill targets.

Northern Alaska

TRILOGY METALS INC. announced revised metallurgical, geotechnical and hydrology studies at the nearby Arctic volcanogenic massive sulfide deposit. Metallurgical improvements include copper recoveries that improved from 87 percent to 92 percent, zinc recoveries that improved from 87 percent to 88 percent, copper concentrate grade average remaining high at 29 percent, zinc concentrate grade improving from 56 percent to 60 percent and in-pit geotechnical and hydrology studies that are now completed to a preliminary feasibility study level. Neither the zinc nor copper concentrate contains significant deleterious metal contaminants and are considered excellent quality by world standards. The lead concentrate contains significant precious metals and is still undergoing further work to determine optimal recoveries for lead, gold and silver. Metallurgical studies indicate soft to modest ore hardness and recovery using standard froth flotation methods. Geotechnical and hydrologic studies also have been completed to the preliminary feasibility study level. Welcome to Alaska South32 Limited! Southeast Alaska

HECLA MINING COMPANY announced preliminary first-quarter 2017 production results for its Greens Creek mine on Admiralty Island. The mine produced 1,929,297 ounces of silver and 14,022 oz. gold, which represent a 22 percent and 12 percent decrease, respectively, over silver and gold production levels during the year-previous period. Lower silver and gold production was expected and principally due to lower ore grades mined during the first quarter. The mill operated at an average of 2,950 tons per day in the first quarter. Cost of production was 65 cents per ounce of silver compared to $3.96 per ounce in the year previous period. 

COEUR MINING INC. reported first-quarter 2017 production results from its Kensington gold project located about 165,895 tons of ore, a slight increase over the year of 26,000 oz. from the year-previous period. The mine produced 26,197 oz. of gold, grading 0.17 oz. per ton with an average recovery of 94 percent, all significant increases over the year-previous period. These lower grades, recoveries and production figures were anticipated due to mine sequencing. Higher grades, recoveries and production are anticipated for the remainder of the year. The company also indicated that development of the decline into the higher-grade Jualin deposit is progressing with initial production expected in late 2017. Coeur also indicated that it expects full-year 2016 production from the mine to total 120,000 to 125,000 oz.

CONSTANTE METAL RESOURCES LTD. and partner DOWA METALS & MINING ALASKA LTD. announced 2017 plans for the Palmer volcanogenic massive sulfide deposit near Faines. A budget of US$7 million has been approved that includes plans for 7,000 meters of drilling. The partners have formulated a plan that includes a dual focus of exploring for new resources across the district-scale property and expanding and upgrading the current inferred copper-zinc-polymetallic resource of 8.1 million metric tons grading 12 percent zinc-equivalent. The majority of 2017 drilling is dedicated to discovery of new mineral deposits. The balance is for expansion and upgrade of the South Wall-RW Zone resource, and geotechnical studies to support a potential road construction, engineering and environmental studies, and evaluation of a potential exploration drill for the purpose of controlling drill expansion and drill definition on the deeper portion of the existing resource.

GRANDE PORTAGE RESOURCES LTD. announced that it has received regulatory approval to commence drilling at its Herbert gold project located within the Juneau Gold Belt. The company plans to drill up to 19,000 feet of diamond drill core to test targets significantly deeper and further to the east than in previous exploration efforts. The company will specifically target the Main, Deep Trench, Ridge and Goat veins during the 2017 program. The project hosts indicated resources of 821,100 metric tons grading 6.91 g/t (182,400 oz) gold and inferred resources of 5,600 metric tons grading 7.73 g/t (12,800 oz) gold.
Hecla’s silver mining costs hit 5-year low

Hecla Mining Company April 20 reported that its Greens Creek Mine produced 1.9 million ounces of silver and 14,022 oz of gold during the first quarter of this year. While this is down from the 2.5 million oz of silver and 15,891 oz of gold recovered at the Southeast Alaska operation during the first three months of 2016, it is higher than the company expected. This drop in metals production is primarily due to lower grades. Mill throughput at Greens Creek averaged about 2,190 tons per day during the first quarter of this year, which is roughly the same as the same period of 2016. Overall, Hecla’s four mines—Greens Creek, San Sebastian (Mexico), Casa Berardi (Quebec) and Lucky Friday (Idaho)—produced 3.4 million oz silver and 56,113 oz gold, along with 15,537 tons of zinc and 8,636 tons of lead, in the first quarter. Thanks to higher metals prices, Hecla’s cost per ounce of silver produced during the first quarter was US$84 cents after credits for the gold, zinc and lead also produced. This is the lowest silver production cost for the miner in more than five years and well below the US$2.75/oz cost the company projected for 2016. “This strong operating performance allowed us to add US$14 million of cash since the end of the year, marking the fourth consecutive quarter of increasing cash balances,” said Hecla President and CEO Phillips Baker, Jr. The Idaho-based miner ended the first quarter with roughly US$213 million in cash, cash equivalents and short-term investments.

Auryn Resources is getting ready for a 25,000-meter drill program that will focus on the Anuri, Four Hills, Three Bluffs and Inuk corridors of its expansive Committee Bay gold project in Nunavut.

Bay gold project in Nunavut that includes 25,000 meters of drilling. In January, Goldcorp invested C$35 million in Auryn, giving the gold mining major a 12.5 percent stake in the exploration company. The 2017 program will include exploration of 12 newly identified targets across the 3,800-square-kilometer (1,500 square miles) Committee Bay property. Drilling will be focused within the Anuri, Four Hills, Three Bluffs, and Inuk corridors on the property. Additionally, regional till sampling will be completed on the 15 percent of the 300-kilometer-(185 miles) long Committee Bay greenstone belt yet to be explored to delineate additional targets for 2018. At Auryn’s newly acquired Gibsons MacQuoid project, another large gold property situated between the Meliadine gold deposit and Meadowbank Mine in Nunavut, the company is planning an initial belt-wide till survey as well as completing high resolution drone imagery. This program, slated to begin in July, will focus on identifying the major centers of gold mineralization within the project area that will be drilled in 2018.

Chuchuna will be the operator of the project and will plan and execute exploration field programs as set out in a budget and work plan approved by Quaterra.

Confirming Kennecott exploration

Quaterra and Chuchuna will pick up where Kennecott left off, with a field program being planned for this summer.
range, which was a problem you even discussed earlier.

Coughlin: Durability is always a goal, but in a dynamic world, it’s a moving target. The answer is yes, I think we have heard from our consultants very clearly: simplify your tax. The trouble is we’ve had people make huge investments under our very complex system. They are being audited as we go, four years prior to where we are at right now. The durability means you have to be very methodical about how you change your tax system. Being methodical as we are and as intense as we are, because there are different philosophies in that tax, people have already invested in other structures. We need to honor that as best as we know how while we look for simpler solutions along the way. I don’t know that many of us in the Senate disagree that we could do it simpler. The question is when do you want to start that process. My thinking is we need to go through the low cash flow, and get it as stable as we can, and that means it has to remain fairly complex.

Petroleum News: Earlier you touched upon how historically the state has done a good job environmentally. But recently, there are state rate hikes and cuts on other structures. Are you concerned that it’s getting a bit intense as we are, because there are different philosophies in that tax, people have already invested in other structures. We need to honor that as best as we know how while we look for simpler solutions along the way. I don’t know that many of us in the Senate disagree that we could do it simpler. The question is when do you want to start that process. My thinking is we need to go through the low cash flow, and get it as stable as we can, and that means it has to remain fairly complex.

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Coughlin & Q&A

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HB 111

eral of which were checked off in HB 247 last year (that body focused on the elimination of credits for Cook Inlet). HB 111 completes the checkoff of those six recommend-ations, she said, by eliminating refundable credits state-wide and repealing the tax credit fund. Under the Senate CS, HB 111 does not permit any tax credits for work in the Interior by Attna and Doyon. Those credits are nonre-fundable, she said, but the CS allows those Native corpo-rations to carry them forward and use them against their corporate income tax. The soon to expire in-state refinery, natural gas stor-age and LNG storage credits would also be refundable only by appropriation.

Use against tax liabilities

The CS also expands the opportunity for companies to get reimbursement for cash credits accrued by allowing use of those credits against tax liabilities that have not been netted. While that wouldn’t pay off the credit liability, Giessel said, it would begin the process of reducing the state’s liability.

House Resources Committee co-Chair Andy Josephson, D-Anchorage, said in an April 25 House majority press availability that the entire credit and refund system effective the end of this year in the Senate CS is an overlap with the House version of the bill, but said the Senate CS has significant changes that he doesn’t think the House would support. He called the CS a place to start negotiation, but said there are so many changes in the Senate Resources CS legislation that it is really a new bill. Josephson said he was looking forward to hearing from the Department of Revenue on the impacts of the Senate CS, and said it’s important that there not be unintended consequences. He said he thinks that will be harder to determine under the Senate CS than under the House bill.

The House bill

House Resources Committee co-Chair Geran Tarr, D-Anchorage, introduced the House version in Senate Finance. She said the Senate bills were driven by the the feeling because of a belief that the state’s present tax system was not working well in a low-price environment.

Tarr said a goal of House Resources is a system durable at a wide range of prices. Previous tax regimes didn’t meet that goal, Tarr said, because ACS was not working well in a high-price environment and SB 21 not working well in a low-price environment.

Tarr said the ringfencing feature of the House bill, not included in the Senate CS, applied losses to leases where production occurred. In the governor’s bill, the House, a CS from House Finance, also added a 15 percent surtax at production values (price less costs) of $60 and above. She also said transparency provisions in the House resources version, including access for legisla-tors with confidentiality agreements, were scaled back in the House Finance CS.

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Let me go back to the royalty. The roy-alty is the king’s 12 percent right. The production tax is based on a different kind of revenue. So not only do we get value for the first percentage of it, but if you’ll produce at a greater level, we will give you a sliding scale benefit. It was meant to increase. I don’t know that the reason we went to a production based, net based system was so we could incentivize things. Now akk Alaska have the expertise to do that, probably not, but we did have a goal in mind of diversifying that field and getting more production.

The royalty is always a big part of it and it’s flexible. But once that oil leaves us, if we don’t retain the value, then it’s not going to be worthwhile to us. Alaska has the expertise to do that, probably not, but we did have a goal in mind of diversifying that field and getting more production.

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BONDING LAW

to implementing the statutes.
The complexities of implementation require coordination between DCCED, the Department of Revenue and the Department of Natural Resources. DCCED had published a notice solicit-
ing public comments and industry input on regulation development and had received two comments, Parady said.

Which businesses?

One complication consists of com-
ing up with a legal definition of which types of business would require the bonding. All Alaska business licenses are categorized using what is referred to as an NASIC coding, a national system of codes for all the various types of business activity. It turned out that about 23 of these codes might apply to businesses that require the new bonding, but that it was possible to whittle down this list to about four codes, Parady explained.

Unfortunately, however, issues arose when evaluating the impact of applying the bonding requirement to businesses with licenses linked to these codes. For example, an obvious code to use would be the one for “crude petro-

SUMMARY

The complexities of implementation could cause delays in the licensing process for companies that would not, in fact, require the new bonding, Parady said.

Cost and benefit

Asked by Rep. Gary Knopp whether the benefit to be gained from the mod-
est scale of the new bonding actually justifies the effort involved in resolving the complexities of the required regula-
tions, Parady commented that the secur-
ity provided by the bonding is signifi-
cant for a typical small company.

“Without a little guarantee that we offer to a small business… is a substantive bonding, it potentially has a lot of future viability,” Parady said.

Parady added that, on the other hand, increasing the size of the bonding would increase the cost of doing busi-
ness for the oil and gas company. At a $250,000 level, a surety bond might cost somewhere in the range $6,500 to $7,500, depending on the rate charged for the bond, he suggested.

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IPA PRODUCTION

higher range of potential production rates than those offered for its 2016 forecast.

If the current forecast proves correct, oil production in 2017 would remain roughly even with oil production in 2015, despite two years of reduced drilling and workover activities.

The Initial Participating Areas, or IPA, is the largest of the three administrative regions at Prudhoe Bay, and the first to report its plans each year. BP usually files a plan for the Greater Point McIntyre Area in June and a plan for the Western Satellites in September.

Smaller cuts

The cuts planned for this year are smaller than those expected for last year.

In its 2016 plan of development for the Initial Participating Areas, BP expected a decrease from 3.8 rig years in 2015 to 1.6 rig years in 2016. The company eventually performed 1.8 rig years of activity in 2016, and is planning 1.3 rig years for 2017.

BP initially proposed a 31 well-development program for the Initial Participating Areas in 2016, down from 60 wells in 2015. The company actually drilled 37 wells in 2016.

Well work was also down, with the company performing approximately 1,000 jobs in drilling 336 sidetracks at two locations, at the Initial Participating Areas in the company.

In 2017, the company performed approximately 1,800 jobs in 2016; of which 413 were rate ad-

Even so, BP produced 197,900 barrels of crude oil and condensate per day from the Initial Participating Areas in 2016, up from 196,400 barrels per day in 2015. All told, the company sent 72.43 million bar-
rels of oil from the Initial Participating Areas to the trans-Alaska oil pipeline in 2016, up from 71.7 million barrels in 2015. And the company also produced 38,800 barrels of natural gas liquids per day from the Initial Participating Areas in 2016, or 13.9 million total barrels delivered to the pipeline — equal to rates from 2015.

In fact, the oil production from the Initial Participating Areas, combined with oil production from Prudhoe Bay satellite pro-
duction (Prudhoe Bay unit) processing capacity within reser-
voir management constraints,” according to the company.

In its 2017 plan of development, the company attributed the increase in oil pro-
duction in 2016 to “the lack of any produc-
tion impacting facility TARs (turn-
around), strong wellwork and drilling performance, and increased emphasis on mitigating and minimizing deferrals.”

Even with the projected decline in rig activity, BP is forecasting oil production between 158,000 and 198,000 barrels per day and natural gas liquids production between 30,000 and 41,000 barrels per day for the coming year.

The Initial Participating Areas also pro-
duced 6.883 million cubic feet of natural gas per day in 2016, down from 6.902 mil-

“Adding new hydroelectric facilities

to the Kenai River watershed represents high ecological risk to the integrity of world-class Kenai River fisheries, and economic risk to the entire Kenai Peninsula and Southcentral Alaska,” KRWF said in comments to the Federal Energy Regulatory Commission regarding Chugach Electric’s application for a FERC license for the project.

The River Coalition told the commission that the non-power use of the project area, including fish spawning and recreational use, is equal in importance to the use of the area for power generation. The Resurrection Bay Conservation Alliance told FERC that the area is commonly used for activities like hiking, skiing, snow machin-
ing and moose hunting.

—ALAN BAILEY

APRIL 30, 2017

—ALAN BAILEY
Reviewing the geology associated with the various recent Brookian oil finds on Alaska’s North Slope, Paul Decker, resource evaluation manager for Alaska’s Division of Oil and Gas, told the Senate Finance Committee on April 25 that there are three different play fairways in the Brookian rock sequence: the Nanushuk formation, the Torok that lies below the Nanushuk and some other rock units that are younger than the Nanushuk.

The Brookian is the youngest and shallowest of the petroleum bearing rock sequences on the North Slope. The Nanushuk and Torok were formed in conjunction with the building out from west to east of an ancient continental shelf, Decker said. The Nanushuk consists predominantly of sands, sorted and sifted into reservoir quality deposits in shallow water, while the sands in the lower part of the Torok formation were formed as so-called “turbidites,” sands that had avalanched down the continental slope onto the basin floor.

Well leg
A log from the Oqruk no. 3 well, drilled in 2013 in the Pikka unit, illustrates the petroleum potential. The Nanushuk and Torok formations extend over vertical depths of hundreds of feet, with the bottom 250 feet or so of the Nanushuk consisting of known pay containing high quality, 30 API oil. This interval has been tested, with flow rates of up to 2,600 barrels of oil per day, Decker said. Although the Nanushuk is the current focus of attention, the sandy Torok section below the Nanushuk, may have effective oil reservoir quality at some locations — the reservoir quality is close to what is required in some places, Decker said. Below the Brookian reservoir fairways lies the Husa Shale and HRZ, the source rock for the Brookian oil. It appears the oil has migrated upwards from the source rock, along the sloping strata of the Torok and into stratigraphic traps in the Nanushuk, Decker explained.

Geology similar to this appears to extend west, along the northern coastal region of the NPR-A. The federal onshore land to the west of the Greater Mooses Tooth unit has been withdrawn from oil and gas leasing. However, that situation could potentially change, given changes seen in Washington D.C., Decker commented.

“Right now that’s a significant restriction on the running room of our play in the Nanushuk and Torok formations into the western NPR-A,” Decker said.

—ALAN BAILEY

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SLOPE INTEREST

wells have confirmed the extension of the Pikka discovery to the south.

“This is very good news and it helps confirm what they expected about the extent of that north-south belt of reservoir in the Nanushuk formation,” Decker said.

ConocoPhillips’ Willow discovery, in a similar but completely separate Nanushuk reservoir, lies 55 to 60 miles west of Pikka, in the northeastern part of the National Petroleum Reserve-Alaska. A two-well exploration drilling program has confirmed a discovery originally made in 2002 from the Hunter A well, Decker said. The Willow find has a north-south extent of at least about 10 miles he said.

Smith Bay
Caelus’s Smith Bay find is in the Torok formation within the Brookian sequence. The company has drilled two wells in the shallow waters of the bay and has found some interesting sand bodies. However, the company has yet to conduct any flow tests for oil in the reservoir and has not yet collected large diameter rock cores for fully testing the reservoir quality. The reservoir rocks appear challenging for oil production, but Caelus anticipates that hydraulic fracturing stimulation can overcome those reservoir challenges — Caelus hopes to drill another well in 2018 to test one of the several sands in the prospect. And, especially given that Smith Bay is more than 100 miles from the central North Slope oil infrastructure, much remains to be determined about this particular development opportunity, Decker said.

“But it’s certainly something of scale and scope, and we hope that good things will continue to unfold,” he said.

Decker commented on the drilling that Accumulate Energy is currently conduct-

GOVERNMENT

ANWR bills moving slowly in Congress

Two bills with opposing views on the potential for future oil and gas development on the coastal plain of the Arctic National Wildlife Refuge have seen little action in Congress so far. In early January, Sen. Lisa Murkowski and Sen. Dan Sullivan, both Republicans representing Alaska, introduced S. 49, the Alaska Oil and Gas Production Act, a bill designed to open the coastal plain for oil and gas development. That bill was referred to the Senate Committee on Energy and Natural Resources on Jan. 5.

Murkowski chairs that committee.

In early April Sen. Edward Markey, D-Mass, introduced S. 820, a bill that would designate the Arctic National Wildlife Refuge coastal plain as a wilderness area, thus excluding the region from oil and gas activities. That bill was referred to the Senate Committee on Energy and Public Works on April 4. Murkowski responded to Markey’s bill by commenting “this bill was dead before it got introduced.” And, presumably to add some fuel to the ANWR debate, given the new makeup of Congress and the federal administration, in late February the Alaska Legislature passed a resolution urging Congress to approve responsible oil and gas exploration, development and production in the ANWR coastal plain.

—ALAN BAILEY
SLOPE INTEREST

Nikaitchu, Decker commented.

Upcoming projects

Decker reviewed oil projects at various stages of planning and development on the North Slope. He started with projects expected to come on line at some time between 2018 and 2021. He presented information about what is known about expected peak production rates from each development, emphasizing that different developments would peak at different times and that production would typically decline after peaking.

In the Colville River unit ConocoPhillips is continuing its drilling operations into the Alpine and Kuparuk formations from the CD-5 pad in the eastern NPR-A. Production from the pad is anticipated to peak at 15,000 barrels per day, Decker said.

The company is also engaged in two phases of development in the Greater Mooses Tooth unit. It looks as if each of these developments could result in oil production of up to 30,000 bpd.

Developments on hold

Following the drop in oil prices, Caelus Energy has postponed its Nuna development in a challenging Torok reservoir in the Oooguruk field. The company has also put on hold further expansion of the Jurassic Nuiqsut reservoir, one of the main reservoirs in the field. Nuna, if developed, could result in production of 20,000 to 25,000 bpd, Decker said.

Also because of low oil prices, further development drilling has been postponed in Eni’s Nikaitchu field in the Kuparuk River unit, capital constraints have put a hold on drilling has been postponed in Eni’s Nikaitchu field in the Kuparuk River unit, capital constraints have put a hold on.

Decker said.

In the Southern Michuweah unit on the west side of the Kuparuk River unit, capital constraints have put a hold on Brooks Range Petroleum’s Mustang development, although much of the construction work has actually been conducted for this. Production from the field, with its good quality, modest sized Kuparuk formation reservoir, could peak at 15,000 bpd.

In the Kuparuk River unit, ConocoPhillips has drilled two horizontal wells to test potential oil production from the Moraine accumulation, a continuation in the Torok of the Nuna accumulation that Caelus hopes to develop in adjacent the Oooguruk unit. Also in the Kuparuk River unit, ConocoPhillips has postponed the 1H NEWS project, a further oil development in the West Sak accumulation in the Schrader Bluff formation.

And Hilcorp Alaska is planning a 44-well development, mostly targeting the Schrader Bluff formation, at the Moose Pad in the Milne Point unit — that could peak at 10,000 bpd, Decker said.

2022 and beyond

Looking at 2022 and beyond, Decker listed a series of potential developments, starting with developments that seemed relatively likely to move ahead before discussing projects associated with higher levels of uncertainty.

ConocoPhillips seems likely to move forward with its Fiond West development in the northwestern corner of the Colville River unit, given that, under an agreement with DNR, the company has committed to building a drilling site in the Tofkat unit that is needed to drill extended reach wells for field development from existing pads in the unit. The company has not released estimates of production rates from this development.

ASRC Energy is planning the Placer project, a project involving a Kuparuk reservoir similar in scale and type to the Mustang development.

Armstrong’s Pikka Nanushuk development has predicted production rates of up to 120,000 bpd over several years.

“We feel pretty good about those numbers, within DNR, having had the opportunity to work closely with Armstrong and Repsol in their offices, and seeing their data,” Decker said.

ConocoPhillips is interested in the Tofkat project, in a Kuparuk C sands reservoir, in what used to be the Tofkat unit. The company has appealed to DNR to add the Tofkat leases to the Colville River unit, with the alternative being to add the leases to a subsequent state sale lease. With the leases lying between the Pikka unit and the Horsehoe wells, there may be Nanushuk interest in the leases, Decker commented.

ConocoPhillips has said that its Willow discovery may hold 300 million barrels of recoverable oil. Peak production through standalone facilities at Willow could be 100,000 bpd, but the production rate may be 40,000 bpd if existing production facilities at Greater Mooses Tooth or Alpine are used, ConocoPhillips has said.

Hilcorp has a plan to develop the Liberty field from an artificial island in the Beaufort Sea. An environmental impact statement is being prepared for the development — EIS documentation suggests a peak production rate of 60,000 bpd.

Point Thompson

ExxonMobil’s Point Thompson gas-condensate field is associated with proposed North Slope major gas sales. If full-scale gas sales move ahead, condensate production from the field’s challenging over pressured reservoir could peak at 70,000 bpd. One option that is part of a settlement agreement with the state for the Point Thompson development is to blow down the field reservoir by transferring gas into the Prudhoe Bay field, thus maximizing Point Thompson condensate production while also increasing the Prudhoe Bay reservoir pressure. But, while this would increase Point Thompson condensate production, there is a gas export line from the North Slope, this arrangement could be commercially complex, Decker suggested.

For its Smith Bay field, Caelus has estimated the possibility of production rates as high as 200,000 bpd. However, this is a very large number and the company needs to drill more wells to evaluate the find, Decker said, commenting that even the one well that the company plans for 2018 would not be sufficient to prove out the whole project, given the many different reservoir sand sources involved.

One wildcard that has sat on the periphery of North Slope production for many years is the cold, thick, heavy oil in multiple accumulations in the shallow Ugnu formation that straddles several oil and gas units in the central North Slope. While remaining an unsolved development challenge, the Ugnu holds tens of billions of barrels of oil in place.

Looking at the number of development projects and potential projects on the North Slope, coupled with recent political developments, Decker expressed some optimism over the future of the industry in the region.

“It’s a very interesting time on the North Slope, a very exciting time, even though with low oil prices we have seen a number of projects that we hoped to see in production being deferred,” he said.

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BP began production in Prudhoe Bay 40 years ago. Today, as a result of continued drilling rig spending and are producing 55% of Alaska’s oil.

Learn more about BP’s investments in Alaska for today and tomorrow at bp.com/Alaska