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Page Stoltze to Walker: Proceed with3 care; market may push Alaska aside

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This week's Mining News



Graphite Creek's STAX material excels as anode in lithium-ion batteries. Read more in North of 60 Mining News, page 9.

Nenana well nearing its targets

As Doyon's Toghotthele No. 1 exploration well in the Nenana basin approaches its drilling targets, Doyon Ltd has filed a plan for a second well this summer from the same drilling pad, should the first well encounter a significant hydrocarbon resource. James Mery, Doyon vice president for lands and natural resources, told a press briefing on June 22 that the Native regional corporation had started drilling the Toghotthele well early in the season, on June 1, to allow time later in the

see NENANA WELL page 22

Furie drilling at Kitchen Lights

Furie Operating Alaska has started drilling the Kitchen Light Unit No. A-2 well offshore in the Cook Inlet, Bruce Webb, Furie senior vice president, told Petroleum News in a June 21 email. The well spudded on June 19, Webb said.

Furie is drilling the well using the Randolf Yost jack-up rig, cantilevered over the Julius R. offshore gas production platform. The well is the first of four development wells that the company plans to drill in its Kitchen Lights gas field. The company has

see FURIE DRILLING page 23

Governor calls special session

The special session of the Alaska Legislature ended June 19 when the Alaska Senate gaveled out, following a House exodus June 18.

Gov. Bill Walker immediately called another special session for July 11. Three items are on the call: use of the Alaska Permanent Fund for state government; a tax bill, including proposals for a personal income tax and a sales tax, as well as other taxes Walker has proposed; and an oil and gas produc-

see SPECIAL SESSION page 22

PIPELINES & DOWNSTREAM

KBPL rate challenge

Cook Inlet gas pipeline stakeholders question doubling of shipping fees

By ALAN BAILEY

Petroleum News

Several businesses and Alaska's attorney general have submitted statements to the Regulatory Commission of Alaska, questioning a proposed rise in the fees charged for shipping gas through the Kenai Beluga Pipeline. The pipeline company has applied to the commission for a rate rise from 29.15 cents to 63.98 cents per thousand cubic feet of gas, a more than doubling of the existing rate.

The line connects gas fields in the southern Kenai Peninsula to Enstar Natural Gas Co.'s gas transmission system in the northern part of the peninsula, to the Cook Inlet Natural Gas Storage Alaska, or CINGSA, storage facility near Kenai At the core of HEA's complaint is the fact that the pipeline's rate is a postage stamp rate, a rate that remains the same regardless of where or how far a shipper wants to transport gas through the line.

and, by running under the waters of Cook Inlet, to the gas transmission network on the west side of the inlet.

The tariff filing has come as the result of a settlement between various stakeholders in the pipeline infrastructure, agreeing with the formation of the Kenai Beluga Pipeline as the consolidation

see RATE CHALLENGE page 24

FINANCE & ECONOMY

Linc bankruptcy filing

Company's American subsidiaries seek to reorganize; Umiat project up for grabs

By ERIC LIDJI

For Petroleum News

The U.S. subsidiaries of Linc Energy Ltd. have filed for bankruptcy protection.

In late May, Linc USA GP and 10 other subsidiaries of the Australian independent, including Linc Energy Resources Inc. and Linc Alaska Resources LLC, filed for chapter 11 bankruptcy protection in a federal bankruptcy court in the Southern District of Texas.

Aggressive and expensive drilling programs in Alaska and the U.S. Gulf Coast in recent years left the companies "especially vulnerable to the recent decline in oil prices," according to testimony from Vice President for Corporate Development Jude By October 2015, the company had reduced the scope of the development to 35 wells, in part because third-party reserve estimates for the field had sharply declined.

Rolfes. The subsidiaries were also pursuing development in the Powder River basin of Wyoming.

During its six-year tenure in Alaska, Linc pursued conventional natural gas exploration in the Cook Inlet basin, underground coal gasification in Cook Inlet and the Interior and oil exploration at the Umiat field in the National Petroleum Reserve-

see LINC BANKRUPTCY page 23

FINANCE & ECONOMY

Whatever it takes

Canadian oil sands giants try to wrestle down debt levels; Suncor equity offering

By GARY PARK

For Petroleum News

Two of Canada's largest oil sands producers are trying two different routes back to financial strength.

Suncor Energy, which is estimating its costs from the Fort McMurray wildfire at C\$1 billion, has launching a C\$2.5 billion equity offering, while offering to buy back C\$1.5 billion of debt.

Cenovus Energy, having already reduced its payroll by 31 percent over the past 18 months is hoping to follow that by searching for tenants to fill unoccupied space it is leasing in a new Calgary office tower that is due to open by late 2017.

Indicating that it is not yet convinced oil prices are on a sustained recovery path, Suncor has dan-

Stephen Poloz, governor of the Bank of Canada, said in a speech earlier in June that he does not expect a rebound in crude will see a recovery in industry spending.

gled premium prices to slash its debt rather than continuing to pay high interest rates of 4.5 percent to 8.2 percent, with maturities ranging from 2019 to 2042

The notes were part of its acquisition early this year of Canadian Oil Sands, the largest partner in the Syncrude Canada consortium.

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GOVERNMENT

Stoltze to Walker: Proceed with caution

Outgoing lawmaker, now serving on Senate Resources, remains hopeful for a gas line, but adds market forces may push Alaska aside

By STEVE QUINN

For Petroleum News

Sen. Bill Stoltze may not be running for re-election, capping a 14-year career in office, but his work is hardly done. The Chugiak Republican returns to Juneau in July for another special session on tax bills including another shot at reshaping the state's oil tax credit system. Stoltze spoke to Petroleum News shortly before and after Walker issued a proclamation calling for the special session.

Petroleum News: You're closing out 14 years. What comes to mind first when you think of the entire time you've been in office?

Stoltze: My first issue with a governor was with Murkowski when he made an executive order for the unitization of the fields, which was a tax increase on the industry. The big issue, the policy issue, was the Stranded Gas Development Act. It was a Murkowski bill but Bud Fate was really involved with that. Bud Fate in the House as the Resources Committee chair probably had more activity on that during his last term in office. These were major revisions to the Act. It's kind of like during the Hoover administration: Prosperity is just around the corner. During my whole 14 years, a natural gas line was just around the corner.

Petroleum News: On the gas line, where do you think the state succeeded?

Stoltze: I think we've probably succeeded in not blowing more money than we did, not taking the steps that weren't economic. Sometimes the whole market conditions forced that. We've spent a lot of money on the different ventures.

I think the bigger success is not throwing our only nest egg on something that right now if you were depending on gas line revenues to carry us over and not having the impending liquidity of Permanent Fund Revenue earnings to lessen the fall at a time when oil has dropped so low.

I'm a skeptic on this. The AIDEA bill the governor was pushing, I don't want to be too pejorative, but it's going a little Hugo Chavez, having the state — well nationalize isn't the term — but directing the activity and being a player. Not just a player but the central player where the state has a role.

I think the governor's team believes the state can be the key investor, maybe the single investor on this. We have laws of gravity and laws of economics and you're not very successful when you mess with either of them, trying to force a market that doesn't exist.

Petroleum News: Do you think the state saw it needed to back off when it slowly migrated from AGIA to SB 138?

Stoltze: AGIA pretty much died its own death. It didn't take a court order or any kind of extra intelligent forces to decide to pull the plug on that process. Just about everybody voted for the framework of AGIA. I think 16 of us voted against the contract. I was accidentally right on that one. I wasn't steering it. It was like a bunch of ants floating down a river on a rotten log. Everyone thought they were steering that one in the legislative process. It really died a natural death.

Petroleum News: LNG then became the path forward, though not right away.

It was almost like a slow migration, first LNG would be considered as part of AGIA, then as part of a re-written plan under SB 128.

Stoltze: Well, the whole Midwest scenario, that dog just didn't hunt. Under



SEN. BILL STOLTZ

no scenario was it feasible to send our gas to thirsty Midwest markets as one of our former governors called it — energy hungry, energy thirsty — one of those. Can you imagine if we were sending gas at a loss every day to the Midwest right now?

Petroleum News: Even the previous proposed contract under Murkowski didn't gain much traction, either.

Stoltze: I think he hadn't brought the public along either. Some of the factors he talked about to push things forward, he never had the full legislative support, and definitely not the public support on the particulars of his method.

Petroleum News: OK, so the next step comes in the fall when we'll be hearing from all four partners on pre-FEED? Even as you're heading out, is there anything you'd like to hear specifically?

Stoltze: You know if we can begin to address the Interior energy needs. We've had so many efforts trying to address the needs of the Interior who have been very vocal and will vote for just about anything that's going to offer a glimmer of hope. If we can provide for our internal needs, maybe it will take the severe politics you get out of the Interior and direct us more so they can be more objective towards looking at the market approach.

All of this is driven, one plan after another, as to how you take care of the Interior, and justly so for folks who represent their area. We've had a reprieve with the pricing right now.

That's really out of the real frustration from the Interior. Motion and big economic investments by the state, don't confuse those with necessarily progress toward a solution. Politics and the severe need, it forces folks to jump on decisions that aren't part of basic economics or marketable supportable solutions.

At least that's my observation. I'm not criticizing my colleagues. It's just a reality. It's put them in a tough spot. They have an imperative to deliver something for the Interior. It's too easy to jump on any proposed solution that might get you there. Maybe we just isolate it and say we are going to bite the bullet and make sure we have a gas line.

Even a gas line for the Mat-Su Valley doesn't mean a lot of the valley is on natural gas. The areas way off the grid, which is a big chunk, are still going to be on diesel — probably a pretty large percentage.

Petroleum News: The governor has taken unilateral steps before during an interim, as he did last year with the Medicaid expansion. Do you sense that there may be any of those coming when there is an interim on the gas line?

Stoltze: You know the governor has limits on what he can do. I think that's a lot of the obsession with what the state's bond rating has to do with and less about individual communities in the state, our university and AHFC's ability to bond—that as well as restructuring of AIDEA, which is toward getting to a state-centric, government-driven pipeline proposal.

There were things that seemed like low hanging fruit when he was running for office, like salaries of executive directors of the gas line authority (AGDC). Seems like you need a ladder to reach some of the fruit they are growing there now. It probably makes Dan Fauske blush and ask what was I doing making a mere \$366,000 when the next guy coming in could make three quarters of a million potentially.

Petroleum News: What are your thoughts on the structure of AGDC now with the new hire?

Stoltze: I think the expectations are built on a lot of shaky premises. I'm not

trying to be pejorative. It seems to have more elements of pipedream and not pipeline. I realize these are from wellmotivated people who have a passion for their direction.

Petroleum News: Would you like to hear from the new AGDC director soon, perhaps in a hearing?

Stoltze: I suspect once we get done with the business of special session, I'd be surprised if (Senate Resources co-chair) Cathy Giessel didn't want to have some hearings. They have to have their quarterly updates, too. I'm looking forward to it. He appears to have good credentials. I like to know what does he expect to do? Does he expect to put together a framework, build a

gas line and say you've got to put your gas in here? Is he part of a plan to take back leases? What's the end game of this whole thing? Is he part of putting an invest-

ment into a pretty speculative project? Right now the numbers don't show a lot of market support. The most objective analyses are very skeptical. If this is such a great project, how come there aren't all kinds of investors coming forward? Everything has been kind of vague.

I keep hearing that we have Asian investors interested. Well Asia is a pretty big place. Indonesia has 125 million people. They are all players in this world market. That's what this is — a world market. I guess I'm just at the level to know just enough to be very cautious and skeptical. I think Alaskans should be asked would you want to invest your Permanent Fund and potential dividends into this.

They certainly have shown an opinion every time we talk about using the Permanent Fund for anything. Maybe the public needs to be more involved in the conversation. Not maybe, they do need to be. It would be nice if there was some type of (voters') blessing where we are willing to take this risk and hope there is a new panacea for state revenue. That will force a discussion over what the real numbers are

see STOLTZE Q&A page 18



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LAND & LEASING

Messages of support for OCS development

Labor unions, trade associations, Native corporations and retired military leaders make case for future Arctic offshore lease sales

By ALAN BAILEY

Petroleum News

Collowing the publication of a letter to the Obama administration from nearly 400 scientists opposing oil drilling on the Arctic outer continental shelf, supporters of Arctic offshore oil and gas development have weighed into the debate.

The Bureau of Ocean Energy Management has been accepting comments on a proposed outer continental shelf lease sale program, running from 2017 to 2022. The program includes a Beaufort Sea sale in 2020 and a Chukchi Sea sale in 2022. Public comments on the program were due by June 16. Letters for and against Arctic drilling were filed as part of the public comment process, and some of these letters have now been published.

Letter to BOEM

On June 16 a coalition of 15 groups, including labor unions, trade associations and Native regional corporations sent a letter to Abigail Ross Hopper, director of the Bureau of Ocean Energy Management, saying that it is paramount that the agency retain all Arctic outer continental shelf acreage in the lease sale program.

"As an Alaska coalition that represents tens of thousands of jobs for our state's citizens, we cannot overstate how important it is to have consistent lease sales which provide the first step in gaining access to the Arctic OCS for responsible development," the letter says.

The letter says that Alaska statehood was predicated on natural resource development and that today more than one-third of Alaska jobs are tied to the oil and gas industry. And, as the state's existing oil fields mature, Alaska's economy depends on outer continental shelf development, the letter says.

According to a University of Alaska Anchorage study, outer continental shelf

According to a University of Alaska Anchorage study, outer continental shelf oil and gas development would create an average of 54,700 new jobs.

oil and gas development would create an average of 54,700 new jobs. And, with the Alaska outer continental shelf holding one of the world's largest untapped hydrocarbon resources, denial of the ability to develop these resources would further increase reliance on foreign oil and gas in a geopolitically volatile environment, the letter says.

Military leaders

Comments submitted by a group of 15 retired senior leaders from the U.S. military and former U.S. Secretary of Defense, William Cohen, focus on what they see as the strategic importance of the Arctic.

"The strategic importance of the Arctic is growing due to rapid change in the physical and geopolitical environments," the retired military leaders say. "Excluding the Arctic from the (leasing) program would harm our ability to protect our interests and to promote cooperation in the region."

The comments say that the White House, Defense Department and Coast Guard Arctic strategies depend on cooperation between the government and the private sector, with both sectors sharing the infrastructure development resources and expertise needed for the region. Excluding the Arctic from the oil and gas leasing program would signal a retreat from the region, reducing flexibility in promoting U.S. national interests while compromising the nation's involvement in international cooperation in initiatives such as ensuring best practices in Arctic drilling, the comments say.

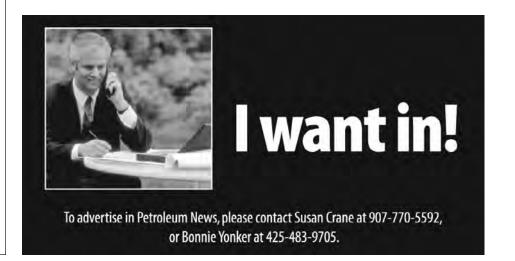
> Contact Alan Bailey at abailey@petroleumnews.com

CORRECTION

Leases expire throughout 2017

The article titled "Federal acreage down" in the June 19 issue of Petroleum News incorrectly states that all currently active oil and gas leases on the Beaufort Sea outer continental shelf expire in December 2017. In fact, the leases expire over a range of months, starting in July 2017, although all will have expired by the end of the year.

Petroleum News apologizes for any confusion.



FINANCE & ECONOMY

Tough measures in tough times

Penn West tries for fresh start by unloading prized assets in Saskatchewan; more deals expected after year-long downward spiral

By GARY PARK

For Petroleum News

Penn West Petroleum, once a star among Canada's mid-size petroleum producers, has ended a decade of frequent turmoil by returning itself to the start line.

It has jettisoned one of its two main assets by selling all of its Saskatchewan holdings in the Viking light oil play for C\$975 million to Teine Energy, a privately held producer owned 77 percent by the investment board of the Canada Pension Plan, as well as C\$140 million of Alberta assets to unidentified buyers.

For Teine the purchase comes with production of 16,300 barrels of oil equivalent per day (91 percent liquids), proved plus probable reserves of 53.2 million boe (also 91 percent liquids) and 410,000 net acres of undeveloped land.

Penn West also said it expects to sell additional assets pumping 20,000 barrels per day later this year, dramatically shrinking its focus to the Pembina Cardium region of Alberta.

Jeremy McCrea, an analyst at Raymond James, said the Viking transaction was a drastic, but necessary move, allowing Penn West to reduce its debt-to-cash-flow ratio to 3.9 times in 2017 from 13 times at the end of 2015, or to a net C\$600 million from C\$2.1 billion at the end of 2015.

To those who view the debt ratio as relatively high, he said that fails to capture the company's relatively low decline profile of 19 percent, while a revised capital spending program should allow the company to grow much easier and further lower the debt-to-cash-flow figure in 2018, he said.

"The sale is a definitive step which will help change the narrative from constant discussions around its debt towards a constructive conversation around (the company's) recent performance," McCrea said in a note to clients.

He said that "meaningful solutions cannot be achieved through half measures. In the case of Penn West, the full measure solution of its debt overhand was the sale of one of its jewels."

The deal allowed McCrea to revise his rating for Penn West to "outperform" from "underperform" and lift his 12-month target price to C\$3 a share from 75 cents.

Forced transaction?

Barclays said it believed the transaction was forced by debt-holders — speculation that has deeply annoyed the current executive team — at a time the company was approaching a breach of its covenants.

The bank said the company will now be able to remain on side with its debt terms through the second half of 2016, although Barclays analyst Grant Hofer increased his target to a more modest C\$1.50 from C\$1.

He said the market will now shift its focus from debt to the operation of remaining assets "and on this front the market is likely to take a wait-and-see approach."

It is not yet clear how those beyond bondholders and remaining employees will response to Penn West's attempt to wipe its slate clean and restart from scratch

Chief Executive Officer David Roberts

said in a memo to staff that "we come out of the shadows of the past and are facing a bright future."

Whether that will help soften the blow from the loss of billions of dollars in market capitalization may need more explanation, especially among those investors who have seen their share prices plunge from a peak of C\$47 in 2006.

Severe beating in market

Regardless of the fact that Canadian government moves to scuttle income trusts, combined with a recession and two slumps in oil prices, Penn West shareholders have taken one of the most severe beatings on the Toronto Stock Exchange's oil and gas group which has fallen by an average 50 percent over the same period.

Chief Financial Officer David Dyck candidly admits that the Teine transaction is "pivotal ... while we have made significant progress over the past three years in reducing out total debt, this asset sale results in a markedly improved capital structure and positions the company in the top tier of our peers in terms of all significant debt metrics."

There are many observers who insist Penn West was out of control under its former management.

When forced to abandon the tax benefits of operating as a trust that gave it the freedom to load up on property acquisitions in Saskatchewan and Alberta to fuel its cash distributions, Penn West was unprepared to make the transition to a dividend-paying corporation, given the high capital costs and rising liabilities associated with its aging properties.

Its answer to declining production was a C\$3.8 billion acquisition in 2007 of Canetic Resources Trust that drastically inflated debt.

Accounting scandal

Even when Rick George, the former chairman at Suncor Energy, took over the helm at Penn West, the hopes of a turnaround were blown off course by an accounting scandal that forced the company to restate years of financial results.

That was compounded by the recent disclosure that one of China's state-owned energy companies had bid C\$6.8 billion — or about C\$13-C\$14 a share — in 2013 to acquire Penn West just after the new management was installed.

What has angered many investors is the realization that peer companies, notably ARC Resources and Peyto Exploration & Production, have managed to ride out the industry storms and retain much of their value. ●

Contact Gary Park through publisher@petroleumnews.com



PIPELINES & DOWNSTREAM

Tesoro closes on Alaska acquisitions

Consent decree with state requires company to sell existing Anchorage petroleum fuel terminal to address competitiveness issue

By KRISTEN NELSON

Petroleum News

esoro and the state of Alaska have reached an agreement allowing the company to go ahead with the purchase of Flint Hills Resources' wholesale and logistics assets in Anchorage and Fairbanks, subject to Tesoro selling one of its existing terminals in Anchorage.

Tesoro Corp. said June 20 that the acquisitions, made through the company's affiliates Tesoro Alaska Co. LLC and Tesoro Alaska Terminals LLC., include: Flint Hills wholesale fuel marketing contracts in Alaska; an Anchorage terminal with 580,000 barrels of in-service storage capacity, a truck rack and rail loading capacity; a Fairbanks airport terminal with 22,500 barrels of in-service jet fuel storage and truck rack; and a multiyear

If Tesoro is unable to divest or lease the terminal, it would then offer "terminalling, storage, and ancillary services" at the terminal "on a non-discriminatory basis" to qualified third parties.

terminalling agreement at Flint Hills' North Pole refinery providing rail offload capabilities and access to Alaska's Interior.

The former Flint Hills North Pole refinery is not part of this acquisition, which was announced in late 2015.

Agreement reached

The state said June 21 that Alaska Attorney General Craig Richards reached an agreement with Tesoro requiring the

company to sell a petroleum fuel terminal at the Port of Anchorage to preserve competition in Alaska's fuel markets. In addition to the 580,000-barrel capacity former Flint Hills Anchorage terminal it is acquiring, Tesoro owns two storage facilities at the port, Terminal 1 with 220,000 barrels of capacity and Terminal 2 with some 600,000 barrels of capacity.

The Department of Law conducted a six month investigation and determined that Tesoro's acquisition of Flint Hills' tank farm would limit the ability of competitors to import fuel through the port and impair competition in some fuel markets, including gasoline.

Tesoro agreed to sell Terminal 1 to a qualified buyer to address the competitiveness concern.

"Allowing a new competitor into the Port of Anchorage will increase competition in this very constrained market," said Chief Assistant Attorney General Ed Sniffen in a statement.

Tesoro has one year from approval of the consent decree to sell the terminal and must lease it if it cannot find a buyer.

The consent decree was filed June 21 with the Alaska Superior Court and is subject to the court's approval; there is a 60-day period for public comments on the consent decree.

Tesoro's view

"This acquisition enhances our capabilities to efficiently and reliably serve our customers in the state of Alaska," Greg Goff, Tesoro president and CEO, said in a statement.

Tesoro said that to complete the Flint Hills acquisition in a timely manner it has agreed with Alaska's attorney general to offer for divestment approximately 25 percent of its existing Tesoro Logistics Anchorage product terminal capacity (some 830,000 barrels in total).

The company said the rail loading capabilities it gains through the acquisition will improve its ability to serve customers in the Interior from Anchorage. Tesoro said it plans to offer the acquired assets to the master limited partnership, Tesoro Logistics LP, in the near future.

The consent decree

The consent decree notes that Tesoro Logistics owns two petroleum products storage facilities at the Port of Anchorage; a petroleum products terminal facility at Nikiski, adjacent to Tesoro's Kenai refinery; and the 69-mile Tesoro Alaska Pipeline, which moves petroleum products between the Nikiski terminal and Kenai refinery and the Port of Anchorage.

As to the acquisition, Tesoro asserts it will "support the economic utilization and overall health of the Kenai refinery" and "provide a reliable and secure source of petroleum product supply" to Interior Alaska markets using the rail loading capabilities of the Flint Hills Anchorage terminal.

Tesoro also asserts that the acquisition "does not alter the supply options for petroleum products in Alaska" because since Flint Hills shut down operation of the North Pole refinery in 2014 that company has not imported any petroleum products from outside Alaska, but has purchased products from Tesoro, a purchase it is contractually committed to continue for the next eight years. Flint Hills has also, the consent decree notes, operated its Anchorage terminal "on a proprietary basis."

The state, on the other hand, asserts that Tesoro's acquisition of the Flint Hills facilities "will alter supply options for the purchase and delivery of petroleum products in Alaska by removing a competitor from the market and eliminating a potential source of imported supply of petroleum products" and "may be unlawful under Alaska and federal antitrust law by substantially reducing competition."

The consent decree notes that the court has made no determination of any violation of the law and defendants continue to deny that the transaction is unlawful. Both the state and the defendants "wish to avoid litigation and resolve the potential controversy on mutually acceptable

Qualified third parties

Tesoro has one year to divest Tesoro Terminal 1 assets to a qualified third party for no less than the minimum reserve price Tesoro provided to the state in response to an investigative demand based on the fair market value of the terminal and to a party that receives the prior approval of the attorney general.

The consent decree lists qualified third parties and says they must be "creditworthy customers as reasonably determined"

see TESORO DEALS page 8

EXPLORATION & PRODUCTION

Statoil confirms two Newfoundland finds

Norway's Statoil has confirmed two new discoveries after 19 months of evaluating its drilling program in the Flemish Pass basin offshore Newfoundland.

The company issued the results from its Bay du Nord play after the return of its West Hercules semi-submersible to a base at Bay Bulls in Newfoundland.

However, Statoil said the results are likely at the lower end of its 2013 expectations of 300 million to 600 million barrels.

A spokesman said efforts are now concentrated on determining whether the recoverable volumes are commercial.

The company has previously suggested Bay du Nord is unlikely to become a core producing area until after 2020.

Nine wells were drilled near the original Bay du Nord find about 300 miles offshore, with some drilled at record speed despite the harsh offshore environment, the operator said.

Uncertainties reduced

Statoil said the appraisal well and near-field exploration have "reduced key reservoir uncertainties and confirmed that the volumes are within the original volume range."

The campaign included three appraisal wells and four nearby exploration wells, plus two wells outside the discovery zone, one with ExxonMobil and Royal Dutch Shell and one with Chevron, Shell and BP.

Statoil said oil was found in two prospects, called Bay de Verde and Baccalieu, adding it was working to mature more prospects that could increase potential volumes and help trigger a development.

"Of course we would have wanted to find more," said the spokesman. "But this is a gigantic area (of 11,600 square miles where only 17 wells have been drilled so far) and it's still in an early phase."

Statoil Canada President Paul Fulton said the latest drilling program has been "critical to Statoil's continued assessment of Bay du Nord" and its chances of operating a development.

—GARY PARK



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ALTERNATIVE ENERGY

Making the optimum use of the power

Heat pumps make efficient use of electrical energy and can work in Alaska's climate for cost effective heating of buildings

By ALAN BAILEY

Petroleum News

The heat pump, a technology that has been around for many years, is best known to many people as the engine that drives a household refrigerator or air conditioning system. But the technology also works as a means of heating a building, an application that can work effectively even in Alaska's cool and often cold climate. In fact, depending on factors such as the cost of the alternative form of heating and the local price of electricity, a heat pump can prove financially attractive, in addition to being an especially clean heating mechanism.

A heat pump in a refrigerator, for example, involves a liquid refrigerant evaporating to a gas in a system of tubes inside the refrigerator, with the absorbed latent heat of evaporation causing the refrigerator to cool. A pump then compresses the gas back to a liquid in tubes outside the refrigerator, releasing latent heat to the outside of the appliance. The compressed liquid flows back into the refrigerator to be evaporated again. As this process continues, with the refrigerant cycling around the system, heat is continuously transferred, or pumped, from the inside of the appliance to the outside

Now imagine transferring this technology to a building, but reversing the process so that the refrigerant evaporation takes place outside the building, while the compression happens inside. The result will be the heating of the building by pumping heat



Darryl Schaefermeyer, special projects director for the Alaska SeaLife Center, in front of a bank of four state-of-the-art heat pumps that use carbon dioxide as refrigerant and provide heat for the center.

from outside to inside. The heat pump itself can be entirely self contained within the building, with a fluid such as water used to transfer energy from outside the building into the cool side of the pump, or used to transfer heat around the building from the pump's warm side.

Efficient electricity use

Sean Skaling, policy and program director for the Alaska Energy Authority, told Petroleum News that the key advantage of a heat pump is the manner in which it can place more heat in a building than is repre-

sented by the electrical energy that the pump consumes. The ratio of the energy pumped into the building to the electrical energy used is called the coefficient of performance, or COP for short. A traditional electrical heater, using a heating element, uses most of the electricity it consumes to generate an equivalent amount of heat and, therefore, has a COP of around one. But a heat pump, with a COP that can be three or more, is much more efficient in its use of electrical power, Skaling explained.

The Alaska Energy Authority has been promoting the use of heat pumps in Alaska

in situations where this approach can work technically and financially. There are now a number of locations in the state where the technology has proved successful in lowering heating bills, Skaling said. The economics depend on relatively cheap electricity, the opportunity to replace an expensive alternative heating source, and a workable source of heat for the pump. Heat sources can be the outside air, a water body or the ground. The source does not have to be hot, or even warm, but it does need some combination of a high heat capacity and a means of heat replenishment to ensure a stable, continuing heat flow.

Andy Baker, a clean energy consultant, told Petroleum News that for maximum efficiency a heat pump needs to run overloaded, trying to move more heat than its capacity. In a cold climate such as Alaska's this factor can be used to advantage, with perhaps several pumps being run flat out, and with some pumps shutting down if the heating load drops. Baker also emphasized that, rather than simply buying a heat pump and installing it, it is necessary to custom design the various fluid loops and the heat source required for a particular application, to ensure a cost-effective implementation.

And what can be relatively high up-front installation costs need to be factored into the overall project economics.

The Alaska SeaLife Center

One of the higher profile heat pump applications in Alaska is in the Alaska

see **HEAT PUMPS** page 8



continued from page 7

HEAT PUMPS

SeaLife Center in Seward, where a system of heat pumps now meets all of the building's heating needs. The center uses seawater from Resurrection Bay as a heat source, a convenient arrangement since the water is already being pumped through the various marine life installations in the center

Fortuitously, thanks to ocean currents from the south, the water in Resurrection Bay at Seward is relatively warm, reaching a peak temperature of 56 degrees F in November and cooling to a minimum of around 40 degrees F by May, Baker said.

Darryl Schaefermeyer, special projects director for the center, told Petroleum News that the very high cost of heating oil in 2008 had driven the center's interest in converting from oil-fired heating systems to heat pumps. With total funding support of \$713,000 from the Alaska Energy Authority's Renewable Energy Fund and the Denali Commission, the SeaLife Center installed two heat pumps. Those pumps started operating in 2011, sending heat to the center's five largest air handlers and pre-heating the domestic hot water.

A grant from the Murdock Charitable Trust enabled an extension of the system into pavement heating, a major source of heat demand for the center.

The most recent upgrade, funded by a \$37,000 AEA grant matched by \$68,000 in funding from the SeaLife Center, has involved the installation of four additional state-of-the-art heat pumps that use carbon dioxide as refrigerant. The phase-change properties of carbon dioxide allow this type of pump to transfer heat at a temperature of up to 190 F, a much higher temperature level than the maximum of 120 F from a traditional refrigerant. That has enabled the full heat-pump heating of the center's hot water supply, as well the ability to use the carbon dioxide pumps for the building's medium temperature heating.

Eliminated heating oil

The upshot has been the elimination of the need to purchase heating oil for the SeaLife Center. Prior to the heat pump installation, the building was consuming between 100,000 and 130,000 gallons of heating oil per year, Schaefermeyer said. Although the price of fuel oil has dropped since then, the comparison in energy costs before

and after heat pump installation remains impressive: In 2008 the center's combined electricity and fuel bill was \$1.2 million, while in 2015, with no heating fuel needed, the electricity bill amounted to a little over \$500,000, Schaefermeyer said.

Elsewhere on the Kenai Peninsula, there has been a particularly successful heat pump application in a senior housing complex in Seldovia, Baker said. This system, which has displaced about 90 percent of the building's oil boiler usage, involves heat extracted from a layer of basalt rock under the parking lot adjacent the building. HDPE (high-density polyethylene) piping carrying fluid for extracting heat from the rock passes through 10 holes drilled 300 feet vertically through the rock, Baker said.

Juneau Airport

There is another high-profile heat pump application in the Juneau airport in Southeast Alaska. Like the Seldovia application, the airport system uses ground-sourced heat pumps, using piping run through holes drilled into the subsurface. The availability of modestly price hydropower in Southeast Alaska can make the use of heat pumps particularly appealing in that region.

Construction of the Juneau airport system began in 2009 in conjunction with a major renovation of the airport terminal that took place at that time. An AEA grant of \$513,000, half of the total project cost, supported the heat pump project. The heat source involves HDPE piping that passes through 108 vertical holes bored beneath the commuter airplane ramp adjacent the terminal. A total of more than 16 miles of the piping circulates a mixture of water and methanol, transferring heat energy from the ground into more than 30 electrically powered heat pumps inside the terminal. In addition to providing heat for the renovated section of the building, the system, which was completed in early 2011, heats a snow melt system for the front sidewalk, street crossing and a waiting area.

An analysis of the operation of the system, published in 2014, indicates a direct savings of about \$130,000 per year, with a payback period on installation costs of less than eight years.

But are heat pumps a feasible option in colder parts of Alaska, farther north?

Project in Fairbanks

The Cold Climate Housing Research Center has been

conducting a research project in Fairbanks in the Alaska Interior, using a ground source heat pump system to heat a building to test the feasibility of heat pump use in an area of semi-continuous permafrost — a six-ton residential heat pump, installed in 2011, replaced a 76,000-Btu-per-hour oil fired boiler. The heat pump delivers heat to the existing infloor water-based heat distribution system. For a heat source, the project involved the horizontal placement of 4,800 lineal feet of coiled tubing a few feet underground, outside the building, below the active soil layer and above the top of the permafrost. Water mixed with methanol antifreeze flows through the tubing, transferring heat energy from the ground into the intake side of the heat pump.

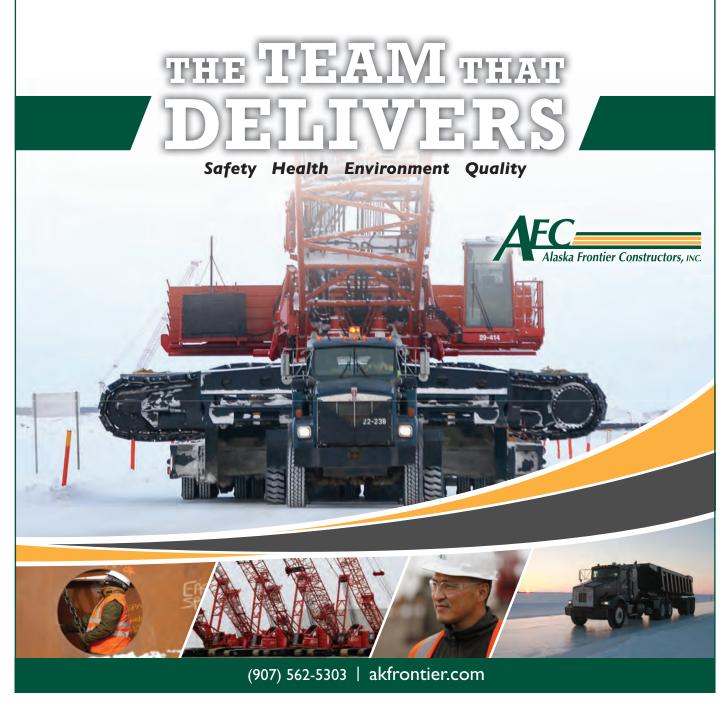
A concept behind the system is that in the depth of the winter the ground temperature a few feet below the surface remains much higher than the temperature of the frigid air above, thus providing a temperature contrast that can drive a heat pump efficiently.

Robbin Garber-Slaght, a research engineer in the CCHRC, told Petroleum News that the system performance was excellent during the first year of operation, with a COP of 3.7. Over the subsequent two years the performance dropped, as the ground around the buried tubing cooled under the refrigerating effect of the system. But after three years the system was still delivering a respectable COP of around 2.9 during the winter. Garber-Slaght said that the temperature around the underground tubing has now dropped to about 32 F but that, theoretically, the heat pump would remain efficient down to 20 F.

As part of the research project, the CCHRC team is testing the effect of different ground covers, such as sand or grass, on the efficiency of the system. The idea is that, although the system will cool the subsurface ground when in use during the winter, the summer heat will warm the ground back up again. Another possibility would be to reverse the heat pump in the summer, using the pump to cool the building by delivering heat back into the ground.

Garber-Slaght said that the original three-year AEA grant for funding the project is coming to an end that the team hopes for further funding to determine the longer term performance of the heat pump system, and to figure out whether the continuing heat flow through the system has reached an efficiency equilibrium.

The CCHRC has also been conducting a project to test the efficiency of air sourced heat pumps in Southeast Alaska.



continued from page 6

TESORO DEALS

by Tesoro "who agree to follow industry standard practices related to health, safety, security, and environmental protection."

The consent decree lists companies which are "actual or potential competitors of Tesoro" who will be deemed qualified third parties if they satisfy state financial responsibility requirements: Delta Western Inc., Crowley Petroleum Distribution, Petro Star Inc., Petro Marine Services, Petro 49 Inc., Shoreside Petroleum, Chevron Products Co., Shell Oil Products US and Erickson Petroleum Corp.

The consent decree has an initial term of 10 years.

If Tesoro is unable to close a deal to divest Tesoro Terminal 1 assets within a year, it may apply to the attorney general for additional time to close the transaction.

If it is unable to divest Tesoro Terminal 1 at the minimum reserve price and subject to approval of the attorney general, Tesoro would then lease the storage capacity of the terminal, for no more than 10 years, to a qualified third party, or to multiple qualified third parties if no single party is interested in leasing the entire storage capacity.

If Tesoro is unable to divest or lease the terminal, it would then offer "terminalling, storage, and ancillary services" at the terminal "on a non-discriminatory basis" to qualified third parties. •

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10 Freeman cheers Alaska mining as momentum shifts in its favor

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Week of June 26, 2016

NEWS NUGGETS Compiled by Shane Lasley



A preliminary economic assessment completed in 2013 outlined the initial plans for an open-pit mine at the Arctic volcanogenic massive deposit that would produce roughly 1.5 billion pounds of copper, 1.8 billion lbs. of zinc, 289 million lbs. of lead, 30.5 million ounces of silver and 349,000 oz. of gold over a 12-year mine life.

NovaCopper focuses on studies needed for Arctic pre-feasibility

NovaCopper Inc. June 22 said the Bornite Camp is being prepared for the 2016 field program at the Upper Kobuk Mineral Projects located in Northwest Alaska. The majority of this year's project budget of US\$5.5 million is planned to be spent on roughly 3,000 meters of drilling at the Arctic project. The program will include drilling for geotechnical, hydrological, waste rock characterization and metallurgical studies as well as further resource definition. The company is also planning a series of environmental studies that include an aquatic survey, avian and large mammal habitat survey, and a continuation of baseline environmental information collection. The LiDAR survey that was incomplete last year due to weather conditions will be finished this season, while the wetlands delineation and surface water quality work is to be expanded. This site investigation work will form the basis for completing a future pre-feasibility study on the Arctic deposit. The exploration camp will host 40 to 50 staff and contractors with the majority of the work force hired locally and most of the work occurring from mid-June through mid-August. "While the majority of this year's site investigation program will focus on the Arctic project, the company also will continue to improve our geological understanding of the regional exploration potential of the Ambler mining district through low-cost bedrock mapping within the Ambler schist belt and a deep penetrating soil geochemistry survey located immediately north and east of the current Bornite multibillion-pound copper resource," said NovaCopper President and CEO Rick Van Nieuwenhuyse. "We also look forward to continuing to work closely with our partners at NANA to support training and hiring of the local work force and with (the Alaska Industrial Development and Export Authority) to support (its) effort to build access to the Ambler mining district." NovaCopper also said AIDEA has changed the name of the roughly 200-mile industrial access road proposed from the Dalton Highway to the Ambler mining district to the Ambler Mining District Industrial Access Project. At the end of 2015, AIDEA initiated an environmental impact statement process for the access road by filing a consolidated right-ofway permit application with a half-dozen relevant federal agencies, including the National Park Service, the U.S. Army Corp of Engineers, U.S. Fish and Wildlife Service, Bureau of Land Management, U.S. Coast Guard, and the Federal Highway Administration. AIDEA's project team is working with residents and communities to address their concerns and will be thoroughly investigating all potential impacts on local communities and subsistence resources. NovaCopper shareholders have approved changing the company's name to Trilogy Metals Inc. and implementation of the new name is expected around Sept. 1.

TECHNOLOGY MINERALS

Battery of tests

Graphite Creek's STAX material excels as anode in lithium-ion batteries

By SHANE LASLEY

Mining News

The more that is known about Graphite Creek, the more this enormous deposit in western Alaska seems ideally suited to fill the growing need for graphite in electric vehicle batteries and other technology applications.

Though Graphite One Resources Inc. has only systematically drilled a small section of the 11 miles of known near-surface mineralization at Graphite Creek, the Vancouver B.C.-based company has already outlined 17.95 million metric tons of indicated resource grading 6.3 percent graphitic carbon and 154.36 million metric tons of inferred resource at 5.7 percent at this deposit located about 35 miles north of Nome.

Establishing that the Graphite Creek deposit is so massive that a mine could ship out 50,000 metric tons of graphite per year for centuries, Graphite One is working with TRU Group Inc. – a technology metals consultant with expertise along the entire graphite-graphene supply chain – to find out if this massive store of graphite could efficiently be transformed into carbon-coated spherical graphite needed for the anodes of lithium-ion batteries used in electric vehicles.

Graphite One and TRU Group has just released the final results from a five-phase program that indicates the graphite not only meets the criteria but has unique characteristics that sets it above any known deposit of natural graphite on the planet.

STAX advantage

When TRU Group first began examining Graphite Creek material late in 2014, its technicians immediately recognized it was different. These distinguishing features can be described as spheroidal, thin, aggregate and expanded. The graphite specializing consultant postulated that these distinctive characteristics could lend to different specialized applications with minimal processing.

These unique and naturally occurring properties have prompted Graphite One to apply for the trademark, STAX, an acronym to describe Graphite Creek graphite.

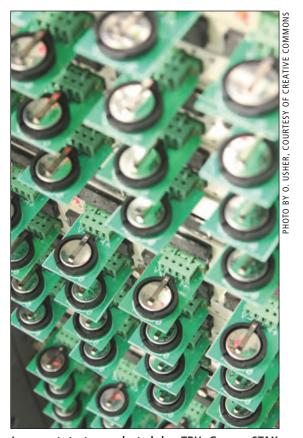
"From the time we identified the unique mineralization of our STAX graphite, we've observed a number of potential performance advantages," said Huston.

During the initial phases of the exploratory program designed to confirm these advantages, TRU tested various means of milling and purifying Graphite Creek STAX material, all of which resulted in creating graphite purities above the 99.95 percent requirement for battery quality graphite.

John Roumeliotis, TRU Group Vice President and manager of the Graphite Creek tests, said the material was really easy to air mill, requiring about one-third of the air pressure typically needed.

To efficiently pack graphite into the anodes of lithium-ion batteries, it first must be transformed into roughly potato-shaped spheroids. This seems to be where the STAX graphite really stands above any other of its competitors.

TRU found that more than 74 percent of the



In recent tests conducted by TRU Group, STAX graphite demonstrated superior performance as an anode in lithium-ion coin cells.

STAX flake graphite could be turned into spherical graphite without milling. This is a monumental achievement considering that only about 40 percent of the best-performing flake graphite found in any other known deposit can be converted to spherical graphite, even using high-end equipment.

"This is another unique result that we can attribute to the STAX graphite," Roumeliotis explained.

Battery tests

In the final two phases of testing, TRU Group measured the performance of the spheroidized graphite produced from STAX material in coin cells typically used in watches and similar devices.

During the fourth phase, uncoated spherical graphite produced during the testing was used as the anode in five battery cells.

Three of the cells demonstrated a first discharge capacity that approached natural graphite's theoretical maximum of 372 ampere hours per kilogram.

Discharge capacity is a measure of a battery's energy storage capability once first charged.

The top three performing cells -1203, 1207 and 1208 — used air-milled and spheroidized graphite.

The first-discharge capacity of the best-performing cell, 1203, equaled the theoretical maximum for natural graphite.

Cell 1209, which was loaded with un-milled but spheroidized graphite, had a first-discharge capacity of 369.1, still within 1 percent of the theoretical maximum.

The lowest performing coin cell, 1211, had a first discharge capacity of 361 ah/kg, or about 3 percent below the theoretical maximum. Even this

see STAX TESTS page 11



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COLUMN

Alaska mining roars back in recent weeks

No one seems to have predicted this sudden 'change in momentum,' but reasons for the industry revival may be revealed in hindsight

By CURT FREEMAN

For Mining News

f you have ever played or followed sporting events, you are probably familiar with that bizarre and often gamechanging event known as the "change of momentum". This is when the team that was on the ropes suddenly comes to life and often roars to victory, putting smiles on the faces of coaches, fans and bookies alike.

Well, unless I am mistaken, the Alaska mining industry has been the beneficiary of just such a change of momentum over the past month. After taking head shots for the past four years, the industry suddenly came to life over the past month, with new budgets, new players and new targets invigorating Alaska's mining scene. For whatever reason, everyone wants to get back to business – now! Hindsight being 20:20, we will no doubt hear from pundits in a month or so just why this happened, but I am not aware of anyone who actually predicted this sea change ahead of time. If such a person does exist, come fall, I know who I am voting for as our next President. Mind you, I am not holding my breath waiting for this genius to step forward, I suspect the reasons will only become clear, if they can be discerned at all, in the rearview mirror. Regardless, the game is afoot in Alaska. If you were waiting to get in at the bottom of the market, I recommend you get moving, it's about to become a seller's market for the first time in five years.

Western Alaska

NORTHERN DYNASTY MINERALS

LTD. reported closing of a previously announced financing that netted it \$17.1 million. These funds are earmarked for the company's Pebble copper-molybdenum-gold deposit. Among the items the company intends to work on include the U. S. Environment Protection Agency's proposed pre-emptive regulatory action under the United States Clean Water Act and preparation of the project's initial federal and state permitting under the National Environmental Policy Act. The company also indicated it was continuing efforts to find a partner to aid in advancement of the project.

Alaska newcomer MINERAL **MOUNTAIN RESOURCES LTD.** has acquired the Iditarod gold project in the Iditarod District in southwestern Alaska. The 16.5 square mile project covers anomalous gold and antimony in rocks and soils and a large magnetic anomaly that was defined by a 2010 airborne geophysical survey of the Alaska Division of Geological & Geophysical Survey. The claim block also contains the Golden Ground and Nelson prospect, two previously noted prospects. Plans for a 2016 summer field program include collection of 2,000 soil samples along with rock chip sampling and geologic mapping designed to move the project to the drillready status for 2017. Welcome to Alaska Mineral Mountain!

REDSTAR GOLD CORP. announced that it has commenced drilling at its Unga

The author

The author Curt Freeman, CPG #6901, is a well-known geologist who lives in Fairbanks. He prepared this column **CURT FREEMAN**



June 20. Freeman can be reached by mail at P.O. Box 80268, Fairbanks, AK 99708. His work phone number at Avalon Development is (907) 457-5159 and his fax is (907) 455-8069. His email is avalon@alaska.net and his website is www.avalonalaska.com.

gold project near Sand Point. The 2016 program will include programs at the Shumagin, Empire Ridge and Orange Mountain prospects. At the Shumagin prospect, drilling will focus on delineation of new drill targets to expand previously drilled targets. The Shumagin prospect is characterized by multi-phase gold and silver-bearing quartz – adularia - rhodochrosite-bearing breccia bodies that occur within favorable zones over a distance of more than 1,200 meters. High-grade gold-silver mineralization is open at depth and other undrilled but potentially significant gold-silver bearing breccia bodies exist along strike. At Empire Ridge, the southwest extension of the historic Apollo gold mine, the company plans to conduct detailed structural mapping and drill targeting. Select samples of exposed vein gossans are enriched in silver up to 157 grams per metric ton silver. Reconnaissance mapping and sampling will be conducted at the Orange Mountain prospect to bring this target to the drill stage. The one-square-kilometer alteration zone at Orange Mountain is interpreted as a high-level lithocap above an intermediate sulfidation state epithermal gold-silver system.

Interior Alaska

NORTHERN EMPIRE RESOURCES **CORP.** said it has raised \$1.05 million and intends to use a portion of this money to explore its Richardson gold project in the Richardson District. Detailed exploration plans for the project

were not released. ENDURANCE GOLD CORP.

announced plans to drill its Elephant Mountain gold project. Three targets are being prioritized for drilling within the 1,800 meters by 600 meters intrusivehosted gold target. The South Zone target has very few outcrop exposures but has yielded the highest gold values in rock samples from the property. Surface grab rock samples from the South Zone target include 12.98 g/t gold, 5.21 g/t gold, 4.44 g/t gold, 3.02 g/t gold, and 2.59 g/t gold associated with iron oxide stained and altered granitic rocks. The 2015 exploration program confirmed a continuous 1,000-meters-long soil anomaly exceeding 100 parts per billion gold with peak values up to 320 ppb gold. Associated with the gold-in-soil anomaly

see FREEMAN page 11

FREEMAN

are coincident pathfinder elements arsenic (with a peak value of 1,660 parts per million) and antimony (with a peak value of 267 ppm). Three drill holes are currently planned for this target. The company plans to drill one hole in the North Zone soil anomaly, which covers an area approximately 1,200 meters by 500 meters wide, with peak values of up to 1,540 ppb gold. One drill hole also is planned for Central Zone where a chargeable IP anomaly with dimensions of about 1,500 meters by 500 meters was identified.

Alaska Range

WHITE ROCK MINERALS LTD.

announced that it has commenced compiling historical surface geochemical and geophysical surveys in order to define new high-grade zinc – silver exploration targets in the vicinity of its Red Mountain project in the Bonnifield District. The company has commenced a multi-disciplinary compilation of all available data sources, combined with interpretation of these data and drill target prioritization. This body of work will be used for vector analysis and 3D processing. The process will allow definition of a variety of target types, including specific extensions to known mineralization as well as district wide targets that could represent additional zinc - silver deposits.

COVENTRY RESOURCES LTD. said the first drilling rig has arrived at its Caribou Dome copper project in the Valdez Creek District. The company plans to complete 8,000 meters of drilling in 2016. The drilling program will include initial testing of the Menel, Guardian, Lense 9 and Lense 3 induced polarization geophysical targets, located along strike from the 700 meters-long mineralized zone drilled to date. All four of these targets consist of strong IP anomalies that coincide with outcropping and/or sub-cropping mineralization and strong copper geochemical anomalies at surface, including rock chip samples that assayed up to 16.5 percent copper at the Guardian target. In addition to drilling, new IP data will be acquired over extensive soil anomalies delineated for more than seven kilometers of strike. The company plans to bring a second drill rig to the project after completion of the IP surveys.

KISKA METALS CORP. announced that its partner First Quantum Minerals has indicated its intent to conduct a dia-

mond drilling program on the Copper Joe copper-gold-molybdenum porphyry project in the western Alaska Range. A magnetotelluric geophysical survey conducted by the partners in 2015 identified a discrete, one-kilometer-wide conductivity low anomaly that is coincident with an extensive zone of intense phyllic alteration at surface. The core of this anomaly will be the focus of this summer's drilling program. The specific details of the drilling program have not been released.

Northern Alaska

GOLDRICH MINING CO. announced that its partner Nyac Gold LLC has commenced placer gold mining at the Chandalar gold project in Alaska. Favorable spring weather conditions allowed processing of stockpiled pay gravel about three weeks ahead of the normal mid-June start of production. Mining is expected to continue through early September, subject to weather conditions. To date about \$24 million has been invested by Nyac Gold to develop the project. The partners are targeting production of 20,000 ounces of gold per year over a mine life in excess of 25 years.

Southeast Alaska

UCORE RARE METALS announced a further update on the commissioning of the SuperLig-One rare earth elements separation pilot plant. The first tranche of pregnant leach solution derived from the company's Bokan-Dotson Ridge project in Alaska has been subjected to a series of tests, the most recent of which was separation of the light and heavy rare earth elements into two products. The processed created two classes, heavy rare earth elements comprised of samarium to lutetium and light rare earth elements comprised of lanthanum to neodymium plus yttrium. The class separations have been achieved at greater than 99 percent purity and at greater than 99 percent recovery of contained rare earth metals. The next stages of the SuperLig-One Plant operation will demonstrate the separation and recovery of critical heavy rare earth elements dysprosium, terbium and europium at the 99.99 percent purity level and the separation and recovery of a heavy rare earth sub-group containing holmium, erbium, thulium, ytterbium, and lutetium at greater than 99 percent purity levels. The final step will be separation and recovery of a heavy rare earth sub-group containing samarium and gadolinium at greater than 99 percent purity levels.

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STAX TESTS

lowest performing cell is on par with the roughly 360 ah/kg average first discharge capacity of lithium ion batteries currently being manufactured.

"The STAX graphite is performing robustly and in the manner in which we had predicted during TRU's initial investigation of the Graphite Creek deposit. It was anticipated that the morphology observed in the drill core samples would translate into processing and performance gains over conventional flake graphite," said Roumeliotis.

In addition to first discharge capacity, the phase 4 tests also provided an early indication of the ability of the STAX graphite to achieve similar discharge capacity in repeated, subsequent charging-discharging cycles. This behavior was evident in both the highest-performing

and lowest-performing cells.

"These results support our material having demonstrated superior first discharge capacity for uncoated graphite, while the continuous cycling test shows the potential for our SPG (spheroidized graphite) to be used in EV (electric vehicle) applications," said Graphite One CEO Huston.

In addition to being spheroidized, the graphite loaded into the cells of commercially produced lithium ion batteries is coated with a layer of carbon that extends the lifetime of the battery.

Spheroidized graphite typically trades some of it high-performance for extended durability. The coating applied to the Graphite Creek test material, however, only slightly lowered the reversible discharge capacity of the coin cells while increasing the efficiency, measured in terms of reduced irreversible capacity

see STAX TESTS page 13

NORTHERN NEIGHBORS

Compiled by Shane Lasley





The Sunrise zone on Independence Gold's Boulevard property is located about six miles (nine kilometers) southwest of Kaminak Gold Corp.'s Coffee deposit. The discovery hole at Sunrise, drilled in 2015, cut 7.23 grams per metric ton gold across 12.2 meters

Goldcorp buys into another White Gold explorer

Independence Gold Corp. June 20 reported that Goldcorp Inc. intends to buy 10,884,880 flow-through shares of Independence for net proceeds of C\$1,959,278.40. Upon completion of this private placement financing, Goldcorp will own roughly 19.9 percent of Independence Gold's issued and outstanding shares. "We are pleased to welcome Goldcorp as a shareholder of Independence. We view this investment as a validation of our exploration results and as well as positive encouragement for the White Gold District in the Yukon," said Independence Gold President and CEO Randy Turner. The company said it will use the proceeds of the placement to advance its Yukon projects, which includes the Boulevard gold project that lies immediately southwest of Kaminak Gold Corp.'s Coffee property. In May, Goldcorp agreed to acquire Kaminak in an all-share transaction valued at roughly C\$520 million. On completion of the Independence Gold financing, Goldcorp will have the right to maintain its equity ownership interest in Independence to a maximum of 19.9 percent of the issued and outstanding common shares. Goldcorp also will have the right to match non-equity financing and tolling arrangements related to future exploration on Independence's current and future Yukon properties and a 30-day right of first refusal over any sale, in full or part, of the company's interest in the Boulevard project.

Seabridge buys SnipGold; Iskut, KSM drilling begins

Seabridge Gold Inc. June 21 said it has purchased all of the outstanding shares of SnipGold Corp. in an all-share arrangement announced in April. To complete the acquisition, Seabridge issued 695,277 shares, at an exchange ratio of one Seabridge share for 63 outstanding SnipGold shares. Up to roughly 60,550 additional Seabridge shares may be issuable upon exercise of outstanding options and warrants originally issued by SnipGold, but now exercisable to acquire Seabridge shares. As a result of the acquisition, Seabridge now owns the Iskut project, a roughly 286-square-kilometer (110 square miles) contiguous block of ground located near Seabridge's KSM project in the

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Companies involved in Alaska and Companies involved in Alaska and northwestern Canada's mining industry



Mining Companies

Kinross Fort Knox/Fairbanks Gold Mining Inc.

Fairbanks, AK 99707

Contact: Anna Atchison, Manager, Community and Government Relations Phone: (907) 490-2218 Fax: (907) 490-2290 E-mail: anna.atchison@kinross.com Website: www.kinross.com

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STAX TESTS

In the final phase of testing, TRU Group loaded batteries with coated spherical STAX graphite.

The highest ranking reversible discharge capacity for a coin cell loaded with coated spherical graphite was 370.1 Ah/kg - 0.5 percent less than the theoretical maximum for natural graphite. The irreversible capacity loss for this cell was 6.3 percent, which is about par with synthetic graphite currently being loaded into lithium ion batteries.

The other two cells had 367.9 and 364.1 Ah/kg reverse discharge capacity and 7.8 percent and 9.2 percent irreversible capacity loss.

"These first coated coin cell results indicate that our C-SPG maintained high reversible capacity, while improving efficiency as measured by ICL", said Huston.

Dual characteristics

Up to this point, the testing has been completed on surface samples collected

at Graphite Creek. During the next phase of testing, Graphite One and TRU Group will use material from the near-surface high-grade zone where mining would

In addition to reproducing the highperformance achieved thus far, TRU believes the unique attributes of STAX graphite could deliver both high-energy and high-power as an anode material in lithium-ion batteries.

"Because of the particle sizes we do observe in the graphite, and how we believe the spherical graphite is being formed, we could possibly achieve dual characteristics of both high-power and high-energy," Roumeliotis explained. "This could certainly translate into an advantage for Graphite One."

"Up to this point, EV battery endusers have had to make a choice between systems that deliver high-power and high-energy. Based on these new results and observations made when processing STAX graphite, we will focus our development work on determining whether

our STAX-derived SPG can deliver both high-energy and high-power performance," Huston added.

While the battery tests look promising, the economics of developing a mine at Graphite Creek have yet to be evaluat-

The first look at the viability of mining the STAX graphite at this Northwest Alaska project will be available in a preliminary economic assessment due to be completed in the third quarter of this year.

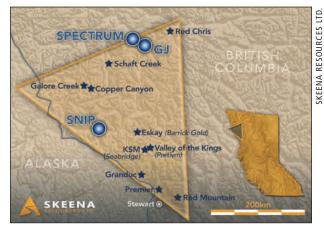


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Golden Triangle region of northwestern British Columbia. On June 22, the company outlined its exploration plans for both properties. At KSM, the company plans to complete 10,000 meters of core drilling designed to expand the block cave shapes that confine the current resource estimate for the Deep Kerr deposit. "Our geological team believes the mineralized zone on the west limb of the Deep Kerr deposit projects to the south. Extending the footprint of the proposed block cave shapes in this direction should enable us to increase the potential mining rate for Deep Kerr higher grade material," said Seabridge Chairman and CEO Rudi Fronk. Drilling also will target the less-explored eastern limb of the Deep Kerr deposit to test its potential expansion at depth. At Iskut, the company is planning 3,000 meters of core drilling that will target the high-grade gold. "This year's objective is to determine which of the many known targets has the best potential, in preparation for a much larger program next year," Fronk added.

Skeena doubles drilling at Snip

Skeena Resources Ltd. June 20 posted a 2016 budget of C\$2.5 million to fund a 6,000-meter drill program at its recently acquired Snip gold property. This is double the drilling originally planned for this historic Golden Triangle property. In March, Skeena reported that it had entered into an option to acquire 100 percent interest in the property that hosts the past-producing Snip Gold Mine from Barrick Gold Corp. A budget of C\$2.5 million for the 6,000 meters of drilling has been approved. Walter Coles Jr., president and CEO of Skeena commented, "The ongoing compilation of Barrick Gold Corp.'s comprehensive database of historic exploration reports and operational mine information, as well as the overwhelming amount of investor interest in the Snip project has led to the expanded drill plans and overall budget," explained Skeena President and CEO Walter Coles Jr. In addition to expanded exploration at Snip, Skeena reported positive preliminary metallurgical test results from its Spectrum project, also located in the



Following the success it had at Spectrum in 2015, Skeena Resources cut deals on GJ and Snip, two additional high-quality projects in the Golden Triangle region of northwestern British Columbia.

Golden Triangle region of northwestern British Columbia. The company said flotation test results on porphyry gold-copper mineralization indicate that recoveries in excess of 90 percent for gold and 85 percent for copper are achievable from average grade material. Recoveries are consistent with the results of a mineralogical study that shows the gold to be free and very fine-grained. Skeena plans to conduct a second phase of metallurgical tests on samples selected to cover the range of anticipated gold and copper grades. Geological and ground geophysical surveys began at Spectrum in early June, and drilling is expected to begin in July.

Colorado kicks off 2016 drilling in B. C.'s Golden Triangle area

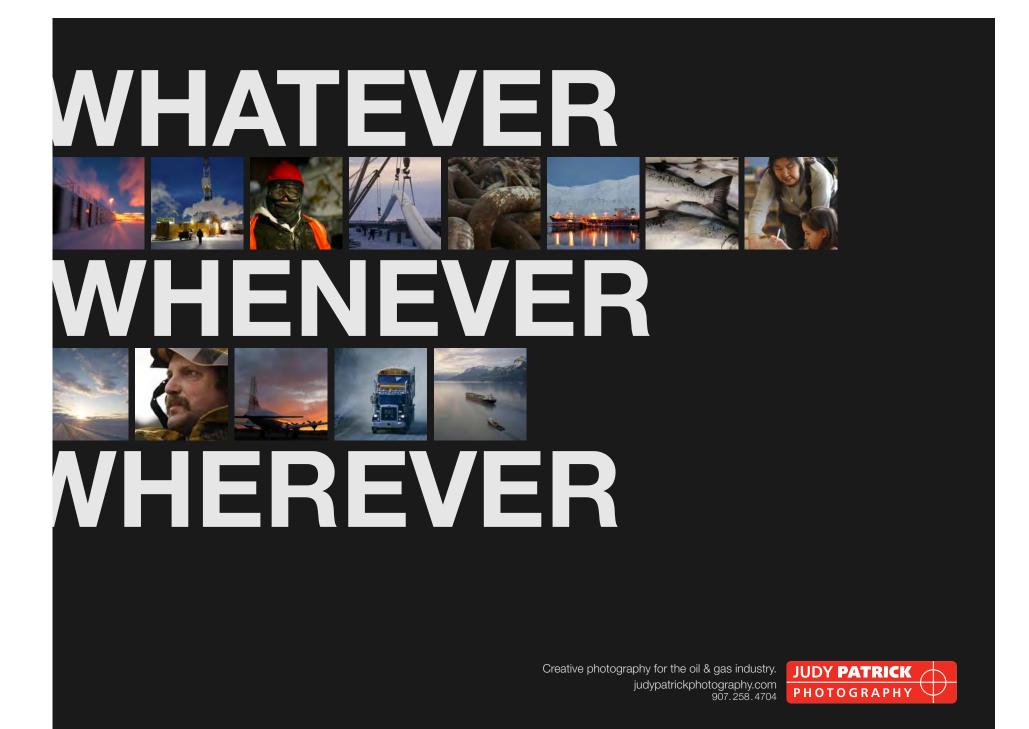
Colorado Resources Ltd. June 16 posted plans for exploration at three properties in the Golden Triangle region of northwestern British Columbia. At KSP, a property the company is optioning from SnipGold Corp., the company has begun drilling at the Inel zone. Colorado has had crews mapping and prospecting at lower elevations at KSP over the last few weeks. Colorado is also preparing for a field program at KingPin, a large copper-gold property immediately southwest of KSP that Colorado acquired earlier this year. The 32,825-hectare (81,111 acres) KingPin prop-

erty covers 35 British Columbia Minfile occurrences. Colorado's initial program will investigate four of these historical mineral occurrences: Max Area, a cluster of 15 porphyry, vein and skarn targets that Colorado believes may have been under-appreciated for their gold potential; KingPin South, which hosts three known polymetallic-gold targets located in areas that have undergone significant glacial retreat since last worked and offer new areas to explore for vein targets; Boulder Creek, a cluster of nine occurrences in the southwest portion of KingPin that shows promise for vein and skarn targets; and KingPin West, which includes more than 15 kilometers (nine miles) of promising geology on trend from the KSP property. In a program slated for later this summer, Colorado intends to follow up on these areas using the knowledge it has gained while working at KSP. Centerra Gold Inc., a Toronto-based company with two operating gold mines in Asia, is planning to complete 2,000 meters of drilling at HP, a property it is optioning from Colorado.

Gahcho Kué Mine achieves glittering safety milestone

Mountain Province Diamonds Inc. June 20 reported mechanical completion of the primary crusher at Gahcho Kué and that commissioning of the process plant at the Northwest Territories diamond mine continues to progress well. Gahcho Kué – a joint venture between De Beers Canada (51 percent) and Mountain Province Diamonds (49 percent) – expects to begin production sometime during the third quarter. Mountain Province President and CEO Patrick Evans said, "We are pleased with the continuing excellent progress at Gahcho Kué and excited that first production will commence within the next few months. Key areas of focus are finalization of commissioning of the process plant, remaining earthworks, pre-stripping and mining of kimberlite, as well as preparations for operational readiness." Gahcho Kué's safety performance remains very good. In May, the employees at Gahcho Kué surpassed an impressive 1 million hours worked without a losttime injury. The permanent staff complement of the mine now stands at 290, including 91 experienced

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employees transferred from the De Beers Snap Lake diamond mine.

Kivalliq eyes high-grade precious metal target

Kivalliq Energy Corp. June 21 posted plans to test precious metals enriched targets at its Angilak property in Nunavut. "We are excited to kick-off the first program designed to determine the scope and setting of exceptional gold, silver and PGM (platinum group metals) results reported from the Yat area since 2007," said Kivalliq President Jeff Ward. The Yat occurrence is located 16 kilometers (10 miles) southwest of the Lac 50 uranium resource and near the northern margin of the Angikuni Basin. Kivalliq staff visited the area in 2015 to investigate high-grade polymetallic mineralization and visible gold periodically noted during previous Kivalliq prospecting programs. One of three boulder grab samples collected in 2015 returned the highest precious metal assays ever reported from the Angilak property. "Prospecting at Yat in 2015 included one grab sample of 211 grams per metric ton gold, 80,900 g/t silver, 1.82 percent U3O8 (tri-uranium oxide), 6.8 percent copper, 3.1 g/t platinum and 6.7 g/t palladium, which are very compelling results to follow up this season," Ward said. The Yat area is characterized by a discrete 250-meter-wide magnetic low with coincident high-grade gold-silveruranium-copper-PGM mineralization, occurring with quartz-carbonate breccia and veins in hydrothermally altered host rock. The C\$500,000 program will begin in early July by mobilizing staff and supplies to the existing Nutaaq camp at the Angilak property. Kivalliq plans to carry out trenching, geological mapping, sampling and geochemical surveying at the Yat target, in addition to geochemical surveying along geophysical conductors in the vicinity of Dipole, a uranium discovery made in 2015.

Drilling extends highgrade gold at 3 Aces

Golden Predator Mining Corp. June 20 posted the results from a 31-hole reverse circulation drill program testing the Sleeping Giant zone at its 3 Aces gold project in southeastern Yukon. Highlights from the program include: 6.4 meters grading 13.8 grams per metric ton gold from a depth of 22.55 meters in hole 3A16-RC003; 2.28 meters grading 96.78 g/t gold from a depth of 3.51 meters in hole 3A16-RC007; 11.43 meters grading 31.89 meters from a depth of 12.8 meters in hole 3A16-RC015; and 10.36 meters of 14.3 g/t gold from a depth of 10.06 meters in hole 3A16-RC025. "These drill results continue to demonstrate impressive values along with an apparent thickening of the mineralization with depth," said Golden Predator CEO Janet Lee-Sheriff. "With each successive program we continue to demonstrate continuity of mineralization and expand our working knowledge of the nature of the veins and mineralization at 3 Aces. We look forward to applying this knowledge to the systematic exploration of additional veins across the project, while continuing to expand the mineralization along the Sleeping Giant vein." The 31 holes drilled during this program targeted near-surface extensions to the high-grade Sleeping Giant vein where a bulk sample was excavated. Earlier this month, Golden Predator

reported the recovery of 110.7 troy ounces of a gold concentrate from 66.65 dry metric tons of sample material processed. This concentrate is estimated to contain 85.9 percent gold; 8.1 percent silver and 6 percent waste.

McEwen Mining is now a Golden Predator insider

Golden Predator Mining Corp. June 16 said it has returned 10,312,154 of the company's common shares to the treasury. Following this cancellation, a total of 53,501,201 shares remain issued and outstanding. The cancelled shares represent 16.2 percent of the issued shares of the company prior to the cancellation. As a result of the retirement of these shares, McEwen Mining Inc. became an insider of Golden Predator. In May, McEwen Mining invested C\$500,000 to acquire 3.125 million Golden Predator units at C16 cents apiece. Each unit included one Golden Predator share and a warrant that entitles the holder to purchase one common share for C21 cents by May 24, 2018. Following the retirement of shares, McEwen Mining controls 5.84 percent of Golden Predator shares, which would increase to 11.04 percent if McEwen Mining exercises its warrants. Earlier in June, McEwen Mining accepted an invitation to nominate Stefan Spears to Golden Predator's board of directors. In 2008, Spears joined McEwen Mining as vice president, U.S. projects. After founding Coreprint Patterns Inc., an innovative sand casting pattern manufacturer whose repeat clients have included several multi-national corporations in the mining and industrial sectors, Spears rejoined McEwen Mining to address special projects with a focus on corporate development and to tackle technical challenges in operations. He has experience in gold exploration in Canada, USA and Mexico, and has been involved with raising more than C\$400 million in equity capital for exploration and development projects. McEwen Mining said it does not have any immediate plans to acquire ownership or control over additional securities of Golden Predator.

Victoria Gold raises cash for expanded program

Victoria Gold Corp. June 17 reported that it has raised C\$2.85 million through the sale of 4,384,615 flow-through com-

mon shares at C65 cents per share. The company plans to use the money for a second phase of 2016 drilling focused on the Shamrock and other targets at its Dublin Gulch gold project in the Yukon Territory. "This flow-through financing is the result of a combination of encouraging factors. First and foremost, the 2016 exploration program at Olive and Shamrock has given us confidence that our geological model is accurate and Shamrock deserves a follow-up drill program immediately. Furthermore, the first phase of drilling this year has been the most efficient drill program we have ever conducted at Dublin Gulch and that is expected to continue into phase 2. Finally, the favorable premium we were able to secure on the financing allows for us to preserve our hard dollars while minimizing dilution," said Victoria Gold President and CEO John McConnell. During the initial phase of 2016 drilling, Victoria invested C\$3.6 million on a program primarily focused on connecting the Shamrock and Olive zones. Highlights from the first 42 holes of the 89-hole program include: 45.8 meters grading 2.48 grams per metric ton gold and 46.7 meters averaging 1.45 g/t gold. In a batch of results released on June 15, the company posted results for another 12 holes. Highlights from this batch include: 35.1 meters averaging 1.7 g/t gold in hole DG16-686C and 106.1 meters of 0.94 g/t gold in DG16-700C. McConnell said Victoria will use the results "to develop a resource estimate for Olive that will feed into the feasibility study update currently underway for Eagle." A feasibility study completed in 2012 envisioned an open-pit mine and valley heap leach operation at Eagle Gold that would produce 192,000 ounces of gold annually for roughly nine years, based on probable reserves of 92 million metric tons averaging 0.78 grams per metric ton (2.3 million oz.) gold. Overall, Eagle Gold hosts 222 million

metric tons of indicated resource averaging 0.68 g/t (4.9 million oz.) gold, inclusive of probable reserves, and 78 million metric tons of inferred resources averaging 0.60 g/t (1.5 million oz.) gold. The Olive-Shamrock zone is located about 2,000 meters from the Eagle Gold deposit.

Auryn nearly doubles Nunavut land package

Auryn Resources Inc. June 20 said it has staked 162,000 hectares (400,000 acres) of claims at its Committee Bay gold project, expanding this land package to more than 380,000 hectares (939,000 acres). Auryn also has begun its summer exploration program, which will consist of roughly 10,000 meters of rotary air blast drilling focused on the Anuri and West Plain target at Committee Bay as well as regional till sampling across the entire project. During its spring program, Auryn collected airborne geophysical data at Anuri, a prospect that lies about midway along Auryn's roughly 280-kilometer (175 miles) land package at Committee Bay. The company said a combination of magnetic, electro-magnetic, drone imagery, and geochemical datasets has identified high-priority drill targets at Anuri. Auryn President and CEO Shawn Wallace said, "We are very excited to commence our discovery-focused exploration program this summer. The Committee Bay project represents one of the largest, high-grade gold endowed greenstone belts in the world with several preliminary gold discoveries to date." Additionally, Auryn said Rael Lispon, a former chief exploration geologist for Goldfields, has joined its technical team. During his 14-year tenure at Goldfields, Lipson was instrumental in the discovery of the Three Bluffs gold deposit at

see northern neighbors $page\ 16$



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Committee Bay. "I am delighted to once again be associated with the Committee Bay project in Nunavut after an absence of some 13 years," said Lipson. "This belt-scale play, which besides the 1.3-million-ounce Three Bluffs deposit, is still in the very early stages of exploration and promises significant untapped potential."

Nunavut board rejects Back River mine proposal

Sabina Gold & Silver Corp. June 16 reported that the Nunavut Impact Review Board has recommended to the Minister of Indigenous and Northern Affairs not to advance Sabina's proposal to develop a mine at the Back River gold project to the permitting phase at this time. In its report, the review board indicated that the Back River proposal could be reconsidered once more information is provided to address uncertainties regarding effects, predictions and mitigation measures, particularly with respect to caribou and climate change. "We fully appreciate the central importance of caribou in the North," said Sabina President and CEO Bruce McLeod. "Obviously, climate change is a matter that impacts everyone - and Northern Canada is more heavily impacted than other places. These are values and concerns we share. Sabina will be considering these issues carefully as it continues its review of the NIRB report." The report follows a lengthy regulatory process during which NIRB reviewed the roughly 15,000-page environmental impact statement submitted by Sabina. During a six-day public hearing in Cambridge Bay, Nunavut, the



The use of lightweight rotary air blast drills is one of the ways Auryn Resources is holding down costs as it explores the numerous gold targets along the 280-kilometer- (175 miles) long Committee Bay property in Nunavut.

Back River project received broad support from the Kitikmeot Inuit Association, local communities and government agencies. In its report, NIRB acknowledges the general support for the economic benefits that are expected to accrue to the Kitikmeot region if Back River were to proceed. Under the provisions of the Nunavut Land Claim Agreement, the next step in the review process is for the minister to review NIRB's report. Sabina is reviewing its options, including a request for the minister to refer the report back to NIRB for further consideration. "The report is over 300 pages long, and it will take some time for us to review and analyze the report in detail," said McLeod. "We remain confident that the concerns of the

board can be addressed and resolved through further consultation and collaboration with stakeholders."

Nunavut board OKs Hope Bay expansion

TMAC Resources Inc. June 15 reported that the Nunavut Impact Review Board has recommended to the Minister of Indigenous and Northern Affairs Canada to approve a permit amendment to expand Doris North, which is located at the north end of the company's Hope Bay gold project in Nunavut. TMAC is currently permitted to operate the Doris North project and to dispose of 458,000 metric tons of tailings, roughly 1.5 years of currently planned production, into a permitted tailings impoundment area. The pending amendment would increase the amount of tailings permitted to be disposed to 2.5 million metric tons. During 2015, TMAC secured more than C\$350 million in equity and debt financing to fund its "path to production" plan for the Hope Bay project. Scheduled to start by the end of 2016, the plan begins with mining at the Doris North deposit. By the end of the year, TMAC plans to have 110,700 metric tons of high-grade ore stockpiled that contains 55,600 ounces of gold.

Garibaldi nabs unique NW BC nickel property

Garibaldi Resources June 15 reported that it has an option to purchase full ownership of the E&L nickel-coppergold deposit and surrounding claims located at Nickel Mountain in northwestern British Columbia. The E&L deposit was discovered by five holes drilled in 1966 with mineralization extending to 210 meters and zones remaining open laterally and to depth. Work since 1971 has been limited to aeromagnetic surveys with no documented exploration since 1990. The claims covering the deposit were held by Silver Standard Mines from 1958 to 2014, and Silver Standard retains a 1 percent net smelter return royalty. Historic reports show that mineralization at E&L consists of disseminated and massive pyrrhotite, pentlandite and chalcopyrite hosted in an olivine gabbro stock that is unique in the Stewart-Iskut region. According to a British Columbia Minfile report, E&L host 2.9 million metric tons of historical resources averaging 0.80 percent nickel, 0.62 copper, 0.34 grams per metric ton gold, six g/t silver, and anomalous values in platinum group elements.

NWT incentive bolsters Yellowknife program

TerraX Minerals Inc. July 15 said it has

begun a C\$500,000 summer program at its Yellowknife City Gold project, immediately north of Northwest Territories' capital city. This field work budget has been supplemented by a Northwest Territories Mineral Incentive Program grant worth more than C\$120,000, bumping the total funding available for comprehensive surface programs this summer to C\$620,000. The summer program will include comprehensive field mapping and rock sampling to identify extensions to new areas of mineralization such as the Mispickel zone, where the company recently reported an eight-meter drill intercept averaging 60.6 grams per metric ton gold. The Mispickel mineralized structure has been identified in geophysics and historical exploration reports over roughly 5,000 meters of strike length. An initial 5,000-meter drill program focused on extensional drilling on the Mispickel zone is tentatively scheduled to begin in early July. The company is investigating areas of historical trenching along the mineralized structure to the north of TerraX's recently reported drilling. The summer program also will seek new areas of mineralization, particularly sulfide replacement-style zones similar TerraX's discovery at Hebert-Brent, where channel sampling last year returned 11 meters averaging 7.55 g/t gold. The sulfide replacement target areas will be mapped, sampled, stripped and possibly channel sampled in preparation for drilling later in the summer. The company also plans to carry out mapping and sampling at the Southbelt property to follow up on 2015 surface sampling, which turned up grab samples of up to 94.9 g/t gold. TerraX anticipates this work will turn up targets for winter drilling in early 2017. "The discovery of replacement=style mineralization at Hebert-Brent last year, as well as the high-grade gold discovery at Mispickel this winter, has laid to rest the myth that there is no high-grade gold left to be discovered in this major Canadian mining camp," said TerraX Minerals President Joe Campbell. Additionally, the 2016 summer program will include: detailed ground magnetic surveys over the remainder of the Mispickel structure not covered in the winter survey, and along the Sam Otto structure, a mineralized zone sub-parallel and 300 meters to the west of the Mispickel structure; a LiDAR survey over TerraX's Southbelt property; and electromagnetic and magnetic surveys over sulfide replacement target areas and the Homer Lake gold and base metal area.

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PIPELINES & DOWNSTREAM

British Columbia Chevron refinery up for sale

By GARY PARK

For Petroleum News

Chevron is testing the market for interest in its small Vancouver-area refinery, which supplies about a quarter of British Columbia's refined fuel, along with its chain of 138 service stations and 41 Chevron-branded outlets.

That comes only three months after Imperial Oil sold 497 Esso gas stations for C\$2.8 billion, with 7-Eleven acquiring 148 of them in British Columbia and Alberta.

A Reuters report earlier in June said Suncor Energy is also weighing the auction of its Petro-Canada lubricants division on Ontario, an asset that is estimated to carry a price tag of C\$800 million, although Suncor said only that it is looking to divest some non oil producing assets.

Chevron's refinery in Burnaby, which has capacity to process 55,000 barrels per day of crude, opened 81 years

ago under the Standard Oil banner at 2,000 bpd, before expanding and modernizing.

A Chevron spokesman said there have been approaches in the past by those interested in the company's refinery and distribution network.

He said that triggered Chevron's decision to invite bids "to test the broader market value."

"We are open to changing market conditions and this expression-of-interest process allows us" to take the next step.

The spokesman said no deadlines have been set to complete a sale beyond indicating that "these processes can be lengthy." Analysts have yet to put an estimate on possible sale proceeds.

Storage facilities sold

In the spring Chevron sold two gas storage facilities in British Columbia to Fortis for US\$266 million as part

of an effort to streamline its portfolio and generate C\$5 billion to C\$10 billion from assets sales over the next two years.

Two years ago Chevron said in a conference call with analysts that its smaller refineries, including the Burnaby plant, are among its most profitable facilities.

The timing is viewed as interesting, given that the Canadian government is only months away from deciding whether or not to approve Kinder Morgan's plans to triple capacity on its Trans Mountain pipeline from the Alberta oil sands to a tanker terminal adjacent to the refinery, whose feedstock to process 300,000 bpd of crude already comes from Alberta.

Currently an estimated 50,000 bpd of capacity on Trans Mountain is destined for export to markets in Asia and elsewhere. •

Contact Gary Park through publisher@petroleumnews.com

ENVIRONMENT & SAFETY

Oil canals in national preserve to be filled

By CAIN BURDEAU

Associated Press

In the heyday of oil exploration on Louisiana's coast after World War II, companies dug about 10,000 miles of canals as straight as Kansas highways through a natural world that's unraveling today — due, in part, to those canals.

Soon, about 16.5 miles of canals are to be filled in the Barataria Preserve — making a small dent in a massive problem.

Interior Secretary Sally Jewell on June 20 toured water plant-choked canals in the alligator-and-bird preserve by airboat and called the work crucial; she said filling in open canals can help fend off the Gulf of Mexico and its hurricanes.

"It can have an impact, not just restoring the National Park site, but also on buffering these communities from the impacts of climate change, sea level rise, of increasing storms."

The National Park Service is using \$8.7 million from penalties drawn from the catastrophic BP Gulf of Mexico oil spill in 2010 to do the work. The Barataria Preserve, established in 1978, lies about 10 miles southwest of New Orleans.

Canals abandoned

Long ago, oil companies abandoned the canals and spoil banks. Scientists say they have interfered with hydrology — trapping water in places and keeping water from flowing properly in others — and funneled salt water inland. Also, canals have widened and eroded the landscape.

The canals have long been considered a major problem for Louisiana's coast, which experiences some of the fastest rates of land loss in the world. The state loses about 17 square miles of land each year — an area not that much smaller than Manhattan — and has lost about 1,900 square miles since the 1930s, an area the size of Delaware.

Restoring hydrology is critical, said Dusty Pate, the National Park Service's natural resource program manager on the preserve.

"It's the action of the river that creat-

ed this entire landscape, and water movement out across the landscape is very important. The primary thing that you're trying to do is remove barriers to (water) exchange," he said as he surveyed the banks along the Gulf South Pipeline Canal. "It's super, super flat and normally the way the water would move is in a big sheet or in a small natural channel."

He added: "By taking down the spoil banks and shallowing out the canal we can't necessarily restore all of that function, but we can do good things for sure."

He said plans call for pushing the trees — many of which are invasive Chinese tallow trees — and brush along the spoil banks into the canal. Trees with value, such as cypress and oaks, would likely be kept, he said.

The canals won't be filled in completely — simply because there's not enough dirt in the spoil banks to do that, Pate said. But over time, they are expected to gradually become shallower and shallower.

Work seen as model

Julie Whitbeck, a National Park Service ecologist, said the work to fill in the canals would be a model for future projects to backfill canals.

The preserve has become a leader in filling canals, said Eugene Turner, a Louisiana State University coastal scientist. He was not on the tour, but has studied the canals for a long time. The preserve previously filled in about 5 miles of canals. In all, about 30 miles of canals across the Louisiana coast have been filled in, Turner said.

The question whether oil companies should be forced to pay for damage caused by the canals has long been contentious. The oil industry says it was not required to fill in canals, but others argue that they should be forced to pay for that work.

Three coastal parishes — the equivalent of counties in Louisiana — are suing dozens of oil companies over damage by the oil industry to the coast. Recently, Gov. John Bel Edwards got involved in the litigation and has sought to broker a settlement. •

PIPELINES & DOENSTREAM

TAPS owners respond to rate challenges

The owners of the trans-Alaska pipeline have responded to complaints from the state of Alaska and Anadarko Petroleum over revised rates for shipping oil through the pipeline. The owners had filed new rates in compliance with an order from the Federal Energy Regulatory Commission in a ruling over the recovery of costs from the strategic reconfiguration project, a major upgrade project for the pipeline. The commission had ruled that the strategic reconfiguration project had been imprudent and had ordered the owner companies to remove much of the cost of the project from rates for the years in which those costs had been recovered.

But the state and Anadarko have claimed some of the costs now included in the revised rates are inadmissible.

The new rates include costs relating to the upgrade of pump station 1, an upgrade which the complainants argue was part of strategic reconfiguration. Not so, say the owners: The pump station 1 upgrade was carried out after the period considered in the strategic reconfiguration rate case. The upgrade, therefore, lies outside the scope of that case and would require a separate determination, if challenged, the owners say.

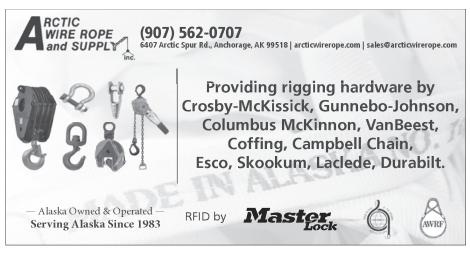
The owners reject another claim, that they have included some supplementary property taxes that were prohibited from the revised rates. The tax payments in question were not considered as part of the rate case, the owners say.

The owners also say that there is a no basis for claiming that some of the costs included in the revised rates consist of pipeline dismantlement expenses already accounted for as part of the pipeline dismantlement, removal and restoration components of the rates.

The owners have also pushed back on a request from Anadarko for documentation that would substantiate the strategic reconfiguration case litigation costs that the owners have included in the revised rates. Because the veracity of the litigation costs will be investigated as part of a formal FERC investigation of the revised rates, it would be wasteful and inefficient to establish a separate procedure to furnish Anadarko with the documentation it has requested, the owners say.

—ALAN BAILEY





STOLTZE Q&A

in the public.

With these investors, they are very polite until they are asked to take out their checkbook. When you are at the alumni party enjoying the hors d'oeuvres and stuff, then they separate out who is really serious when they make the speech about bring out your checkbook. Both are cordial events, whether it's a visit from potential Asian investors or the alumni meeting. Until someone whips out a checkbook they are just observers who are there for the free hors d'oeuvres.

Petroleum News: Do you ever see this coming to fruition?

Stoltze: I tell you, I would love for it to work. Just like (former House Majority Leader) Ralph Samuels said with AGIA, "I hope I'm wrong." He had sincere hopes that he was wrong. Same thing when I hope I'm wrong on things I'm skeptical with.

Petroleum News: The other thing that has gone back and forth almost the entire time you've been in office is tax policy. Some believe the Legislature just hasn't nailed down a stable tax policy either with PPT or ACES or SB 21. What are your thoughts on that?

Stoltze: Certainly the credits are an issue. I don't think any of us fathomed the low oil prices, just as we didn't fathom the high prices. Shame on the legislative branch for not delving into it. The governor's as well.

We've got to stop thinking about what's the right oil tax policy for high prices or low prices. We've got to have a tax policy for fluctuating prices, so it's fair and rationale no matter what the market. I think Mr. Alper (Ken, Alaska's tax division director) said something like "I've got a tough job. I've got to try and put together a tax policy for low prices." Well, that's not very comprehensive and visionary for a tax director. Our goal ought to be having a tax policy that will work at all levels of prices. It can't all be what's our maximum and adjust it because we aren't doing well on tax revenues. It ought to be an enduring policy.

Petroleum News: Do you think the Legislature has an appetite for a review of the regime under the fluctuating prices?

Stoltze: We are pretty close. We had a

2014 vote and the public voted on it. I'm actually surprised the public voted for maintaining the tax policy because of most of the polling and anecdotes. But people looked at it and said let's have stability. Let's have an economy. The governor had said there would be no talk about income tax or taking the dividend away.

It wasn't absent the discussion of reduced oil prices or less revenues. He was keenly aware. He was running ads saying we are spending \$7 million a day we don't have. It wasn't said in a vacuum. It was said in conjunction. (The late former Gov) Steve Cowper got criticized a little bit for saying all bets are off, but at least he admitted to it.

Petroleum News: So what then do you think of the special session called by Walker, which has another attempt at oil tax?

Stoltze: It would make sense for him to sign HB 247. Then he's not having to re-claw new turf. Would you want to have to go back and re-fight the parts you won with Cathy Giessel again?

Petroleum News: With exception of the GVR (gross value reduction), the new oil provision, HB 247 did not change SB 21.

Stoltze: No, but that's the goal of the governor, to rewrite SB21, which is pretty well stated by Mr. Alper. You send a signal when you bring in a certain type of quarterback that you know you're not going to have a certain type of running game. You know what kind of game there is when he hired Mr. Alper. He sent a pretty clear signal. It's pretty consistent with notwithstanding that he said he didn't think we should tinker with it

I won't fault him on it. I don't think he's ever been shy through his litigation with the industry that he's a critic and that he's always had more interest in the revenue that the production and the jobs. I think that's just the reality.

Petroleum News: Do you think the next regular session will have an oil tax bill?

Stoltze: I would guarantee it. I would guarantee it. The governor is probably better off taking where he was able to get a consensus and his people have said we probably need to change out the Legislature. It's kind of hard to deal with people when your stated goal is to take

them out of your seats. It makes for a less than a warm and loving relationship.

I guess the governor deserves his shot. If he wants more of his Democrats in office — and I understand that — and more malleable Republicans. That's part of the process. It's not unreasonable for a governor to try to elect a Legislature in his own image who will conform with him. He's really been more of a Democrat and he wants to have a Democratic-led Legislature. I think every governor wants to have someone who melds with their philosophy.

I'm not being critical. It's normal pragmatism or dogmatism, I guess. He's going after some of the people who have been some of his key supporters on some issues, like his number one initiative other than the gas line, which has been the restructuring of the Permanent Fund and the Dividend. It creates a little bit of a risk when you go after the group you're praising, the ones who stepped up (Giessel and Senate Majority Leader John Coghill), people who voted for his plan.

It's an interesting dynamic with people who aren't running again because of reapportionment cycle and the ones who are unopposed. You have more House members in competitive Senate races than you do senators. You've got Gattis (Lynn, seeking Charlie Huggins' seat), Hughes (Shelly, seeking Stoltze's seat) and Craig Johnson (seeking Lesil McGuire's seat). It's a pretty interesting observation. It would have been the easiest way to take a no position on SB 128. They took the more risk plan from a pure politically pragmatic point of view.

Petroleum News: So from 2002-2016 where do you think the state is better off when it comes to resource development?

Stoltze: Southcentral meeting its energy security is a pretty big deal. I represent the Mat-Su mostly now. We've been pretty blessed. We haven't seen the severity of the issue because more production online and lack of severe winters. But during the middle of my term — around 2009 and 2010 — we had years when we were wondering if there would be a gas supply to the northern valley.

Once you lose that pressure and compression, just getting it fired up again is a big deal. We were the canary in the coal mine. That hasn't been a problem with the major gas suppliers in Southcentral. We've spent a lot of money helping that, both in terms of credits and facilities that we invested in like the gas storage. Some of the folks in the Interior have not been shy about their disappointment but at the same time they are getting gas trucked up there. You're talking about 55 to 60 percent of the population so it's not a special interest we are talking about.

Petroleum News: That's Cook Inlet. What about the North Slope?

Stoltze: We are on the cusp on a lot of potential investment from folks that have come in: Caelus; Armstrong; Repsol. My mom used to tell us when we were kids — don't pick those carrots when they were little. Even though they were pretty tasty, you're not going to have much of a crop. There is that temptation on wanting to maximize everything. I'd like these companies to be here for the long haul and continue to make those investments. It's certainly not their fault that it's so difficult to do business here. The environment is a struggle. When they tell you it's going to take seven or eight years to get a project to production, it's not because they don't want to go faster. We put up a lot of the hurdles. •

ENVIRONMENT & SAFETY

BSEE funds submersible oil skimmer tests

In a project funded by the U.S. Department of the Interior's Bureau of Safety and Environmental Enforcement, Albion Sciences and Technologies has been using BSEE's Ohmsett test tank to try out a prototype submersible skimmer for recovering spilled oil from ice infested waters. According to the latest Ohmsett newsletter, the idea is that the device will operate from below the water surface, rather than above, thus enabling the device to navigate under ice to reach otherwise difficult to access oil contaminated locations.

The newsletter says that the prototype device consists of a drum oil skimmer and three remote operated vehicles mounted to an aluminum frame. A protective cage structure prevents ice from interfering with the oil recovery process.

Staff engineers at Ohmsett designed and developed a new system for producing ice blocks for the test tank. Chiller boxes and frames froze and stored the ice, thus adding new Arctic simulation capabilities to the test facility, the Ohmsett newsletter says.

After testing the device's maneuverability in the water, tests were initiated by the placement of ice and diesel fuel oil in a boomed test area. The device was place in the water outside this area and then caused to travel underwater to surface among the oil and ice to start recovering the oil.

"The prototype was able to successfully submerge, maneuver under the ice, surface within the field and recover diesel oil," said Kristi McKinney, BSEE project manager, "Next steps will be to review test results with an eye towards future development of this concept."

—ALAN BAILEY



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ENVIRONMENT & SAFETY

Deal reached in methane pollution dispute

The U.S. government has reached an agreement to end a dispute over greenhouse gas emissions from federal oil and gas leases in Montana with only modest changes to current practices. The deal was filed in federal court June 17 by attorneys for the Bureau of Land Management and three environmental groups that had sued to block drilling — The Montana Environmental Information Center, WildEarth Guardians and Earthworks' Oil and Gas Accountability Project.

The groups wanted the government to force companies to reduce emissions of methane from oil and gas fields. Under the June 17 agreement, federal officials must consider such steps for two dozen federal leases in eastern Montana, but are not compelled to adopt them.

Separately, the Obama administration in March proposed new regulations to reduce methane pollution nationwide.

Attorney Erik Schlenker-Goodrich with the Western Environmental Law Center says the administration's proposal offered a better way to address the issue than continuing with the lawsuit against the BLM.

BLM spokesman Al Nash referred questions to the Department of Justice, which did not respond immediately to a request for comment.

Methane is a far more potent greenhouse gas than carbon dioxide. It gets into the atmosphere when pipelines leak and when companies vent or flare excess natural gas from oil production.

The proposed regulations would require energy producers to find and repair leaks at oil and gas wells and capture gas that escapes from wells.

—ASSOCIATED PRESS

PIPELINES & DOWNSTREAM

Oregon officials want a hold on oil trains

By GILLIAN FLACCUS

Associated Press

The fiery derailment of an oil train in Oregon's Columbia River Gorge has state transportation officials asking for a halt to the massive trains because of concerns their heavier weight could be putting extra strain on a certain type of bolt that fastens the rails to the tracks.

The Oregon Department of Transportation discussed its concerns about the safety of the so-called "lag bolts" in a presentation June 16 to the Oregon Transportation Commission and made public a letter it mailed to the Federal Railroad Administration on June 8 asking for the moratorium.

Union Pacific, which operated the train, has said the June 3 derailment was caused

by a failure of the bolts, fasteners which are used to attach the rail to the rail tie on a curved section of track. The accident forced evacuations in the tiny town of Mosier, about 70 miles east of Portland, and spilled 42,000 gallons of oil into the Columbia River. No one was injured.

In a presentation to commission members, ODOT administrator Hal Gard said the lag bolts found at the scene were rusted on both ends, indicating they had been sheared off before the derailment. State officials showed a photo of a pile of lag bolts collected at the site.

Trains that carry only crude oil began running in that section of the Columbia River Gorge in 2014 and state investigators are concerned that the heavier weight and shorter length of those trains might be causing the lag bolts to break. The trains' weight is spread out over a shorter distance, increasing the pressure on the tracks.

Without the fasteners anchoring the rails to the rail ties, the parallel rails can be pushed further apart, causing a derailment, said Tom Fuller, ODOT's director of communications. The sloshing of the liquid oil inside the tankers might also mean additional stress as the train's contents shifts on curves, he added.

"The liquid is heavier and the weight is even more concentrated because there's a shorter distance between the wheels and that's what allowed one of the cars to literally come off the rails and then it pulled the other cars with it," he said.

The lag bolt system was installed on the Columbia River Gorge route in 2001, Gard said, and the rails at the location were replaced in 2013.

Tests conducted by both Union Pacific and ODOT for flaws in the tracks didn't turn up the faulty bolts, Fuller said.

"Our concern right now is if Union Pacific or ODOT weren't able to determine that these bolts were broken, how do we know there aren't more of these bolts broken in other places?" he said. "Where else are these bolts installed? Where else might this exist ... just waiting to have a derailment?"

Matthew Lehner, a spokesman for the Federal Railroad Administration, said in a statement that his agency was working closely with ODOT and would respond to the letter, but the investigation is not over.

Union Pacific said it has increased the frequency of inspections since the derailment.

The company is doing walking inspections each month on curved sections of track in the Columbia River Gorge and will use a special type of testing to detect problems once every three months instead of once every 18 months, said Justin Jacobs, Union Pacific spokesman. Oil trains are not currently running in the gorge, he said.

Jacobs could not provide more details about why the lag bolts failed, but cited a 99.9 percent safety record.

"Has a lug nut on a car tire ever failed? Yes, it has. Does it happen very often? No," he said. "Safety is a priority for us."

At least 27 oil trains and 11 ethanol trains have been involved in major fires, derailments or spills during the past decade in the U.S. and Canada, according to an Associated Press tally from data kept by transportation agencies and safety investigators from the two nations.

Hundreds more rail cars have released smaller amounts of crude following less-severe mishaps. ●





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Petroleum 1

Business Spotlight





Alaska Instrument Company

Alaska Instrument Company is a process instrumentation manufacturer's representative established in 1968, serving all industrial markets within Alaska. AIC represents more than 30 manufacturers of pressure, temperature, level and flow instrumentation, leak sensing and human/machine interface software. The staff of five travels the entire state in support of our clients to see that they are getting the best engineered solutions for their process control needs.

RC Cromwell, President

President of AIC, RC Cromwell has a Bachelor of Science in Aviation Business

Administration and is a former airline pilot and flight instructor. Looking for a career change, he moved on to industrial plumbing and heating and wholesale for about 12 years, then in 2005 applied for in inside sales job with AIC. Cromwell has worked through various positions eventually becoming president of the company.

Companies involved in Alaska and northern Canada's oil and gas industry

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EXPLORATION & PRODUCTION

US rig count rises 10 in 3rd week of gains

The number of rigs drilling for oil and natural gas in the U.S. rose by 10 the week ending June 17 to 424, marking the third-consecutive week the count has increased after a slide that lasted months and pushed the count to record-low levels amid depressed energy prices.

A year ago, 857 rigs were active.

Houston oilfield services company Baker Hughes Inc. said 337 rigs were drilling for oil and 86 for natural gas. One was listed as miscellaneous.

Among major oil- and gas-producing states, Texas gained 13 rigs and West Virginia increased two.

Alaska and Louisiana fell by one apiece.

Arkansas, California, Colorado, Kansas, New Mexico, North Dakota, Ohio, Oklahoma, Pennsylvania, Utah and Wyoming were unchanged.

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

—ASSOCIATED PRESS

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NENANA WELL

season for well testing and for drilling that second well if appropriate.

"We wanted to get an early start because we're really constricted on the tail end of the project," Mery said, commenting that a barge crossing of the Nenana River needed for site access becomes impossible when the river level drops later in September.

The primary purpose of drilling a second well would be to confirm and delineate a gas discovery, to provide some certainty about the gas potential of the prospect that Doyon is testing, and to accelerate gas development, should there prove to be a viable find in the well currently being drilled, Mery said.

Casing the well

On June 22 the drilling operation had paused for a few days at a depth of 6,394 feet while the drilling crew placed intermediate casing into the well bore, before proceeding to the planned total depth of 10,000 feet. The drilling targets are within that depth range of about 6,400 to 10,000 feet, Mery said.

The Toghotthele well is the third well since 2009 that Doyon has drilled in the central part of the Nenana basin in a search for oil and gas. The Native regional corporation has found eviThe gas discovered was socalled wet gas, gas containing both methane and natural gas liquids such as propane. This indicates a thermal rather than biogenic source for the hydrocarbons. Thermally generated hydrocarbons could include oil.

dence of the existence of both natural gas and liquid hydrocarbons in the basin. Mery said that the second of Doyon's Nenana wells, the Nunivak No. 2 well, drilled in 2013, encountered a significant quantity of gas over a vertical interval of about 400 feet. However, the water content of the reservoir rock was too high for commercial gas production — it appears that much gas originally in the reservoir had leaked out through a fault zone that marks one side of the underground hydrocarbon trap, Mery said.

The gas discovered was so-called wet gas, gas containing both methane and natural gas liquids such as propane. This indicates a thermal rather than biogenic source for the hydrocarbons. Thermally generated hydrocarbons could include oil.

—ALAN BAILEY

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SPECIAL SESSION

tion tax credit bill.

The Legislature failed to pass a bill requested by the governor to allow use of Permanent Fund earnings for state government. It also failed to pass various tax measures proposed by the administration, but did pass an amended version of the governor's oil and gas production tax credit bill, House Bill 247. That bill went to the governor June 14.

Walker said in a June 19 press availability not to read too much into the inclusion of the tax credit bill on the call for the special session because the proclamation had to be done before all of the bills had been received. There was some good work done on that bill, he said.

Walker has until June 30 to sign or veto HB 247, or allow it to become law without his signature.

There is a link between HB 247 and the governor's plan to use earnings from the Permanent Fund to help finance state government. A number of legislators said in voting against the Permanent Fund bill that they couldn't agree to that without more changes in what the oil industry pays.

And while House Democrats supported the original version of HB 247 passed by the House, the House minority, the Alaska Independent Democratic Coalition, called the conference committee version of the bill flawed.

"The subsidies and incentives included in this bill makes it impossible for the Alaska Legislature to pass any version of a fiscal plan that is fair to the people of Alaska," House Minority Leader Chris Tuck, D-Anchorage, said in a statement after the bill passed.

While the Senate passed an amended version of the governor's Permanent Fund proposal, the bill failed to move out of the House Finance Committee and never received a floor vote in that body.

Primarily Cook Inlet

The Legislature was in general agreement on HB 247 changes for Cook Inlet where the state receives no production tax on oil and a minimal tax on natural gas. Incentives were created for exploration and production in Cook Inlet when Southcentral Alaska faced natural gas shortages and utilities were exploring the cost of importing liquefied natural gas to meet the need for power generation and home heating.

Companies have brought enough natural gas online in Cook Inlet since incentives were passed to meet Southcentral's immediate needs but have also earned credits for oil exploration and development.

The Legislature's consultants characterized the credits in Cook Inlet as unsustainable and there was enough agreement among legislators on that portion of the bill.

General agreement was never reached on North Slope changes.

Resolution of an issue which only became apparent after the administration's bill was introduced — operating losses by major producers on the North Slope — became a source of contention. The version of HB 247 originally passed by the House eliminated net operating loss credits on the North Slope. The Senate version did not include that provision and it was not part of the bill crafted by the conference committee which passed June 6.

The administration's bill also hardened the North Slope production tax floor and raised it from 4 percent to 5 percent; those provisions were not part of the conference committee bill.

Impact of low oil prices

The conference committee version of the bill easily passed the Senate — and had enough changes favored by House members to pass that body 21 to 19. The bill attempts to address some of the problems caused by the impact of low oil prices on state finances, but doesn't meet the goal of the administration and many legislators to produce a substantial increase in state revenues.

Elements adopted from the House version include making available names as well as amounts for those from whom the state purchases tax credits, and an extension of an allowance for credits for refinery work through the end of 2019.

The conference committee also adopted a provision from the House bill requiring preference in allocating available monies for credit repurchase to applicants based on Alaska hire and an extension of credits for Middle Earth drilling from January 2017 to July 2017.

One North Slope change on which both bodies agreed was limiting the gross value reduction — a benefit for new oil — to seven years, and both bodies agreed that GVR can't be used to increase the size of a net operating loss.

—KRISTEN NELSON

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FURIE DRILLING

committed to drilling two of those well this year and two further wells between April 2017 and October 2018. Although the Julius R. Platform has a workover rig for well maintenance, a powerful jack-up rig is required for the drilling of new wells.

Furie now has agreements for the supply of Kitchen Lights gas to Homer Electric Association and Enstar Natural Gas Co. While the HEA agreement has already gone into effect, the Enstar agreement starts in April 2018. Under the terms of the Enstar agreement, Furie must drill

and prove out two new Kitchen Lights wells in 2016, to assure the reliability of the future Kitchen Lights gas supply.

Currently a single well, the Kitchen Lights No. 3 well, produces gas from Furie's offshore gas field. The gas is being delivered through a subsea pipeline to an onshore facility, from where it is output to the Kenai Peninsula gas transmission pipeline network for delivery to HEA.

In addition to the Kitchen Lights development drilling, Furie plans some new exploration drilling in the Kitchen Lights unit using the Randolf Yost rig.

—ALAN BAILEY

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DEBT LEVELS

Michael Dunn, an analyst with FirstEnergy Capital, said Suncor has a "lot of credit room facility" to achieve its priority of strengthening the company balance sheet.

He said the result for Suncor will be to lower its future interest costs "because short-term borrowing costs are a lot lower than long-term."

Suncor said it expects to match the usual take-up for tender offers of about half the targeted debt.

The move follows Suncor's C\$2.5 billion share issue announced earlier in June which is also tagged for paying down debt, some tied to its purchase of Murphy Oil's stake in Syncrude Canada.

Chief Executive Officer Steve Williams said it is also possible the company will sell up to C\$1.5 billion in assets.

The measures coincided with comments from Moody's Investors Service that oil producers and oil exporting countries remain under pressure, despite a recovery in commodity prices from the low of under US\$30 a barrel.

Terry Marshall, senior vice president with the credit-rating agency, pointed to the fundamental problem facing many companies that borrowed heavily to finance production gains when oil was above US\$100 and are now unable to generate the cash flow needed to carry that debt, while high development costs are exacerbating the financial pressures.

The hopes of stressed companies are reflected in the options being weighed by Canadian Natural Resources, which is aiming for production growth of 8 percent assuming a US\$60 oil price, but is prepared to scale that back to 1 percent if crude trades in the range of US\$45-

US\$48 through 2019.

Whatever happens, the company intends to pare debt with cash from its Horizon oil sands mine which is ramping up output in the face of what President Steve Laut admits is deep uncertainty about where oil prices are headed.

Stephen Poloz, governor of the Bank of Canada, said in a speech earlier in June that he does not expect a rebound in crude will see a recovery in industry spending.

"Indeed, market intelligence suggests there is further downside risk to investment at these still-low prices," he said.

For Cenovus the persistent gloom is forcing it to lower a 2013 commitment to occupy 1 million square feet of Brookfield Place, a 56-storey tower that will be the tallest structure in Western Canada.

Cenovus now thinks it will need only 400,000-500,000 square feet, putting it in the same category as MEG Energy and others who are trying to offload unused space in towers now nearing completion that will add another 2.5 million square feet to a market now at saturation point that is forecast to face a vacancy rate of 25 percent in 2018.

MEG reported it booked a C\$58.7 million expense in the final quarter of 2015 that was tied to "onerous" lease contracts, while Cenovus is turning to subleasing after cutting 1,600 jobs since the end of 2014, shrinking its payroll to 3,600.

For now, Cenovus is the sole tenant in Brookfield Place, having an agreement to occupy 71 percent of the building, although it can sublet about 18 months after the building is completed.

The winners from this downturn are prospective tenants, who are being enticed with offers such as a year's free rent and breaks on interior decorating.

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LINC BANKRUPTCY

Alaska. But the company suspended its Cook Inlet and Interior programs in recent years to focus entirely on the Umiat project, which the company still believes is primed for development.

Linc Alaska Resources LLC owns an 84.5 percent stake in Renaissance Umiat LLC, which holds the federal and state leases comprising the 18,540-acre Umiat prospect. Arctic Falcon Exploration LLC holds 15 percent and Rutter & Wilbanks Corp. owns 0.5 percent. Although the interest Linc holds in the company is one of the assets included in reorganization, Renaissance Umiat LLC is not one of the debtors in the bankruptcy case.

Big spending

Through that program, Linc spent approximately \$120 million on a two-well appraisal program at Umiat in 2013 and 2014 "for the purposes of demonstrating the potential of the Alaska properties and securing a joint venture partner," according to the company.

While the results were "favorable," the downturn in prices prevented the company from finding a partner or recovering expenses except through state of Alaska tax credits.

Even so, Linc continued to promote the Umiat development project. Between October 2014 and June 2015, the company proposed schemes ranging from 70 to 150 wells.

By October 2015, the company had reduced the scope of the development to 35 wells, in part because third-party reserve estimates for the field had sharply declined.

At one point, Linc believed Umiat could produce 45,000 barrels per day at its

peak, although the company later revised the figure to 30,000 barrels per day. The most recent third party analysis estimated probable reserves of nearly 99 million barrels of oil equivalent at Umiat. Generally, "probable" means that actual recovered volumes are expected to have at least a 50 percent chance of meeting or exceeding the estimate.

Over the same period of time, Linc was also pursuing a sizeable oil development program at its various properties in the Gulf Coast, drilling 66 wells between 2012 and 2014.

When oil prices began declining in late 2014, Linc suspended its drilling programs and reduced its lease operating expenses by 44 percent to below \$30 net per barrel, according to the company. Even with these changes, decreasing oil prices cut into revenues and, at the same time, approximately \$22 million in interest payments were due in April 2015.

By amending its borrowing terms and getting some money from its Australian parent company, Linc was able to satisfy those initial payments, only to face additional deadlines in October 2015 and April 2016. But in April 2016, the parent company entered "voluntary administration" in Australia, which led to a recommendation to liquidate.

With the grace period on the April 2016 due date nearing, Linc filed for bankruptcy.

In addition to paying tax credits on the exploration work, the state of Alaska spent considerable time and money studying the benefits of building a road to Umiat. The project faced local concerns about the impact son subsistence resources and opposition to "corporate welfare." The Parnell administration suspended the project in mid-2013. •

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RATE CHALLENGE

of what had been four different but interconnected pipelines.

Given the pipeline's location at the core of the network of gas transmission lines transporting gas from the various gas fields in the Cook Inlet basin, much of the gas used by Southcentral Alaska gas and power utilities passes through at least some portion of the line. An increase in the rates on the line would, therefore, increase the delivered cost of much utility gas.

Investigation requested

Daniel Dieckgraeff, director of rates and regulatory affairs for Enstar, the main Southcentral gas utility, has sent a letter to the commission saying that Enstar, either by itself or through its suppliers, ships considerable volumes of gas on the Kenai Beluga Pipeline. The request for a significant rate increase warrants a suspension of the tariff filing and a careful investigation of the pipeline's revenue requirement, Dieckgraeff wrote.

Tony Izzo, general manager of Matanuska Electric Association, said that MEA's customers will feel "the full brunt" of any increase in the pipeline tariff because the utility obtains all of its gas from Hilcorp Alaska LLC, a direct shipper of gas on the KBPL and an affiliate of the pipeline company.

"KBPL's proposed 119 percent increase is staggering and warrants suspension and investigation by the commission," Izzo wrote. "MEA opposes this increase and is also concerned about the rate shock that could result from such an increase."

Homer Electric Association, in a complaint to the commission about the proposed rate increase, says that it uses the KBPL to transport gas to its gas-fired power station at Nikiski on the Kenai Peninsula, as well as to and from the CINGSA facility. HEA has requested a formal investigation of the rate rise.

Postage stamp rate

At the core of HEA's complaint is the fact that the pipeline's rate is a postage stamp rate, a rate that remains the same regardless of where or how far a shipper wants

to transport gas through the line. The idea behind this rate arrangement is to remove the shipping cost from consideration when deciding the routing for gas transportation, thus encouraging shippers to make routing decisions based on shipping efficiency rather than cost. But the system can work to the disadvantage of shippers that only use short sections of the line, causing these shippers to incur high costs per mile of gas transportation. In fact, Enstar has already built a short pipeline bypassing part of the KBPL for shipping gas between the CINGSA storage facility and Enstar's nearby pipeline system.

As part of its rationale for the shipping rate increase, KBPL has said that the use of bypass lines will reduce the gas throughput in its line, thus increasing the unit cost of shipping gas. The pipeline company says that, in addition to the Enstar bypass line, Furie Operating Alaska has plans to build a bypass line to deliver gas from its East Foreland gas processing plant to HEA's power station in Nikiski.

HEA, in its commission filing, says that it was never party to the agreement to institute a postage stamp rate on the KBPL and that the use of this rate arrangement has substantially increased its gas transportation costs. The proposed new postage stamp rate presents a 700 percent increase relative to what HEA used to pay to ship gas from CINGSA to HEA's Nikiski plant, HEA told the commission

Cost of new compression

Another point of contention is the recovery from pipeline rates of the cost of new compression added to the KBPL on the Kenai Peninsula to increase the capacity of the pipeline to ship gas east to west under Cook Inlet. This extra capacity ensures that the gas transmission network can adequately deliver utility gas to wherever it is needed during periods of peak winter demand in Southcentral Alaska. The pipeline company has told the commission that the cost of the new compression is one of the factors in the proposed rate rise.

But HEA, in its filing, has told the commission that it does not need east-to-west gas transportation services and that the cost of this service should be borne by the businesses using the service.

HEA has also accused KBPL of making "speculative assumptions" about future shipment volumes when estimating the future unit cost of shipping gas — the cost cal-

culations assume a drastic drop in Enstar shipments from CINGSA because of the new bypass line; the calculations assume that Furie will build its bypass line to ship HEA gas; and the calculations assume no liquefied natural gas exports from ConocoPhillips' Nikiski LNG facility in 2016, HEA says. HEA also questions the pipeline company's assumptions about the amount of working gas needed to be stored to maintain flexibility in pipeline operations — the cost of the working gas and its storage factor into the pipeline's shipping rates.

Bruce Webb, Furie senior vice president, has told the commission that his company has supported the consolidation of the KBPL and the institution of the postage stamp rate, arrangements that have greatly simplified and improved the movement of gas across the Cook Inlet. Furie does not have any agreements for the construction of a bypass pipeline but is concerned about the magnitude of the proposed rate increase and the possibility that such a large rate hike might encourage parties to explore bypass opportunities, Webb wrote in a letter to the commission commenting on the proposed KBPL rate increase.

Other questions

Tesoro Alaska Co., operator of the oil refinery at Nikiski, a major industrial user of Cook Inlet natural gas, has told the commission that KBPL has failed to demonstrate that the scale of the proposed rate rise is justified. Deficiencies in the tariff filing include a "huge unjustified downward adjustment" to pipeline throughput; the inclusion in the rate without justification of new compressor costs; a lack of supporting evidence for administrative and operating expenses; excessive dismantlement, removal and restoration costs; and an unjustified reduction in the anticipated life of the pipeline from 25 to 20 years, Tesoro said.

The state attorney general's Regulatory Affairs and Public Advocacy Section also questioned the shortening of the pipeline's anticipated economic life, saying that a depreciation study is required to justify a change of this type. The attorney general requested a tariff suspension and investigation, citing several issues relating to the information that KBPL provided in justification of the rate rise. lacktriangle

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