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The weekly mining newspaper for Alaska and Canada's North

Week of November 26, 2017



CopperBank's San Diego Bay project shows signs of hosting a porphyry copper-gold deposit near or potentially connecting to the nearby Pyramid deposit on the Alaska Peninsula.

Auracle sensing Pyramid copper

CopperBank Resources Corp. Nov. 17 said Auracle Geospatial Science Inc. will complete a remote sensing radar and hyperspectral survey for the Pyramid and San Diego Bay copper projects on the Alaskan Peninsula. Auracle has developed a suite of mapping technologies that offers structural analysis and mineral classification to identify and map mineral occurrences and alteration zones associated with metal deposits. CopperBank said the results from the satellite radar survey will provide data relative to the nature of the alteration and its distribution pattern associated with the different types of mineralization present on the properties. Auracle's technology and mapping suite combines radar and optical satellite data to penetrate vegetation, ground cover, water, ice, rocks and soils. CopperBank hopes this will reveal the main structures controlling the mineralization that are masked at the surface by rubble, gravel and vegetation. "Auracle's technology works at, near and under the earth's surface enabling it to see through things that no other technology can claim," explains Auracle President and CEO David McLelland. "We are excited to apply The Auracle System to model the structure, texture and lithology and to differentiate rock and formation types within this project area. We believe our geological interpretation and upgraded geological maps will help CopperBank's technical team to understand the host system, even when direct identification isn't possible in an extremely remote part of the world, to narrow prospective targets."

Pyramid hosts a large porphyry deposit on the Alaska eninsula with a 122.5-million-metric-ton historical inferred resource averaging 0.41 percent (1.1 billion pounds) copper, 0.1 grams per metric ton (389,000 ounces) gold and 0.021 percent (56.7 million lbs.) molybdenum. This year, CopperBank drilled 13 holes aimed at upgrading and expanding this resource. San Diego Bay is another porphyry copper prospect about 4.5 miles east of Pyramid. A 15square-mile red-stained anomaly from the pervasive alteration at San Diego Bay indicates the potential of another large porphyry system near or potentially connecting to Pyramid. Limited exploration completed in the past has turned up some interesting results, including rock samples with grades as high as 16 percent copper and more than 1 g/t gold. A reconnaissance exploration program carried out this year at San Diego Bay investigated the areas of promising copper and gold values with prospecting and soil sampling. CopperBank said the Auracle hyperspectral survey will be



The Red Dog Mine in Northwest Alaska currently accounts for roughly 5 percent of the world's new zinc supply. A combination of fantastically rich zinc grades, and a road and port built by the Alaska Industrial Development and Export Authority, helped overcome the challenges of developing this world-class but remote zinc mine.

• PUBLIC POLICY

More Alaska mines

Gov. Walker calls for 12 mines; mining leaders say state can help sector

By SHANE LASLEY

Mining News

A laska's current fiscal crisis has highlighted the need to diversify the state's economy and being one of the richest minerals jurisdictions on the planet, mining is an industry that could play a major role in future wealth creation in the Last Frontier.

Alaska Gov. Bill Walker touched on mining's role in the state's future during a Nov. 15 address at the Alaska Resource Conference.

"We have six large scale mines in Alaska, we would like to have 12," he told the business leaders gathered at the annual convention put on by the Resource Development Council.

While the governor's remarks were welcomed by Alaska miners, many leaders in the sector believe that the state needs to do more to attract global mining companies and investment.

"We could have 12 mines by 2039 – that's a big goal but I think it could be done if the government will work collaboratively with the mine industry," Millrock Resources President Greg Beischer said during a Nov. 16 presentation at the resource conference.

"To make it happen, there has to be stability, certainty and good policy," the minerals exploration executive added.

mits.

While EPA under President Donald Trump is working to undo the restrictions attempted under the former administration, the negative publicity has not been good for companies wanting to explore Alaska's rich minerals endowment.

As mine permitting at the federal level is taking a turn for the better, Satre is concerned about how budget cuts could affect the state's ability to do a thorough and timely job moving ahead.

"If we can't attract good people to work in our resource agencies, to be able to work on mine permits and regulate them in the future, that causes a little bit of uncertainty," said Satre.

"When permits are stacked up on a regulator's desk and are not being able to be worked through in a timely manner that increases the cost of capital," he added.

The mining leaders have similar concerns that Alaska's need for more cash might mean higher taxes in the state, which would steer minerals investments away.

"People don't want to invest money in our state if they think that money is going to be taxed and taken away from them, or their capital is going to be significantly at risk," Satre said.

Frontier infrastructure

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Hecla Greens Creek Mining Government and Community Relations Manager Mike Satre delivered a similar message during the panel on putting new mines into production.

Permitting, taxation uncertainty

While Beischer and Satre believe Alaska's taxation and system for permitting mines is adequate, they worry that the state's fiscal situation could have a negative effect on these two key elements to attracting mining investment.

In the past, Alaska has maintained a good reputation for responsive mine permitting, which has helped to somewhat offset the longer and more cumbersome federal mine permitting regime in the United States. One federal issue that has hit Alaska hard in recent years was the Environmental Protection Agency's attempt to put restrictions on Pebble before developer of the Southwest Alaska copper project filed for per-

Alaska's current financial situation limit's its ability to resolve the other major issue when it comes to adding new mines, the lack of infrastructure across most of the Last Frontier.

"You either need to have world-class size and metal-grade or you have to have access to power and infrastructure," said Satre.

Fortunately, Alaska has rich metals deposits close to its limited infrastructure and mine projects with the world-class metals endowment to be developed well beyond the end of the road.

The best example of this is Donlin Gold, which has both the size (at least 40 million ounces of gold) and grade (2.2 grams of gold per metric ton) to support the multi-billion-dollar development costs, including a 300-mile gas pipeline with a roughly US\$1 billion

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NORTHERN NEIGHBORS



NCP finds no merit to SEACC KSM complaint

Seabridge Gold Inc. Nov. 21 said Canada's National Contact Point, an interdepartmental committee chaired by Global Affairs Canada, has concluded that a complaint it received regarding aspects of the environmental assessment review process for the world-class KSM gold-copper project in northwestern British Columbia did not merit further examination and its file has now been closed after only the initial assessment level of review. The complaint came from Southeast Alaska Conservation Council that alleged Seabridge violated multinational enterprises guidelines by failing to disclose project documents and engage appropri-

ately with stakeholders in Alaska. SEACC also claimed the mining company had not exercised sufficient due diligence regarding potential environmental and human rights impacts of the KSM project. Seabridge received provincial and federal approvals for KSM in 2014.

During its investigation, which began in January, National Contact Point found that during the permitting process, the KSM project was subject to a rigorous and detailed environmental assessment process at both the federal and provincial levels. The committee said it found that: Seabridge had disclosed all of its relevant studies and plans related



Mitchell Creek runs orange from naturally occurring acid rock drainage on the KSM property in northwestern B.C. Seabridge said the quality of this water flowing toward Southeast Alaska would improve when it mines KSM due to water discharge requirements in Canada.

to the environment; federal and provincial environmental assessment agencies conducted public consultations; evidence that Seabridge had engaged with Alaskans during the environmental assessment process despite no legal requirement to do so; the federal and provincial environmental assessment review processes included examination of all potential negative impacts and identification of mitigation measures where needed; and concerns of stakeholders had been integrated into the environmental assessment process and ultimately had led to important changes in KSM project design.

"We are pleased that the thoroughness of the federal and provincial joint environmental assessment review process for KSM has been acknowledged and that this complaint has been dismissed," said Seabridge Chairman and CEO. "I want to ... reiterate that Seabridge remains committed to continuing engagement with the people of northwestern BC and southeastern Alaska, including Treaty and First Nations, as the KSM Project moves toward development."

White Gold extends Golden Saddle, Arc

White Gold Corp. Nov. 20 reported that drilling has extended gold mineralization at the Golden Saddle and Arc deposits on the White Gold property in the Yukon. The results reported herein further define a significant extension of the

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North of 60 Mining News is a weekly supplement of the weekly newspaper, Petroleum News.

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completed early in 2018 and the data collected will help it design future exploration programs on both projects.

Aussie junior options Estelle

Quantum Resources Ltd. Nov. 20 announced that it has entered into an option five Alaska projects prospective for gold, silver, zinc, nickel, copper, cobalt and rare earth elements. The primary property optioned by the Australiabased junior is Estelle, a district-scale gold-copper-silver project about 100 miles northwest of Anchorage. The other four properties, collectively known as the Farewell group are located northwest of Estelle and include: Chip-Loy-Roberts, a nickel-copper-cobalt-gold-silver-platinum group element project; Bowser Creek; Windy Fork, a rare earths property; and Ozzna Creek, a gold-silver-zinc-copper-lead property. Under the option agreement with another Australian company, Quantum can earn up to a 70 percent JV interest in these properties by investing AU\$3.3 million over a four-year span, including AU\$300,000 on due diligence work over the first year. The company said it has already begun the appraisal activities by compiling and investigating the substantial historical data on these properties. "This is a fantastic opportunity and substantial milestone for Quantum. It represents a rare opportunity for the company to capitalize on high quality exploration assets with excellent exposure to the surging commodity and battery minerals markets," said Avi Kimelman, a managing director of Quantum. "The company has established a highly skilled and experienced Alaskan team to advance its exploration and development strategy for the projects, with one of the proposed director appointments 'subject to successful due diligence' to be Alaska- and North America-based to look over every aspect of the company's project exploration and development plans." Quantum Resources also has a lithium project in Manitoba.

Drills grow Shorty Creek porphyry

Freegold Ventures Ltd. Nov. 16

reported that the initial holes of its 2017 drill program at Shorty Creek have intercepted significant widths of copper-goldsilver, cobalt and tungsten mineralization, further confirming and expanding the Hill 1835 target. Since the 2015 discovery hole was drilled, Freegold has completed roughly 4,200 meters of drilling at Hill 1835. Hole SC 16-01, drilled last year at the property's Hill 1835 target, cut 434.5 meters averaging 0.57 percent copper-equivalent, which accounts for the value of the copper, gold and silver. The bottom 12 meters of this deepest hole at Hill 1835 averaged 0.55 percent copper, 0.145 grams per metric ton gold and 9.67 g/t silver. In addition to the copper, gold and silver, the 2016 drilling also tapped significant tungsten in the form of wolframite. SC 16-01 cut 207 meters averaging 0.045 percent tungsten trioxide; and SC 16-02 cut 409.6 meters averaging 0.03 percent tungsten trioxide. This year, Freegold drilled several step out holes testing the extent of the porphyry target. Holes SC 17-01 and SC 17-02 were vertical step out holes located 100 and 200 meters SW of the 2016 drilling and intercepted copper, gold and silver with tungsten and cobalt mineralization over significant widths. Hole 17-01 cut 360 meters averaging 0.24 percent copper 0.07 g/t gold, 4.04 g/t silver, 100 parts per million cobalt and 0.03 tungsten trioxide. Hole 17-02 cut 408 meters averaging 0.27 percent copper 0.05 g/t gold, 4.97 g/t silver, 85 ppm cobalt and 0.05 percent tungsten trioxide. Holes SC 17-03 and SC 17-04 were drilled on the eastern edge of the magnetic high at Hill 1835. Hole SC 17-03, which was lost at a depth of 362.2 meters in strong copper mineralization due to mechanical difficulties, cut 105.2 meters averaging 0.27 percent copper, 0.05 g/t gold, 6.75 g/t silver, 114 ppm cobalt and 0.06 percent tungsten trioxide. Hole 17-04, which encountered significant fault material, cut 192 meters averaging 0.11 percent copper, 0.13 g/t gold, 1.48 g/t silver and 56 ppm cobalt. Two other holes drilled at Hill 1835 are pending. Hill 1835 is only one of the several magnetic highs identified at the expansive Shorty Creek property. An initial hole was drilled to test Steel Creek, one such large magnetic high target about 2,500 meters northeast of Hill 1835, assays are pending.



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Arc deposit 250m along strike and also extend the Golden Saddle Footwall Zone along strike and towards surface. The company said reverse circulation drilling at Golden Saddle continues to validate historical drilling within the historical resource area. Highlights from the latest results include 28.96 meters of 3.99 grams per metric ton gold in hole WHTGS17RC-010 and 13.12 meters of 7.47 g/t gold in WHTGS17RC-013. The company said the latest results extend both the main mineralized zone recently identified footwall zone at Golden Saddle. Drilling has also extended mineralization at Arc, which lies about 400 meters south of Golden Saddle. The company received results for three RC holes drilled at Arc, including one hole that cut 12.19 meters averaging 1.52 g/t gold. In addition to the continuation of the mineralization along trend, White Gold said there appears to be strong potential for subparallel zones of mineralization below the historical resource area based on past drilling and revised geologic interpretation of the Arc deposit. Kinross Gold Corp., the former owner of White Gold, reported 9.79 million metric tons of indicated resource averaging 2.7 grams-per-metricton (840,000 ounces) gold; and 2.17 million metric tons of inferred resource averaging 1.8 g/t (125,000 oz) gold for White Gold at the end of 2016. The 2017 drilling program at White Gold includes 31 RC holes and four diamond holes targeting the Golden Saddle and Arc deposits, as well as the newly identified Golden Saddle East and Ulli's target areas. Assays from 13 of the RC holes are pending. "The results of the 2017 drill program received to date confirm the potential to significantly expand both the Golden Saddle and Arc deposits, and I look forward to receiving the additional drill results from the Arc as well as initial drill results from the Ulli's and Golden Saddle East targets," said White Gold Vice President of Exploration Jodie Gibson. The results from Saddle and Arc will be included in an updated White Gold resource estimate slated for completion early in 2018.

Drills strike gold at Monte Carlo zone

Goldstrike Resources Ltd. Nov. 20 reported that the discovery hole at the Monte Carlo zone on its Lucky Strike property cut 22 meters averaging 5.36 grams per metric ton gold, including 18.79 g/t gold over 5.72 meters. The 2017 program at Lucky Strike included 1,032 meters of drilling in nine shallow holes testing Monte Carlo. Intercepts from the first seven holes include 3.57 meters of 1.75 g/t gold; 2.15 meters of 5.12 g/t gold; and 9.55 meters of 1.33 g/t gold. Assay results from one hole are pending. "The inaugural drill program on the Monte Carlo Zone clearly demonstrated the tremendous potential of the entire Lucky Strike property," said Goldstrike Chief Geologist Stefan Kruse. Located in the heart of Yukon's White Gold District, Lucky Strike hosts five known gold-in-soil anomalies - Monte Carlo, Belmont, Samson, Boss and Maverick - along a 10kilometer- (6 miles) corridor. "The results to date demonstrate that the project is one of the most important new discoveries in the White Gold Camp in 2017 and has the makings to be a flagship standalone project," said Goldstrike President and CEO Terry King.

While Goldstrike explored Lucky Strike, Newmont Gold Corp. carried out an extensive exploration program at Plateau, an expansive Yukon property where Goldstrike has identified multiple zones of high-grade gold. In March, Newmont cut a C\$53 million deal to earn up to a 75 percent stake in Plateau. Goldstrike and Newmont plan to release the exploration and drill results from the 2017 exploration at Plateau Property in the near future. "The 2018 exploration season is shaping up to be the largest drill campaigns to date on both Lucky Strike and Plateau properties," King added.

Saddle continues to deliver high grades

GT Gold Corp. Nov. 20 reported results from five additional holes drilled at the Saddle gold discovery on its Tatogga property in northwestern British Columbia. The best hole, TTD046, cut 8.25 meters averaging 20.02 grams per metric ton gold and 45.31 g/t silver. This is a 50-meter step-out from hole TTD037, which cut 2.59 meters averaging 42.55 g/t gold; and hole TTD040, which cut 6.6 meters averaging 12.64 g/t gold and 30.7 g/t silver. "The intersection in hole 46 continues the steady expansion of the core zone west, with excellent grade," said GT Gold President and CEO Kevin Keough. "We continue to be impressed with the strength of the results we have achieved to date, and in a short period of time, on the first ever drill program on the Saddle target." The 2017 discovery drill program at Saddle included 16,180 meters of core drilling in 64 holes and 1,527 meters of reverse circulation drilling in 28 holes. Assays for 19 core holes – 15 from Saddle South and four from Saddle North - are pending.

Defining high-caliber gold-silver at Klaza

Rockhaven Resources Ltd. Nov. 16 reposted additional high-grade gold-silver intercepts at its Klaza project in the Yukon, including one hole that cut 56.19 grams per metric ton gold, 290 g/t silver, 1.63 percent zinc and 1.44 percent lead over 1.9 meters. The company completed 15,922 meters of drilling in 96 holes this year. The latest batch of results are from 18 holes drilled into the Western and Central BRX zones, where infill drilling has better defined near-surface mineralization so that inferred resources can be upgraded to the indicated category. Other highlighted intercepts from the 18 holes include: 23.7 g/t gold, 652 g/t silver, 5.42 percent lead and 4.04 percent zinc over 1.74 meters; 37.21 g/t gold, 402 g/t silver, 1.6 percent lead and 2.37 percent zinc over 1.09 meters; and 16 g/t gold, 271 g/t silver, 3.26 percent lead and 1.92 percent zinc over 2.18 meters. All of the highlighted intercepts are from Western BRX. "The drill results at the Western BRX zone continue to confirm the style and consistency of highgrade gold and silver mineralization and further validates the Western BRX zone as a truly elite asset," stated Matt Turner, Rockhaven's CEO. "Road accessible mineralization of this caliber is rare in northern Canada and we expect to continue to focus on defining this zone as the Klaza project advances." Assay results from six additional holes drilled at Klaza this year are pending.

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price tag.

While the state government cannot afford to pay for roads, power and other infrastructure needed to develop mines at some of the other remote deposits across the Last Frontier, the Alaska Industrial Development and Export Authority has the wherewithal to fund and permit such projects.

AIDEA was responsible for building the Delong Mountain Transportation System, a road and port facility that now delivers roughly 5 percent of the world zinc from Red Dog to world markets.

Over the years, the quasi-state-owned





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authority has recouped the money it invested in building and maintaining DTMS and pays a dividend to state coffers from the profits it gets from ongoing tolls.

AIDEA is currently working on gaining the permits to build a 211-mile-long road to the Ambler Mining District, one of the richest and highest grade minerals districts on the planet.

Much like the road and port at Red Dog, the Ambler road will be paid for by delivering metals-rich concentrates from a mine at the Arctic project and other high-grade deposits Trilogy Metals and its partners are developing in this extremely metals-rich region of Northwest Alaska.

Beischer said he touts AIDEA's ability and willingness to develop mining infrastructure as he sets out to attract global miners and investors to Millrock's Alaska projects.

Geological advantage

Despite the challenges, great geology gives Alaska a leg-up when it comes to attracting mining investments and the ultimate prize of building new revenue generating mines in the Far North state.

"There is no doubt about the prospectivity of the rocks in this state – geologists really want to come here because we know there are other huge prizes like Donlin, Red Dog or Pebble," said Beischer.

Two of these prizes, Red Dog and Donlin Gold, are located on lands selected by Alaska Native corporations as part of the Alaska Native Claims Settlement Act.

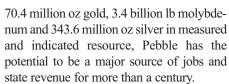
Satre said mineral rich lands owned by Alaska Native regional and village corporations are currently the best places in Alaska to explore for and build a mine.

"The people that own the mineral rights have to be willing and able to partner with the companies going forward. Some of our greatest successes in the past, and in the future, are on ANCSA lands," Satre told the crowd.

"If I am an explorer, if I am a mine developer, I go to the ANCSA corporations," he added.

The biggest geological prize discovered in Alaska so far, Pebble, is located on state land.

With roughly 56.8 billion pounds copper,



The Pebble Partnership is set to file for permits to develop an "environmentallyoptimized" mine at this world-class copper deposit by the end of the year.

Beischer is convinced that other deposits with the world-class tenor of Red Dog, Donlin Gold and Pebble are waiting to be discovered across the state.

"What I like most of all is we have barely scratched the surface in this state – we are going to find other major mineral deposits that could be mined," he said.

State could do more

If Alaska wants additional mines to help employ more Alaskans and diversify the state economy, mining leaders urge the state to spread this message outside of local resource conferences.

"We have state land that is designated for mineral development but I don't believe the state is doing enough as a partner to promote development of those lands," Satre said.

He rejects the argument that as a mine regulator the state government is not in a position to promote mining.

In a conversation with Mining News, Satre pointed out that the state actively promotes other resource sectors it regulates, such as natural gas and fishing.

Beischer agrees that Alaska's leaders "need to make it clear that mining is welcome in this state."

"They need to say it all over the world, in the board rooms of major mining companies to make sure they understand that this state wants their investment. If they do that, they are going to come," he said.

With an exploration-permitting-development timeline that is typically measured in decades, Satre points out that the number of mines in Alaska could lessen, not increase, without new projects moving through the pipeline.

"If things stayed the way they are today we would be running out of mines in Alaska," he said.

Beischer pointed out that there are six major mining projects – Donlin Gold, Pebble, Livengood, Arctic, Bokan Mountain and Palmer – that are in the advanced exploration and development stage.

"I really think the state government should do what it can to move the ones that deserve to get into production along as quickly as possible," the mining executive said.

"It is time to invigorate the mining industry – it is time to make it a cornerstone of a comprehensive economic development

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plan," he added.

Beischer said exploration companies will keep feeding new mining projects into the pipeline as long as the state is seen as an attractive mining jurisdiction.

"We'll keep coming as long as the environment is favorable," he said.

While Satre sees a need for Alaska to be more proactive in ensuring it reaches Gov. Walker's aspirations of 12 mines, he sees a bright future for the state's mining sector.

"I am incredibly optimistic about the future of mining in Alaska," he said. "We have some great projects in the pipeline and hopefully we can bring those into fruition and we don't have a production gap in the future and we can contribute to the fiscal stability of this state." \bullet