

page North Slope output down 2.5% in **5** June; Milne Point up, Prudhoe down

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Spurr geothermal sale gets OK; **GeoAlaska can convert to lease**

On July 28, Alaska Department of Natural Resources' Division of Oil and Gas Director Derek Nottingham issued a final written finding and decision to hold a geothermal lease sale on the south flank of Mount Spurr.

The competitive lease sale area is 38,315 acres on the west side of Cook Inlet, northwest of Trading Bay, and includes the east end of Chakachamna Lake and a portion of the Chakachatna River.

Mount Spurr is remote and uninhabited. The closest cities, towns, villages and communities to the area are Tyonek and Beluga on the west coast of Cook Inlet,



DEREK NOTTINGHAM

and Nikiski on the east coast of Cook Inlet. Many of the industries and businesses of the area are supported directly or indirectly by natural resources, including oil and gas, coal and timber, commercial fishing, and government.

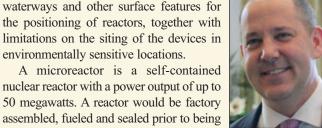
Disposals in the Mount Spurr area have been approved in the past for geothermal exploration. The division held geothermal lease sales in the Mount Spurr area in May 1983, June

see GEOTHERMAL SALE page 8

DEC finalizes regulations for siting of microreactors in Alaska

The Alaska Department of Environmental Conservation has issued finalized regulations for the siting of nuclear microreactors

in Alaska. Essentially, the regulations specify minimum distances from buildings, waterways and other surface features for the positioning of reactors, together with limitations on the siting of the devices in environmentally sensitive locations.



50 megawatts. A reactor would be factory assembled, fueled and sealed prior to being shipped to an installation site. In effect, the reactor would operate like a nuclear battery,

with nuclear fuel that might last for around 10 years. Once the fuel is expended, the entire unit would be removed and replaced by a newly fueled unit. The reactor manufacturer would deal with

see MICROREACTORS page 9

AOGCC appeals decision on confidentiality of NPR-A data

The Alaska Oil and Gas Conservation Commission is appealing U.S. District Court Judge Sharon Gleason's June 26 ruling that ConocoPhillips Alaska's well data from its exploration wells in the Willow area in the National Petroleum Reserve-Alaska is confidential, based on federal regulations. AOGCC had argued that because it received the data from ConocoPhillips directly, not from the federal Bureau of Land Management, that under state law it could release the data after a 24-month confidentiality peri-

Federal law for NPR-A well data holds that data confidential for the life of the lease.

In her ruling Gleason said that the intent of Congress was clearly to encourage exploration in NPR-A by private companies. Data gathered from exploration wells is valuable and if it were made public after a company invested in acquiring that data, the company would lose the value of their exploration work. This would discourage exploration by private companies, the judge

see AOGCC APPEAL page 10

EXPLORATION & PRODUCTION

Pikka on track

Advancing on all fronts, first modules to arrive at Pikka before end of year

By KAY CASHMAN

Petroleum News

he Pikka Phase 1 project on Alaska's North Slope is progressing as planned and remains on schedule and on budget, targeting first oil production in the first half of 2026, Oil Search (Alaska) LLC's parent Santos Ltd. told Petroleum News July 30.

"The Final Investment Decision (FID) announced in August 2022, provided full funding for all aspects of the project. Santos is advancing work on all fronts, and remains on target for first oil 1H 2026," Santos told PN.

Santos also released a short, summary statement



BRUCE DINGEMAN

about Pikka Phase 1 in its second quarter report on July 20, saying that "all major drilling, fabrication and construction contracts are in place. On-site 2022/23 winter construction activities, including gravel work for road, pad and pipeline crossings, has been completed. All pipeline orders have been placed, materials are being delivered and fabrication is underway for the upcoming 2023/24 winter construction season."

Furthermore, Pikka Phase 1 fabrication activities for fluid processing, seawater treatment, drill site, camp and grind and inject, or G&I, facilities are all

see PIKKA ON TRACK page 11

FINANCE & ECONOMY

ANS: Up up and away!

Prices spike in July — ANS up 15%; August lurches off to slow start

By STEVE SUTHERLIN

Petroleum News

laska North Slope crude plunged \$2.01 Aug. 2 Ato close at \$85.80 per barrel, while West Texas Intermediate lost \$1.88 to close at \$79.49 and Brent lost \$1.71 to close at \$83.20.

Traders took profits in the wake of an impressive month of oil price gains. ANS was up 15% for July, WTI was up 15.8% and Brent notched a 14.2% gain for July.

Risk markets — including U.S. equities were widely in the red Aug. 2. Investors of all stripes were spooked when the United States had its credit rating docked — due to its exploding debt burden — from AAA to AA+ by ratings agency

Fitch.

Even a massive drawdown in commercial crude oil stores, reported Aug. 2 by the U.S. Energy Information Administration, was not enough to buoy the animal spirits of oil markets.

U.S. commercial crude oil inventories for the week ending July 28 — excluding the Strategic Petroleum Reserve — plummeted by 17.0 million barrels from the previous week to 439.8 million barrels, 1% below the five-year average for the time of year, the EIA said.

Total motor gasoline inventories increased by 1.5 million barrels from last week to 225.3 million barrels, 6% below the five-year average for the time of year.

see OIL PRICES page 10

ALTERNATIVE ENERGY

Surveying on Augustine

GeoAlaska collecting geophysical data for geothermal, huge step forward

By KAY CASHMAN

Petroleum News

Following approval of the South Augustine Island Geophysical Exploration and Land Use Permit to collect geophysical data between July 15 and Sept. 30, GeoAlaska LLC mobilized its geophysical survey team from Homer to Augustine Island on the morning of July 26. Mobilization involved three landing craft boatloads of supplies and equipment, a geophysical crew and a helicopter.

Augustine Island is on the lower west side of Cook Inlet. The island is home to Mount



PAUL CRAIG

Augustine volcano, a stratovolcano that last erupted in 2006.

U.S. Geological Survey researchers have determined that Augustine's magma chamber is relatively shallow. Mount Augustine is believed to have significant geothermal potential.

"We had an extensive face-to-face safety meeting in Homer including everybody involved with mobilization and data collection the day before mobi-

lization — Tuesday the 25th. Early the next morning, the helicopter and the boats departed to Augustine," Paul Craig, GeoAlaska's CEO and

see GEOTHERMAL DATA page 10

EXPLORATION & PRODUCTION

US rotary count continues dropping, to 664

By KRISTEN NELSON

Petroleum News

The Baker Hughes' U.S. rotary drilling rig count dropped by five the week ending July 28 to 664, down for the third week in a row after a one-week turnaround earlier in the month. The count has dropped for seven of the last eight weeks, a trend of decreasing rig counts which has been dominant since the beginning of May. This week's count is down by 103 from 767 a year ago.

A drop of 17 on May 12 was the steepest drop since June of 2020. The July 28 count is the lowest since March 18, 2022, when the count was 663. The count dropped below 700 the week ending June 2, the first time it has been below 700 since April 2022. This week's count is down from a high so far this year of 775 on Jan. 13. The high for 2022 was a count of 784 rigs at the beginning of December.

When the count dropped to 244 in mid-August 2020, it was the lowest the domestic rotary rig count had been since the Houston based oilfield services company began issuing weekly U.S. numbers in 1944.

Prior to 2020, the low was 404 rigs in May 2016. The

Baker Hughes shows Alaska with eight rotary rigs active July 28, unchanged from the previous week and down by two from a year ago when the count in the state was 10.

count peaked at 4,530 in 1981.

The count was in the low 790s at the beginning of 2020 prior to the COVID-19 pandemic, where it remained through mid-March of that year, when it began to fall, dropping below what had been the historic low in early May with a count of 374 and continuing to drop through the third week of August 2020 when it gained back 10 rigs.

The July 28 count includes 529 rigs targeting oil, down one from the previous week and down by 76 from 605 a year ago, with 128 rigs targeting natural gas, down three from the previous week and down 29 from 158 a year ago, and seven miscellaneous rigs, down one from the previous week and up by two from a year ago.

Fifty-three of the rigs reported July 28 were drilling directional wells, 592 were drilling horizontal wells and 19 were drilling vertical wells.

Alaska rig count unchanged

Louisiana (51) was up by two rigs from the previous week.

New Mexico (111) was down by two rigs.

Colorado (14), Ohio (12), Oklahoma (39) and Pennsylvania (22) were each down by a single rig week over week. Rig counts in other states were unchanged from the previous week: Alaska (8), California (2), North Dakota (35), Texas (322), Utah (15), West Virginia (12) and Wyoming (19).

Baker Hughes shows Alaska with eight rotary rigs active July 28, unchanged from the previous week and down by two from a year ago when the count in the state was 10. All eight of the Alaska rigs were onshore, unchanged from the previous week, and no rigs were working offshore, also unchanged.

The rig count in the Permian, the most active basin in the country, was up by one from the previous week at 334 and down by 17 from 351 a year ago. ●

Contact Kristen Nelson at knelson@petroleumnews.com

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Alaska-Mackenzie Rig Report

Operator or Status

Alaska Rig Status

Rig Location/Activity

North Slope - Onshore

IDECO H-37 AAO 111 Stacked in MagTec's Yard Available **Doyon Drilling** Dreco 1250 UE 14 (SCR/TD) Milne Point, M-61 Hilcorp Alaska LLC Dreco 1000 UE 16 (SCR/TD) Standby Available Dreco D2000 Uebd 19 (SCR/TD) Standby Available AC Mobile Alpine, MT7-14 ConocoPhillips **OIME 2000** 141 (SCR/TD) Standby Available 142 (SCR/TD) Kuparuk, 1C-157 ConocoPhillips TSM 700 Arctic Fox #1 Demobilizing Available FRD Alpine, CD4-586 ConocoPhillips

Hilcorp Alaska LLC

Rig Owner/Rig Type

All American Oilfield LLC

Rotary Drilling Hilcorp Alaska LLC Innovation Prudhoe Bay, Z Pad

Nabors Alaska Drilling

CDR-2 (CTD) AC Coil Hybrid Milne Point, B-15A Hilcorp Alaska LLC CDR-3 (CTD) AC Coil ConocoPhillips Kuparuk 7-ES (SCR-TD) Kuparuk Dreco 1000 UE ConocoPhillips Available Dreco 1000 UE 9-ES (SCR/TD) Stacked 16-E (SCR/TD) Oilwell 2000 Hercules Stacked Brooks Range Petroleum Emsco Electro-hoist Oilwell 2000 Canrig 1050E 27-E (SCR-TD) Stacked Available Academy AC Electric CANRIG 99AC (AC-TD) Stacked Available OIME 2000 245-E (SCR-ACTD) 12 Acre Pad, stacked Available Academy AC electric CANRIG 105AC (AC-TD) Stacked Available Academy AC electric Heli-Rig 106AC (AC-TD) Stacked Available

Nordic Calista LLC

Superior 700 UE 1 (SCR/CTD) Deadhorse Available Superior 700 UE 2 (SCR/CTD/TD) Deadhorse, stacked Available Ideco 900 3 (SCR/TD) Kuparuk ConocoPhillips Rig Master 1500AC 4 (AC/TD) Oliktok Point **ENI**

Parker Drilling Arctic Operating LLC

NOV ADS-10SD Santos NOV ADS-10SD Hilcorp Alaska LLC Undergoing startup maintenance

North Slope - Offshore

Doyon Drilling

Sky top Brewster NE-12 15 (SCR/TD) ENI Demobilizing

Nabors Alaska Drilling

OIME 1000 19AC (AC-TD) Oooguruk, Cold Stacked ENI

Cook Inlet Basin - Onshore

BlueCrest Alaska Operating LLC

BlueCrest Rig #1 Stacked BlueCrest Alaska Operating LLC Land Rig

Nordic Calista LLC Kenai, stacked Rig 37 36 (TD) Land Rig Kenai, stacked

Hilcorp Alaska LLC

TSM-850 Beluga River Unit, F Pad Hilcorp Alaska LLC TSM-850 169 Pearl Pad Hilcorp Alaska LLC

Cook Inlet Basin - Offshore

Hilcorp Alaska LLC

National 110 C (TD) Platform C, Stacked Hilcorp Alaska LLC Steelhead Platform, Stacked Hilcorp Alaska LLC Rig 51 Hilcorp Alaska LLC Rig 56 Monopod A-13, stacked

Spartan Drilling

Baker Marine ILC-Skidoff, jack-up Spartan 151, Tyonek Platform Hilcorp Alaska LLC

Glacier Oil & Gas

National 1320 Osprey Platform, activated Glacier Oil & Gas

Mackenzie Rig Status

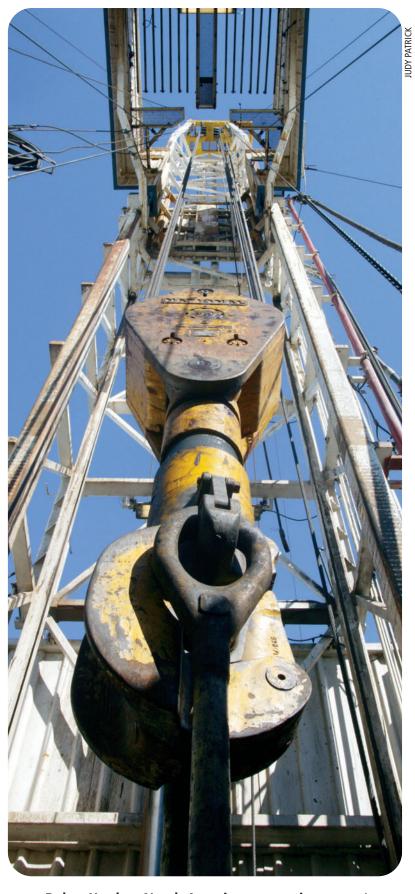
Canadian Beaufort Sea

SDC Drilling Inc.

SDC Mobile Offshore Drilling Unit Rig #2 Set down at Roland Bay Available The Alaska-Mackenzie Rig Report as of August 2, 2023. Active drilling companies only listed.

TD = rigs equipped with top drive units WO = workover operations CT = coiled tubing operation SCR = electric rig

This rig report was prepared by Marti Reeve



Baker Hughes North America rotary rig counts*

	July 28	July 21	Year Ago
United States	664	669	767
Canada	193	187	204
Gulf of Mexico	19	18	15

Highest/Lowest

Available

US/Highest 4530 December 1981 August 2020 US/Lowest 244 *Issued by Baker Hughes since 1944

> The Alaska-Mackenzie Rig Report is sponsored by:



State OKs Milne Point I Pad plan amendment

The Alaska Department of Natural Resources Division of Oil and Gas has approved an amendment to the plan of operations for Milne Point, allowing Hilcorp Alaska to expand the existing header on the Milne Point I Pad, allowing increased production from wells at the pad.

In June, the most recent month for which production data are available from the Alaska Oil and Gas Conservation Commission, I Pad accounted for some 15% of Milne production. Hilcorp has been growing production at Milne since taking over as operator in 2014 (see June production story in this issue).

The work approved in a July 27 decision will expand the existing I Pad header, including addition of new pipe and removal and replacement of existing pipe.

The work approved in a July 27 decision will expand the existing I Pad header, includ-

ing addition of new pipe and removal and replacement of existing pipe.

"The purpose of this project is to lower the production header pressure by adding a second production line to the separator and increasing from six-inch pipe to ten-inch pipe out of the separator to the cross-country line," the division said, with reduced pressure allowing increased production from the wells.

Work will be from existing gravel and was scheduled to begin in July. Activities include:

- •Construction of a utiliway 4 feet wide, 5 feet deep and 54 feet long.
- •Removing 50 feet of 6-inch production pipe.
- •Installing 1,200 feet of new 10-inch production pipe.
- •Decommissioning and removing 120 feet of 3-inch production lateral pipe.
- •Installing 120 feet of 4-inch production lateral pipe to the existing pipe rack.
- •Installing insulation, heat trace and connections for headers.

—KRISTEN NELSON



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THIS MONTH IN HISTORY

Evergreen expands north, west of Pioneer

20 years ago this month: Coalbed methane producer acquiring acreage north of Castle Mountain fault; applies for shallow gas leases

Petroleum

Editor's note: This story first appeared in the Aug. 3, 2003, issue of Petroleum News Alaska.

By KAY CASHMAN

Petroleum News

Evergreen Resources, operator of the Pioneer unit in the Matanuska-Susitna Borough north of Anchorage, is in the process of picking up what it considers more prospective acreage for coalbed methane production north and west of Pioneer, across the Castle Mountain fault.

In an earnings conference call July 31, 2003, Evergreen CEO Mark Sexton said the company wants to get its hands on 100,000 acres north and west of the fault near Chickaloon and south of the Sheep Mountain area, and then expand to a total of 200,000 acres.

"That's about right for a coalbed methane project," Sexton said. Currently, Evergreen holds 11,200 acres outside the Pioneer unit and 52,813 in the unit: "This does not include shallow natural gas leases acquired (and being acquired) via farm out. The total of those properties is not yet determined," Evergreen spokesman Jack Ekstrom told Petroleum News at the end of July.

If Evergreen decides to proceed with gas development at the Pioneer unit, it will be Alaska's first commercial coalbed methane operation

Applies for 11 shallow gas leases

In addition to trying to put together deals with private landowners in the area, Evergreen has applied to the Alaska Department of Natural Resources, Division of Oil and Gas, for 11 shallow gas leases (ADLs 390396-390406) north of the Castle

Mountain fault. On July 25, 2003, the state issued a call for public comments, due by Sept. 25. If approved, Evergreen will receive leases for state-owned natural gas from any part of a field that is above 3,000 feet true vertical depth for an initial

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term of three years.

Ekstrom said the company will likely ask the state to expand the Pioneer unit to include the acreage it is acquiring across the

fault and outside the

The coals north of the fault look to be easier to produce, Ekstrom said.

"The coals under 3,000 feet in our first pilots (in the Pioneer unit) are up significantly higher on the



MARK SEXTON

other side of the fault; and drilling there is a lot easier because there is not as much glacier silt and gravel to drill through," he said.

"The process for coalbed methane is it's easy to find and hard to produce, unlike conventional oil and gas operations. ... It takes an extraordinary amount of testing time to unlock all the doors that lead to commercial success," Ekstrom said.

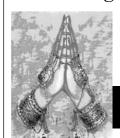
The third pilot Evergreen recently said it was drilling is on the north side of the Castle Mountain fault. (See July 6, 2003, issue of Petroleum News.)

"We always thought the coals on that side were more prospective. ... Given the opportunity to explore in that area we have taken it," Ekstrom said.

Some of the private leaseholders north of the Pioneer unit, across the fault, include Kenneth Schlenker, Ted Williams and Paula J. Mills.

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• EXPLORATION & PRODUCTION

North Slope production down 2.5% in June

ANS averaged 463,788; Milne Point up 8% at more than 40,000 bpd; at 250,590 bpd, Prudhoe down 12,892 bpd from May, a 4.9% drop

By KRISTEN NELSON

Petroleum News

Alaska North Slope production for June was down from May, but up from last June, with the largest drop at Prudhoe Bay and the largest increase at Milne Point.

ANS production in June averaged 463,788 barrels per day, down 12,026 bpd, 2.5%, from a May average of 475,814 bpd but up 1.7% from a June 2022 average of 456,146 bpd. Crude accounted for 89.5% of the June average, 414,932 bpd, down 6,650 bpd, 1.6%, from a May average of 421,582 bpd, but up 1.5% from a June 2022 average of 408,838 bpd. Natural gas liquids, NGLs, accounted for 10.5% of the total, an average of 48,856 bpd, down 5,376 bpd, 9.9%, from a June average of 54,232 bpd, but up 3.3% from a June 2022 average of 47,308 bpd.

Production data are from the Alaska Oil and Gas Conservation Commission which reports production by field and well on a month delay basis.

Prudhoe and Milne Point

The largest month-over-month decrease was at Prudhoe Bay; the largest month-over-month increase at Milne Point. Both averaged more production this June than in June 2022.

Hilcorp North Slope-operated Prudhoe Bay, the Slope's largest field, averaged 250,590 bpd in June, down 12,892 bpd, 4.9%, from a May average of 263,482 bpd, but up 4.5% from a June 2022 average of 239,719 bpd. Crude accounted for 205,083 bpd of Prudhoe production, 81.8% of the total, down 7,611 bpd, 3.6%, from a May average of 212,695 bpd, but up 4.6% from a June 2022 average of 196,151 bpd. Prudhoe NGLs averaged 45,507 bpd in June, 18.2% of the total, down 5,281 bpd, 10.4%, from a June average of 50,787 bpd, but up 4.5% from a June 2022 average of 43,569 bpd.

In addition to the primary reservoir, production volumes from Prudhoe include Aurora, Borealis, Lisburne, Midnight Sun, Niakuk, Polaris, Point McIntyre, Put River, Raven and Schrader Bluff.

Hilcorp Alaska's Milne Point averaged 40,295 bpd in June, up 2,973 bpd, 8%, from a May average of 37,322 bpd and up 7.1% from a June 2022 average of 37,620 bpd. Hilcorp has doubled production since April 2014 when it acquired 50% of Milne Point from BP and took over as operator. In that month Milne production averaged

19,578 bpd. In July 2020 Hilcorp acquired the remaining 50% of the field along with BP's other North Slope interests, and, as Hilcorp North Slope, became the Prudhoe operator.

Other fields with increases

The ConocoPhillips Alaska-operated Kuparuk River field averaged 81,203 bpd in June, up 1,486 bpd, 1.9%, from a May average of 79,717 bpd and up 2.7% from a June 2022 average of 79,095 bpd.

In addition to the main Kuparuk pool, Kuparuk produces from satellites at Tabasco and Tarn, and from West Sak.

Eni's Nikaitchuq averaged 15,962 bpd in June, up 462 bpd, 3%, from a May average of 15,500 bpd, but down 9.9% from a June 2022 average of 17,708 bpd.

Savant's Badami averaged 1,041 bpd in June, up 461 bpd, 79.5%, from a May average of 580 bpd and up 4.4% from a June 2022 average of 997 bpd. The big jump in production came from the Badami B1-07 well, which produced 16,101 barrels in June, 51.6% of the field's production. Looking back a year, B10-07 produced 12,556 barrels in June 2022, dropping off over the year to a low of 147 barrels in April, and then beginning a climb back with 2,524 barrels in May. Savant is a Glacier Oil and Gas company.

ConocoPhillips' Colville River averaged 35,950 bpd in June, up 345 bpd, 1%, from a May average of 35,605 bpd and up 3% from a June 2022 average of 34,904 bpd. The CD5 pad accounted for 50.3% of Colville River production in June

In addition to oil from the main Alpine pool, Colville includes production from the Nanuq and Qannik oil pools.

Other fields with decreases

ConocoPhillips' Greater Mooses Tooth in the National Petroleum Reserve-Alaska averaged 16,902 bpd in June, down 2,250 bpd, 11.8%, from a May average of 19,152 bpd and down 11% from a June 2022 average of 18,999 bpd. The field produces from two oil pools, Lookout at GMT1, which produced 8.5% of the field's volume in June, and the Rendezvous pool at GMT2, which accounted for 91.5% of June production.

The Hilcorp Alaska-operated Point Thomson field averaged 3,114 bpd in June, down 1,967 bpd, 38.7%, from a May average of 5,081 bpd and down 66.1%

see ANS OUTPUT page 7

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Cook Inlet gas up marginally

Natural gas production in Cook Inlet averaged 200,905 thousand cubic feet per day in June, up marginally, 0.1%, 187 mcf per day, from a May average of 200,719 mcf per day but down 6.9% from a June 2022 average of 215,818 mcf per day.

This data is from the Alaska Oil and Gas Conservation Commission, which reports production on a month-delay basis. For natural gas AOGCC reports measurements in thousands of cubic feet, mcf.

The six largest producers, with production averaging more than 10,000 mcf per day, accounted for 78.7% of inlet production in June.

Hilcorp Alaska's Ninilchik averaged 45,373 mcf per day in June, 22.6% of inlet production, up 6,206 mcf per day from a May average of 39,167 mcf per day and up 34.2% from a June 2022 average of 33,817 mcf per day.

Hilcorp's North Cook Inlet averaged 37,035 mcf per day in June, 18.4% of inlet production, down 629 mcf per day, 1.7%, from a May average of 37,664 mcf per day, but up 23.9% from a June 2022 average of 29,888 mcf per day.

Hilcorp-operated Beluga (majority owned by Chugach Electric Association) averaged 30,887 mcf per day in June, 15.4% of inlet production, down 1,686 mcf per day, 5.2%, from a May average of 32,573 mcf per day and down 7.4% from a June 2022 average of 33,371 mcf per day.

Hilcorp's Kenai averaged 19,866 mcf per day in June, 9.9% of inlet production, down 158 mcf per day, 0.8%, from a May average of 20,024 mcf per day and down 22.3% from a June 2022 average of 25,578 mcf per day.

Hilcorp's McArthur River averaged 14,740 mcf per day in June, 7.3% of inlet production, down 297 mcf per day, 2%, from a May average of 15,037 and down 18.7% from a June 2022 average of 18,125 mcf per day.

Furie's Kitchen Lights averaged 10,102 mf per day in June, 5% of inlet production, down 158 mcf per day from a May average of 10,260 mcf per day and down 22.2% from a June 2022 average of 12,977 mcf per day.

Fifteen fields accounted for the remaining 21% of inlet production, topped by Hilcorp's Swanson River, which averaged 9,371 mcf per day in June, down 1,441 mcf per day, 13.3%, from a May average of 10,811 mcf per day and down 7.6% from a June 2022 average of 10,139 mcf per day.

Hilcorp's Ivan River averaged 6,984 mcf per day in June, down 1,312 mcf per

see INLET GAS page 7



■ GOVERNMENT

BLM wants leasing regulation changes

Agency proposes significant increases to royalty rates and bonding; only filing fee changes would apply to NPR-A and ANWR

By ALAN BAILEY

For Petroleum News

he federal Bureau of Land . Management has published proposed new regulations that would significantly increase royalty rates and bonding requirements for oil and gas production on federal onshore lands. However, in Alaska the revised regulations would not, in general, apply to the National Petroleum Reserve-Alaska or to the Arctic National Wildlife Refuge — oil and gas exploration, development and production in NPR-A and ANWR operate under different federal statutes and regulations than other federal onshore land. However, revised fees for filing documents would apply to NPR-A and ANWR, BLM has told Petroleum News.

The proposed regulation revisions would apply elsewhere in Alaska. For example, there is onshore oil and gas potential in the federal Kenai National

Wildlife Refuge in the northern Kenai Peninsula.

A balanced approach

BLM says that the regulatory changes would ensure a balanced approach to development while also ensuring a fair return for taxpayers and adequate protection for important wildlife habitats and cultural sites. The proposed changes would also align the regulations with the terms of the Bipartisan Infrastructure Law and the Inflation Reduction Act that were passed by Congress in 2021 and 2022.

The agency says that royalty rates for oil and gas production have not been raised for more than 100 years prior to the current administration. Bonding levels have not been raised for 60 years, and minimum bids and rents for oil and gas leases have remained the same for more than 30 years.

Under the proposed regulations, the

minimum lease bonding amount would increase from \$10,000, as at present, to \$150,000. The minimum statewide bond would be \$500,000. BLM says that the current bonding rates do not adequately incentivize companies to meet their obligations to reclaim impacted land. Nor are the rates adequate to cover the costs of dealing with disused wells, in the event that the well operator does not conduct the reclamation, perhaps because of bankruptcy. The changes would reduce the financial burden on U.S. taxpayers — in recent years the Department of the Interior has had to make available more than \$1 billion in funding for the cleanup of orphaned wells on federal, state and private lands, BLM says.

The Alaska Oil and Gas Conservation Commission has recently made major increases to the bonding levels for wells drilled in Alaska, with the commission similarly arguing that the existing minimum bonding levels were inadequate to cover the costs of plugging, abandoning and remediating defunct wells. AOGCC bonding requirements for wells drilled anywhere in the state, including on federal land, now range from \$400,000 to \$30 million, depending on how many wells are drilled.

Minimum royalty rates

Under the proposed BLM regulations the minimum royalty rates for oil and gas produced on federal land would increase from the current level of 12.5% to 16.67%. The minimum bid for obtaining a lease would increase from \$2 per acre to \$10 per acre, with the minimum bid then being

adjusted for inflation after 10 years. Rental rates for leases would be \$3 per acre, increasing to \$5 per acre two years after a lease is issued, and then increasing to \$15 per acre after another six years. After Aug. 16, 2032, those rental rates would become minimums, with the rates potentially being increased.

"The Interior Department has taken several steps over the last two years to ensure the federal oil and gas program provides a fair return to taxpayers, adequately accounts for environmental harms, and discourages speculation by oil and gas companies," said Principal Deputy Assistant Secretary for Land and Minerals Management Laura Daniel-Davis. "This new proposed rule will help fully codify those goals and lead to more responsible leasing and development processes."

"This proposal to update BLM's oil and gas program aims to ensure fairness to the taxpayer and balanced, responsible development as we continue to transition to a clean energy economy," said BLM Director Tracy Stone-Manning. "It includes common sense and needed fiscal revisions to BLM's program, many directed by Congress."

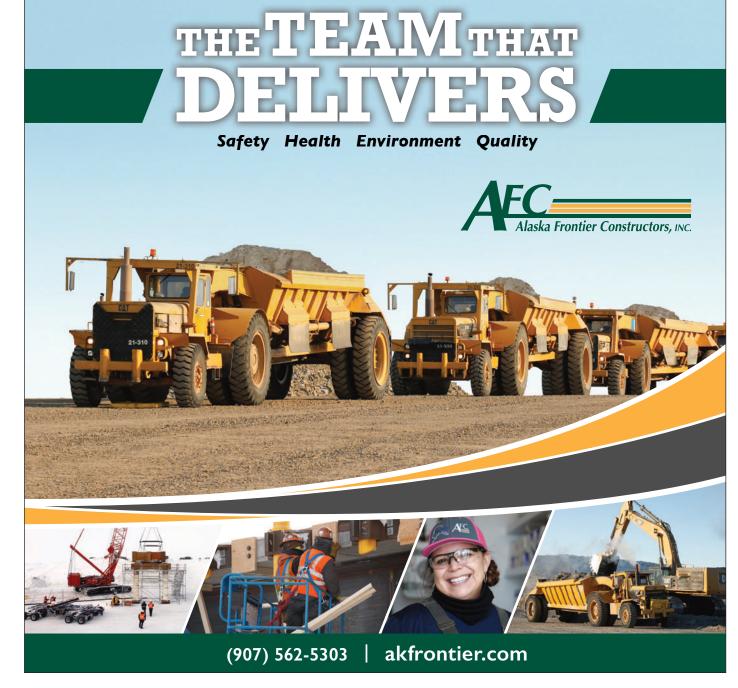
Comparison with Alaska

By comparison, Alaska has a minimum royalty rate of 12.5% for state lands, although in recent years the state has set a 16.67% royalty rate for some areas. Royalty reductions can be negotiated in certain situations. Rental rates for leases on state land are \$10 per acre for the first six years of a lease, increasing to \$100 per acre in year seven and to \$250 per acre, beginning in year eight. The initial \$10 per acre rate can be continued, if there is sustained production from the lease or if there has been reasonable diligence in exploring and developing the lease.

Federal royalty rates in NPR-A can be 12.5% or 16.67%, and rental rates \$3 or \$10 per acre, depending on the discovery and development potential of the land. ●

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ANS OUTPUT

from a June 2022 average of 9,187 bpd, the high for 2022; last year's low, 7,987 bpd, was in October. Production has been in a fairly steady decline this year, with a high of 8,136 bpd in February. Facilities at the field are designed for maximum production of 10,000 bpd.

In information provided to AOGCC in February, Hilcorp noted that there is only one producer at Point Thomson, PTU-17, and over time productivity has declined. There are several potential explanations for that, the company said, including natural decline and issues with the well. Filings indicate treatments to address potential well issues began in February 2022, and resulted in some improvement that month, with analysis and testing ongoing.

Hilcorp's Northstar averaged 5,859 bpd in June, down 328 bpd, 5.3%, from a May average of 6,186 bpd and down 16.3% from a June 2022 average of 6,996 bpd. Crude was 55.3% of Northstar production in June, an average of 3,240 bpd, down

291 bpd, 8.3%, from a May average of 3,532 bpd and down 18.5% from a June 2022 average of 3,976 bpd. Northstar NGLs were 44.7% of the field's production in June, 2,618 bpd, down 36 bpd, 1.4%, from a May average of 2,654 bpd and down 13.3% from a June 2022 average of 3,020 bpd.

Eni's Oooguruk averaged 6,793 bpd in June, down 178 bpd, 2.6%, from a May average of 6,970 bpd, but up 24.7% from a June 2022 average of 5,449 bpd.

Hilcorp's Endicott averaged 6,080 bpd in June, down 138 bpd, 2.2%, from a May average of 6,217 bpd, but up 11.1% from a June 2022 average of 5,472 bpd. Crude was 88% of Endicott production in June, averaging 5,348 bpd, down 79 bpd, 1.5%, from a May average of 5,427 bpd, but up 12.5% from a June 2022 average of 4,752 bpd. NGLs were 12% of Endicott production in June, an average of 732 bpd, down 59 bpd, 7.4%, from a May average of 790 bpd, but up 1.7% from a June 2022 average of 719 bpd.

Cook Inlet down 3.8%

Cook Inlet production averaged 8,336

bpd in June, down 329 bpd, 3.8%, from a May average of 8,664 bpd and down 16.1% from a June 2022 average of 9,940 bpd. Crude oil accounts for 99% of Cook Inlet production, with the remaining 1%, natural gas liquids, from a single field, Swanson River, where it is 10.1% of that's field's volume.

Hilcorp Alaska's McArthur River averaged 2,746 bpd in June, up 128 bpd, 4.9%, from a May average of 2,618 bpd but down 5.7% from a June 2022 average of 2,912 bpd.

Hilcorp's Granite Point averaged 2,254 bpd in June, down 16 bpd, 0.7%, from a May average of 2,270 bpd, and down 1.3% from a June 2022 average of 2,284 bpd.

These two, along with Hilcorp's Trading Bay and Cook Inlet Energy's Redoubt Shoal, produce from platforms in Cook Inlet.

Trading Bay averaged 973 bpd in June, up 95 bpd, 10.9%, from a May average of 877 bpd and up 8.2% from a June 2022 average of 899 bpd.

Hilcorp's Swanson River averaged 771 bpd (crude and NGLs) in June, down 6

bpd, 0.7%, from a May average of 777 bpd and down 5.5% from a June 2022 average of 816 bpd.

BlueCrest's Hansen averaged 708 bpd in June, down 9 bpd, 1.3%, from a May average of 717 bpd and down 8.5% from a June 2022 average of 774 bpd.

Cook Inlet Energy's West McArthur River averaged 420 bpd in June, up 39 bpd, 10.2%, from a May average of 381 bpd and up 63.7% from a June 2022 average of 256 bpd. CIE is a Glacier Oil and Gas company.

Hilcorp's Beaver Creek averaged 335 bpd in June, down 79 bpd, 19%, from a May average of 414 bpd and down 60.9% from a June 2022 average of 856 bpd.

CIE's Redoubt Shoal averaged 129 bpd in June, down 481 bpd, 79%, from a May average of 610 bpd and down 88.7% from a June 2022 average of 1,143 bpd.

ANS crude oil production peaked in 1988 at 2.1 million bpd; Cook Inlet crude oil production peaked in 1970 at more than 227,000 bpd. ●

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INLET GAS

day, 15.8%, from a May average of 8,296 mcf per day and down 44.4% from a June 2022 average of 12,558 mcf per day.

Hilcorp's Beaver Creek averaged 5,889 mcf per day in June, down 323 mcf per day, 5.2%, from a May average of 6,212 mcf per day and down 58.9% from a June 2022 average of 14,325 mcf per day.

Hilcorp's Cannery Loop averaged 5,432 mcf per day in June, down 89 mcf per day, 1.6%, from a May average of 5,521 mcf per day and down 21.1% from a June 2022 average of 6,881 mcf per day.

Hilcorp's Deep Creek averaged 3,808 mcf per day in June, up 83 mcf per day, 2.2%, from a May average of 3,725 mcf per day and up 18.8% from a June 2022 average of 3,205 mcf per day.

Hilcorp's Granite Point averaged 3,275 mcf per day in June, basically unchanged from a 3,274 mcf per day average in May

and down 5.6% from a June 2022 average of 3,470 mcf per day.

Vision Operating's North Fork averaged 2,311 mcf per day in June, down 67 mcf per day, 2.8%, from a May average of 2,378 mcf per day and down 24.4% from a June 2022 average of 3,058 mcf per day.

AIX's Kenai Loop averaged 2,122 mcf per day in June, up 113 mcf per day, 5.6%, from a May average of 2,010 mcf per day but down 40.5% from a June 2022 average of 3,568 mcf per day.

BlueCrest's Hansen averaged 1,580 mcf per day in June, up 131 mcf per day, 9%, from a May average of 1,449 mcf per day but down 6.5% from a June 2022 average of 1,691 mcf per day.

Hilcorp's Trading Bay averaged 1,049 mcf per day in June, down 230 mcf per day, 18%, from a May average of 1,278 mcf per day and down 9.3% from a June 2022 average of 1,156 mcf per day.

Hilcorp's Lewis River averaged 357 mcf per day in June, down 5 mcf per day, 1.3%, from a May average of 362 mcf per

day and down 49.1% from a June 2022 average of 702 mcf per day.

Amaroq's Nicolai Creek averaged 331 mcf per day in June, up 64 mcf per day, 24.1%, from a May average of 267 mcf per day but down 32.3% from a June 2022 average of 489 mcf per day.

Hilcorp's Nikolaevsk averaged 263 mcf per day in June, up 102 mcf per day, 63%, from a May average of 161 mcf per day but down 15% from a June 2022 average of 309 mcf per day.

Cook Inlet Energy's West McArthur River averaged 100 mcf per day in June,

down 6 mcf per day, 5.9%, from a May average of 106 mcf per day but up 133.9% from a June 2022 average of 43 mcf per day. CIE is a Glacier Oil and Gas company

CIE's Redoubt Shoal averaged 32 mcf per day in June, down 111 mcf per day, 77.6%, from a May average of 143 mcf per day and down 85.7% from a June 2022 average of 224 mcf per day.

Cook Inlet natural gas production peaked in the mid-1990s at more than 850,000 mcf per day.

—KRISTEN NELSON



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GEOTHERMAL SALE

1986 and in 2008.

The 2008 lease sale encompassed 36,057 acres in 16 tracts ranging from 250 to 2,560 acres, and that lease sale area overlaps the majority of this sale area.

Most recently, on March 12, 2021, the division awarded two noncompetitive geothermal prospecting permits: ADL 393958 to Raser Power Systems Inc. on three tracts within the sale area consisting of 7,666 acres and ADL 393962 to GeoAlaska LLC, on three tracts within the sale area consisting of 6,376 acres.

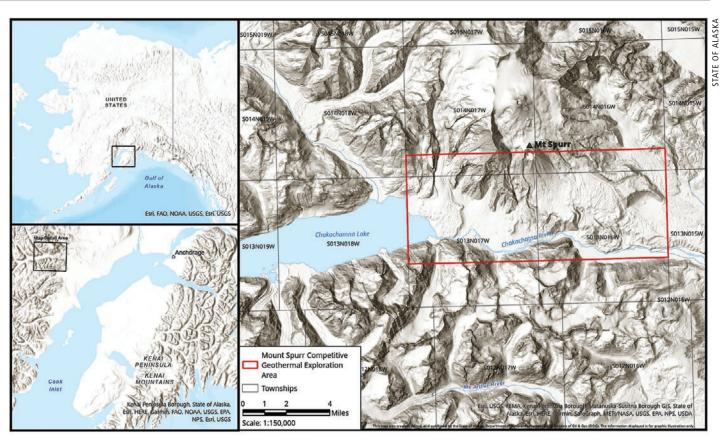
Under the authority of AS 38.5.181(c), if the land included within a prospecting permit is designated a competitive geothermal area during the permit term, the permittee must apply to convert its prospecting permit to a noncompetitive lease within 30 days after notification of the designation or forfeit the conversion privileges and the exclusive right to prospect.

GeoAlaska CEO and majority owner Paul Craig told Petroleum News on July 28 that the Anchorage-based company would definitely make some type of application to the division regarding its Mount Spurr prospecting permit, which division records show will expire on Sept. 1.

Statutory authority

The division is asserting DNR's authority under AS 38.05.181(b) and 11 AAC 84.720(d) to designate the acreage in the sale area.

Nottingham's decision is based on the history of commercial exploration interest in the area as well as the available geologic information indicating a sub-



stantial likelihood of commercial geothermal resources in the sale area.

The decision is bolstered, Nottingham wrote, by the financial incentives provided by the Inflation Reduction Act 2022. Signed into law on Aug. 16 by President Joe Biden, the bill includes a geothermal federal tax credit to a bonus rate of 30% until 2032.

Geothermal power plants are eligible for either a production tax credit for clean electricity at \$25 per megawatt hour for the first 10 years of operation of the facility, or an investment tax credit for clean electricity equal to 30% of the investment in a new geothermal facility.

Mount Spurr, elevation 11,070 feet, is one of the northernmost peaks in the

Aleutian Island-Alaska Peninsula volcanic arc. It is an active snow- and ice-covered stratovolcano.

The Mount Spurr sale area is in relatively close proximity to the Southcentral Alaska power grid (roughly 80 miles west of Anchorage), which makes the project area potentially viable as a geothermal energy production site.

Not scheduled

Mount Spurr Competitive Geothermal Lease Sale Number 4 has not yet been scheduled, Jonathan S. Schick, natural resource specialist with the division, told Petroleum News on July 28.

The sale area lies entirely within the Kenai Peninsula Borough. The state of

Alaska owns the subsurface mineral rights and the surface estate within the area.

A geothermal lease will grant a lessee the exclusive right, for a period of 10 years, to prospect for geothermal resources on state land included under the lease. The division's director has the discretion to renew the lease for an additional five-year term if the lessee is actively engaged in drilling operations.

A geothermal lease is valid for the duration of commercial production (AS 38.05.181(f), 11 AAC 84.720).

—KAY CASHMAN

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MICROREACTORS

refurbishing or disposing of the used unit, and with the disposal of the spent fuel.

The development of commercially available microreactors is still a work in progress. However, devices of this type are expected to become available within a few years and may have applications to support Alaska electricity supplies.

Nuclear regulation

As with all nuclear facilities in the United States, the U.S. Nuclear Regulatory Commission has regulatory authority over the reactors and would license the devices for use. However, unlike a conventional large-scale nuclear plant, which requires on-site NRC oversight and approval, NRC licensed microreactors could be installed under the regulatory authority of state and local governments.

Consequently, this year the state Legislature passed Senate Bill 177, a bill that enables local decision making over where to place reactors, rather than requiring the Alaska Legislature to approve reactor locations. The new DEC regulations supplement other regulations relating to the construction of nuclear power facilities in Alaska and are designed to ensure the safe siting of microreactor devices.

Potential source of affordable power

The state envisages the potential use of microreactors as a means of providing stably priced and affordable power in a number of situations in Alaska. Currently there is a plan to locate a microreactor at Eielson Airforce Base near Fairbanks, with an expectation of bringing that power generation facility into operation in 2027. The state anticipates the possibility of commercial microreactors becoming available for Alaska communities within a decade.

Alaska Center for Energy and Power, in its evaluation of microreactors, has previously suggested that the devices may be appropriate for installation in Alaska hub communities and at industrial sites. The use of microreactors in the Railbelt is also presumably a possibility.

"For rural Alaska villages that are now dependent on diesel power generation, power from nuclear microreactors can be a gamechanger that reduces both the cost for electricity and carbon emissions," said Gov. Mike Dunleavy. "I want all Alaskans to have access to 10 cent power by 2030. These regulations lay the groundwork to help accomplish that goal."

"It's incredibly important to engage with stakeholders early and often. Giving local governments the ability, or rather the requirement, to participate in the siting of these facilities will be vital to the success of microreactors in Alaska," said DEC Commissioner Jason Brune. "Microreactors also have the potential to bring rural resource development projects to fruition, bringing economic opportunity to rural Alaska while also protecting human health and the environment."

The regulations say that a microreactor must be sited at least 50 feet from the nearest property boundary, at least 100 feet

from a public right of way and at least 2,700 feet from the nearest residence. And the device must be at least 300 feet from any area designated for wildlife protection under various federal and state laws.

A facility cannot be located in state waters, except as permitted under the terms of the federal Clean Water Act and as allowed under the applicable state water laws. If a microreactor is to be placed within a 100-year floodplain, the owner or operator must demonstrate that a flood would not result in a radioactive hazard.

A microreactor cannot be located within a coastal area vulnerable to storm surges, nor within 500 feet of an area susceptible to erosion within twice the lifecycle of the device. Nor may a device be placed within a drinking water protection area without evidence provided to DEC that there is no potential adverse impact to the water.

—ALAN BAILEY

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Oil Patch Bits



Airgas strategically adds argon storage capacity

Airgas, an Air Liquide company, said recently that it has installed two strategically located argon storage nodes to further strengthen the argon supply chain for its customers, who use argon in automotive and aeronautical, electronic, manufacturing and metal fabrication applications.

The argon nodes were completed in late 2022/early 2023, and are in Moraine, Ohio, and Guilderland, NY. Both store enough argon to fill around 40 tanker trucks each. Airgas will be installing a third Argon node, which is expected to be operational by the end of this year.

These storage relays provide more flexibility in argon distribution by moving more Airgas product inventory closer to customers and were added in response to recent rail transportation delays and logistics challenges. Airgas continues to take action as a company to minimize supply chain disruption effects, safely enhance essential operations and meet customer needs throughout the country. For more information visit www.airgas.com.

GCI fiber in three more Aleutian schools, clinics

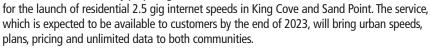
GCI said July 21 that its crews have successfully launched fiber-optic connectivity for the schools and clinics in King Cove, Sand Point and Akutan. This marks a major milestone in the company's AU-Aleutians fiber project, which will connect a dozen Aleutian, Alaska Peninsula and Kodiak Island communities to GCI's 6,000+ mile subsea fiber-optic network.

Bringing fiber to some of the state's most-remote education and healthcare facilities is a significant step toward closing the digital divide in rural Alaska.

"Imagine even one day without students having access to media-rich learning materials or

educational videos in the classroom or a doctor being unable to quickly exchange information with specialists in other parts of the state," said Vice President of GCI healthcare and education Annette Jones. "For most of us, it's unthinkable. Now, healthcare professionals and educators in these three communities will have ready access to the resources those in urban areas have long taken for granted."

GCI crews are currently preparing



"Our crews are working hard and we're on track to meet our end of 2023 deadline to launch 2.5 gig residential internet speeds to the residents of King Cove and Sand Point," said GCI Senior Project Manager Mike Bertsch. "Our crews are currently deploying fiber-optic cable throughout the thousands of feet of conduit installed in both communities."

The AU-Aleutians Fiber Project runs approximately 800 miles from Kodiak along the south side of the Alaska Peninsula and the Aleutians to Unalaska. The project, which currently delivers 2,500 Mbps residential internet speeds to Unalaska, will bring urban speeds, plans and pricing to King Cove, Unalaska, Sand Point, Akutan, Chignik Bay, Chignik Lake, Chignik Lagoon, Cold Bay, Larsen Bay, False Pass, Ouzinkie and Port Lions. For more information visit www.gci.com.

Companies involved in Alaska's oil and gas industry

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GEOTHERMAL DATA

majority owner told Petroleum News July 28.

"Everything is on the island now. There were no glitches. Everything is proceeding according to plan."

Craig said this summer's work program is "a huge step forward: If the data are favorable it opens the way forward to drill temperature gradient wells, which we hope to design to convert to production wells."

Anchorage-based GeoAlaska holds a geothermal prospecting permit (ADL 394080) for South Augustine Island. That permit was issued Aug. 3, 2022, effective Sept. 1, 2022. It is for 3,048 acres of the onshore portions of three tracts, ranging from 320 to 2,240 acres each.

All of Augustine Island is owned by the state of Alaska and lies within the Kenai Peninsula Borough.

Both the land use and geothermal prospecting permits were issued by Alaska's Division of Oil and Gas, which is part of the Alaska Department of Natural Resources.

The division said that if a commercially viable geothermal resource is identified, development could include construction of well pads, wells, pipelines, power plant, roads, personnel housing, transportation and maintenance facilities, and a subsea power cable.

24/7 baseload energy

Geothermal energy is generated by tapping into the earth's heat. That heat is brought to surface and is used to generate electricity. Heat from the earth is concentrated in geological formations adjacent to dormant volcanoes.

Geothermal power is considered a clean and sustainable energy source because geothermal energy does not emit greenhouse gases or pollutants, and it has the potential to provide a reliable source of energy.

The oldest geothermal power plant in the world — Larderello in Italy — began production in 1904 and continues to produce green electricity today.

Geothermal energy is one of the few renewable energy sources that can provide 24/7 baseload energy, as it can operate continuously, regardless of weather conditions or time of day.

Other renewable energy sources, such as solar, wind, tidal and hydro, are intermittent and dependent on seasonal occurrence and weather conditions.

In a March press release about Ignis H2 Energy Inc. acquiring a minority interest in GeoAlaska, Richard Calleri, CEO and owner of Ignis, was quoted as saying: "Currently, geothermal resources in Alaska are underdeveloped and provide little or no contribution to the state energy mix. Our aim, supported by our sister company Geolog, is to work with GeoAlaska to explore for and generate reliable, carbon zero baseload energy, that is sustainably produced and sensitive to local ESG policies and practices."

Drilling summer 2024

GeoAlaska plans to collect two types of geophysical data on and around its geothermal prospecting permit holdings. The land use permit authorizes the company to conduct a gravity survey and a magnetotelluric (MT) survey, involving approximately five square miles of 3D acquisition.

GeoAlaska is using surface equipment to non-intrusively measure subsurface geophysical structures.

The goal is to gather and interpret the geophysical data needed to reduce subsurface uncertainty and to objectively assess the presence of a working hydrothermal system.

If a geothermal reservoir is suggested by the geophysical data, then GeoAlaska will have the data it needs to finance the drilling of one or more temperature gradient wells on Augustine Island during summer 2024 to confirm subsurface hydrothermal parameters.

The resulting data and interpretations could result in carbon neutral energy production that will provide long term energy security for the Alaska Railbelt region, GeoAlaska has said.

Safety, environment first

Craig said GeoAlaska is "committed to protecting the environment at Augustine Island and will remove everything associated with its geophysical work" during demobilization.

"Other than the buildings and sheds installed by the AVO — structures GeoAlaska will not be using — Augustine Island is undeveloped. GeoAlaska will leave the island as pristine as we found it. Private parties ... visit Augustine Island occasionally. If we find any trash discarded by such visitors, we will remove it," he said.

The Alaska Volcano Observatory, or AVO, monitors Alaska's volcanoes with a focus on public health and safety.

GeoAlaska is continuously monitoring site conditions including any AVO alerts about changes in the status of the volcano. If Mount Augustine exhibits signs of anything other than its normal background state, the company will evacuate all personnel and will abandon the collection of geophysical data.

"Yes, we need the data we have set out to collect. But even more, we want everybody to return home safely and we want Augustine Island to be in the same condition — if not better — than when we arrived," Craig said.

Equipment, contractors

In GeoAlaska's collection of five square miles of data, it will use approximately 192 gravity survey stations and 29 MT stations. The gravity survey equipment consists of Lacoste & Romberg (L&R) Model-G gravity meters and survey grade GPS weighing less than 200 pounds in total.

The MT equipment includes the Geometrics Stratagem EH-5 AMT system, and associated cables, stainless steel electrodes, magnetic coils, a data logger and in-field controller weighing less than 160 pounds in total.

All survey equipment will be placed on the ground, with the exception of small rods measuring less than one centimeter in diameter — less than half an inch — that will be inserted into the ground at measuring sites and will be infilled with soil upon removal.

Logic Geophysics is the contractor collecting the MT and gravity data on behalf of GeoAlaska.

Pollux Aviation is providing the helicopter support.

Coldwater Alaska is providing the marine transportation. •

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OIL PRICES

August rushed in on a slightly somber note, with ANS down 31 cents Aug. 1 to close at \$87.81. WTI dropped 31 cents to close at \$81.37 and Brent shed 65 cents to close at \$84.91.

But those losses were miniscule compared to the end-of-month three-day run of gains that preceded.

ANS jumped \$1.12 July 31 to close at \$88.12, its high for the week, and for the month of July. WTI leapt \$1.22 to close at \$81.80 and Brent added 57 cents to close at \$86.56.

On July 28, ANS gained 75 cents to close at \$87.00, WTI added 49 cents to close at \$80.58 and Brent matched ANS at 75 cents gained — to close at \$84.99.

ANS jumped 97 cents July 27 to close at \$86.25; WTI surged \$1.31 to close at \$80.09 and Brent put up \$1.32 to close at \$84.24.

From Wednesday to Wednesday, ANS eked out a 51-cent gain from its July 26 close of \$85.29 to \$85.80 on Aug. 2.

Higher E&P spend nets lower volumes

Despite rising investments by explo-

ration and production companies, discovered volumes are falling to new lows, according to Rystad Energy.

Spending on conventional oil and gas exploration is growing and on pace to top \$50 billion this year — the highest spend since 2019, the consultancy said.

Rystad estimates show that in first half 2023, explorers found 2.6 billion barrels of oil equivalent, 42% below the first half 2022 total of 4.5 billion boe.

Fifty-five discoveries have been made, versus 80 in the first half 2022, Rystad said, adding that discoveries in 2023 have averaged 47 million boe, lower than the 56 million boe per discovery in first half 2022.

"The exploration and production industry is in a transitionary period, with many companies exercising increased caution and shifting their strategies to target more profitable and geologically better-understood regions" Rystad said. "This strategic shift and the failure of several critical high-potential wells are contributing to the precipitous drop."

A period of uncertainty

E&Ps are prioritizing offshore to capitalize on underexplored or frontier areas

through high-risk, higher-cost offshore developments, Rystad said. Offshore represented 95% of exploration spending year to date but only some two-thirds of discovered volumes.

"Upstream companies are facing a period of uncertainty; they are eager to capitalize on the increased demand for fossil fuels and find additional resources, but recent results have been lackluster," said Aatisha Mahajan, Rystad vice president of upstream research. "If exploration efforts continue to yield unimpressive results for the remainder of the year, 2023 could be a record-breaker for the wrong reasons."

Rystad said its research shows that 31 high-impact wells — designated using a tiering system based on project significance and production potential — are expected to be drilled this year.

To date, 13 have been completed, six are ongoing and 12 are in the pipeline.

Just four of the 13 completed wells encountered hydrocarbons, a 31% success rate.

The results of three wells are not yet

disclosed, while the remaining six found no reserves.

A smorgasbord of offshore fare

Offshore discoveries are balanced between ultra-deepwater, deepwater and shelf finds, but Rystad expects increased activity in second half 2023, especially ultra-deepwater, with projected growth of 27% over 2022 in terms of spud wells.

"The six majors — ExxonMobil, BP, Shell, TotalEnergies, Eni and Chevron — continue to play a critical role in global exploration, with a prominent share of exploration spending and global conventional discovered volumes," Rystad said adding that the six companies are expected to spend some \$7 billion this year on exploration, up 10% from 2022.

Exploration activity will likely gain momentum in the second half of 2023, with crucial exploration wells planned to be drilled, Rystad said. ●

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AOGCC APPEAL

said, as, without confidentiality for data, each company would wait to see if others would do the work first, knowing the information would become public and available to competitors.

The notice of appeal by AOGCC was filed July 26.

ConocoPhillips Alaska filed the case against AOGCC in May 2022 after AOGCC said it would release well data from the company's Willow area exploration wells following the 24-month con-

fidentiality period and the commissioner of the Alaska Department of Natural Resources refused to keep the data confidential for the duration of the leases.

A July 27 scheduling order calls for appellant AOGCC to file a mediation questionnaire Aug. 3, and to file its opening brief Sept. 25. The answering brief from ConocoPhillips Alaska, the appellee, is due Oct. 25. An optional reply from AOGCC is due 21 days after the answering brief.

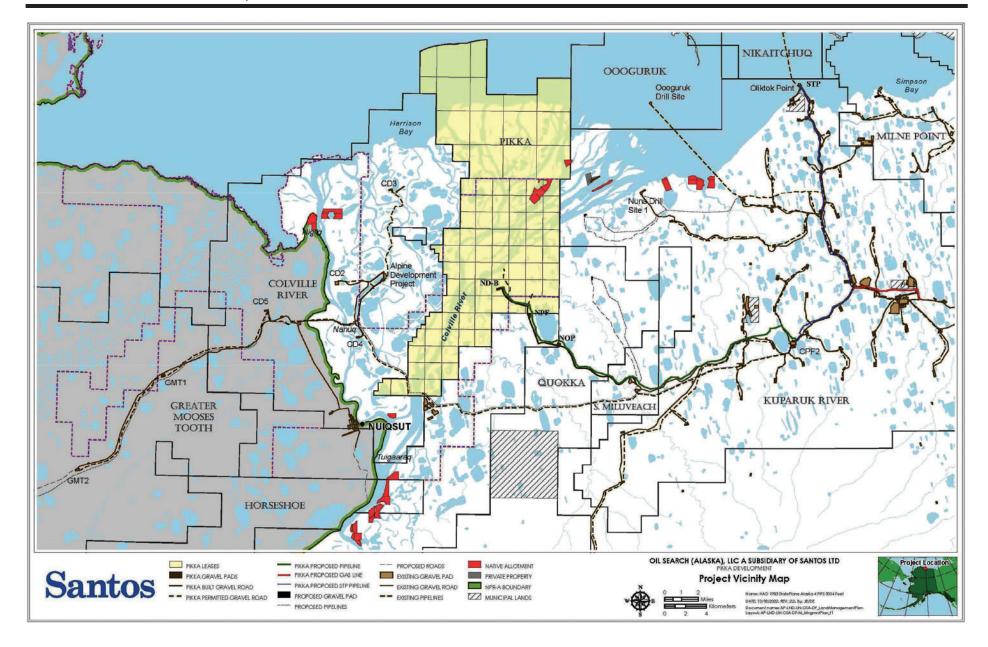
—KRISTEN NELSON

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PIKKA ON TRACK

progressing to meet the first production target of 80,000 barrels a day.

"Modules are under production in both Alaska and Canada. Worley is building the G&I facility in Anchorage and Nana is building the camps in Big Lake. The modular processing facility is being built in Canada. First modules are expected to arrive at Pikka before the end of the year," Santos told PN.

Pikka's processing facility is a modular design with two 40,000 barrel per day processing trains and is expandable in 40,000 bpd increments.

In the 2023 plan of development filed by Pikka operator OSA with Alaska's Division of Oil and Gas, OSA said the initial six to eight wells to be drilled from the existing ND-B gravel pad in the 23rd POD period from Feb. 1 through Jan. 31, 2024, will be completed, stimulated and flowed back. The flowback will only consist of enough time to clean up stimulation fluids and gather reservoir information (less than two weeks). Wells will be suspended after the flowback until the production facility is ready to accept oil. When asked if that was still the plan, Santos told PN "yes ... to maximize schedules the wells are being drilled while the production facilities are being built."

Accelerating first oil

In a Santos Investor Day briefing on Nov. 8, OSA President Bruce Dingeman said the Alaska team is looking for "opportunities to accelerate" first oil; in other words, to begin oil production earlier than mid-2026, which was the timeline OSA gave the Regulatory Commission of Alaska on Sept. 16.

Dingeman said OSA was "now proceeding to excavate well cellars" for the initial wells, which would speed things up.

In the emails with PN, Santos confirmed that some of the well cellars for the initial six to eight wells were "installed ... during this past winter construction period in preparation for wells to be drilled this year."

Cuttings disposal well

According to the 2023 POD, the first well drilled during the POD period would be a Class I underground injection control cuttings disposal well.

In response to whether that well, DW-02, had been drilled, Santos said, "yes, the first well ... was spud in June. The well will be used to dispose of drilling cuttings after they are processed through the grind and injection facility. The well has been completed and the rig (Parker 272) has moved to the next well."

When asked whether the following from the POD was still accurate, Santos said yes: "During the 2023 POD ... detailed engineering, procurement and construction will continue on the Phase 1 scope, along with planning activities for future phases."

OSA has said that although all Pikka wells will be extended reach drilling, ERD,

or ultra-ERD, earlier wells will be the shorter ones, which are less challenging to drill. Santos confirmed that's still accurate.

Target and reserves

In an April 18 pool rules hearing with the Alaska Oil and Gas Conservation Commission, OSA said its initial target at Pikka is the Nanushuk 3 reservoir, with 43 development wells planned at the ND-B pad; 41 into the Nanushuk oil pool and two into Alpine C. The company said the Alpine C wells were planned for later, and that they would apply then for pool rules for Alpine C.

In previous reports official reserves for Pikka Phase 1 were booked at 397 million barrels, including the two Alpine C wells, with an expected recovery factor, combined waterflood and WAG EOR, at about 37%.

The company told PN that was accurate but clarified that the 397 million figure was

"2P — proved + probable — reserves."

Expanding unit

In the April 18 AOGCC hearing commissioners said oil must be metered before it leaves the unit, which is west of the central North Slope, and noted that the Pikka production facility (still referred to as the Nanushuk Production Facility, or NPF, on maps) where the LACT meter would be located, was outside the unit boundary to the east. When asked about another location for the facility. OSA said there were constraints on where the facility could be located and said an application to expand the unit would include the pad location.

As of July 30, Santos said "an application has not been filed and a firm date has not been set for doing so." •

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