Petroleum news

page 2 ANS December output up 1.3% from November; Cook Inlet down 1.2%

Vol. 28, No. 6 • www.PetroleumNews.com *A weekly oil & gas newspaper based in Anchorage, Alaska* Week of February 5, 2023 • $2.50

Governor drops carbon M&M bills; could raise billions, help save PFDs

MIKE DUNLEAVY

On Jan. 27 Alaska Gov. Mike Dunleavy introduced Senate Bill (SB) 48, SB 49, House Bill (HB) 49 and HB 50, his Carbon Management and Monetization Bill Package, creating statutory and regulatory structures needed to capitalize on carbon markets. The package consists of two pieces of legislation focusing on a carbon offset program; and a carbon capture, utilization and storage (CCUS) program.

"In Alaska, we are blessed with the resources of today, but we're also blessed with the resources of tomorrow," Dunleavy said in a Jan. 27 press release.

"With support from the Legislature for our carbon management bill package, we'll change the conversation about new revenue. We've been told by some that we can generate revenue in the billions over 20 years just from our forest lands. This represents the means to fund services, lower the cost of living and improve our quality of life, to create wealth and billions of dollars in economic activity without taxing Alaskans

see **DUNLEAVY BILLS** *page 12*

AOGCC's rescheduled Alpine gas release hearing set for March 23

The Alaska Oil and Gas Conservation Commission has rescheduled a hearing, originally set for October, on the March 2022 release of natural gas from ConocoPhillips Alaska's Alpine CD1 drillsite.

The hearing will be March 23 at 10 a.m. at the commission's Anchorage offices. The audio call-in number is (907) 202-7104 conference ID 531 706 515#.

The commission said ConocoPhillips' investigative report identified the natural gas as originating from Colville River unit well WD-03 during drilling operations and "identified findings and causal factors for the gas release."

Hearing issues

The commission said it conducted an internal investigation into the gas release and called the hearing on several issues:

•Casing and cementing on WD-03 "as it relates to confining fluids to the wellbore, preventing the migration of fluids

see **ALPINE HEARING** *page 11*

Dates extended for work at 3 fields, including Narwhal, Hansen

The Alaska Oil and Gas Conservation Commission has approved date extensions for work at the Colville River, Cosmopolitan and West McArthur River units. The approvals were issued Jan. 31.

ConocoPhillips Alaska requested an extension of an enhanced recovery injection order for the Narwhal reservoir at the Colville River unit.

The commission said the enhanced recovery injection order was issued in December 2019 authorizing a pilot enhanced oil recovery injection project in the Narwhal reservoir in the Colville River unit, with an expiration date of 3 years after the beginning of injection activity unless it approved an extension.

The injection activity began in February 2020, AOGCC said, with the project planned to involve a full injection pattern — a central horizontal producer with a horizontal injector on either side. To date, only half the pattern is on injection and

see **DATE EXTENSIONS** *page 12*

GOVERNMENT

Willow advances

ConocoPhillips Alaska mobilization could start 'as soon as February'

By KAY CASHMAN
Petroleum News

EREC ISAACSON

The Interior Department's Bureau of Land Management released the final Supplemental Environmental Impact Statement for ConocoPhillips' Willow Project on Feb. 1. The company says the final SEIS "represents a major milestone in the permitting process" that began in 2018.

BLM said it may issue a Record of Decision no sooner than 30 days after the Environmental Protection Agency's Notice of Availability of the final SEIS is published to the Federal Register. BLM anticipates that the EPA's notice will be published on Friday, Feb. 3.

Erec Isaacson, president, ConocoPhillips Alaska, said "After nearly five years of rigorous regulatory review and environmental analysis, the National Environmental Policy Act (NEPA) process is almost complete and should be concluded without delay. ConocoPhillips looks forward to a final record of decision (ROD) and is ready to begin construction immediately after receiving a viable ROD and full authorization from all permitting agencies."

ConocoPhillips Alaska intends to immediately initiate gravel road construction once all necessary

see **WILLOW ADVANCES** *page 11*

EXPLORATION & PRODUCTION

Upcoming gas shortage

Assessment sees reduced volumes from proved resources of inlet gas after 2027

By KRISTEN NELSON
Petroleum News

Hilcorp Alaska, Southcentral's primary natural gas producer, began warning its utility customers last year that, while it could meet obligations under its existing contracts, it did not have firm natural gas supplies available beyond that.

A new study of Cook Inlet gas supplies by the Alaska Department of Natural Resources' Division of Oil and Gas, updating studies done since 2009, has found that while significant volumes of natural gas are "potentially available through additional investment and development in currently producing fields," there are only 820 billion cubic feet of proved gas reserves which are economic to develop. "The key uncertainties that drive the variability in these estimates are costs, production rates, and the rate of return companies require to invest in new projects," the report said.

With a current demand level of some 70 bcf per year volumes identified in the study can only satisfy the current demand until around 2027, the division found.

The report is authored by the division's John Burdick, a petroleum reservoir engineer, and Jhonny Meza, a commercial analyst.

The gas included in the study was limited to proved developed and undeveloped categories, the report says, which means "sanctioning of gas projects

see **GAS SUPPLY** *page 9*

FINANCE & ECONOMY

Changing energy world

BP Energy Outlook sees steady transition to low-carbon energy over 30 years

By ALAN BAILEY
For Petroleum News

SPENCER DALE

In its recently published Energy Outlook 2023 publication, BP expects a continuing transition to the increased use of low carbon energy sources over the next 30 years. The report anticipates the world moving into an energy system dominated by renewable energy, hydrogen-based fuels and biofuels.

BP Chief Economist Spencer Dale, in an introductory talk, commented that energy scenarios evaluated in this year's Energy Outlook are dominated by four overriding trends: the declining role for fossil fuels; the increasing role for renewable energies, in particular wind, solar and bioenergy; the increasing electrification of the energy system; and a growing role for low-carbon hydrogen.

However, Dale cautioned that, with existing oil and gas resources insufficient to ensure adequate energy resources during the decades-long energy transition, there is a continuing need for investment in upstream oil and gas. A focus on reducing hydrocarbon supplies rather than tackling the demand side of the energy equation introduces a risk of future energy shortages and higher energy prices, he said.

"The world needs to see a decisive and orderly

see **ENERGY OUTLOOK** *page 10*

● EXPLORATION & PRODUCTION

ANS December output up from November

At 498,184 bpd, North Slope crude, NGL volumes up half a percent from November, but down 1% from December '21; Cook Inlet down

By KRISTEN NELSON
Petroleum News

At 498,184 barrels per day, Alaska North Slope production for December was up half a percent, 2,582 bpd, from a November average of 495,602 bpd, but down 1% from a December 2021 average of 503,128 bpd.

Crude oil accounted for 87.9% of December ANS production, 437,906 bpd, up 0.5%, 2,037 bpd, from a November average of 435,869 bpd but down 0.8% from a December 2021 average of 441,594 bpd. Natural gas liquids accounted for 12.1% of December ANS production, 60,278 bpd, up 546 bpd, 0.9%, from a November average of 59,733 bpd but down 2% from a December 2021 average of 61,534 bpd.

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

Month-over-month increases

The largest month-over-month increase was at the Hilcorp North Slope-operated Prudhoe Bay, the Slope's largest field, which averaged 280,492 bpd in December, up 3,561 bpd, 1.3%, from a November average of 276,931 bpd, although down 1.3% from a December 2021 average of 284,294 bpd.

Crude accounted for an average of 224,016 bpd at Prudhoe in December, 79.9% of the field's volume, up 2,777 bpd, 1.3%, from a November average of 221,239 bpd but down 1.4% from a December 2021 average of 227,222 bpd.

NGLs averaged 56,475 bpd at Prudhoe in December, 20.1% of the field's volume, up 784 bpd, 1.4%, from a November average of 55,691 bpd but down 1.1% from a December 2021 average of 57,072 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.

ConocoPhillips Alaska's Colville River averaged 37,854 bpd in December, up 2,816 bpd, 8%, from a November average of 35,038, although down 9.5% from a December 2021 average of 41,833 bpd. In addition to oil from the main Alpine pool, Colville includes production from the Nanuq and Qannik oil pools.

Eni's Oooguruk averaged 6,825 bpd in December, up

see ANS OUTPUT page 5

Cook Inlet gas production up 5%

Natural gas production from Cook Inlet averaged 225,440 thousand cubic feet per day in December, up 10,854 mcf, 5.1%, from a November average of 214,586 mcf per day, and up 10.3% from a December 2021 average of 204,414 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.

In December, 79.5% of Cook Inlet gas was produced from six large fields (each accounting for 5% or more of current-month production) — Ninilchik, Beluga, North Cook Inlet, McArthur River, Kenai and Kitchen Lights — with 15 smaller fields accounting for the other 20.5%.

Hilcorp's Ninilchik averaged 48,149 mcf per day in December, 21.4% of inlet production, up 10,943

see INLET GAS page 5

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ON THE COVER

ENVIRONMENT & SAFETY

EXPLORATION & PRODUCTION

UTILITIES

Alaska-Mackenzie Rig Report

Alaska Rig Status

North Slope - Onshore

Rig Owner/Rig Type	Rig No.	Rig Location/Activity	Operator or Status
All American Oilfield LLC			
IDECO H-37	AAO 111	Stacked in MagTec's Yard	Available
Doyon Drilling			
Dreco 1250 UE	14 (SCR/TD)	Milne Point, MPU B-37	Hilcorp Alaska LLC
Dreco 1000 UE	16 (SCR/TD)	Standby	Available
Dreco D2000 Uebd	19 (SCR/TD)	Kuparuk, 3S-701	ConocoPhillips
AC Mobile	25	Alpine, MT7-97	ConocoPhillips
OIME 2000	141 (SCR/TD)	Standby	Available
	142 (SCR/TD)	Alpine, Standby	ConocoPhillips
TSM 700	Arctic Fox #1	Standby	ConocoPhillips
ERD	26	Alpine, CD2-361	ConocoPhillips
Hilcorp Alaska LLC			
Rotary Drilling	Innovation	Prudhoe Bay, Z Pad	Hilcorp Alaska LLC
Nabors Alaska Drilling			
AC Coil Hybrid	CDR-2 (CTD)	Prudhoe Bay, L4 Pad	Hilcorp Alaska LLC
AC Coil	CDR-3 (CTD)	Kuparuk	ConocoPhillips
Dreco 1000 UE	7-ES (SCR-TD)	Kuparuk	ConocoPhillips
Dreco 1000 UE	9-ES (SCR/TD)	Stacked	Available
Oilwell 2000 Hercules Emsco Electro-hoist	16-E (SCR/TD)	Stacked	Brooks Range Petroleum
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 Services			
Superior 700 UE	1 (SCR/CTD)	Deadhorse	Available
Superior 700 UE	2 (SCR/CTD/TD)	Alkaid 2 well	Great Bear Pantheon
Ideco 900	3 (SCR/TD)	Deadhorse	ASRC
Rig Master 1500AC	4 (AC/TD)	Oliktok Point	ENI
Parker Drilling Arctic Operating LLC			
NOV ADS-10SD	272	Deadhorse Yard, undergoing maintenance/upgrades	Santos
NOV ADS-10SD	273	Deadhorse, Stacked	Available

North Slope - Offshore

Doyon Drilling			
Sky top Brewster NE-12	15 (SCR/TD)	Spy Island SD37-DSP1	ENI
Nabors Alaska Drilling			
OIME 1000	19AC (AC-TD)	Oooguruk	ENI

Cook Inlet Basin – Onshore

BlueCrest Alaska Operating LLC			
Land Rig	BlueCrest Rig #1	Stacked	BlueCrest Alaska Operating LLC
Glacier Oil & Gas	Rig 37	West McArthur River Unit Workover	Glacier Oil & Gas
Hilcorp Alaska LLC			
TSM-850	147	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
	Rig 51	Steelhead Platform, Stacked	Hilcorp Alaska LLC
	Rig 56	Monopod A-13, stacked	Hilcorp Alaska LLC
Nordic Calista Services			
Land Rig	36 (TD)	Kenai, stacked	Available
Spartan Drilling			
Baker Marine ILC-Skidoff, jack-up		Spartan 151, Tyonek Platform	Hilcorp Alaska LLC
Glacier Oil & Gas			
National 1320	35	Osprey Platform, activated	Glacier Oil & Gas

Mackenzie Rig Status

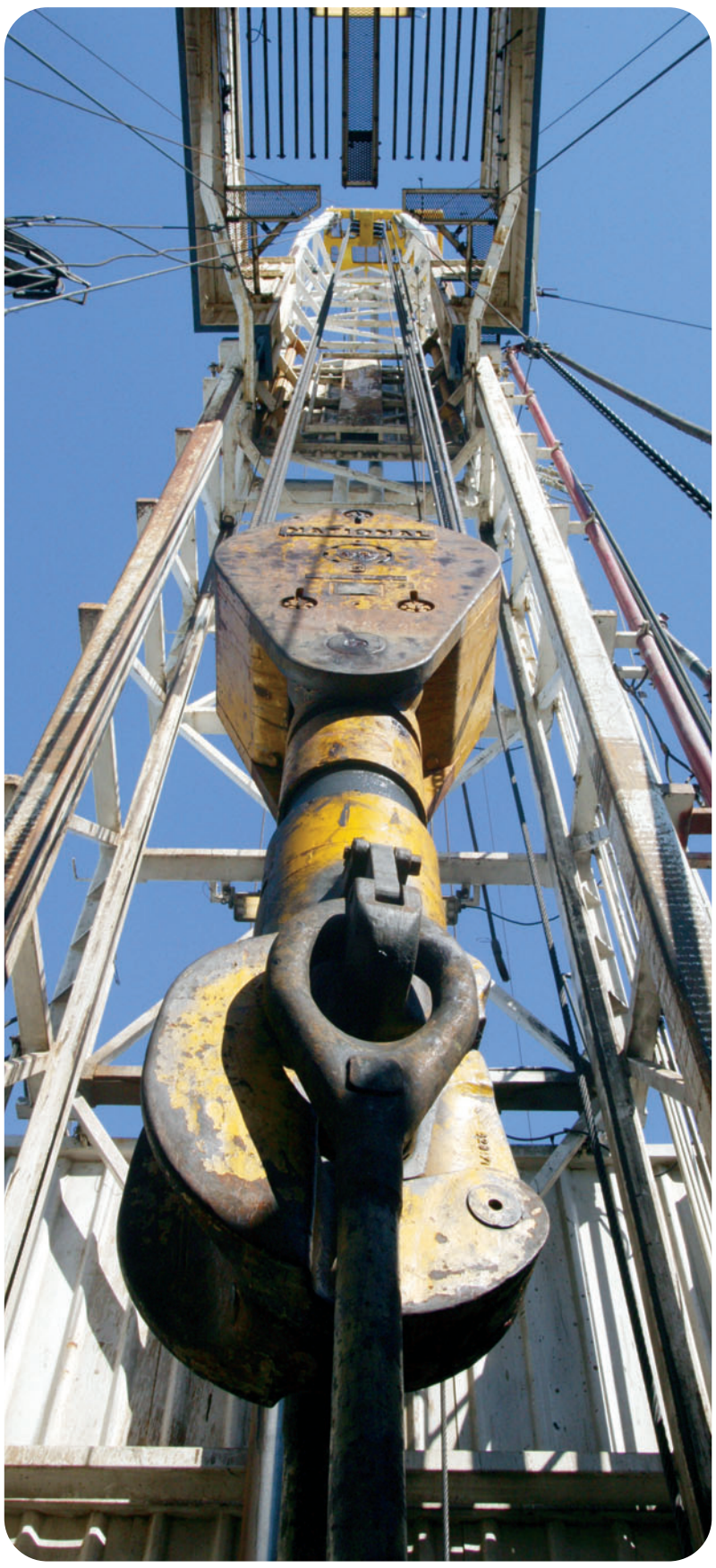
Canadian Beaufort Sea

SDC Drilling Inc.		
SDC Mobile Offshore Drilling Unit Rig #2	Set down at Roland Bay	Available

The Alaska-Mackenzie Rig Report as of February 1, 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



JUDY PATRICK

Baker Hughes North America rotary rig counts*

	Jan. 27	Jan. 20	Year Ago
United States	771	771	610
Canada	247	241	217
Gulf of Mexico	13	16	18

Highest/Lowest		
US/Highest	4530	December 1981
US/Lowest	244	August 2020

*Issued by Baker Hughes since 1944

EXPLORATION & PRODUCTION

Lower, upper foothills areas remain closed

Both lower and upper foothills areas on the North Slope remain closed to tundra travel, the Alaska Department of Natural Resources' Division of Mining, Land and Water said Jan. 27.

All tundra opening areas were sampled Jan. 26, the division said, and staff found that snow depths have improved across the North Slope, but with "significant wind transport evident" and "large drifts along with scour" in known windy areas.

"Wind slab strengthened slightly at most monitoring stations, including the Upper Foothills."

The Western Coastal Area opened Dec. 16 and the Eastern Coastal Area opened Jan. 4.

Both the Lower Foothills Area and the Upper Foothills Area remain closed to off-road travel.

In the Lower Foothills Area the division said average snow depths have increased, but "typical snow depth patterns have reestablished this season and two sites that are most often the last to meet the required 9 inches, are below that standard." The division did say that soil temperatures at all monitoring stations have reached the required minus 5 degrees C at a depth of 30 centimeters.

In the Upper Foothills Area, the division said snow measurements have increased moderately at all monitoring stations, but one station remains below the required 9-inch opening criteria and one station remains slightly above the required -5 degrees C.

Division staff will return to the North Slope in early to mid-February to continue monitoring.

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Petroleum News and its supplement, Petroleum Directory, are owned by Petroleum Newspapers of Alaska LLC. The newspaper is published weekly. Several of the individuals listed above work for independent companies that contract services to Petroleum Newspapers of Alaska LLC or are freelance writers.

OWNER: Petroleum Newspapers of Alaska LLC (PNA)
Petroleum News (ISSN 1544-3612) • Vol. 28, No. 6 • Week of February 5, 2023

Published weekly. Address: P.O. Box 231647 Anchorage, AK 99523-1647
Subscription prices in U.S. — $118.00 1 year, $216.00 2 years
Canada — $206.00 1 year, $375.00 2 years
Overseas (sent air mail) — $240.00 1 year, $436.00 2 years

"Periodicals postage paid at Anchorage, AK 99502-9986."
POSTMASTER: Send address changes to Petroleum News, P.O. Box 231647 Anchorage, AK 99523-1647.

UTILITIES

Chugach Electric board position open

Applications are being accepted for a Chugach Electric Association Inc. board vacancy due to the resignation of Director Erin Whitney.

She is taking a federal position as director of the Arctic Energy Office for the U.S. Department of Energy.

Whitney was first elected to the board in May 2021. She served as vice chair of the Governance Committee and was a member of the Operations Committee.

As a result of Whitney's resignation, Chugach has an immediate vacancy on its seven-member board.

Chugach members who meet qualifications and are interested in being appointed to the board must submit a letter of intent, an application form, an attestation of candidate qualifications form, and a resume by 5 p.m. on Feb. 9.

Candidates will need to indicate on the application form whether they are also applying for one of three board seats open in the May 2023 election.

Links to the application forms are available on the Annual Meeting & Election Page at chugachelectric.com. Documents can be emailed to Julie_hasquet@chugachelectric.com.

Following the application deadline, the board will interview candidates. At the Feb. 22 regular board meeting, the board will then appoint a Chugach member who meets the qualifications as specified in Article IV, Section 3 of the Chugach bylaws.

The appointee will serve until the seat is filled in the May 2023 election.

If you have questions regarding the application process, please call (907) 762-4489.

—PETROLEUM NEWS

EXPLORATION & PRODUCTION

Vision's North Fork Unit POD approved

On Jan. 25 Alaska's Division of Oil and Gas notified Mark Landt of Gardes Holdings Inc. that the proposed 2023 North Fork Unit Plan of Development from Vision Operating LLC had been approved. The POD period runs from April 1, 2023, through March 31, 2024.

The approval was signed by division Director Derek Nottingham.

The North Fork Unit, or NFU, was formed as a federal unit on May 27, 1965. Both the U.S. Department of Interior, Bureau of Land Management and the state of Alaska co-managed the NFU, which was originally comprised of two state and two federal oil and gas leases totaling 58,113.40 acres.

In 2006, BLM waived its administration rights and transferred its NFU leases to the state of Alaska.

North Fork was first brought online in 2011 by a Bill Armstrong joint venture, even though the field was first unitized by Standard Oil Co. of California in 1965.

Currently, the NFU is comprised of five state oil and gas leases totaling 2,601.84 acres, and one Participating Area, or PA, the NFU Gas Pool 1 PA, or GPA.

Bob Gardes of Lafayette, Louisiana, entered Alaska in September 2020, interested in bypassed gas.

On May 1, 2021, Gardes-owned Vision Operating took over as operator of the North Fork unit, which leases are held by another Gardes company, Vision Resources LLC.

Production from the NFU has averaged 3,129.12 thousand cubic feet of natural gas per day from Dec. 1, 2021, through November 2022, representing a 2% year over year increase.

During the 2023 POD period, Vision plans to maintain production and evaluate opportunities to increase production, including well workovers, additional perforations or drilling new wells.

Additionally, during the 2023 POD period, Vision will apply to expand the GPA.

New wells in the unit will depend on favorable economic conditions. If Vision determines economic conditions warrant drilling an additional well a POD amendment will be required for approval by the director before operations begin, the division's decision said.

—KAY CASHMAN

continued from page 2

ANS OUTPUT

447 bpd, 7%, from a November average of 6,387 bpd and up 36.9% from a December 2021 average of 4,987 bpd.

Savant Alaska's Badami field averaged 504 bpd in December, up marginally from a November average of 502 bpd, but down 47.7% from a December 2021 average of 964 bpd. Savant is a Glacier Oil and Gas company.

Month-over-month decreases

The largest month-over-month decrease was at ConocoPhillips' Greater Mooses Tooth in the National Petroleum Reserve-Alaska, which averaged 12,698 bpd in December, down 2,758 bpd, 17.8%, from a November average of 15,456, although up 74% from a December 2021 average of 7,298 bpd. The second drillsite at GMT, GMT2, came online Dec. 12, 2021. In December 2022 GMT2 accounted for 82.3% of GMT production, down from a peak of 96% of the field's production in March. The drillsites produce from different reservoirs, GMT1 from the Lookout oil pool and GMT2 from the Rendezvous oil pool.

ConocoPhillips-operated Kuparuk River averaged 81,773 bpd in December, down 504 bpd, 0.6%, from a November average of 82,276 bpd and down 3.8% from a December 2021 average of 85,036 bpd. In addition to the main Kuparuk pool, Kuparuk produces from satellites at Tabasco and Tarn, and from West Sak.

Eni's Nikaitchuq averaged 16,904 bpd in December, down 297 bpd, 1.7%, from a November average of 17,201 bpd and up 0.9% from a December 2021 average of 16,753 bpd.

Hilcorp Alaska's Endicott averaged 6,608 bpd in December, down 285 bpd, 4.1%, from a November average of 6,893 bpd and down 2.4% from a December 2021 average of 6,772 bpd. Crude averaged 5,837 bpd, 88.3% of the field's December production, down 286 bpd, 4.7%, from a November average of 6,123 bpd and up 0.4% from a December 2021 average of 5,812 bpd. Endicott NGLs averaged 770 bpd in December, 11.7% of the field's volume, unchanged from November and down 19.8% from a December 2021 average of 960 bpd.

Hilcorp Alaska-operated Point Thomson averaged 8,228 bpd in December, down 180 bpd, 2.1%, from a November average of 8,408 bpd and down 11.7% from a December 2021 average of 9,316 bpd.

Hilcorp's Milne Point averaged 39,329 bpd in December, down 161 bpd, 0.4%, from a November average of 39,490 bpd and up 4.7% from a December 2021 average of 37,565 bpd.

Hilcorp's Northstar averaged 6,969 bpd in December, down 58 bpd, 0.8%, from a November average of 7,028 bpd and down 16.1% from a December 2021 average of 8,330 bpd. Northstar crude averaged 3,937 bpd in December, 56.5% of the field's volume, up 180 bpd, 4.8%, from a November average of 3,757 bpd but down 18.1% from a December 2021 average of 4,809 bpd. Northstar NGLs averaged 3,033 bpd in December, 43.5% of the field's volume, down 238 bpd, 7.3%, from a November average of 3,271 bpd and down 13.4% from a December 2021 average of 3,501 bpd.

continued from page 2

INLET GAS

mcf per day, 29.4%, from a November average of 37,206 mcf per day and up 56.2% from a December 2021 average of 30,830 mcf per day.

The Hilcorp-operated Beluga field (majority owner Chugach Electric Association) averaged 40,023 mcf per day in December, 17.8% of inlet production, up 7,062 mcf per day, 21.4%, from a November average of 32,961 mcf per day and up 39.7% from a December 2021 average of 28,645 mcf per day.

Hilcorp's North Cook Inlet averaged 39,977 mcf per day in December, 17.7% of inlet production, down 1,494 mcf per day, 3.6%, from a November average of 41,471 mcf per day and up 23.3% from a December 2021 average of 32,414 mcf per day.

Hilcorp's Kenai field averaged 23,411 mcf per day in December, 10.4% of inlet production, down 181 mcf per day, 0.8%, from a November average of 23,592 mcf per day and down 18.8% from a December 2021 average of 28,819 mcf per day.

Hilcorp's McArthur River averaged 16,296 mcf per day, 7.2% of inlet production, down 131 mcf per day, 0.8%, from a November average of 16,427 mcf per day and down 19.6% from a December 2021 average of 20,277 mcf per day.

Furie's Kitchen Lights averaged 11,431 mcf per day in December, 5.1% of inlet production, up 84 mcf per day, 0.7%, from a November average of 11,347 mcf per day and down 3.9% from a December 2021 average of 11,900 mcf per day.

Smaller fields range from those producing as much as 4.5% of inlet gas in December to those producing less than 1%.

Hilcorp's Beaver creek averaged 10,193 mcf per day in December, up 377 mcf, 3.8%, from a November average of 9,815 mcf per day and up 20.3% from a December 2021 average of 8,475 mcf per day.

Hilcorp's Ivan River averaged 7,351 mcf per day in December, down 2,379 mcf, 24.5%, from a November average of 9,730 mcf per day but up 2.3% from a December 2021 average of 7,183 mcf per day.

Hilcorp's Cannery Loop averaged 6,505 mcf per day in December, down 255 mcf, 3.8%, from a November average of 6,761 mcf per day and up 63% from a December 2021 average of 3,990 mcf per day.

Hilcorp's Swanson River averaged 5,735 mcf per day in December, down 2,174 mcf, 27.5%, from a November average of 7,909 mcf per day and down 52.9% from a December 2021 average of 12,172 mcf per day.

Hilcorp's Deep Creek averaged 4,256 mcf per day in December, down 96 mcf, 2.2%, from a November average of 4,352 mcf per day but up 34.8% from a December 2021 average of 3,157 mcf per day.

Hilcorp's Granite Point averaged 3,326 mcf per day in December, down 38 mcf, 1.1%, from a November average of 3,364 mcf per day and down 5.8% from a December 2021 average of 3,532 mcf per day.

Vision Operating's North Fork averaged 3,068 mcf per day, down 65 mcf, 2.1%, from a November average of 3,133 mcf per day and down 6.9% from a December 2021 average of 3,296 mcf per day.

AIX's Kenai Loop averaged 2,089 mcf per day in December, down 930 mcf, 30.8%, from a November average of 3,019 mcf per day and down 49.3% from a December 2021 average of 4,118 mcf per day.

BlueCrest's Hansen field at Cosmopolitan averaged 1,751 mcf per day in December, up 277 mcf, 18.8%, from a November average of 1,474 mcf per day but down 6.9% from a December 2021 average of 1,881 mcf per day.

Hilcorp's Trading Bay averaged 771 mcf per day in December, up 96 mcf, 14.3%, from a November average of 675 mcf per day but down 50.4% from a December 2021 average of 1,556 mcf per day.

Hilcorp's Lewis River averaged 492 mcf per day in December, down 58 mcf, 10.5%, from a November average of 550 mcf per day and down 51.8% from a December 2021 average of 1,022 mcf per day.

Hilcorp's Nikolaevsk averaged 239 mcf per day in December, down 8 mcf, 3.3%, from a November average of 247 mcf per day and down 15.6% from a December 2021 average of 283 mcf per day.

Amaroq's Nicolai Creek averaged 167 mcf per day in December, down 182 mcf, 52.3%, from a November average of 349 mcf per day and down 37.6% from a December 2021 average of 267 mcf per day.

Cook Inlet Energy's Redoubt Shoal averaged 125 mcf per day in December, down 10 mcf, 7.1%, from a November average of 136 mcf per day and down 43.6% from a December 2021 average of 222 mcf per day. CIE is a Glacier Oil and Gas company.

CIE's West McArthur River averaged 86 mcf per day in December, up 16 mcf, 23.4%, from a November average of 70 mcf per day and up 50.9% from a December 2021 average of 57 mcf per day.

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

—KRISTEN NELSON

Cook Inlet down 1.2%

Cook Inlet production averaged 8,792 bpd in December, 99.2% crude and 0.8% NGLs, down 106 bpd, 1.2%, from a November average of 8,898 bpd and down 8.7% from a December 2021 average of 9,629 bpd.

Cook Inlet Energy's West McArthur River averaged 388 bpd in December, up 53 bpd, 15.9%, from a November average of 335 bpd and up 34.8% from a December 2021 average of 288 bpd. CIE is a Glacier Oil and Gas company.

Hilcorp's Trading Bay averaged 702 bpd in December, up 34 bpd, 5.1%, from a November average of 668 bpd but down 22.4% from a December 2021 average of 905 bpd.

BlueCrest's Hansen, at the Cosmopolitan unit, averaged 744 bpd in December, up 3 bpd, 0.5%, from a November average of 741 bpd but down 9.8% from a December 2021 average of 825 bpd.

Hilcorp's Granite Point averaged 2,348 bpd in December, level with its November average, but down 8.3% from a December 2021 average of 2,560 bpd.

Other fields had month-over-month declines.

CIE's Redoubt Shoal averaged 521 bpd in December, down 72 bpd, 12.1%, from a November average of 593 bpd and down 51% from a December 2021 average of 1,062 bpd.

Hilcorp's Swanson River averaged 746 bpd in December (662 bpd of crude and 84 bpd of NGLs), down 51 bpd (all crude), 6.5%, from a November average of 798 bpd and down 1.6% from a December 2021 average of 758 bpd.

Hilcorp's McArthur River averaged 2,852 bpd in December, down 36 bpd, 1.2%, from a November average of 2,887 bpd but up 6.7% from a December 2021 average of 2,674 bpd.

Hilcorp's Beaver Creek averaged 506 bpd in December, down 22 bpd, 4.1%, from a November average of 528 bpd and down 9.2% from a December 2021 average of 558 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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EXPLORATION & PRODUCTION

US rotary rig count unchanged at 771

The Baker Hughes' U.S. rotary drilling rig count was 771 on Jan. 27, unchanged from the previous week and up 161 from 610 a year ago.

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 count peaked at 4,530 in 1981.

The count was in the low 790s at the beginning of 2020, where it remained through mid-March, 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 Jan. 27 count includes 609 rigs targeting oil, down four from the previous week and up 114 from 495 a year ago, with 160 rigs targeting natural gas, up by four from the previous week and up 45 from 115 a year ago, and two miscellaneous rigs, unchanged from the previous week and up by two from a year ago.

Forty-five of the rigs reported Jan. 27 were drilling directional wells, 706 were drilling horizontal wells and 21 were drilling vertical wells.

The New Mexico rig count (105) was up by three from the previous week.

North Dakota (41) was up two rigs week over week and Pennsylvania (22) was up by a single rig.

Louisiana (61) was down by three rigs and West Virginia (16) was down one rig.

Rig counts in other states were unchanged from the previous week: Alaska (8), California (5), Colorado (20), Ohio (14), Oklahoma (64), Texas (380), Utah (12) and Wyoming (20).

Baker Hughes shows Alaska with eight rotary rigs active Jan. 27, unchanged the previous week and up by two from a year ago, when the state's rig count stood at six. All eight of the Alaska rigs were onshore, unchanged from the previous week. There were no offshore rigs active in the state.

The rig count in the Permian, the most active basin in the country, was up by three from the previous week at 357 and up by 64 from 293 a year ago.

—KRISTEN NELSON

● ALTERNATIVE ENERGY

NRC certifies first small nuclear reactor

NuScale Power's 50-megawatt design advanced light-water reactor can be selected by US companies; rule effective late February

By JENNIFER MCDERMOTT
Associated Press

The U.S. Nuclear Regulatory Commission has certified the design for what will be the United States' first small modular nuclear reactor.

The rule that certifies the design was published Jan. 19 in the Federal Register. It means that companies seeking to build and operate a nuclear power plant can pick the design for a 50-megawatt, advanced light-water small modular nuclear reactor by Oregon-based NuScale Power and apply to the NRC for a license.

It's the final determination that the design is acceptable for use, so it can't be legally challenged during the licensing process when someone applies to build and operate a nuclear power plant, NRC spokesperson Scott Burnell said Jan. 20. The rule becomes effective in late February.

New design

The U.S. Energy Department said the newly approved design "equips the nation with a new clean power source to help drive down" planet-warming greenhouse gas emissions.

It's the seventh nuclear reactor design cleared for use in the United States. The rest are for traditional, large, light-water reactors.

Diane Hughes, NuScale's vice president of marketing and communications, said the design certification is a historic step forward toward a clean energy future and makes the company's VOYGR power plant a near-term deployable solution for customers. The first small modular reactor design application package included over 2 million pages of supporting materials, Hughes added.

However, David Schlissel at the Ohio-based Institute for Energy Economics and Financial Analysis expressed concerns about the costs. Schlissel, who has studied the history of the nuclear power industry and the finances of the NuScale project, expects they will continue to go up, which could limit how many NuScale reactors are built. He said he thinks they're not competitive in price with renewables and battery storage.

Hughes said from wind and solar to hydrogen and nuclear, energy projects have seen cost increases due to changing financial market dynamics, interest rate hikes and inflationary pressures on the sector's supply chain that have not been seen in decades. NuScale's VOYGR power plant remains a cost competitive source of reliable, affordable and carbon-free energy, she added.

Emerging answer

For many, nuclear power is emerging as an answer as states and countries transition

see **REACTOR CERTIFIED** *page 11*

E & P

Oil Search files fill application

PETROLEUM NEWS

Oil Search (Alaska) has filed an application with the U.S. Army Corps of Engineers Alaska District to discharge fill into wetlands for support facilities for the company's proposed seawater treatment plant, part of the company's proposed Pikka development. The work described in the application is at several sites some 32 miles west of Deadhorse, Alaska, the Corps said.

The application covers the following discharges:

•7,900 cubic yards of fill into 1.2 acres of wetlands for equipment crossings for the sea water treatment plant, STP.

•8,800 cubic yards of fill into 0.4 acre of wetlands for STP road pipeline crossings.

•1,600 cubic yards of fill into 0.2 acre of wetlands for STP pigging platform at Spine Road Y.

•3,000 cubic yards of fill into 0.5 acre of wetlands for gas spur pipeline equipment crossings.

•4,400 cubic yards of fill into 0.4 acre of wetlands for gas spur pipeline parking pad/platforms at DS-1C Road.

•1,500 cubic yards of fill into 0.2 acre of wetlands for 30 STP vertical support members.

•1,840 cubic yards of fill into 0.1 acre of wetlands for 460 gas spur pipeline VSMs.

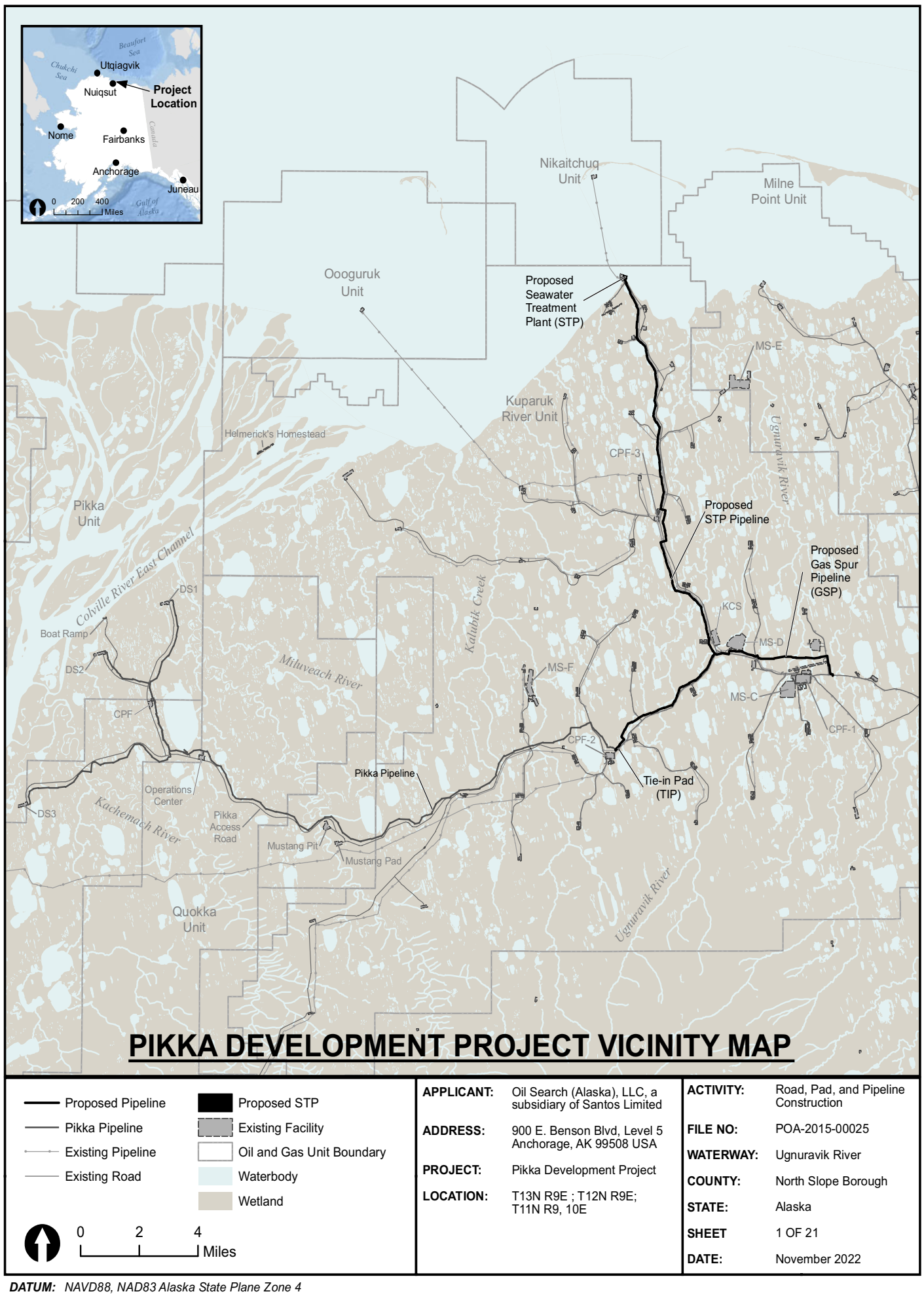
•170 cubic yards of fill into 0.1 acre of wetlands for bonding cable trenching.

The Corps said the total proposed discharge is 29,210 cubic yards into 3.1 acres of wetlands.

Purpose of the seawater treatment plant "is to provide a long-term supply of fuel gas and sea water that is reliable and in sufficient quantity to allow Oil Search (Alaska) to optimize production efficiency from the Pikka Development project," the Corps said.

This would be a modification of the original permit, POA-2015-00025, issued under the Nanushuk project environmental impact statement. The Corps issued a public notice of the application Jan. 31; comments are due March 2. ●

US ARMY CORPS OF ENGINEERS



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GAS SUPPLY

that are currently under evaluation for their commercial viability is an important contributor to meeting the demand of gas when the economic production in this study falls below 70 bcf per year."

The report stresses that it is not intended as a prediction of Cook Inlet gas supply and demand, but "serves as a tool for understanding Cook Inlet's capacity to meet natural gas demand under present conditions and assumptions."

Fields and pools

The report looks at 38 currently or historically producing gas fields in Cook Inlet and uses data publicly available from the Alaska Oil and Gas Conservation Commission. Within those 38 fields, the report evaluated 90 pools, with historical production considered through the end of 2021.

The report assumes a steady drilling pace of 15 development wells per year for the remainder of the decade, based on 2009-2019 drilling, with years beyond 2019 not considered because the drilling pace then was impacted by the COVID-19 pandemic and the market crash which resulted.

60 years of production

Cook Inlet has been in production for more than 60 years, and in a Jan. 30 presentation to the Senate Resources Committee, Burdick and Meza presented a slide showing the share of production from wells by vintage which illustrates the importance of continuous development drilling.

In 2005, 69% of gas produced was from wells drilled prior to 2000, while by 2021, that percentage had dropped to 20%. Exploration has led to 13 new oil and gas units coming online and more than 450 wellbores drilled since 2000, as noted in a slide from that presentation.

DNR Commissioner-designee John Boyle said in introductory comments that natural gas is a finite resource. The questions, he said, are whether the natural gas supply will increase or demand decrease, and he noted the potential for additional gas along with other options such as liquefied natural gas imports.

Boyle also said, as does the report, that another factor to be considered is the health of the service and support industry in Cook Inlet, with reduced production providing fewer opportunities for the support industry.

The report said among the issues it does not address is the basin-wide effect that "some fields reaching the end of their economic lives could have on the service industry. A fewer number of surviving gas-producing fields could lead to the downsizing of the service industry in terms of providers or the availability of rigs."

Economics

The 2022 forecast is a technical assessment using decline curve analysis to estimate volumes from currently producing fields. Discovered resources — requiring more favorable commercial conditions for approval — and undiscovered resources were not included in the forecast.

The technical forecast was subject to economic analysis including such factors as the unlikelihood that companies will operate fields as a sustained loss and that if marginal revenue does not cover marginal expenditures, the operator is likely to stop production and any remaining technically recoverable gas will not be available to the market.

The report also says that where fields share facilities, such as pipelines, one field closing down for economic reasons may have a ripple effect, increasing pipeline costs for the remaining field and causing that field to also become uneconomic to produce.

Potential

The study does not consider undiscovered gas and "does not encompass all the gas that remains in Cook Inlet. Additional supplies may come from sources not considered in this report: new development in some smaller existing fields, currently unidentified prospects, added compression that increases ultimate recovery, and unconventional resources."

A slide in the presentation to legislators noted that both the U.S. Geological Survey and the federal Bureau of Ocean Energy Management have released estimates of undiscovered, technically recoverable gas in Cook Inlet — USGS in 2011 estimating a mean of 13.7 trillion cubic feet of conventional gas and BOEM also in 2011 assessing 1.2 trillion cubic feet in the southern Cook Inlet outer continental shelf area. Undiscovered resources are not considered in the division's study.

In state waters, BlueCrest has discovered natural gas offshore at Cosmopolitan, but, Senate Resources Chair Cathy Geissel said in the hearing, developing that gas would require installation of a platform. ●

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Petroleum news

Oil Patch Bits

Coffman project manager earns certification

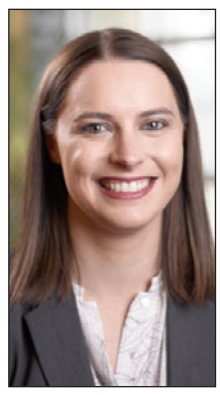
Coffman Engineers Inc. said Jan. 25 that it is pleased to announce Michelle McGinnis' achievement on earning her project management professional certificate. She is a project manager in Coffman's corrosion control engineering department.

McGinnis joined Coffman in 2014 and has provided project controls and management services for numerous projects in the oil and gas, commercial construction and hospitality industries. Apart from being a NACE certified cathodic protection technician, McGinnis role as a project manager includes overseeing, reviewing and drafting project documentation, as well as overseeing company-wide project controls activities. She manages projects throughout the entire cycle of the project, including initiating, planning, executing, monitoring and closing phases of each project. Throughout the project McGinnis manages the project scopes, budgets, forecasts, schedules and contracts. McGinnis is also the corporate safety coordinator for Coffman, where she is part of a corporate safety committee that oversees safety aspects of the company, including proctoring required safety training, maintaining records, OSHA reporting and tracking client compliance through ISNetWorld.

McGinnis graduated from the University of Alaska Anchorage with a Bachelor of Arts in psychology degree, and is currently working towards her master's degree in business administration.

"Michelle excels in all that she does, and this latest accomplishment further exemplifies her continued development and leadership in the project controls/corrosion control groups," said Dan Stears, vice president of corrosion control.

For more information about Coffman Engineers Inc. visit www.coffman.com.



MICHELLE MCGINNIS

Companies involved in Alaska's oil and gas industry

All of the companies listed above advertise on a regular basis with Petroleum News

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ENERGY OUTLOOK

transition away from hydrocarbons," Dale said.

Three scenarios

The Energy Outlook assesses three potential future energy scenarios. The "new momentum" scenario envisages the continuing energy trajectory, along which the world is currently moving, taking into account recent government pledges and ambitions. The "accelerated" scenario evaluates the possibility of carbon emissions dropping by 75% by 2050, while the "net zero" scenario would see emissions dropping by about 95% in the same timeframe. Accelerated would require significant tightening in climate policies, while net zero would, in addition, entail a shift in societal behavior preferences. Carbon emissions from these two more aggressive scenarios would be consistent with those required to limit global warming to a range of 1.5 C to 2 C, Dale said.

However, rather than predicting the future, the scenarios provide a means of assessing a wide range of possible energy outcomes over the next 30 years. And, by identifying common features of the three scenarios, it may be possible to shape our understanding of how the energy system may evolve in the future.

All three scenarios anticipate a diminishing role for hydrocarbon fuels, with oil demand peaking at some point over the next 10 years and declining thereafter. The biggest declines are in the accelerated and net zero scenarios. In the new momentum scenario, oil demand remains close to 100 million barrels per day through much of this decade, after which it declines to about 75 million barrels per day by 2050.

A major driver boosting oil demand is increasing consumption in emerging economies, as living standards improve. The biggest factor in this demand is the need for fuel for road transportation, Dale said.

And while all three scenarios predict future drops in oil and coal consumption, the prospect for natural gas is much less clear. The accelerate and net zero scenarios anticipate gas demand rising in the near term before declining by between 40% and 55% by 2050. In the new momentum scenario gas demand would grow throughout almost the whole 30-year timespan of the Energy Outlook.

Less fossil fuel, more renewable energy

Overall, the Energy Outlook anticipates a decline in fossil fuel consumption in all its scenarios, the first time this has happened in modern history, Dale commented. In contrast to this, there will likely be a strong increase in renewable energy use, in particular wind and solar power — the new momentum scenario anticipates a nine-fold increase, while the other scenarios anticipate a 15-fold increase.

However, there are a couple of caveats associated with the rate of implementation of renewable energy sources. One caveat is that an acceleration in the pace of buildout in wind and solar capacity will only be possible if there is a matching expansion of the power transmission and distribution capacity — this will all depend on rapid planning and permitting, together with the availability of critical metals needed for electrification of the energy system. The second caveat is that in the accelerated and net zero scenarios about 70% of the required renewable energy investment would have to take place in emerging economies, a transition that would require adequate access to capital and finance.

Increasing electrification

A common feature of the three scenarios is the increasing electrification of the energy system, with electricity demand increasing by about 75% by 2050 in all the scenarios. The share of electricity consumption in total energy consumption increases from about 20% today to somewhere in the range 35% to 50%. However, about 90% of the growth would be in emerging economies as a consequence of improving living standards.

Although there are widespread opportunities for increased electricity use, the biggest possibility for increased electrification is in buildings — in the accelerated and net zero scenarios the growing use of heat pumps would be particularly significant, Dale said. In addition, there would be a large increase in the use of electricity in transportation, as the use of electric cars and light trucks becomes more widespread.

Low carbon hydrogen

The Energy Outlook anticipates the increasing electrification of the energy system being accompanied by the growing use of low carbon hydrogen — hydrogen can act as a carrier of low carbon energy for use in processes that are difficult to electrify. Within industry this fuel has applications in the iron and steel sector, for example, as an alternative to natural gas and coal. In transportation, hydrogen based fuels could be used to decarbonize long-distance air and marine transportation, while pure hydrogen could fuel long distance road transportation, Dale said.

Blue hydrogen is manufactured from natural gas and coal, together with the sequestration of the resulting carbon emissions, while green hydrogen is manufactured through the electrolysis of water using renewable electricity. Blue hydrogen could act as an important complement to green hydrogen, providing a lower cost form of hydrogen in some regions, Dale said.

While pure hydrogen would probably need to be shipped by pipeline from regional sources, hydrogen derivatives such as ammonia and methanol could probably be shipped globally by sea, he suggested.

There is also likely to be an accelerated use of bio-based fuels, especially as aviation fuels, he commented.

Impact of Ukraine war

The Energy Outlook addresses the potential impacts on the global energy system of Russia's invasion of Ukraine. Essentially, the war is causing countries to adopt a heightened focus on energy security, is causing weaker economic growth and is changing the composition of global energy supplies, Dale said. The Energy Outlook assumes a persistent reduction in Russian hydrocarbon exports.

The focus on energy security is driving countries to try to reduce their dependency on imported energy. That in turn will likely encourage moves towards the increased use of domestic renewable resources together with improved energy efficiency.

Particularly dramatic has been the impact of the war on international natural gas flows, with Russian pipeline exports to the European Union all but eliminated. The Energy Outlook anticipates the global liquefied natural gas trade continuing over the coming decade, but with a failure in the expansion of Russian LNG exports offset by stronger growth in LNG exports from elsewhere — U.S. LNG exports may account for more than half of that growth.

"Threats to energy security can have large and persistent affects," Dale commented.

In the near term, higher food and energy prices caused by the war will lead to weak global economic growth. In the longer term the war will likely reduce the pace of global integration and trade, as companies reduce their exposure to international risk. And while the annual slowdown in growth may be modest, the compounding of annual slowdowns over a number of years will likely be significant and will likely impact energy demand.

Ultimately, the impact of the war will probably be to reduce energy consumption, with the reductions tending to focus on oil and natural gas, the two most heavily traded fuels. On the other hand, the demand for domestic renewable and nuclear energy will likely increase. Thus, the war in Ukraine will probably have the effect of accelerating the energy transition, Dale said. However, the impact of the war on the energy mix is greatest for the new momentum scenario, given that the other two scenarios already assume an aggressive transition to renewable energy.

The Inflation Reduction Act

Dale also commented on the significance of the Inflation Reduction Act, legislation passed by the U.S. Congress last year. The act included various measures supporting low carbon energy sources and decarbonization technologies. While the policies embedded in this act provide significant support and incentives for low carbon technologies, the fact that these policies do not go far enough to have much impact on the accelerated and net zero scenarios demonstrates the huge scale of policy support needed for these more aggressive carbon reduction scenarios. On the other hand, the passage of the Inflation Reduction Act in the U.S. could encourage other regions to offer similar incentives for carbon emission reductions, Dale said. ●

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ALPINE HEARING

from one stratum to another and protecting significant hydrocarbon zones."

•Gas disposition from drillsite CD1 "as it relates to waste of resources."

•Conduct of operations for WD-03 as related to the company's internal plan "for the well and communication of pressure limits to the field."

•Well safety valve systems related to producing natural gas up the outer annulus of WD-03.

•Change of approved program related to application for sundry approvals following oral approval from the commission.

Gas release background

Natural gas, later determined to be from the C10-Halo interval in the WD-03 disposal well, then being drilled at CD1, was observed March 4, ConocoPhillips told the commission in its May 3 final report, as "intermittent, low pressure natural gas releases at CD1-05, which is approximately 450 feet away from WD-03."

"By March 8, ConocoPhillips had secured the location, determined the most probable gas source, and established a controlled flow path for the gas up the outer annulus of the WD-03 well into the Alpine Central Facility," ConocoPhillips said in a May 10 letter answering questions about the release from Congress.

The company told the commission April 1 that an estimated 7.2 million cubic feet of natural gas was not captured and said it believes most of that gas escaped to the atmosphere between March 4 and March 8. In its May 3 final report to AOGCC ConocoPhillips said an estimated 24 million cubic feet was recovered, based on metering data from the flow directed to the Alpine Central Facility from the WD-03 outer annulus from March 8 through March 29, when source control was achieved and WD-03 stopped producing gas after circulation of kill weight fluid.

The company identified two causal factors and said in its letter to Congress that neither related to well design: "a surface casing shoe in WD-03 that broke down when pressure limits were exceeded during freeze protection operations" and subsequent pressure increases in the outer annulus of the WD-03 well which were not recognized or addressed and "which could have led to more immediate investigation or remedial action."

The company said the pressure limits were exceeded Feb. 27 during an annular leak-off test and freeze protection operations and "most likely broke down the casing shoe and provided an initial pathway for gas migration around the outside of the WD-03 surface casing." A subsequent injection of 300 barrels of water to displace mud "likely expanded the pathway."

Pressure increases in the WD-03 outer annulus from March 1 to March 3 were not recognized, and the company said the volume of gas released "would have been reduced" if elevated pressures in the WD-03 outer annulus had been addressed earlier.

In its final report to the commission, ConocoPhillips said: "Based on historical evaluation methods used to successfully drill 49 other CD1 wells, the C10/Halo at the WD-03 well path was determined not to be a 'significant hydrocarbon zone' or 'abnormally geo-pressured area' during pre-drill planning and/or during drilling operations," so no cement isolation was deemed necessary.

The company did, however, note a potential missed indicator. "A well in proximity to WD-03's well path potentially had indications of gas from shallower zones than the Qannik. Further review into the source of this gas may have informed WD-03 well planning."

—KRISTEN NELSON

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WILLOW ADVANCES

approvals are in place, and then proceed to a final investment decision. Planning is currently in progress and mobilization could start "as soon as February," the company said.

Additional North Slope construction activities for Willow, which is located in the National Petroleum Reserve-Alaska, will occur throughout the summer and fall. Concurrently, material fabrication will begin in U.S. facilities and the pace of contracting and procurement will increase.

"All that remains now is for the Biden administration to fulfill its commitment to our people and region by advancing Willow consistent with project's minimum requirements as laid out by ConocoPhillips." —Nagruk Harcharek, president of the Voice of Arctic Iñupiat.

"In the SEIS, the BLM identifies Alternative E as the preferred alternative. Alternative E was developed by the BLM and cooperating agencies with extensive stakeholder input. Under Alternative E, the BLM could authorize three drill sites initially, and potentially one additional drill site in the future. This is a reduction from the five drill sites initially proposed by ConocoPhillips and a reduction of project footprint in the Teshekpuk Lake Special Area by more than 40%," ConocoPhillips said.

The company added that the three core drill sites in Alternative E — BT1, BT2, and BT3 — outlined in BLM's final SEIS "reflect an integrated design concept and provide a viable path forward for development of our leasehold."

Job creation

The Willow Project is estimated to produce 180,000 barrels of oil per day at its peak and deliver $8 billion to $17 billion in new revenue for the federal government, the state of Alaska and North Slope Borough communities. The project would be built using materials primarily made and sourced in the United States and has the potential to create more than 2,500 construction jobs and 300 long-term jobs.

Willow was designed to meet municipal, state and federal land management requirements, building on ConocoPhillips' five-decade track record of continuous operational and technological improvements in Alaska.

Additionally, federal law requires 50% of lease revenue from NPR-A projects be made available to a unique grant program that offers significant social and environmental justice benefits to Alaska Native communities.

"As a result, we believe Willow will benefit local communities and enhance American energy security while producing oil in an environmentally and socially responsible manner," said Isaacson.

"We appreciate the strong support for Willow from communities on the North Slope and across the state, as well as from Alaska's bipartisan congressional delegation," Isaacson added. "Willow will produce much needed domestic energy while generating substantial public benefits."

Voice of Arctic Iñupiat

Petroleum News received several statements from the people of the North Slope, including the Voice of the Arctic Inupiat, a nonprofit organization established in 2015 by the region's collective Iñupiat leadership to speak with a unified voice on issues impacting the North Slope Iñupiat, their communities, their economy and their culture. Its members include local government, business, tribal and civil society across the North Slope of Alaska.

NAGRUK HARCHAREK

VOICE's board unanimously passed a resolution in support of advancing the Willow Project to support the economic well-being of the North Slope Iñupiat.

"Today's announcement from the Bureau of Land Management inches us closer to a final decision on the future of the Willow Project for Alaska's North Slope Iñupiat. There is widespread support across Alaska Native communities for this considerately designed development opportunity and the long-term economic stability it offers for the people of Alaska's remote North Slope," said Nagruk Harcharek, president of the Voice of Arctic Iñupiat.

"All that remains now is for the Biden administration to fulfill its commitment to our people and region by advancing Willow consistent with project's minimum requirements as laid out by ConocoPhillips. Further unnecessary reviews or limiting the project to fewer and fewer pads would likely terminate the project, leading to dire implications for our national security, our economy, the self-determination of the Iñupiat people, and for the future of Alaska's North Slope," Harcharek said.

"The Willow Project is estimated to generate hundreds of direct jobs and thousands of construction jobs, along with contracting opportunities for Native-owned businesses," he said.

"BLM estimates that Willow will result in approximately $6 billion from federal royalties and state and local taxes. For North Slope communities, more than $1 billion in property taxes paid to the North Slope Borough would help provide basic services like education, police, fire protection, and more. Willow is also projected to add $2.5 billion to the NPR-A Impact Mitigation Grant Program, supporting social services, youth programs, and more throughout our communities," Harcharek said. ●

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REACTOR CERTIFIED

away from coal, oil and natural gas to reduce greenhouse gas emissions and stave off the worst effects of a warming planet.

Roughly 40 serious concepts are in development for the next generation of advanced nuclear reactors worldwide. China was the first to connect a next-generation reactor to its grid to produce about 200 megawatts of electricity. A high-temperature, gas-cooled reactor began operating in 2021.

The U.S. Energy Department said it provided more than $600 million since 2014 to support the design, licensing and siting of NuScale's VOYGR small modular reactor power plant and other domestic small reactor concepts. The department is working with Utah Associated Municipal Power Systems to demonstrate a six-module NuScale VOYGR plant at the Idaho National Laboratory. The first module is expected to be operational by 2029.

NuScale has signed 19 agreements in the U.S. and internationally to deploy its small reactor technology. Assistant Secretary for Nuclear Energy Kathryn Huff said small modular reactors are no longer an abstract concept.

"They are real and they are ready for deployment thanks to the hard work of NuScale, the university community, our national labs, industry partners, and the NRC," Huff said in a statement. "This is innovation at its finest and we are just getting started here in the U.S."

NuScale has also applied to the NRC for approval of a larger design, at 77 megawatts per module, and the agency is checking the application for completeness before starting a full review, Burnell said. ●

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DUNLEAVY BILLS

or eliminating the PFD (Permanent Fund Dividend)," Dunleavy said.

Carbon capture, utilization and storage

SB 49 and HB 50 are key components of the state's efforts to monetize its immense carbon storage potential and maximize the utilization of resources.

CCUS projects capture carbon dioxide that's emitted and inject it deep underground into geologic formations for enhanced oil recovery or permanent sequestration.

Alaska's older oil and gas basins, particularly in the Cook Inlet basin (but also on the North Slope) have the right geology to sequester carbon underground. Cook Inlet has been identified as one of the top spots on earth with the ability to sequester carbon underground — with at least 50 gigatons of capacity, the Dunleavy press release said.

This legislation specifically creates new authorities for state agencies to license, lease and administer the state's pore space for geological storage; administer pipeline infrastructure for transportation of captured carbon to geological storage facilities and administer injection wells and carbon storage facilities; and protect correlative rights of all subsurface owners.

DNR and AOGCC administer

Bill HB 50 and SB 49 allow DNR to lease state lands for carbon storage projects, establishes a CCUS regulatory regime within the Alaska Oil and Gas Conservation Commission, allows AOGCC to pursue primacy for UIC Class VI carbon dioxide injection wells, and expands existing regulatory authority over oil and gas pipelines to carbon dioxide pipelines.

JOHN BOYLE

The majority of the work necessary to administer the CCUS program within the Division of Oil and Gas would be managed with existing staff resources but two new positions would be added within the division in sections that would be most heavily involved in CCUS program implementation and oversight.

One new Storage Geologist I/II position would be added within the Resource Evaluation section to evaluate and characterize carbon storage resources within the state and to undertake technical evaluation of carbon storage applications and project oversight reviews.

One new Economist II/III/IV position would be added within the division's Commercial Section to conduct research on commercial and fiscal storage terms and long term liability issues and to support the Commercial Section in the analysis and negotiation of commercial, fiscal and liability terms of storage license and lease applications.

New fund

The legislation creates a new "Carbon Storage Closure Trust Fund." It will be funded through payments from carbon storage facility operators based on the volume of injected carbon. The payment amounts will be set by the AOGCC at the time that a permit is issued for the facility.

The fund is intended to be used for long term monitoring and maintenance related to injected underground carbon after a carbon storage facility has ceased operation and the operator has dismantled infrastructure and remediated the facility site except for the underground carbon.

"Carbon management will complement — and in some cases enhance — Alaska's existing industries like forestry, oil and gas, mining, tourism, and outdoor recreation," said DNR Commissioner-designee John Boyle.

Carbon offset program

SB 48 and HB 49 establish a statewide carbon offset program through forest sequestration within the Alaska Department of Natural Resources. The proposed carbon offset program has the potential to generate additional revenue for the state through biologic carbon storage projects that can mitigate a portion of the carbon dioxide emitted into the atmosphere.

The bill seeks to grant DNR the ability to establish a carbon offset program and enable carbon offset projects on state lands. Current statutes do not allow for carbon offset projects.

The carbon offset program will allow private parties to lease state land to undertake carbon offset programs and allow the state, through DNR, to implement its own carbon offset projects.

Benefits to existing industries

"Carbon management will complement — and in some cases enhance — Alaska's existing industries like forestry, oil and gas, mining, tourism and outdoor recreation," said DNR Commissioner-designee John Boyle. "These bills do not lock up state land, rather, they unleash new opportunities. Carbon offset projects will not prevent mineral development, timber harvests, new oil and gas exploration or infrastructure development. Land within the carbon offset program area will still be available for hunting, fishing, camping and recreational activities for Alaskans and visitors."

Conventional resource development companies operating in Alaska stand to benefit in multiple ways from a strong state carbon management regulatory framework. These companies can use carbon credits to offset their carbon emissions, creating new opportunities for financing. CCUS allows companies to use the carbon dioxide produced by their operations by capturing it and reinjecting it into oil wells to actually increase production.

Alaska's advantages

According to information supplied by the governor, Alaska has important competitive advantages for the development of a CCUS industry. The state owns the pore space used for storage under its lands, which allows leasing of large contiguous storage sites.

Large storage resources have been identified in both the Cook Inlet basin and the North Slope, co-located with existing infrastructure, making development easier.

The Cook Inlet basin represents the largest carbon sequestration resource on the U.S. West Coast with an estimated 43 gigatons of storage potential in deep unmineable coal seams, with even more in saline aquifers and depleted reservoirs that would likely give Cook Inlet alone the ability to store 50 gigatons.

For perspective, that represents 50 years of carbon emissions from the entire nation of Japan.

—KAY CASHMAN

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DATE EXTENSIONS

a 2-year extension will allow time for full pattern injection and sufficient time to collect data from that full pattern injection "so that the feasibility of expanding the EOR project pool wide can be evaluated," the commission said.

The enhanced recovery injection order has been extended to expire at the end of March 2025, unless an extension is granted.

Cosmopolitan

BlueCrest Alaska Operating requested an extension of a gas-oil ratio, GOR, waiver for the Hansen oil pool at Cosmopolitan. A 2019 conservation order granted a waiver to the GOR for the pool to allow collection of performance data to evaluate the feasibility of enhanced oil recovery for the pool. In December 2021, BlueCrest requested a GOR waiver extension to allow it "to acquire reservoir performance and pressure data to help determine the potential for additional reservoir development," the commission said, and noted that BlueCrest said at that time that EOR did not appear economically viable.

The commission said GOR trends at the Hansen oil pool are "atypical," as, without enhanced oil recovery pressure maintenance, a producing pool would be expected to "exhibit increasing GOR as time goes by." The commission said GOR at Hansen peaked in late 2018 and has been generally declining "and is now close to what it was when regular production began in March 2016." On that basis, a GOR waiver would appear unnecessary, the commission said, but then noted that news reports — Petroleum News was cited — indicate BlueCrest plans to resume drilling this year. The Trident Fishbone well would have three main horizontal wellbores with multiple laterals branching from each. Because it is uncertain how such a well will perform over time, extending the GOR waiver to allow for drilling and completion of the well and gathering further reservoir performance data is prudent.

The GOR waiver is extended through the end of 2023, "so that reservoir performance may be gathered to evaluate the viability of implementing an enhanced oil recovery project in the Hansen Oil Pool," the commission said.

West McArthur River

Cook Inlet Energy requested confirmation from the commission that a disposal injection order issued last March was still in effect. The disposal injection order, DIO 43.001, was set to expire Nov. 12, 2022, unless disposal operations commenced.

CIE is performing work, the commission said, including "injectivity step rate tests designed to evaluate the authorized disposal zone." AOGCC said it "believes these are good faith efforts towards the commencement of disposal operations" under the disposal order, and has changes the expiration date to "two years after injection operations authorized in that order conclude."

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