Petroleum news

page 4 Hilcorp asks commingling, spacing exceptions for Deep Creek gas well

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Honoring Kuparuk; OSH investors mull Santos deal; ANS renaissance

CONOCOPHILLIPS ALASKA and Petroleum News recently entered into an agreement to produce a magazine celebrating the 40th anniversary of the Kuparuk oil field on Alaska's North Slope.

Fifteen years ago, Petroleum News published "Kuparuk — Celebrating 25 years of production at the Kuparuk River oil field."

The second largest oil field on the North Slope, initially Kuparuk was viewed as a marginal field. Second only to Prudhoe Bay, in July, Kuparuk River produced an average of 89,170 barrels of oil per day of the 409,720 bpd that came from the North Slope.

see **INSIDER** page 11

Conoco halts Western North Slope pipeline replacement project

RYAN LANCE

ConocoPhillips Alaska has paused its Western North Slope Service Pipeline Replacement project, on which the company planned to start work in November in preparation for new oil coming from its Willow development in 2025.

"Due to the pending litigation on Willow, COPA will not be moving forward with the WNS Service Pipeline Replacement Project as proposed in the ADOG and SPCO applications," Rebecca Boys, ConocoPhillips Alaska's director of media and

see **PIPELINE PAUSE** page 11

Mustang oil field sale expected; MHLLC submits 9th POD, report

On Sept. 30 Mustang Holding LLC filed the ninth plan of development and annual report for the Mustang oil field with Alaska's Division of Oil and Gas. Its near-term plan is to keep the project in its current cold shutdown status, which includes protecting "surface equipment, wellbores, pipelines, roadways, well pads, and any and all related equipment and infrastructure."

Mustang is in the central North Slope's Southern Miluveach unit, or SMU, which has five state of Alaska leases totaling 8,960 acres. The Mustang Pad is adjacent to the southwest edge of the Kuparuk River unit.

The tiny oil field is operated by Mustang Holding on behalf of the working interest owners: Mustang Holding LLC (90.1%), Nabors Drilling Technologies USA Inc., and AVCG LLC.

see **MUSTANG FIELD** page 8

Canadian leaders: shutting down O&G would carry heavy price

There is no justification for critics to continue vilifying Canada's petroleum industry provided the sector displays its resolve to tackle climate change, says Bob Rae, a political leader of note who is currently Canadian ambassador to the United Nations.

"In the case of Canada, we shouldn't be remembered for who we are," he told the 22nd annual Global Business Forum at the Canadian Rockies resort town of Banff.

"We're not the only country that's an oil and gas producer."

But he didn't dismiss a UN report issued in August that portrayed the fast-evolving threat posed by climate change as "code red for humanity" because of its many elements that can no longer be corrected and the narrowing window of time to head off grave

see **O&G FUTURE** page 8

EXPLORATION & PRODUCTION

PBU satellite focus

2022 drilling targets Western Satellites, which saw most 2021 drilling

By KRISTEN NELSON

Petroleum News

There are three major areas at Prudhoe Bay, the state's largest producer — the Initial Participating areas, Greater Point McIntyre and the Western Satellites.

In 2020-21 there were no wells drilled in the IPA, the oldest and most established area at Prudhoe, and few at Greater Point McIntyre.

Initially there were no wells planned for the Western Satellites — but that changed for 2021, and so far the Western Satellite area also looks to be the focus on 2022 Prudhoe drilling, with as many as 10 wells now proposed.

Prudhoe Bay operator Hilcorp North Slope told the Alaska Division of Oil and Gas in January in its proposed Western Satellites 2021 plan of development: "Due to the challenging economic conditions related to the COVID-19 global pandemic, the PBU working interest owners did not approve a drilling program for 2021." Hilcorp said resumption of

> *Those things combined, the company said, led to a 43% year-over-year increase in oil production from the Western Satellites for the 12 months from July 1, 2020, to June 30, 2021, compared to July 1, 2019, through June 30, 2020.*

see **SATELLITE FOCUS** page 10

FINANCE & ECONOMY

ANS breaches $80s

OPEC+ holds gradual production bump as US hints strategic reserve draw

By STEVE SUTHERLIN

Petroleum News

A dramatic run-up that took Alaska North Slope crude above $80 per barrel cooled off a bit Oct. 6. ANS dropped $1.73 to close at $81.18, while West Texas Intermediate lost $1.50 to close at $77.43 and Brent lost $1.48 to close at $81.08.

Russian President Vladimir Putin said his country will ride to the rescue of European energy markets by pumping more natural gas, which would ease the need to replace the fuel with oil for heating and electric generation this winter.

Brent prices have surged more than 50% in 2021, while natural gas prices expanded to a record peak in Europe and coal prices also hit all-time highs.

U.S. commercial crude oil inventories for the week ending Oct. 1 increased by 2.3 million barrels from the previous week, against analyst expectations of a 418,000-barrel drawdown, according to U.S. Energy Information Administration reports released Oct 6. At 420.9 million barrels, oil inventories are about 7% below the five-year average for this time of year.

Total motor gasoline inventories increased by 3.3 million barrels for the week but remain about 1% below the five-year average for this time of year, the EIA said.

see **OIL PRICES** page 9

PRODUCERS PREVIEW

NSB's unique gas fields

Magazine preview: Fields power Utqiagvik, the northernmost city in U.S.

By KAY CASHMAN

Petroleum News

Coming

November 2021

Near Point Barrow in northern Alaska, natural gas has accumulated in Jurassic-aged sandstone reservoirs that lie along the western and eastern margins of a buried, ancient meteorite impact crater, which is on the northern flank of the east-trending Barrow High.

In the aftermath of World War II, the federal government sponsored exploration in the National Petroleum Reserve-Alaska in a bid to improve domestic energy security. Drilling by U.S. Navy contractors began in the winter of 1948 and continued through 1987.

One impact of that activity was the discovery of three gas fields — South Barrow, East Barrow and Walakpa — near the community of Barrow (renamed Utqiaġvik in 2016), the North Slope's biggest economic hub and population center (4,383 in 2017 Census).

According to the U.S. Department of Energy's National Energy Technology Laboratory, the Barrow Gas Fields Hydrate Study provided very strong evidence for the existence of hydrates updip of the East Barrow and Walakpa gas fields.

The South Barrow and East Barrow reservoirs have a stratigraphic setting similar to the Alpine oil

see **PRODUCERS PREVIEW** page 7

● EXPLORATION & PRODUCTION

Baker Hughes rig count rises by 7 to 528

By KRISTEN NELSON

Petroleum News

For the week ending Oct. 1, the Baker Hughes U.S. rotary drilling rig count was up by seven rigs from the preceding week to 528, an increase of 262 from 266 a year ago.

When the count dropped to 244 in mid-August 2020 it was the lowest the domestic rotary rig count has 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 Oct. 1 count includes 428 rigs targeting oil, up seven from the previous week and up 239 from 189 a year ago, with 99 rigs targeting gas, unchanged from the previous week and up 25 from 74 a year ago, and one miscellaneous rig, unchanged from the previous week and down by two from a year ago.

Twenty-two of the rigs reported Oct. 1 were drilling directional wells, 474 were drilling horizontal wells and 32 were drilling vertical wells.

Alaska rig count unchanged

Louisiana (46) had the largest week-over-week gain, up three rigs.

New Mexico (86) gained two rigs from the previous week.

Oklahoma (40) and Texas (243) each gained a single rig.

Counts in all other states were unchanged, week over week: Alaska (5), California (6), Colorado (11), North Dakota (22), Ohio (12), Pennsylvania (18), Utah (10), West Virginia (8) and Wyoming (18).

Baker Hughes shows Alaska with five rigs active Oct. 1, unchanged from the previous week and up three from a year ago, when the state's count stood at two.

The rig count in the Permian, the most active basin in the country, was up by three from the previous week at 263 and up by 134 from a count of 129 a year ago.

International count up 10

Baker Huges issues its international rig count monthly, information it began providing in 1975. The company said international rigs exclude North America; those rigs are included in worldwide figures.

The international count for September, issued Oct. 1, is up by 10 from August to 787, Baker Hughes said, with land rigs up by 10 to 600 and offshore rigs unchanged at 187.

The international count is up by 85 rigs from the comparable count in 2020, 702, with land rigs up by 76 and offshore rigs up by nine.

The Middle East accounts for the most rigs in the international count, 269 in September, followed by Asia Pacific with 194, Latin America with 140, Europe with 106 and Africa with 78.

The U.S. rig count averaged 508 in September, up seven from August's count of 501 rigs, and up by 251 from September 2020, while the Canadian count for September averaged 153, down by three from an August count of 156 and up by 93 from September 2020.

Worldwide the rig count was 1,448 in September, up by 14 from 1,434 counted in August and up by 429 from a count of 1,019 last September. ●

Contact Kristen Nelson at knelson@petroleumnews.com

contents

Petroleum News *Alaska's source for oil and gas news*

● UTILITIES

BC looking to drop gas-fired power plants

Utility wants to encourage greater use of 'clean, reliable, electricity'; estimates 2 plants produce combined 350,000 mt of CO2

By GARY PARK

For Petroleum News

The British Columbia government has announced plans to phase out two natural gas-powered electricity plants as it focuses on hydroelectricity in pursuit of a greener grid.

Publicly owned BC Hydro said it will not renew a power-purchasing contract with one of the suppliers on Vancouver Island that is set to expire in 2022, while a separate deal with a larger utility in northeast British Columbia will be allowed to lapse by 2030.

An estimated 90% of the province's power is already derived from renewable energy sources, dominated by hydroelectricity.

The utility said that "by encouraging customers to use clean and reliable electricity instead of higher emitting fuels to power their homes, vehicles and businesses BC Hydro can help reduce greenhouse gas emissions and contribute to meeting the government's climate goals."

The contract that will be scrapped next year involves Capital Power Corp.'s Island Generation Plant which is already underutilized because it mostly kicks into action as a backup during times of peak electricity use.

BC Hydro estimates that unloading its 20-year purchasing agreement with Capital Power will cut the equivalent of 10,000 metric tons a year of CO2 emissions.

Capital Power said its plant has been "extremely reliable for BC Hydro with a 99 percent average availability over the last five years, providing critical back-up power and grid reliability for Vancouver Island and Metro Vancouver."

The second plant targeted for phasing out is at Fort St. John and is co-owned by Brookfield Energy Partners and Energy Capital Partners.

BC Hydro said the McMahon cogeneration plant is the "biggest source of greenhouse gas emissions" on its network, emitting the equivalent of 340,000 metric tons a year of CO2.

Over the past 50 years, Canadian energy companies have promoted natural gas as a clean-burning fuel compared with facilities that rely on underground oil tanks, which pose the risk of oil seeping into the surrounding soil.

FortisBC, the largest distributor of natural gas to homes in B.C., argues that the road to achieving net zero emissions by 2050 must include a transition role for natural gas.

But climate activists have stepped up their arguments that as renewable energy sources grow and generate low-carbon electricity that case for natural gas diminishes.

However, the Ontario government, Canada's most populous province at 15 million, said in June that it has selected 28 projects across 43 communities to expand the use of natural gas for home heating. ●

Contact Gary Park through publisher@petroleumnews.com

ENVIRONMENT & SAFETY

Fish & Wildlife plans polar bear review

The U.S. Fish and Wildlife Service has announced that it plans to conduct a review of the status of polar bears, seeking information such as population trends and habitat conditions for the bears. The review, a five-year review under the terms of the Endangered Species Act, comes as a consequence of the bears being listed as threatened in 2008. FWS conducted its last five-year review of the species in 2017.

According to a notice published in the Federal Register on Oct. 5, FWS seeks public comments with information relevant to the new review by Dec. 6.

The listing of the polar bear came as one of several ESA listings relating to the potential long-term impacts of climate change on wildlife habitats. Thus, although the bears are relatively abundant, the listing resulted from the anticipated long-term decline in the Arctic sea ice that the bears depend on for hunting, breeding and feeding.

The listing of the polar bear has proven contentious: While environmental organizations support the resulting protection of the bears, people and organizations with economic interests in the Arctic have expressed concern about the economic impacts of restrictions designed to protect a species which has a substantial population.

Particularly contentious was the designation in 2010 of 187,157 square miles of polar bear critical habitat, including a vast offshore area and polar bear denning habitat along Alaska's northern coast — under the terms of the ESA an application for a permit for an activity that may impact a protected species must assess any potential impacts on the species' critical habitat. In a federal court case challenging the designation, in 2013 the Alaska District Court rejected the designation. However, in 2016 the 9th Circuit court reversed the District Court decision. With the U.S. Supreme Court subsequently declining to take up the case, the critical habitat designation remained in place.

—ALAN BAILEY

PIPELINES & DOWNSTREAM

Canadian public money props up pipelines

Money from the public purse is warping Canada's financial marketplace in favor of fossil fuel pipelines, claims a new research study.

The International Institute for Sustainable Development estimates C$23 billion has been spent by provincial and federal governments combined with the value of loan guarantees that governments and other financial instruments have used to help build pipelines.

Report author Vanessa Corkal said the bulk of the money exists outside the form of direct subsidies.

The institute spent two years probing public documents on government support for three pipelines.

That included C$11.3 billion in federal loans to finance the government's purchase of the Trans Mountain line and the C$6 billion the Alberta government offered in loan guarantees for TC Energy's Keystone XL, although the money was never tapped when President Joe Biden scuttled the project.

The researchers also identified a C$500 million loan for the construction of TC Energy's Coastal GasLink, the pipeline designed to carry feedstock gas to the LNG Canada export venture.

As well, the institute said governments play a role in other ways to limit the risks to industry.

For example, Trans Mountain has spent C$34 million covering its operating losses and pension costs.

The federal government has also promised to stand behind a C$2 billion "emergency fund" promised by Alberta in the event that the project encounters "unforeseen circumstances."

—GARY PARK

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● EXPLORATION & PRODUCTION

Hilcorp asks for Deep Creek well exceptions

By KRISTEN NELSON
Petroleum News

Hilcorp Alaska has applied to the Alaska Oil and Gas Conservation commission for a spacing exception for production of the HVB-15 development well in the Kenai Peninsula Deep Creek unit and for permission to commingle production from the Beluga/Tyonek gas pool and the Undefined Sterling gas pool in that well.

Hilcorp said it drilled the HVB-15 well in 2012 at the Deep Creek field, targeting sands in the Beluga/Tyonek gas pool. The well has produced from various Beluga sands within the Beluga/Tyonek gas pool since 2012 and is currently producing from the Beluga 1-3 sands. The company now wants to perforate the well into the shallower Sterling sands.

In its public notice on the Hilcorp requests AOGCC said it isn't uncommon for wells to encounter multiple pools. "In these situations, normally an operator will first produce from the deepest pool in the well until it is depleted, then plug off that pool and move up to the next pool and repeat the process until all the pools have been depleted. Sometimes one or more of these pools is not large enough tow arrant production/injection operations on its own, or there are other reasons to allow comingled production/injection," and the operator will apply for an order allowing downhole commingling. The commission said it reviews these requests "to assure waste will not occur and all owners receive their share of the production."

In its request Hilcorp said adding proposed Undefined Sterling gas pool sands and commingling would allow it to produce Sterling sands which would not sustain flow on their own and by producing the two pools together production would be accelerated and the life of the well would be extended.

Seven Sterling zones and one Beluga zone are being targeted to add production, Hilcorp told the commission. There are currently three Beluga zones in production.

Without AOGCC permission to commingle the flow from the different pools, Hilcorp said, it would likely bypass potential Sterling zones and possibly plug and abandon the well after depletion of currently producing sands, reducing ultimate recovery from the field.

Hilcorp said there is a conservation order governing Deep Creek, but it does not include Sterling formation sands, thus the necessity for an exception to spacing rules because HVB-15 will be the second well within the government section and will be within 3,000 feet of another well producing from or capable of producing from the same pool.

Spacing exception

The commission said well spacing regulations protect oil and gas rights of adjacent landowners and maximize resource recovery. Exceptions to default well spacing requirements are not unusual, but the commission said it "carefully evaluates each application and typically grants them only when actual geologic conditions demonstrate that the proposed subsurface location of a well is necessary to reach otherwise unreachable oil or gas, and that both the rights of adjacent landowners and underground drinking water can be protected."

Well spacing is an issue the commission deals with in pool rules, established in conservation orders.

Hilcorp said there is a conservation order governing Deep Creek, but it does not include Sterling formation sands, thus the necessity for an exception to spacing rules because HVB-15 will be the second well within the government section and will be within 3,000 feet of another well producing from or capable of producing from the same pool.

The company said proposed perforations in the HVB-15 well will target "discontinuous channel sands in the Undefined Sterling within Deep Creek Field that cannot be produced by wells conforming to applicable spacing restrictions."

AOGCC has tentatively scheduled a virtual public hearing for Nov. 9 at 10 a.m. and said the hearing will be held if a written request is received by 4:30 p.m. Nov. 1, otherwise the commission may consider issuance of an order without a hearing. ●

Contact Kristen Nelson at knelson@petroleumnews.com

UTILITIES

CEA seeks renewable energy ideas

Anchorage-based utility Chugach Electric Association has issued a request for proposals, seeking ideas for the construction of renewable energy power generation projects that would integrate into the regional electrical system. The utility wants to add 100,000 megawatts per year of renewable generation to its power supplies by the end of the first quarter of 2025. The additional generation capacity could potentially come from a single facility or from multiple facilities.

The objective is to diversify Chugach Electric's power supply sources without increasing the electricity rates for the utility's members, the utility says. Currently the utility obtains 76% of its electricity from natural gas fired power stations, 21% from hydropower and 3% from wind.

"We know there are independent power producers with great ideas and innovative projects out there just waiting to find the right partner," said Chugach Electric CEO Lee Thibert. "We look forward to seeing the results of the RFP process."

Although the utility seeks projects that can be in commercial operation by March 31, 2025, the utility is also interested in evaluating projects that will take longer to complete. The deadline for submitting proposals is 4 p.m. on Dec. 17.

—ALAN BAILEY

● FINANCE & ECONOMY

EIA: Oil, gas demand to grow through 2050

Agency's International Energy Outlook 2021 says developing Asian economies will be main driver of continued growth in production

By KRISTEN NELSON

Petroleum News

While new electricity generation will be primarily powered by renewables, oil and natural gas production will continue to grow through 2050, the U.S. Energy Information Administration said Oct. 6 in its International Energy Outlook 2021.

Production growth will be driven by increasing energy consumption in developing Asian economies, the agency said.

EIA said its reference case assumes that world oil prices will reach $95 per barrel in 2050, in 2020 dollars, based on a global growth rate of 2.8% per year.

High and low economic growth cases, on the other hand, are based respectively on 3.7% and 2% annual global GDP growth rate, and the high and low oil price cases are based, respectively, on $176 per barrel and $45 per barrel oil, in 2020 dollars, in 2050.

Population, economic growth

EIA said that under current policy and technology trends, population and economic growth will drive increasing energy consumption — and energy-related carbon dioxide emissions.

Global energy use is projected to increase nearly 50% by 2050, driven by non-OECD (Organization for Economic Cooperation and Development) economic and population growth, particularly in Asia.

Average GDP growth in OECD countries is projected at under 2%, while GDP in non-OECD countries is pegged at almost 4%. India has the highest average 2020 to 2050 GDP percentage change, more than 5%. EIA said while China continues to grow at an annual rate equal to Africa and other Europe and Eurasia countries, "its growth notably slows throughout the projection period."

The top five growth regions (India, other Asia, Africa, China and other Europe and Eurasia) accounted for 70% of the world's population in 2020 and 44% of GDP, shares which are projected to grow to 73% of population and 59% of GDP by 2050, EIA said.

Global energy use in non-OECD countries grows faster than in the OECD, with energy consumption growth through 2050 largely driven by population growth and increasing GDP. "As standards of living increase, most notably in non-OECD Asian countries, demand for goods and the energy needed to manufacture those goods increase."

Energy-related carbon dioxide emissions rise through 2050 in the reference case, EIA said, "largely driven by non-OECD countries where 2050 emissions increase by 35% over 2020 levels, compared with a 5% emissions growth in OECD countries."

The agency attributed the difference to higher retention of fossil fuel usage in non-OECD countries, "particularly coal, which has a higher carbon content than other fuels," with non-OECD countries being more than twice as reliant on coal for electricity as OECD countries.

Production of oil increases

EIA said it expects a steady increase in crude oil and lease condensate production to meet growth in consumption, with both

> *EIA said that while both Saudi Arabia and the Unites states have large resources, "their resources have been more systematically developed and likely have less room to expand beyond their historical levels of production."*

OPEC and non-OPEC oil production growing, but 2020 to 2050 OPEC production growing at almost three times the rate of non-OPEC production.

In the reference case consumption reaches some 125 million barrels per day but reaches some 151 million bpd in the high economic growth case.

"Canada, Iran, Iraq, and Russia all have large undeveloped crude oil resources and so could expand production to help meet 2050 global demand in the High Economic Growth case." EIA said that while both Saudi Arabia and the Unites states have large resources, "their resources have been more systematically developed and likely have less room to expand beyond their historical levels of production."

Natural gas plant liquids production grows some 50% by 2050, EIA said, "driven by high demand for NGPLs in the industrial sector."

see **EIA OUTLOOK** *page 6*

LAND & LEASING

Feds schedule November Gulf lease sale

President Joe Biden's administration says it has followed a court order to schedule an offshore oil and gas lease sale for the Gulf of Mexico after the Democratic president's moratorium on new oil and gas leasing on federal lands was blocked by a judge.

The sale will be livestreamed from New Orleans on Nov. 17, the Bureau of Ocean Energy Management announced in a news release Sept. 30. Bidding will be only by mail; walk-in bids won't be accepted, it said.

The agency postponed lease sales scheduled in March to comply with Biden's executive order to combat climate change. Scientists urge immediate action to slash greenhouse emissions to avoid the worst consequences of global warming, including devastating storms, floods, wildfires and droughts.

But Louisiana and 12 other states sued, and in June a federal judge found that the government had omitted steps required for such actions. The administration said in August it would comply while appealing the judge's order.

"The Biden Harris Administration is continuing its comprehensive review of the deficiencies associated with its offshore and onshore oil and gas leasing programs," the bureau's statement said.

The sale will cover roughly 136,000 square miles from 3 miles to 231 miles offshore in the Gulf of Mexico with water depths ranging from 9 feet to more than 11,115 feet.

Less than 2% of available water bottom was leased in August 2020.

The agency said lease stipulations will protect biologically sensitive resources, mitigate potential adverse effects on protected species, and avoid potential conflicts between oil and gas development and other activities and users in the Gulf of Mexico.

Alabama, Alaska, Arkansas, Georgia, Mississippi, Missouri, Montana, Nebraska, Oklahoma, Texas, Utah and West Virginia joined Louisiana in challenging the lease sale suspension.

The scheduling "is welcome news for the American worker and our national security," said Erik Milito, president of the National Ocean Industries Association.

"The U.S. Gulf of Mexico supports more than 345,000 jobs, many of which are accessible, high-paying and cannot be easily substituted, and generates vital government revenues for conservation and recreation programs," he said.

Several environmental groups sued Interior Secretary Debra Haaland in August, trying to prevent the sale. The lawsuit, brought by Friends Of The Earth, Healthy Gulf, the Sierra Club and the Center for Biological Diversity, contends that the bureau didn't meet a legal requirement to carefully study the sale's environmental impacts and substantially underestimated such effects.

"Climate change is rapidly intensifying Gulf storms, fueling uncontrollable wildfires in the West and threatening numerous species with extinction," said Kristen Monsell, oceans program litigation director for the Center for Biological Diversity. "We need to end offshore oil drilling, not burden future generations with this dirty and dangerous folly."

—ASSOCIATED PRESS

ENVIRONMENT & SAFETY

Cool conditions slowed Arctic ice melt

NSIDC discusses the circumstances behind this year's minimum Arctic sea ice extent, the highest since 2014 but 12th lowest recorded

By ALAN BAILEY
For Petroleum News

The National Snow and Ice Data Center has published its analysis of the circumstances leading to this year's Arctic sea ice minimum extent on Sept. 16. As previously reported by Petroleum News, this year's minimum extent, at 1.82 million square miles, was the highest since 2014. However, the extent was the 12th lowest that has been recorded — overall, the minimum extent has been declining at an average rate of 13% per decade since 1979. NSIDC also cautioned that at the time of this year's sea ice minimum, the extent of thick, multiyear sea ice reached a near record low.

A number of factors

NSIDC said that a number of factors impacted this year's minimum extent. There were relatively low sea level atmospheric pressures over the Arctic during the summer, and the Beaufort Gyre, the ocean circulation north of Alaska and Canada, was relatively weak. A relatively large number of "cold cored" Arctic cyclones then accounted for fairly cool summer weather.

NSIDC said that a number of factors impacted this year's minimum extent. There were relatively low sea level atmospheric pressures over the Arctic during the summer, and the Beaufort Gyre, the ocean circulation north of Alaska and Canada, was relatively weak. A relatively large number of "cold cored" Arctic cyclones then accounted for fairly cool summer weather.

The sea surface temperatures remained relatively cool, with these temperatures being recorded as lower than in the previous three years at a number of locations. Widespread areas of near freezing surface sea temperatures near the edge of the sea ice cover during the summer indicated that the ice melt was cooling the water surface, with little incoming solar radiation.

However, the spring and summer saw an extremely early ice melt and retreat in the Laptev Sea, leading to a record low June extent in that region. On the other hand the sea ice retreat in the Beaufort and Chukchi Seas was very slow. The ice edge in the Beaufort and Chukchi remained near average throughout the summer, in part because of the transport of an unusually large amount of thick, multiyear ice into the region during the winter — thicker ice tends to be more resistant to melting than young, thin ice.

Also, because of the wind patterns this year, less ice than usual was transported south out of the Arctic Ocean through the Fram Strait into the East Greenland Sea.

High Antarctic ice maximum

Interestingly, this year's Antarctic sea ice maximum extent, recorded in late August, was the fifth highest since records began, although the sea ice extent has been declining rapidly since the maximum was reached. Apparently the Antarctic winter of 2021 was among the coldest on record, primarily because of two extended periods of stronger than average wind systems circling the continent. ●

Contact Alan Bailey at abailey@petroleumnews.com

continued from page 5

EIA OUTLOOK

Liquid fuels consumption grows most in non-OECD Asia with consumption nearly doubling from 2020 to 2050; transportation and industry account for most of that growth.

"This consumption growth primarily occurs in the rapidly developing economies of China, India, Indonesia, Thailand, and Other non-OECD Asia countries." Production in the area is relatively flat, requiring increased imports of crude oil or finished products, EIA said.

Liquid fuels consumption grows most in non-OECD Asia with consumption nearly doubling from 2020 to 2050; transportation and industry account for most of that growth.

OPEC production growth is significant compared to the four largest non-OPEC producers — Russia, the United States, Canada and Brazil — with Middle East production increasing by more than 50%, growth the agency attributes to available resources in the Middle East and its proximity to growing non-OECD Asian economies.

"The Middle East is already a prevalent supplier of crude oil to Asia, and we project it to remain so as demand for liquid fuels continues to increase and as many Asian refineries configure to process the Middle East's crude oil," EIA said.

Natural gas production is projected to increase by some 30% between 2020 and 2050 in the reference case, with the three current largest producers — the United States, Russia and the Middle East — projected to continue to expand production and the United States projected to remain the largest producer worldwide, producing almost 43 trillion cubic feet in 2050. Production in both the United States and Russia is projected to grow by about 10 tcf between 2020 and 2050, while Middle East production grows by about 5 tcf. ●

Contact Kristen Nelson at knelson@petroleumnews.com

continued from page 1

PRODUCERS PREVIEW

field.

Walakpa, the most productive of the Barrow gas fields, is in the Pebble shale unit, a major North Slope source rock.

Walakpa has been proven to be methane-bearing at depths of 2,000-2,550 feet below sea level. The producing formation is a laterally continuous, south-dipping, Lower Cretaceous shelf sandstone.

Minimal investment

The Barrow gas fields are unique in Alaska's oil and gas industry because they are operated by a public entity — and because they are the only fields on the North Slope where natural gas is being used for something other than oil field operations.

The Barrow Gas Field Transfer Act of 1984 directed the Secretary of the Interior to convey subsurface estates of the South Barrow and East Barrow gas fields and the Walakpa gas discovery site, related support facilities, funds and other surrounding land interests to the North Slope Borough. This subsurface land transfer gave the NSB ownership of and authorization for exploration and harvesting of oil and gas within 320 acres of land.

Entitlements to energy transportation easements were provided within the Barrow Gas Field Transfer Act, allowing for easements of all purposes associated with the operation, maintenance, development, production, operation or transport of energy (including electricity) from the Barrow gas fields and Walakpa discovery site to Utqiaġvik, Wainwright and Atqasuk.

NSB has operated the gas fields for decades. The fields have generally required minimal development work, aside from a $92 million rejuvenation program launched in 2011 to combat declining production.

With that effort, the NSB commissioned three wells at the East Barrow field and three wells at the Walakpa field. By improving deliverability, the city of Utqiagvik could rely on natural gas for its energy needs even during cold snaps or during maintenance activities, instead of switching to diesel as an alternative.

Other improvements were also made, such as in 2017, NSB selected Taku Engineering to develop the design and construction bid package for work at the Walakpa gas field. The design included the replacement of the three generators, gas turbine heat recovery, fuel gas process improvements, supervisory control and data acquisition, remote operator controls and all other ancillary systems.

Taku also provided construction administration services for the project including owner representation and full-time on-site construction oversight. The design was completed in early 2018 and construction was completed in April 2019.

South Barrow gas field

The accumulation on the western margin of the meteorite impact crater is named the South Barrow gas pool, per the Alaska Oil and Gas Conservation Commission, or AOGCC. The South Barrow field was discovered by the Navy with the 2,505-foot South Barrow No. 2 well in 1949.

From 1948 through 1987, the commission reported that 13 wells were drilled, and one well, South Barrow 7, was subsequently deepened approximately 64 feet.

The South Barrow gas field's main natural gas reservoir is the Barrow sandstone, an informal member of the Kingak formation. This sandstone lies between the measured depths of 1,900 feet and 2,150 feet.

According to the commission's records, regular production from the pool began in August 1949, peaked at 3.6 million cubic feet of gas per day in November 1981, and began to decline.

In 1990, the borough began to sporadically suspend production at South Barrow.

For the first half of 2011, the pool produced an average of 1.1 million cubic feet of gas per day from five wells.

Since July 2012, the pool produced only during winter months.

In November 2015, South Barrow averaged 461,000 cubic feet of gas per day from three wells.

After nearly six years of inconsistent production, South Barrow has now been producing regularly since May 2018.

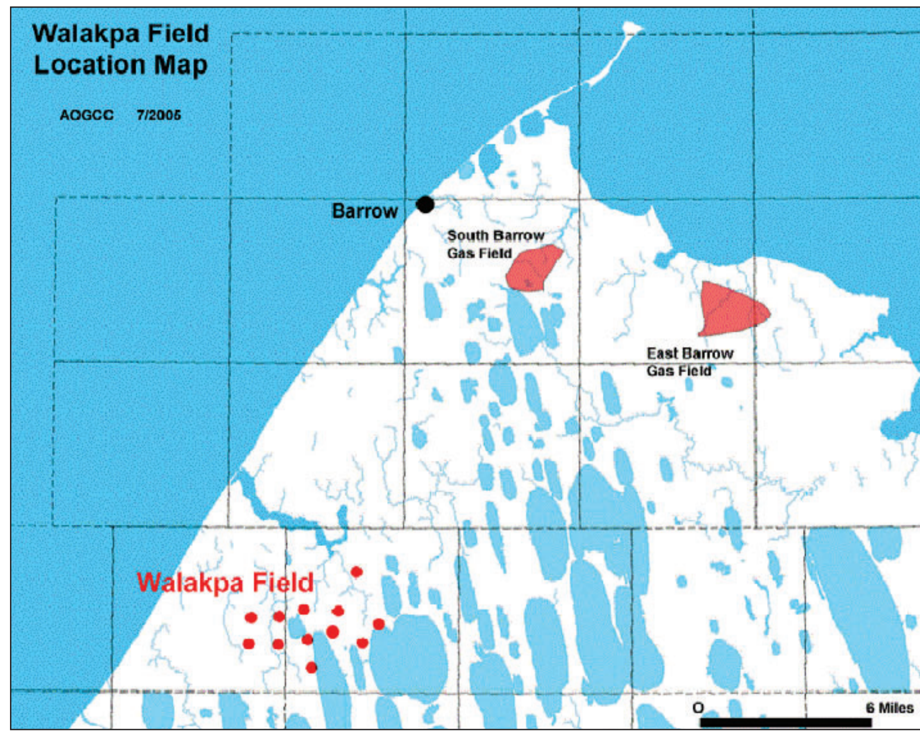
In the year ending June 1, 2021, the South Barrow gas field produced some 199 thousand cubic feet per day, averaging 198.6 thousand cubic feet per day.

Cumulative production from South Barrow through 2020 was 24.0 billion cubic feet, according to the AOGCC.

East Barrow gas field

The U.S. Geological Survey discovered the East Barrow field with the South Barrow No. 2 well in 1949 at a measured and true vertical depth of 2,505 feet.

According to AOGCC, the main gas reservoir for the East Barrow field is the Barrow sandstone, an informal member of the Kingak formation. In South Barrow No. 12 well this sandstone lies between the measured depths of 1,940 feet and 2,132 feet. It deposited in a marine environment, and it consists of silty, very fine to fine grained, moderately sorted sandstone that contains pyrite, siderite, glauconite and calcite and is commonly interbedded with



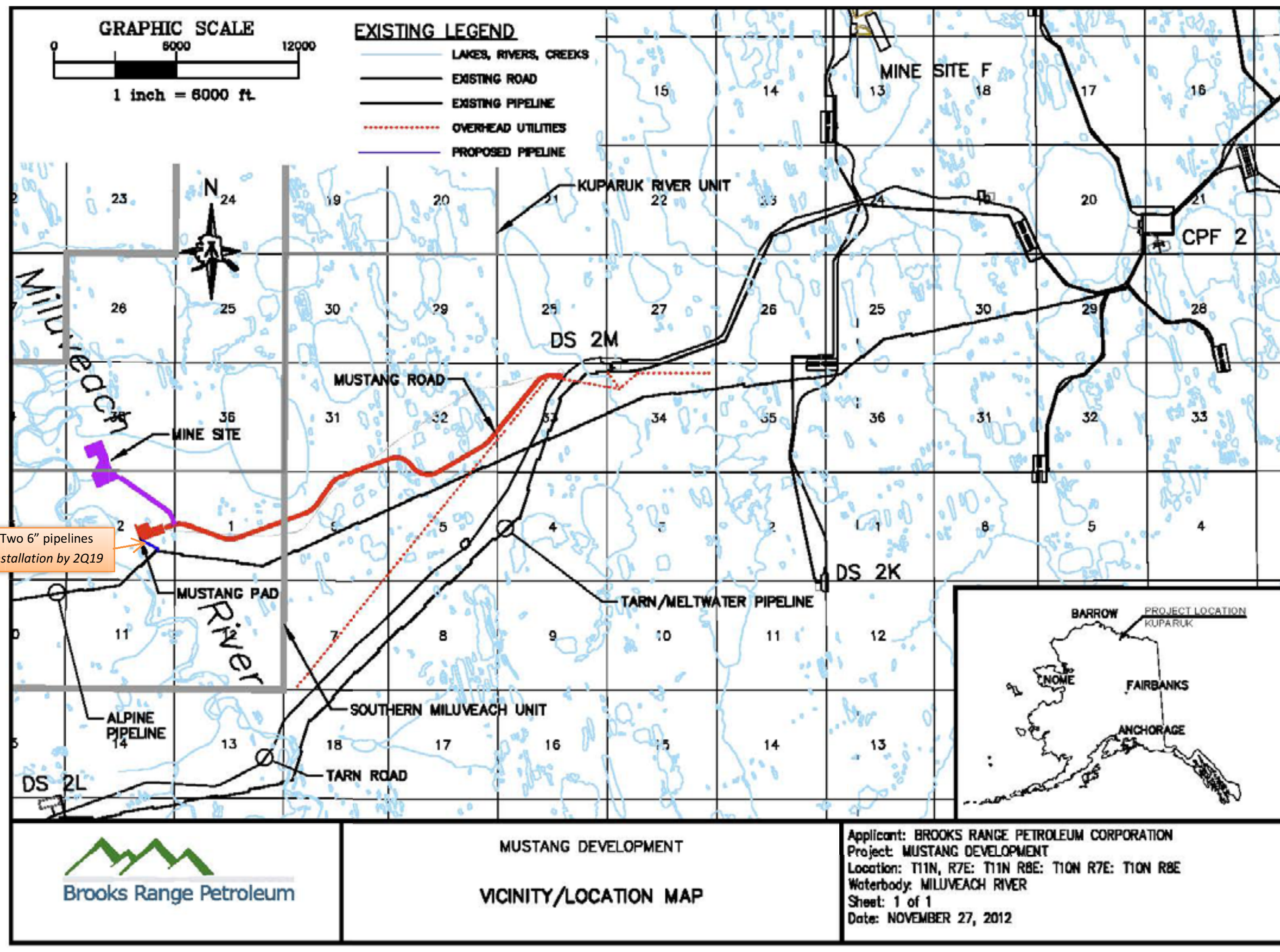
ALASKA OIL & GAS CONSERVATION COMMISSION (AOGCC)

Although dated, this map is still accurate except for the fact that it refers to the city of Utqiagvik as Barrow. (Barrow was its name from 1901 to 2016.) Utqiagvik, Alaska is the northernmost city in the United States, the borough seat and the largest community in the North Slope Borough. The Barrow gas fields — South Barrow, East Barrow and Walakpa — are operated by the North Slope Borough.

see **PRODUCERS PREVIEW** *page 9*

continued from page 1

MUSTANG FIELD



Mustang Holding, formed to hold the SMU assets, was named operator in December 2020 when the division approved a request from the working interest owners to appoint the holding company operator after Brooks Range Petroleum Corp. resigned as operator due to BRPC's default on various financing agreements between it and the Alaska Industrial Development and Export Authority.

The ninth POD period is Jan. 1, 2022, through Dec. 31, 2022.

Mustang sale expected

As reported in previous issues of Petroleum News on Aug. 12 AIDEA's board passed a resolution to divest the "assets of, or the equity interests in, Mustang Holding" and to "commence a competitive sale process of the Mustang project."

AIDEA chief investment officer for Mustang, Morgan Neff, is the main point of contact for the sale of, or the equity interests in, Mustang Holding.

In its ninth POD, the holding company said the following had been accomplished so far: "several" nondisclosure agreements have been executed with interested and qualified parties.

These parties have been granted access to the virtual data room, and the holding company has "via email, circulated a bid process letter to those interested and qualified parties."

Long-range proposed development activities for the SMU, Mustang Holding told the division in its ninth POD, "pursuant to the expected transaction with a qualified party, is for the MHLLC (Mustang Holding LLC) successor provide to the Division an amendment to the 9th POD."

The holding company "expects that the amendment will include, but not be limited to plans for delineation of the underlying oil or gas reservoir(s), to bring the reservoirs into production, and to maintain and enhance production once established."

As part of its sales agreement, Mustang Holding "will also require its successor to apply to the Division for transfer of the MHLLC working interests in the SMU as well as provide notification regarding change of operatorship and assume any active permits and assume all bonding requirements."

—KAY CASHMAN

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continued from page 1

O&G FUTURE

consequences.

Rae said climate change and its impacts are "not something that is happening in the future, it's happening now."

With a career highlighted by one term as Ontario premier, a long association with the socialist New Democratic Party, and a stint as interim leader of the federal Liberal Party, he rejected as completely unrealistic a campaign by some of his former associates to shut down the industry in short order.

"The first thing we have to do is be honest and real — I look out my window in New York City and people are still driving cars," he said.

"The oil and gas industry is going to continue to play a role in Canada and the world. The challenge is making it cleaner."

Insignificant share no excuse

But Rae is unhappy with Canadians who insist there is no reason for their country to reduce the effects of climate change because of their insignificant share of global greenhouse gas emissions — estimated at 1.5%, although the average per household emissions are almost double those of the United Kingdom, France and Norway.

He said it's not reasonable for Canada to leave the challenge of lowering GHG emissions to others. "We should never be free riders. We can't persuade others to do something if we're not willing to do it ourselves."

Gary Mar, a former Alberta cabinet minister, asked Rae how countries such as Russia, China and Saudi Arabia should be held accountable for their contribution to emissions.

Rae replied that pressure can be applied by the internet and social media.

"The process of change and transformation is going to be a very public process. There's going to be no place to hide," he said. Rae cautioned that lagging behind at this stage would make the goal of achieving a reduction in GHG emissions by 40% to 45% by 2030 and net-zero by 2050 "painful and difficult" for Canada.

Former Suncor Energy Chief Executive Officer Steve Williams said there should be "an urgency but not craziness" about pursuing those targets.

He said a full transition away from fossil fuels would take decades, noting that "global national security" will be heavily dependent on oil and gas.

Shutting down the petroleum sector would make no sense if it left Canada to import the products needed to keep the country functioning.

—GARY PARK

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continued from page 1

OIL PRICES

Oil prices continued modestly lower at the end of the trading day following comments by U.S. Energy Secretary Jennifer Granholm to the Financial Times suggesting that the United States could ease prices by releasing oil from its strategic reserves or restricting crude exports.

Oil prices continued to slip in early trading Oct. 7, with Brent briefly hitting $79.95. As Petroleum News went to press, Brent was above the psychologically important $80 mark, seen as the level where prices begin to affect consumer demand.

OPEC+ sparks price appreciation

All jawboning aside, the market staged a strong reaction to the discipline of the Organization of the Petroleum Exporting Countries and its allied producing nations, including Russia.

At its 21st OPEC and non-OPEC Ministerial Meeting Oct. 4, OPEC+ resisted calls from the United States and other consuming nations to step up the return of production volumes, sticking instead with its existing plan to increase oil exports gradually. OPEC+ will increase exports by 400,000 barrels per day in November, as per the schedule approved in July.

U.S. shale producers are not expected to respond with dramatically higher production to offset the OPEC+ restraint, being focused on reducing debt and improving profitability as oil markets improve.

Prices took off after the OPEC+ announcement Oct. 4. ANS leapt $1.87 to close at $81.49, WTI popped $1.74 to close at $77.62, and Brent jetted $1.98 higher to a close of $81.26.

The surge continued Oct. 5, as ANS rose $1.43 to $82.91, WTI rose $1.31 to $78.83, and Brent rose $1.30 to close at $82.56. The WTI price was the highest in seven years.

After prices jumped on the OPEC announcement, Saudi Arabia reduced crude prices for Asia, its biggest market, and cut prices for nearly all grades headed for the United States, the Mediterranean and Northwest Europe, according to a Bloomberg report.

$180 oil in 2022?

Houston based consultancy Opportune LLP thinks oil prices have the potential to rise dramatically higher than current levels, with WTI hitting prices of $180 or more by the end of 2022.

The culprits are hyperinflation spurred by COVID-19 stimulus spending, and the Biden administration's climate agenda.

According to Opportune, quantitative easing in response to the 2007 credit crisis put $3.5 trillion into the economy, stimulating the stock market artificially. As the S&P rose, however, the velocity of money slowed, showing that the economy never fully recovered from that crisis.

Enter the coronavirus pandemic, and the Federal Reserve has injected an additional $3.5 trillion.

"What took five years to do with QE was now duplicated in less than a year, this means that we currently have around $7 trillion of government-directed stimulus floating in the system," Opportune said. "The worst part is that an additional $6 trillion of the COVID/infrastructure bill is currently being debated in Congress. Not only are these numbers staggering, but the rate at which it hits the economy is ripe to spur hyperinflation."

With such a rapid expansion of the money supply, it is only a matter of when hyperinflation will hit, Opportune analyst Ryan Dusek said, adding that commodity prices are up across the board, and Bloomberg's commodity index which tracks futures prices is at a six-year high.

"In addition, several of my internal models are currently valuing West Texas Intermediate crude oil in the $90 per barrel range," Dusek said.

In one simple economic model, the relationship between the Dollar Index and the velocity of money, VM1, is used to guide expectations about future WTI prices, he said.

"Given the government's insatiable thirst for spending, it's not unreasonable to assume a negative and a new low (less than 70) for the DXY index," he said. "Therefore, I would expect WTI to trade north of $180 by the end of next year."

Dusek said that with the existing and potential levels of unprecedented stimulus, the economy is operating in uncharted waters.

"The government won't correct its course until it's forced to do so; hyperinflation "breaks" their game," he said. "They'll be stuck between increasing rates to slow price inflation and decreasing rates to spur recovery. The only alternative remaining is to reduce the money supply and accept all the painful ramifications that will result from it." ●

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continued from page 7

PRODUCERS PREVIEW

siltstone and shale.

In the East Barrow field, porosity for the Barrow sandstone ranges from 2% to 28%, averages 18% and has a median value of 18%. Permeability for the sandstone ranges from 0.01 to 3295 millidarcies, averages 133 millidarcies, and has a median value of 13 millidarcies.

Reservoir quality rock also occurs within the Walakpa sandstone, Pebble shale, Torok formation, and the Sag River sandstone.

Drilling and testing of the East Barrow gas field began in 1974 and continued through 1990, the commission reported. During this time eight wells were drilled in the field: South Barrow 12, 14, 15, 17, 18, 19, 20, and East Barrow 21, per AOGCC.

Regular gas production from the pool began in December 1981, peaked at about 2.75 million cubic feet of gas per day in early 1983, and then began to decline, AOGCC said.

During the first quarter of 2011, the East Barrow gas pool produced an average of 448 thousand cubic feet of gas per day, and for 2015 the pool averaged 442 thousand cubic feet of gas per day. During the first six months of 2019, the pool averaged 392 thousand cubic feet of gas per day.

In the year ending June 1, 2021, the East Barrow gas field was producing an average of 334 thousand cubic feet per day.

Through the end of 2020, cumulative production from the field was 9.8 billion cubic feet, AOGCC reported.

Walakpa gas field

Working under a U.S. Navy contract, Husky Oil discovered the Walakpa field with the 3,666-foot Walakpa No. 1 well in the 1980s.

Southwest of Utqiaġvik, Walakpa has peaked above 5 million cubic feet per day numerous times in the decades since it went online in late 1992. In the year ending June 1, 2020, the field produced 1.3 billion cubic feet or nearly 3.6 million cubic feet per day, according to AOGCC, up from 12.8 billion cubic feet or more than 3.5 million cubic feet per day in the year prior.

In the year ending June 1, 2021, the Walakpa gas field produced an average of 3.7 million cubic feet per day, per AOGCC.

Cumulative production from Walakpa was 35.1 billion cubic feet through the end of 2020. ●

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continued from page 1

SATELLITE FOCUS

drilling in 2022 would depend on market conditions and WIO approval.

Circumstances changed.

In mid-July, Hilcorp told the division it now anticipated completing as many as six wells within the Orion Participating Area in the Western Satellites during the 2021 POD period, including up to three producers and one injector from L pad and up to one producer and one injector from Z pad.

The division approved the POD amendment July 28.

Hilcorp North Slope acquired working interest and operatorship from former operator, BP Exploration (Alaska) in the summer of 2020 via acquisition of the operator's corporate entity.

The Prudhoe Bay WIOs are ConocoPhillips Alaska, ExxonMobil Alaska Production, Hilcorp North Slope and Chevron U.S.A.

Proposed 2022 work

Drilling proposed for the 2022 POD period, Jan. 1, 2022, through Dec. 31, 2022, includes up to 10 new wells, Hilcorp said. The company listed more than 10 candidates to be evaluated, and said the potential candidates were not limited to those named.

•Aurora PA, up to one S pad producer.

•Borealis PA, up to three L pad producers and up to one V pad injector.

•Midnight Sun PA, no planned drilling activity.

•Orion PA, up to four producers and two injectors at Z pad and up to two producers and two injectors at V pad.

•Polaris PA, up to two producers and one injector at W pad and up to one producer and one injector at M pad.

Hilcorp said it anticipates up to three workovers or recompletions during the 2022 POD, with candidates including, but not limited to:

•Aurora PA, no planned workovers or recompletes, but Hilcorp said it is "continuing to evaluate well-stock."

•Borealis PA, as with Aurora, no workovers or recompletes planed, but continued evaluation of well stock.

•Midnight Sun PA, no planned workovers or recompletes.

•Orion PA, one rig workover to install sand control in V-205.

•Polaris PA, two rig workovers to add additional injection.

On the facilities side, Hilcorp said it is "evaluating additional sand jetting improvement projects at GC-2 in the C and D slug catchers, similar to the project executed for the B slug catcher in 2021."

L pad expansion is also being evaluated, work which would provide space for future drilling.

The company said it "plans to continue evaluating opportunities to improve the western area gathering infrastructure."

Long term, future drilling opportunities are being evaluated along with evaluation of potential undeveloped resources. New

Drilling proposed for the 2022 POD period, Jan. 1, 2022, through Dec. 31, 2022, includes up to 10 new wells, Hilcorp said. The company listed more than 10 candidates to be evaluated, and said the potential candidates were not limited to those named.

pad development options will be evaluated, along with polymer injection and expansion of L pad.

A reservoir engineering and geologic study of I pad development will start in the fourth quarter of 2021, with detailed pad options and facility layouts to be evaluated during the 2022 POD period, Hilcorp said.

Starting in the fourth quarter of 2021, Hilcorp will do a six-month, three-well polymer pilot in the Polaris PA. "This pilot will determine polymer's impact on injectivity, MI utility, oil rate, and reserves. Hilcorp North Slope will use this data to determine whether polymer expansion is economic in Orion and Polaris PAs."

The company is conducting front-end engineering studies on L pad expansion and V pad gas separation to determine whether those projects are economic.

2021 POD review

Hilcorp told the division in its proposed 2022 POD, submitted Sept. 30, that its focus with the Western Satellites has been "on returning idle wells to service, optimizing production through the existing surface infrastructure, targeting reservoirs that had been under-developed, improving voidage replacement, maximizing MI utility, and improving operational efficiency."

Those things combined, the company said, led to a 43% year-over-year increase in oil production from the Western Satellites for the 12 months from July 1, 2020, to June 30, 2021, compared to July 1, 2019, through June 30, 2020.

Hilcorp North Slope took over as operator at Prudhoe on July 1, 2020, after the sale of BP's upstream assets was finalized effective June 30, 2020.

The company said the Western Satellite PAs produced some 9.417 million barrels of oil and 24.6 billion cubic feet of gas between July 1, 2020, and June 30, 2021, an increase of 2.837 million barrels of oil. The daily average for the 2020-21 period was 25,801 bpd of oil.

For the July 1, 2020, through June 30, 2021, period, Aurora averaged 5,968 bpd, Borealis 7,094 bpd, Midnight Sun 1,263 bpd, Orion 4,056 bpd and Polaris 7,420 bpd.

2021 POD activity

In July the Prudhoe working interest owners agreed to drilling in the Western Satellites and the division approved an amendment to Hilcorp's 2021 POD for the Western Satellites.

The division said the Aurora, Borealis and Midnight Sun PAs produce primarily from the Kuparuk River formation while Orion and Polaris "produce oil with higher viscosity from the Schrader Bluff formation."

In its 2022 POD, Hilcorp said it mobilized a drilling rig to the Orion PA in September 2021 and spud the L-206 well. The company told the division it plans to drill five wells from L pad and two from Z pad during the remainder of the 2021 POD period, and said one of the wells, the Z-221i is expected to spud in late December but will not be completed until 2022. Z-220, a Z pad producer, will likely move into the 2022 POD period "due to operational timing," the company said.

A number of workovers were completed or are planned to be completed during the 2021 POD.

At the Borealis PA, Hilcorp recompleted two Z pad wells from the Ivishak to the Kuparuk formation: Z-31, recompleted and put on injection June 2, is currently on MI; Z-11A was recompleted and put on production June 18, with an initial stabilized production rate of some 350 barrels per day of oil.

In the Midnight Sun PA, a rig workover was proposed, but not executed. Hilcorp said an alternative procedure was found to achieve the work.

At Orion, Hilcorp said two rig workovers were scheduled to repair mechanically failed wells. L-203, following repairs, tested at some 1,000 bpd. At V-205, a rig workover on the 2021 list was moved to 2022 "due to long lead tangible order timing."

Two rig workovers were done to add injection: V-137 was completed into the Schrader and put on injection; a rig workover at V-120 was "delayed into 2022 POD period due to workover scheduling."

At the Polaris PA, three workovers were proposed to add injection, with work completed at S-216 and W-212, and a scheduled rig workover to convert S-15 to injection scheduled for the third quarter 2021.

Major facility projects in the 2021 POD period included completion of reinstating the Gathering Center 2 "slug catcher sand jetting system to improve solids and water handling capabilities."

Hilcorp said it "continues to generate and evaluate opportunities to improve the western area gathering infrastructure."

Western Satellite PAs

Hilcorp included background on the Western Satellite reservoirs, here supplemented with data from the Alaska Oil and Gas Conservation Commission, which provides profiles on oil and gas pools in the state, as well as monthly production by field and well.

Development of the Aurora reservoir began in July 2000, Hilcorp said, with production startup in November 2000 and water injection beginning in December 2001. Prudhoe Bay miscible gas for water-alternating-gas injection, WAG, was used for tertiary recovery at Aurora beginning in December 2003. AOGCC information on the Aurora oil pool describes it as within the Kuparuk River formation and

Hilcorp told the division in its proposed 2022 POD, submitted Sept. 30, that its focus with the Western Satellites has been "on returning idle wells to service, optimizing production through the existing surface infrastructure, targeting reservoirs that had been under-developed, improving voidage replacement, maximizing MI utility, and improving operational efficiency."

defined by the 1969 Mobil Oil Corp. Mobil-Phillips North Kuparuk State No. 26-12-12 discovery well with the structure between 6,450 and 6,850 feet true vertical depth. AOGCC data shows Aurora production from S pad.

Hilcorp said development at the Borealis reservoir began in July 2021. Production startup was in November 2001, with water injection starting in June 2002. A pilot project using Prudhoe Bay miscible injectant, MI, for WAG for tertiary recovery began at Borealis in June 2007. AOGCC information on the Borealis oil pool says it is in the Kuparuk River formation and is produced from the L, V and Z pads. The hydrocarbon accumulation correlates with the interval between 6,534 and 6,952 feet measured depths in the West Kuparuk State 3-11-11 well.

Development of the Midnight Sun reservoir began in 1997, Hilcorp said, with production beginning in October 1998, water injection in October 2000 and MI in 2016. In AOGCC data on the Midnight Sun oil pool, the discovery well is listed as the 1997 Sambuca No. 1, later renamed PBU MDS E-100. The discovery was confirmed in 1998 by the Midnight Sun No. 1 delineation well, later renamed PBU MDS E-101. Midnight Sun is a Kuparuk River formation accumulation which correlates with the interval from 11,662 to 11,805 feet measured depth in the Sambuca No. 1. AOGCC production records show two wells in production at Midnight Sun in the 2021 calendar year through August, with production from E pad.

Hilcorp said development began at the Orion reservoir in December 2001, with production beginning in April 2002 and water injection in December 2003. Prudhoe Bay MI for WAG has been used since October 2006 for tertiary recovery. Orion is in the Schrader Bluff formation, and AOGCC information on the pool says Orion represents the PBU portion of the formation, which is also present in the Milne Point and Kuparuk River units. The accumulation at Orion was discovered in 1968 by the Kuparuk State No. 1 exploratory well and confirmed in 1998 by Northwest Eileen 2-01 and is defined as the hydrocarbons correlating with the interval from 4,549 to 5,106 feet measured depth in PBU V-201. AOGCC said the pool produces from the V and L pads with horizontal well drilling technology used extensively in the pool's development.

The Polaris PA also produces from the Schrader Bluff formation. Hilcorp said development at the pool began in November 1997 with production beginning in November 1999 and water injection in May 2003. Prudhoe Bay MI was used in 2006 for WAG and then beginning again in 2009 for tertiary recovery. AOGCC said the Polaris oil pool is an accumulation correlating with the interval between 5,544 and 6,012 feet measured depths in the PBU S-200PB1 well, with production from the S and W pads. ●

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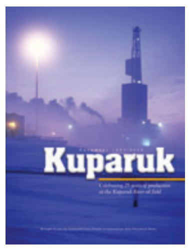
continued from page 1

INSIDER



The history of the Kuparuk oil field is one of technological innovation, environmental stewardship and enthusiastic commitment from both ConocoPhillips employees and its contractors.

For more information on the magazine, contact Susan Crane with Petroleum News at 907-250-9769 or Kay Cashman at 907-782-6110.

Major OSH shareholders question Santos deal

ACCORDING TO AN OCT. 4 article in The Australian, "several large institutional" Oil Search Ltd. shareholders are reconsidering Santos Ltd.'s $6.2 billion (A$8.4 billion) buyout merger proposal due to a "surge in liquefied natural gas and oil prices and more favorable prospects in Papua New Guinea," which "test the merits of the deal."

PETER BOTTEN

If the transaction goes forward, Santos will control 61.5% of the merged company to Oil Search's 38.5%.

At least 75% of shareholders must approve the deal at a meeting scheduled for Nov. 29.

"Several investors have canvassed the possibility of former Oil Search chief executive Peter Botten returning to the company as chairman, replacing Rick Lee, should the company vote down the merger proposal and remain an independent entity," the publication reported.

Allan Gray, which holds nearly 5% of Oil Search's stock, said it is not sold on the merger.

"We weren't that keen on the combination at the outset, and with some of the developments that have happened subsequent to the deal being announced, they have made us even less keen on this transaction," Simon Mawhinney, Allan Gray managing director, was quoted as saying in The Australian. "We are not partial to this combination on these terms. … I think there's every chance shareholders in Oil Search vote this down."

Credit Suisse analyst Saul Kavonic told The Australian: "Given the 75% vote threshold, a negative vote cannot be completely ruled out and we can perhaps hypothetically contend with the possibility some shareholders could seek someone like Peter Botten to return to the field, who may be the only person able to cajole momentum behind Oil Search as a stand-alone entity again. Unlikely, yes, but in the LNG game anything can happen."

Note: The Australian can be found online at https://www.theaustralian.com.au/

JPT: North Slope may see exploration renaissance

ON OCT. 1, THE JOURNAL of Petroleum Technology reported that as Canada, Greenland and Norway shy away from developing their Arctic oil and gas resources, only Russia and the United States remain in the game as Alaska seeks to renew interest in exploration and development of its North Slope.

Following are excerpts from the JPT article, which can be found in its entirety and with accompanying graphics at: https://jpt.spe.org/alaskas-north-slope-may-yet-see-its-renaissance-in-arctic-exploration

- Russia sees its Arctic reserves, particularly gas reserves, as vital to its national security….
- With navigation now possible year-round along the Northern Sea Route, Russia's LNG champion and its largest independent gas producer, Novatek, is moving forward with exploration to expand its resource base and build infrastructure to ship product east to Asia and west to Europe.
- Russia's state-owned majors — Rosneft, Gazprom, and Gazprom Neft — are lining up behind their IOC colleagues as new investment in Arctic exploration and development is encouraged and rewarded by the Kremlin.
- Among countries with Arctic coastlines, Canada has focused its hydrocarbon production on its oil sands which sit well below the Arctic Circle, Greenland has decided not to issue any new offshore exploration licenses, and while Norway is offering licenses in its "High North," the country can't find many takers.
- The Norwegian Petroleum Directorate, NPD, reported that while 26 companies applied for licenses in 2013, this year's bid round attracted only seven participants.
- Norway is Europe's largest oil producer after Russia with half of its recoverable resources still undeveloped and most of that found in the Barents Sea where the NPD says only one oil field and one gas field are producing.
- The U.S. Geological Survey estimates 27% of global unexplored oil reserves may lie (in Alaska's Arctic)
- Between ConocoPhillips' Willow project, recent discoveries by Australia's 88 Energy … and Hilcorp Energy Corp.'s acquisition of BP's Alaska assets — the North Slope may be in for a renaissance.
- ConocoPhillips Senior Vice President Nick Olds said in an investors call (that) Willow (is) the company's "next great Alaska hub" with 200 wells and a processing plant to support 180,000 bpd of production.
- Significant oil exploration and development opportunities still exist on the North Slope, with 75% of the (ConocoPhillips) exploration portfolio undrilled.
- The Biden administration has supported the (Willow) project, which was greenlighted during the Trump administration.
- Meanwhile though, the Alaska Industrial Development and Export Authority, AIDEA, a state-owned economic development corporation which had bought seven of the nine oil leases auctioned in the Arctic National Wildlife Refuge (ANWR 1002 Area) before Biden took office, has fast-tracked implementation of a $1.5 million pre-exploration workplan to develop its leases regardless of any federal moratorium.
- AIDEA approved the expenditure in June, two weeks after the Interior Department issued its license cancellation order.
- On 4 August the state authority reported on its website that it had awarded a contract to SAExploration Inc. to perform predevelopment permitting and planning work including impact studies, data collection and regulatory permitting to support a phased, multiyear seismic acquisition program targeted to begin in 2022.
- In a statement on its website, AIDEA contends that the moratorium is not legally valid, an argument that seems to have been reinforced by Judge Doughty's decision in the case brought in Louisiana.
- And in a letter sent on 11 June to the Interior Department, AIDEA said it holds "valid and enforceable leases covering 365,775 acres onshore" that grant AIDEA "legal, exclusive rights of access" to explore and develop any reserves there.
- AIDEA noted that the non-wilderness Section 1002 Area of ANWR where its leases are located contain an estimated 7.6 billion barrels of recoverable oil and 7.0 tcf of natural gas.

—OIL PATCH INSIDER IS COMPILED BY KAY CASHMAN

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continued from page 1

PIPELINE PAUSE

advertising, told Petroleum News in an Oct. 5 email.

"However, the ADOG permit provides COPA flexibility should the project be redefined and progressed at a later date," she added.

The pending litigation Boys was referring to was an Aug. 18, Federal District Court of Alaska decision that upheld appeals challenging the validity of the environmental impact statement and the associated polar bear biological opinion for the Willow oil field, preventing ConocoPhillips from starting any on-the-ground work in the National Petroleum Reserve-Alaska until the Bureau of Land Management reworked and approved the EIS, and the Fish and Wildlife Service reworked the associated biological opinion.

In a Sept. 21 market update, ConocoPhillips Chairman and CEO Ryan Lance said Willow remained very competitive in the company's portfolio: "We're still focused on moving the project forward when we have the ability to go do that."

Expanding west

The Oct. 2 issue of Petroleum News carried a story titled "Preparing to head west to Willow, beyond" about the approval of two pad expansions on state land filed Aug. 2 by the company with the Alaska Division of Oil and Gas.

The story addressed ConocoPhillips' continued move west on Alaska's North Slope to Willow and other oil fields in the petroleum reserve. The pad expansions would have added space to accommodate new modules and equipment.

Applied for as amendments to plans of operations for both pads, the company was approved to expand Kuparuk's Central Processing Facility 2 pad and Colville River's Miscible Injection/Gas Injection pad north of CD4.

Work was expected to begin Nov. 1 and be completed by June 30, 2024, ConocoPhillips said in its application to the division.

The WNS Service Pipeline Replacement project components were being permitted separately with the State Pipeline Coordinator's Office.

The project included replacing the existing Alpine 12-inch utility pipeline with a new 20-inch pipeline to transport seawater from CPF2 to the MIGI pad on a new pipe rack. A new 4-inch products pipeline was also to be installed to transport diesel and other products from CPF2 to the Colville River unit's Alpine Central Processing Facility on a spare slot on the existing Alpine sales oil pipe rack.

—KAY CASHMAN

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