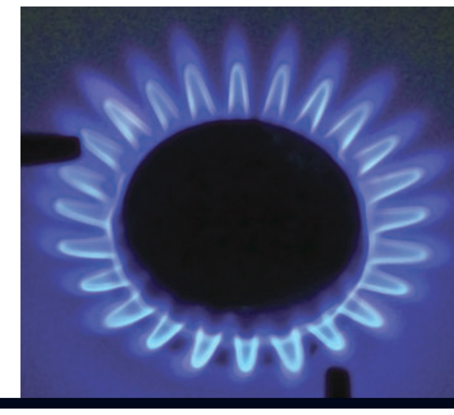
Petroleum news



page 3 Hilcorp lays out plans for three Cook Inlet fields, Beluga, Kenai, Swanson

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Alaska DNR posts new North Slope, Cook Inlet activity maps

The latest North Slope and Cook Inlet oil and gas activity maps were recently posted on the Alaska Department of Natural Resources' Division of Oil and Gas website (see North Slope map in pdf and print versions of this story).

The last time the division released activity maps for the North Slope and the Cook Inlet basin was in December 2020.

Both the July 2021 maps are very detailed, including such things as unit boundaries, prospects, 2019-21 exploration wells, the trans-Alaska oil pipeline, and some geographical elements.

Per the map, active oil companies on the North Slope include 88 Energy, ConocoPhillips, Hilcorp, Oil Search, Pantheon and Savant, a Glacier Oil and Gas company.

see **ACTIVITY MAPS** *page 6*

Hilcorp plans exploratory well inside the Beluga River unit

Hilcorp Alaska has filed a proposed modification to its Beluga River unit plan of development, saying that in the fourth quarter of this year the company plans to drill a new well in the unit into rock formations below the current field reservoirs. Since the well will test for new hydrocarbon resources in the unit, the Alaska Oil and Gas Conservation Commission classifies the well as exploratory. The new well will be drilled from the K pad in the unit, the site of an existing gas production well in the more northerly part of the unit. Hilcorp has applied to the Alaska Department of Environmental Conservation for a modification to its oil spill contingency plan for Cook Inlet exploration, to accommodate the exploratory drilling from K pad.

According to the plan of development amendment, the drilling

see **HILCORP WELL** *page 8*

KXL fight goes legal; TC Energy seeks US$15 billion in damages

The Alberta government is mulling over whether to join TC Energy in a US$15 billion trade action against President Joe Biden's decision to terminate the Keystone XL pipeline.

TC Energy said it aims to recover the damages it "has suffered as a result of the U.S. government's breach of its (North American Free Trade Agreement) obligations."

The case has been filed under a NAFTA carryover to the recently negotiated United States-Mexico-Canada Agreement.

Alberta Energy Minister Sonya Savage said her government is still mulling its options to recover C$1.3 billion it invested in KXL.

The government of Premier Jason Kenney had also offered to

see **KXL FIGHT** *page 8*

Nova Scotia LNG venture fails; Alberta steps in to aid refinery

SONYA SAVAGE

Keeping what were once routinely accepted energy infrastructure projects afloat in Canada is now either a lost cause or a case of cracking open the public piggy bank.

These days every venture faces intense scrutiny from regulators, goes through legal battles and struggles to raise financing.

In the two most recent examples, one of the most doggedly pursued LNG ventures has been all but abandoned in Nova Scotia, while a troubled oil

see **LNG VENTURE** *page 8*

FINANCE & ECONOMY

OPEC+ in agreement

Saudis, UAE break impasse on August production, supply cuts past April 2022

By STEVE SUTHERLIN
Petroleum News

July 14 was a pivotal day for oil prices. July 14 marked the solidification of the production accord between Organization of the Oil Exporting Countries and allied producing countries, as Saudi Arabia and the United Arab Emirates reached an agreement to preserve the OPEC+ Declaration of Cooperation.

The agreement meant that the group's output adjustment for August will be around 400,000 barrels per day, in line with analyst expectations at the time the group went into planning meetings in late June and early July.

The first half of July was mired in uncertainty when OPEC+ meetings were derailed by a spat over production levels, and a proposal to extend OPEC+ oil supply cuts beyond April 2022.

Jet fuel use remains 24% below July 2019, suggesting markets could tighten and prices could climb when air travel normalizes.

The UAE requested a larger increase in its own production under the supply cut agreement, but Saudi Arabia refused.

An OPEC+ meeting to establish August production levels originally scheduled for July 1 was

see **OIL PRICES** *page 9*

PIPELINES & DOWNSTREAM

Preserving AK's pipeline

Alyeska's proactive maintenance program protects TAPS from climate change

By KAY CASHMAN
Petroleum News

Alyeska Pipeline Service Co.'s proactive risk-based maintenance program's latest construction project is designed to protect the 800-mile trans-Alaska oil pipeline from the slow pace of melting permafrost attributed to climate change.

The Trans-Alaska Pipeline System, or TAPS, was "designed and built to manage changing environmental conditions, including permafrost zones," Alyeska's chief communications officer Michelle Egan recently told Petroleum News in an email.

TAPS, which Alyeska has operated for more than 44 years, includes 420 miles of above-ground pipe on vertical support members, or VSMs, to accommodate permafrost conditions.

"Since the startup of TAPS operations, more than 124,000 ground-cooling thermal units called heat pipes along the pipeline have helped cool and stabilize permafrost," Egan said.

As part of that commitment, thermal units and the VSMs are regularly monitored and when needed, Alyeska repairs or reinforces them, she said.

The latest maintenance construction project at Lost Creek Hill, which began in June, it is expected to take 120 days and will be complete yet this summer, Egan confirmed. Alyeska's monitoring

see **TAPS MAINTENANCE** *page 11*

FINANCE & ECONOMY

An extraordinary year

BP Statistical Review reports huge drop in energy use, carbon emissions in 2020

By ALAN BAILEY
For Petroleum News

1 2 SERIES

The COVID-19 pandemic caused a massive drop in energy consumption during 2020, mainly as a consequence of a fall in oil usage, according to BP's annual Statistical Review of World Energy. The drop in oil consumption came primarily as a result of the pandemic related shutdown and the crash in transportation oil demand. The slump in the use of fossil fuels resulted in turn in a major fall in global carbon emissions.

With the production of renewable energy actually increasing somewhat, despite the overall energy usage slump, the year provided important lessons in terms of managing carbon emissions and tackling global climate change.

Spencer Dale, BP chief economist, characterized the impact of the pandemic on global energy in 2020 as "unmatched in modern peacetime," with the largest falls in energy demand and carbon emissions since World War II. And, with energy systems under extreme pressure, "the global pandemic was the mother of all stress tests," Dale commented.

Drop in global demand

World energy demand is estimated to have fallen

see **BP REVIEW** *page 12*

● EXPLORATION & PRODUCTION

AOGCC issues pool rules for Rendezvous

Second pool, after Lookout, to come online in National Petroleum Reserve-Alaska; will produce from Greater Mooses Tooth 2 pad

By KRISTEN NELSON
Petroleum News

The Alaska Oil and Gas Conservation Commission has issued pool rules and an area injection order for ConocoPhillips Alaska's Rendezvous pool, which the company is developing from Greater Moose's Tooth Pad 2 in the Bear Tooth unit in the National Petroleum Reserve-Alaska. The company has been producing from the Lookout pool at GMT1 since 2018. AOGCC said Rendezvous is west and south of Lookout.

The Rendezvous A exploration well penetrated the accumulation in 2000 with five additional exploratory wells drilled over the next few years by ConocoPhillips (Rendezvous 2, Spark 1A, Moose's Tooth C, Spark 4 and Carbon 1) and Altamura 1 drilled by Anadarko Petroleum.

AOGCC said Rendezvous 2 and Altamura encountered black oil; Rendezvous A, Spark 1A, Spark 4 and Carbon 1 encountered gas columns with condensate in the gas.

The commission said ConocoPhillips proposed defining the accumulation as hydrocarbons common to and correlating with the Rendezvous 2 interval from measured depths of 8,229 feet to 8,393 feet (equivalent to minus 8,104 to minus 8,268 feet true vertical depth subsea), late Jurassic-aged sediments subdivided to Alpha C and D intervals.

"The ACF has no free-gas handling capacity so it is not feasible to attempt to produce the gas cap to recover the condensate reserves," the commission said.

Volumes

The gas-oil contact is estimated at minus 8,108 feet TVD based on testing in the Rendezvous A and Rendezvous 3 wells. Oil was established down to minus 8,450 feet TVD in the Altamura 1, the commission said, with no exploratory or development wells drilled in the Colville River unit to the east or within the Greater Mooses Tooth unit encountering an oil-water contact in Jurassic-aged reservoirs.

The API gravity of the oil is 37.2 degrees, with original oil in place estimated at 300 million to 460 million stock tank barrels, primary recovery estimated at 20% of OOIP, 60 million to 92 million barrels, and primary plus waterflood plus enriched gas estimated at 35-60% of OOIP, or 105 million to 276 million barrels.

Gas cap resources are estimated at 1.7 trillion cubic feet to 2.8 tcf with condensate yield at 30-60 barrels per million standard cubic feet and condensate in place estimated at 51-168 million stock tank barrels.

"Project screening data and costs estimates indicate that a standalone processing facility for the ROP is not feasible and that the only viable option for development at this time is to send unprocessed production from the ROP to the Alpine Central Facility (ACF) in the CRU for processing and sales conditioning. The ACF has no free-gas handling capacity so it is not feasible to attempt to produce the gas cap to recover the condensate reserves," the commission said.

Development

Development from GMT2 will be with 36 horizontal wells split evenly between producers and injectors, the commission said. Pilot holes may be drilled before drilling horizontal wellbores. An additional 12 extended reach wells may be drilled, again split roughly between producers and injectors. "Potential ERD wells will depend, in part, on drilling results and performance of the initial wells," the commission said, and the ERD wells would extend development to the east and west.

The commission said all wells would trend northwest, with two rows of wells in the western part of the development area, a northern bank of 14 wells drilled from southeast to northwest and a southern bank of 13 wells drilled northwest to southwest, with producers alternating with injectors "to form a line-drive enhanced oil recovery (EOR) project."

A single row of nine wells is currently planned in the eastern development area.

"Northern wells beneath the ROP gas cap will be

see **POOL RULES** page 5

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ON THE COVER

EXPLORATION & PRODUCTION

GOVERNMENT

● EXPLORATION & PRODUCTION

Hilcorp lays out older inlet field plans

Beluga River, Kenai, Swanson River units, 3 of Cook Inlet's largest, on federal leases, units managed by Bureau of Land Management

By KRISTEN NELSON
Petroleum News

Hilcorp Alaska is the largest operator in Cook Inlet, and the majority of fields it operates there are among the oldest producing fields in the state. Notable are Swanson River, the Cook Inlet discovery field, Beluga River and the Kenai gas field.

The fields are entirely or partially on federal leases and managed by the U.S. Bureau of Land Management. In plans of development and operations filed with BLM in March, Hilcorp described plans of keep these fields in production, illustrating work required at mature fields, which are a focus for Hilcorp both in Alaska and in the Lower 48.

Collectively the three fields accounted for more than 38% of Cook Inlet natural gas production reported by the Alaska Oil and Gas Conservation Commission for May.

Swanson River

The current POD is the 57th for the Swanson River unit and covers April 1 through March 31, 2022.

Swanson River, entirely on federal acreage in the Kenai National Wildlife Refuge, is the only field in this group to produce both oil and gas. Alaska Oil and Gas Conservation Commission data for May, the most recent available, show oil and natural gas liquids production at Swanson averaged some 10.3% of inlet oil and NGL production in that month; Swanson natural gas production accounted for 9.5% of inlet gas production.

During 2020, Hilcorp told BLM, cumulative gas production from Swanson was 3,513 million standard cubic feet and cumulative oil production 326,000 barrels.

The company said that in 2020 various work on gas wells stemmed decline, including two successful perforation additions, one rig workover and one return to production of a long-term shut-in well which had been slated to be plugged and abandoned.

"The non-continuous Sterling B6U gas sand accessed in SRU 213-15 was mapped in SRU 12-15, providing a new future offtake point" in the field, Hilcorp said.

The company also had successful Tyonek G2 perforations in two oil wells and said a handful of wells with these oil zones would be perforated in 2021, including a well on the P&A list.

Also in 2020, a gas storage well was drilled to provide additional deliverability from the Tyonek 77-3 gas storage reservoir and Hilcorp said the plan is for that grassroots well is to serve only as a gas producer, although it could serve as a gas injector if needed in the future. A second gas storge well targeted the Tyonek 64-5 storage sand as an injector and producer.

The company did a number of workovers targeting shallow gas sands, including on two wells that were returned to service. Perforations were successfully added on one well, but on a second, perforations were unsuccessful.

"Hilcorp quantified remaining Sterling and Upper Beluga gas reserves in the North Block" of the field through a field study, identifying several perforation adding opportunities and an opportunity for a grassroots well.

In addition to work proposed in the 2020 POD, Hilcorp did a workover targeting gas sands at one well and planned a workover at another well which was pushed into the 2021 POD period "due to market conditions and other unforeseen factors."

The company said it did not perform any P&A work during the 2020 POD.

"The wells shown on the P&A list for the 2020 POD have been reevaluated and it has been determined that these wells have future potential production. There are no plans to P&A any SRU wells at this time," Hilcorp said.

The company also conducted routine facilities repairs and replacement.

For the 2021 POD Hilcorp said it has a new subsurface team in place and will continue to review the Swanson River unit "to identify remaining Sterling, Upper Beluga, and Tyonek gas in Blocks 3, 4, and 5; remaining oil reserves across the field in the Tyonek G-Zone; and potential oil prospects to target with CTD drilling."

The company listed six workover opportunities — either planned or under review; it also plans routine facilities repair and replacement.

Kenai

The gas-producing Kenai unit is currently Cook Inlet's largest gas producer, accounting for 19.3% of Cook Inlet gas in May, the most recent month for which AOGCC data are available. The unit includes both state and federal acreage.

In the 63rd plan of development and operations for the unit, filed in March, operator Hilcorp Alaska summarized activities from the 2020 plan. Cumulative gas production from the Kenai unit was 13,712.2 million standard cubic feet from non-storage wells in the 2020 POD period, the company told BLM.

The company drilled the KU 24-32 wells into the Sterling formation and executed 28 workover projects. Ten wells were converted from shut-in to producing, with work including uphole recompletes, addition of perforations and rig workovers to existing wells.

During the 2020 POD the company

see HILCORP PLANS page 4

continued from page 3

HILCORP PLANS

upgraded the Kenai Gas field grind and inject facility.

The company drilled two grassroots wells not in the original drilling program — both targeted the Sterling formation.

In the 2021 POD Hilcorp said workovers planned include uphole recompletions, perforation additions and rig workovers. The company also plans routine facilities repairs and replacement, including 24-inch low-pressure and 20-inch medium pressure flowline installation, new compressor installations, a HVAC upgrade and 20-inch sales pig launcher/receiver installation.

Three idle wells are in the queue for 2021 or 2022 workovers, another two wells shown as likely recompletions and more than two dozen idle wells are listed as under evaluation.

Beluga River

Hilcorp operates the Beluga River on behalf of itself and Chugach Electric Association. This field accounted for 9.6% of Cook Inlet gas production according to AOGCC data for May.

The unit includes both state and federal acreage.

In the 59th plan of development and operations, submitted to BLM in March, the company summarized results of the 58th POD, including three grassroots wells drilled with Rig 169 each targeting Sterling and Beluga sands: BRU 212-26 brought online Sept. 29; BRU 222-24 brought online Aug. 10; and BRU 241-34T brought online Sept. 26.

The company did three workovers, two with Hilcorp Rig 169 and the third with a coil tubing unit, with mixed results: one well was returned to production with an electric submissible pump but failed four months later; one well was recompleted and brought online; the third will had a coil ESP installed but failed almost immediately.

On the facility side, a small rental compressor was relocated to K Pad.

In the 2021 POD, Hilcorp said it anticipates drilling one grassroots well with Rig 147 targeting Sterling and Beluga gas sands.

No workovers with Rig 401 are anticipated, but through-tubing workovers are being evaluated and planned.

On the facilities side, the company plans to install produced water line tie-ins to D and F pads.

The company filed an amendment to the 2021 POD to drill from K Pad (see story on side of page 1 in this issue). ●

Contact Kristen Nelson at knelson@petroleumnews.com

EXPLORATION & PRODUCTION

US rotary rig count at 479, a gain of 4

The Baker Hughes U.S. rotary drilling rig count was at 479 the week ending July 9, a gain of four from the previous week's count of 475 and up by 221 from 258 a year ago.

When the count bottomed out at 244 in mid-August last year, it was not just the low for 2020, but the lowest the 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 when it gained back 10 rigs.

The July 9 count includes 378 rigs targeting oil, up by two from the previous week and up 197 from 181 a year ago, 101 rigs targeting gas, up by two from the previous week and up by 26 from 75 a year ago, and no miscellaneous rigs, unchanged from the previous week and down by two from a year ago.

Thirty-one of the rigs reported July 9 were drilling directional wells, 433 were drilling horizontal wells and 15 were drilling vertical wells.

Texas, with the most active rigs in the country (224), was up by two from the previous week. Louisiana (53), Ohio (10), West Virginia (10) and Wyoming (10) were each up by one rig week-over-week.

Colorado (12) and Pennsylvania (18) were each down by one rig.

Rig counts in all other states were unchanged from the previous week: Alaska (4), California (6), New Mexico (75), North Dakota (18), Oklahoma (27) and Utah (10).

Baker Hughes shows Alaska with four rigs active July 9, unchanged from the previous week and up one from a year ago, when the state's count stood at three.

The rig count in the Permian, the most active basin in the country, was unchanged from the previous week at 237 and up by 112 from a count of 125 a year ago.

—KRISTEN NELSON

GOVERNMENT

ND sues feds over lease sale suspension

North Dakota has sued the Biden administration over its suspension of new oil and gas leases on federal land and water, saying the move will cost the state hundreds of millions of dollars in lost revenue.

President Joe Biden shut down oil and gas lease sales from the nation's public lands and waters in his first days in office, citing worries about climate change.

The lawsuit filed July 7 in federal court in Bismarck claims the move is unlawful. It seeks to force the U.S. Bureau of Land Management to reschedule two lease sales that were canceled and block the agency from revoking others in the future.

The lawsuit said the two canceled sales this year have cost the state more than $82 million. The Bureau of Land Management declined comment July 8 on the lawsuit.

North Dakota Attorney General Wayne Stenehjem said in a statement that he sued "to protect North Dakota's economy, the jobs of our hardworking citizens, and North Dakota's rights to control its own natural resources."

Stenehjem said his office began working on the lawsuit immediately after the lease sales were suspended after Biden took office.

The suspension of the lease sales in North Dakota, the nation's No. 2 oil producer behind Texas, could cost the state "billions in the coming months," Stenehjem said.

Stenehjem said oil and gas production from leased federal and tribal land in North Dakota generates nearly $94 million in royalty revenue for the state annually.

A judge in Louisiana temporarily blocked Biden's suspension in June, and said his ruling applies nationwide. But the administration continues to develop plans that could extend the ban or make leases more costly.

—ASSOCIATED PRESS

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● GOVERNMENT

California denies new fracking permits

ASSOCIATED PRESS

California denied 21 oil drilling permits the week ending July 9 in the latest move toward ending fracking in a state that makes millions from the petroleum industry but is seeing widespread drought and more dangerous fire seasons linked to climate change.

State Oil and Gas Supervisor Uduak-Joe Ntuk sent letters July 8 to Aera Energy denying permits to drill using hydraulic fracturing in two Kern County oil fields to protect "public health and safety and environmental quality, including (the) reduction and mitigation of greenhouse gas emissions."

Aera Energy, a joint venture Shell and ExxonMobil, called the permit denials "disappointing though not surprising."

"This is the latest decision attacking the oil and gas industry that is based solely on politics rather than sound data or science," Aera spokeswoman Cindy Pollard said Friday, adding that the company was evaluating its legal options.

"Banning hydraulic fracturing will only put hard-working people of California out of work and threaten our energy supplies by making the state more dependent on foreign oil," she said.

Fracking involves injecting high-pressure water deep underground to extract oil or gas from rock. Critics say it can pollute groundwater and contributes to climate change.

"In the face of the effects of the climate emergency, the risks to everyday Californians are too high to approve these permits," Ntuk said July 9 in emails to the Bakersfield Californian and the San Francisco Chronicle.

Gov. Gavin Newsom applauded the move, his office said. In April, Newsom directed the state's Geologic Energy Management Division, or CalGEM, to develop a plan to stop issuing new fracking permits by 2024 after a measure to ban fracking died in the Legislature.

Newsom also has ordered the California Air Resources Board to figure out how the state can end all oil production by 2045. Those decisions would make California the largest state to ban fracking and likely the first in the world to set a deadline for ending oil production.

Still Newsom, who is facing a recall election in September, is treading a risky path. California is the seventh-largest oil-producing state, with more than 60,000 active wells. CalGEM has approved 100 new oil well-drilling permits and a dozen new fracking permits this year, according to state records cited by the Chronicle.

The industry directly employed about 152,000 people and was responsible for $152.3 billion in economic output, according to a 2019 study commissioned by the Western States Petroleum Association.

Even though oil production fell last year to its lowest level in state history, the industry retains plenty of political pull.

Lawmakers representing Kern County, an oil-rich area of the Central Valley, condemned the permit denials.

State Sen. Shannon Grove, R-Bakersfield, issued a news release July 9 critical of the July 8 permit denials.

"The attack on oil must end," Grove said. "A California without oil is an implausible dream being pushed by progressive politicians. The governor should protect quality careers and vital tax funding while ensuring Californians have access to affordable and reliable energy."

Conservation groups also weren't entirely satisfied.

Newsom should "instruct his agency to deny all new oil and gas permits immediately," said a statement from Alexandra Nagy, California director for the nonprofit group Food and Water Watch.

"Incremental steps are not enough to protect Californian communities and our climate, or save our scarce water resources from drilling operations that usurp them," Nagy said in a statement. ●

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POOL RULES

drilled near the base of the reservoir to minimize the risk of gas coning," the commission said, with hydraulic fracturing programs in those wells designed to avoid fracking into the gas cap.

Development drilling has begun

Drilling at GMT2 began in the second quarter of the year with primary drilling expected to continue through the end of 2024; ERD drilling might occur later, the commission said.

GMT2 construction took place over two construction seasons, with final installation of facilities and pipelines this year and first production and injection expected in the fourth quarter, ConocoPhillips told the commission at a May pool rules hearing.

The reservoir will be developed as a water- and water-alternating-enriched-gas-injection enhanced oil recovery project, with production and injection balanced to maintain reservoir pressure at or near the original measured pressure, preserving reservoir energy and increasing ultimate recovery, the commission said.

Fluids authorized for injection include:

•Source water from the Kuparuk seawater treatment plant;

•Produced water from the Alpine Central Facility;

•Enriched hydrocarbon gas from the ACF;

•Lean gas from the ACF:

•Tracer survey fluids to monitor reservoir performance;

•Fluids used to improve near wellbore injectivity;

•Fluids used to seal wellbore intervals which negatively impact recovery efficiency;

•Fluids associated with freeze protection;

•Standard oilfield chemicals; and

•Small amounts of Class II fluids, mixed with source or produced water including sump fluid, hydrotest fluid, rinsate generated from washing trucks, excess well work fluids and meltwater collected from well cellars. ●

Contact Kristen Nelson at knelson@petroleumnews.com

continued from page 1

ACTIVITY MAPS

Some of the map's highlights:

• 88 Energy drilled the Merlin 1 exploration well this past winter in the National Petroleum Reserve-Alaska. Although not fully tested, indications are that the liquids present are "likely to be oil rather than condensate," the North Slope map said.

• Hilcorp submitted a proposed 2021 Milne Point unit Plan of Development Amendment that added five wells on S pad, three of which will be producers.

• Oil Search is pursuing Pikka Phase 1 development and a series of other development opportunities.

• In January 2021, Pantheon Resources' Talitha A well was spud. Well operations were suspended for future testing.

The division's North Slope map said the company (ConocoPhillips) spud the first development well at Greater Mooses Tooth 2 on April 27, 2021. First production and injection are expected in fourth quarter.

ConocoPhillips slowly gaining

Of 21 wells planned for the Colville River Unit in 2020, which would have been drilled by multiple rigs including the new giant extended reach drilling rig Doyon 26, only six wells were drilled prior to the company's suspension of all drilling operations in April 2020.

While drilling operations resumed in December 2020, only up to seven wells are planned at CRU during 2021 and the first quarter of 2022, ConocoPhillips said per a March 28 PN report.

PN also reported that ConocoPhillips delayed its decision to restart drilling activity pending the results of the Nov. 3 ballot initiative to increase oil production taxes in the state. Following the defeat of the ballot measure, and the stabilization of oil prices around $40 per barrel, ConocoPhillips announced plans to resume drilling before the end of 2020.

Their announcement covered a range of development and maintenance projects at the Kuparuk River unit, the Colville River unit and the Greater Mooses Tooth unit. But it did not include any exploration drilling for the 2020-21 season, making this year one of only a handful of exploration seasons over the past 20 years 1without ConocoPh illips.

The division's North Slope map said the company spud the first development well at Greater Mooses Tooth 2 on April 27, 2021. First production and injection are expected in fourth quarter.

The map also noted that GMT2's development plan includes 36 initial wells, 18 producers and 18 injectors, with a potential for 12 additional wells for extended reach drilling targets.

The map did not mention any other 2021 activities by ConocoPhillips, but PN recently ran two updates on the company's plans in Alaska:

• July 4: Advancing Alaska.

• July 11: Oil patch insider: Coyote may be another Nanushuk find.

Cook Inlet basin activity

In addition to new players in the Cook Inlet basin and early-stage/potential geothermal and tidal energy projects, oil and gas producer and explorer Hilcorp continues to be active.

Among other things, the division approved a 2021 plan of development for Hilcorp's North Cook Inlet unit.

According to the division's inlet map, the company plans to utilize the Spartan 151 jack-up or a similar unit for supplemental development drilling by cantilevering it over the existing Tyonek production platform.

Hilcorp received permission to replace an approximately 4,100-foot section of 8-inch sub-sea oil pipeline connecting the Monopod Platform to the Trading Bay Production Facility. The section will be abandoned in place after appropriate cleaning activities.

The division also approved Hilcorp's lease plan of operations to enter the exploration phase of the Whiskey Gulch project, including construction of a gravel pad and drilling two wells. The prospect is some 3 miles northeast of the community of Anchor Point and north of Hilcorp's Seaview unit, which lies west and south of Anchor Point.

In January, the map said, Hilcorp submitted a permit application with the Bureau of Ocean Energy Management to do a Lower Cook Inlet geohazards survey over four federal lease blocks. Per a March 7 PN article, the lease blocks lie about halfway across the inlet, to the west of Kachemak Bay. Hilcorp had previously indicated that it anticipates drilling two to four exploratory wells in the Lower Cook Inlet. Federal regulations require a geohazard evaluation to be conducted over the entire area within about 1.5 miles of a planned offshore well site, before the start of drilling. The proposed survey would be approximately 35 miles west of the Homer Airport.

—KAY CASHMAN

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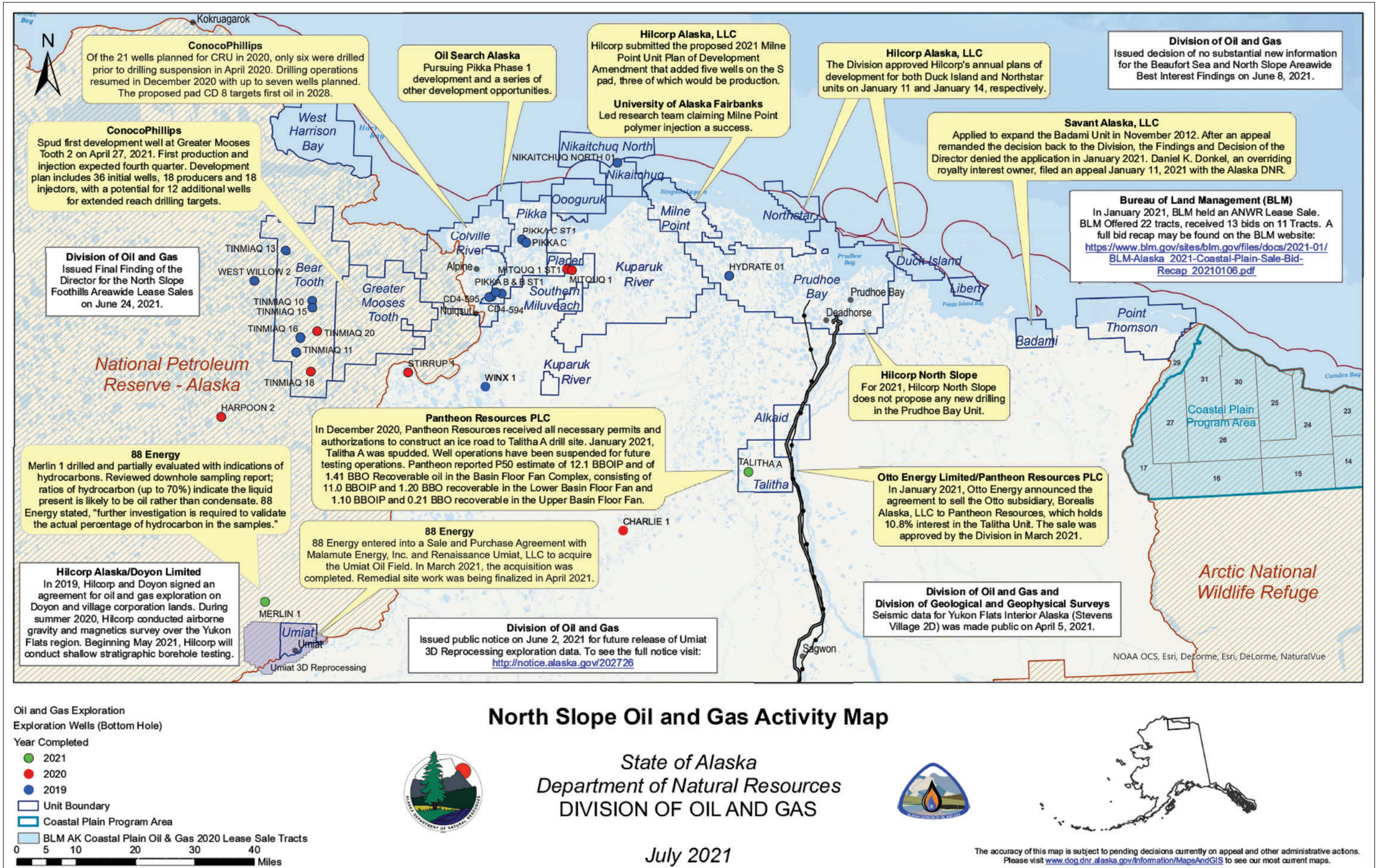
North Slope Oil and Gas Activity Map
State of Alaska
Department of Natural Resources
DIVISION OF OIL AND GAS
July 2021
ConocoPhillips
Of the 21 wells planned for CRU in 2020, only six were drilled prior to drilling suspension in April 2020. Drilling operations resumed in December 2020 with up to seven wells planned. The proposed pad CD 8 targets first oil in 2028.
Oil Search Alaska
Pursuing Pikka Phase 1 development and a series of other development opportunities.
Hilcorp Alaska, LLC
Hilcorp submitted the proposed 2021 Milne Point Unit Plan of Development Amendment that added five wells on the S pad, three of which would be production.
University of Alaska Fairbanks
Led research team claiming Milne Point polymer injection a success.
Hilcorp Alaska, LLC
The Division approved Hilcorp's annual plans of development for both Duck Island and Northstar units on January 11 and January 14, respectively.
Division of Oil and Gas
Issued decision of no substantial new information for the Beaufort Sea and North Slope Areawide Best Interest Findings on June 8, 2021.
ConocoPhillips
Spud first development well at Greater Mooses Tooth 2 on April 27, 2021. First production and injection expected fourth quarter. Development plan includes 36 initial wells, 18 producers and 18 injectors, with a potential for 12 additional wells for extended reach drilling targets.
Savant Alaska, LLC
Applied to expand the Badami Unit in November 2012. After an appeal remanded the decision back to the Division, the Findings and Decision of the Director denied the application in January 2021. Daniel K. Donkel, an overriding royalty interest owner, filed an appeal January 11, 2021 with the Alaska DNR.
Bureau of Land Management (BLM)
In January 2021, BLM held an ANWR Lease Sale. BLM Offered 22 tracts, received 13 bids on 11 Tracts. A full bid recap may be found on the BLM website:
https://www.blm.gov/sites/blm.gov/files/docs/2021-01/BLM-Alaska_2021-Coastal-Plain-Sale-Bid-Recap_20210106.pdf
Division of Oil and Gas
Issued Final Finding of the Director for the North Slope Foothills Areawide Lease Sales on June 24, 2021.
Hilcorp North Slope
For 2021, Hilcorp North Slope does not propose any new drilling in the Prudhoe Bay Unit.
Pantheon Resources PLC
In December 2020, Pantheon Resources received all necessary permits and authorizations to construct an ice road to Talitha A drill site. January 2021, Talitha A was spudded. Well operations have been suspended for future testing operations. Pantheon reported P50 estimate of 12.1 BBOIP and of 1.41 BBO Recoverable oil in the Basin Floor Fan Complex, consisting of 11.0 BBOIP and 1.20 BBO recoverable in the Lower Basin Floor Fan and 1.10 BBOIP and 0.21 BBO recoverable in the Upper Basin Floor Fan.
88 Energy
Merlin 1 drilled and partially evaluated with indications of hydrocarbons. Reviewed downhole sampling report; ratios of hydrocarbon (up to 70%) indicate the liquid present is likely to be oil rather than condensate. 88 Energy stated, "further investigation is required to validate the actual percentage of hydrocarbon in the samples."
Otto Energy Limited/Pantheon Resources PLC
In January 2021, Otto Energy announced the agreement to sell the Otto subsidiary, Borealis Alaska, LLC to Pantheon Resources, which holds 10.8% interest in the Talitha Unit. The sale was approved by the Division in March 2021.
88 Energy
88 Energy entered into a Sale and Purchase Agreement with Malamute Energy, Inc. and Renaissance Umiat, LLC to acquire the Umiat Oil Field. In March 2021, the acquisition was completed. Remedial site work was being finalized in April 2021.
Hilcorp Alaska/Doyon Limited
In 2019, Hilcorp and Doyon signed an agreement for oil and gas exploration on Doyon and village corporation lands. During summer 2020, Hilcorp conducted airborne gravity and magnetics survey over the Yukon Flats region. Beginning May 2021, Hilcorp will conduct shallow stratigraphic borehole testing.
Division of Oil and Gas
Issued public notice on June 2, 2021 for future release of Umiat 3D Reprocessing exploration data. To see the full notice visit:
http://notice.alaska.gov/202726
Division of Oil and Gas and
Division of Geological and Geophysical Surveys
Seismic data for Yukon Flats Interior Alaska (Stevens Village 2D) was made public on April 5, 2021.
N
Kokruagarok
West Harrison Bay
Harrison Bay
Nikaitchuq North
NIKAITCHUQ NORTH 01
Nikaitchuq
Oooguruk
Pikka
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Colville River
Alpine
MITQUQ 1 ST1
MITQUQ 1
Placer
PIKKA B & B ST1
CD4-595
CD4-594
Nuiqsut
Southern Miluveach
Kuparuk River
Milne Point
Simpson Lagoon
Northstar
HYDRATE 01
Prudhoe Bay
Prudhoe Bay
Deadhorse
Duck Island
Liberty
Foggy Island Bay
Badami
Point Thomson
Camden Bay
Coastal Plain Program Area
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TINMIAQ 13
WEST WILLOW 2
Bear Tooth
Greater Mooses Tooth
TINMIAQ 10
TINMIAQ 15
TINMIAQ 16
TINMIAQ 20
TINMIAQ 11
TINMIAQ 18
STIRRUP 1
WINX 1
National Petroleum Reserve - Alaska
HARPOON 2
Alkaid
TALITHA A
Talitha
CHARLIE 1
MERLIN 1
Umiat
Umiat
Umiat 3D Reprocessing
Sagwon
Arctic National Wildlife Refuge
NOAA OCS, Esri, DeLorme, Esri, DeLorme, NaturalVue
Oil and Gas Exploration
Exploration Wells (Bottom Hole)
Year Completed
2021
2020
2019
Unit Boundary
Coastal Plain Program Area
BLM AK Coastal Plain Oil & Gas 2020 Lease Sale Tracts
0 5 10 20 30 40
Miles
The accuracy of this map is subject to pending decisions currently on appeal and other administrative actions.
Please visit www.dog.dnr.alaska.gov/Information/MapsAndGIS to see our most current maps.

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KXL FIGHT

provide up to C$6 billion in loan guarantees, though there is no indication TC Energy made any use of that money.

"We've been pretty clear that we'll do whatever it takes to protect the taxpayers' investment," said Savage.

"TC Energy has given their letter of intent. We've got lots of time to do that."

Changes slim

A veteran U.S. trade lawyer said the chances of TC Energy (which booked a C$2.2 billion first-quarter impairment charge related to the suspension of KXL construction) or Alberta getting their money back are slim.

Mark Warner, a principal at the Toronto-based law firm of MAAW, which specializes in regulatory and international law, said no case ever succeeded against the U.S. under NAFTA's investor-state dispute settlement system.

He said the onus is on any company outside the U.S. to prove it had been "treated unfairly or differently than any American company would have been in the same situation."

"This will go on for a long time. The question is how much corporate energy TC Energy wants to devote to fighting this case."

Line 5 focus

Warner said it was his sense that the Canadian government has no desire to join a legal fight over KXL.

He said Prime Minster Justin Trudeau's strongest energy interest, beyond completion of the Trans Mountain expansion project, is in protecting Enbridge's improvements to Line 5 and preventing Michigan Gov. Gretchen Whitmer's efforts to unilaterally shut down the line.

In a meeting with Kenney on July 8, Trudeau said the "concern we all share about Line 5 is real. We are focused on making sure that things don't get disrupted." But he gave no indication whether his government is prepared to submit a case to a binding international arbitration panel.

For now, he said Canada is working through its embassy in Washington, D.C., to deal with the Biden administration on Line 5. "We haven't taken any possibilities off the table," he said.

Claim launched, withdrawn earlier

TC Energy launched a claim against the U.S. government when former President Barack Obama denied KXL a cross-border permit and nixed the pipeline in 2015.

At that time, TC Energy (then known as TransCanada) launched a NAFTA challenge and filed a US$15 billion lawsuit against the Obama government.

Those two suits were withdrawn when former President Donald Trump issued an executive order approving KXL and granting TC Energy a cross-border permit.

Legal experts believe TC Energy will incorporate its dealings with the Obama and Trump administrations in the latest lawsuit, arguing KXL was not given "fair and equitable treatment" as required under the free trade pact.

—GARY PARK

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LNG VENTURE

refinery in Alberta has been rescued — again — by the provincial government.

Goldboro LNG

The future of the Goldboro LNG project, first announced almost a decade ago, has been halted while operator Pieridae Energy takes a different direction, without any further elaboration.

"Cost pressures and time constraints due to COVID-19 have made building the current version (of Goldboro) impractical," said Chief Executive Officer Alfred Sorensen, conceding that his company had been unable to find a partner.

"As of June 30 we have not been able to meet all of the key conditions necessary to make a final investment decision," that was initially estimated at C$5 billion that was brushed off by one veteran energy analyst as a "long shot."

He said his company will now "assess options and analyze strategic alternatives" that could make an LNG project "more compatible with the current environment."

In addition, Sorensen said Pieridae will further optimize the operation and development of its resources and midstream assets in the Canadian Foothills region of British Columbia, including a carbon capture and storage proposal.

Opposition had already been building from environmentalists who challenged the greenhouse gas emissions that would be associated with Goldboro, while Indigenous communities objected to the presence of a transient workforce in their area.

The project was designed to ship 1.4 billion cubic feet per day of feedstock gas from Alberta — including a C$190 million deal it reached in mid-2019 to buy Alberta gas assets from Royal Dutch Shell — liquefy it at Guysborough County and export up to 10 million metric tons of LNG to Germany.

Pieridae had asked the Canadian government for C$925 million as an initial investment, without getting a response.

At the peak of its optimism, Pieridae negotiated a 20-year agreement to sell LNG from Goldboro's first liquefaction train – about 5.2 million mt a year — to the German utility Uniper SE.

The derailing of current plans occurred after May 31 when U.S. engineering firm Bechtel delivered a turnkey fixed-price proposal to build the plant, hiring up to 3,500 construction workers.

Sturgeon Refinery

On the flip side, Alberta's Sturgeon Refinery has been tossed a rescue line after a series of budget overruns that doubled the completion cost to about C$10.1 billion and construction hitches that delayed the startup date by four years to June 2020.

In a complex deal, Alberta will buy a 50% equity stake to share ownership with Canadian Natural Resources, CNR, and extend its current 30-year processing agreement by another decade.

The transaction is worth C$825 million, but the government says that move will cost taxpayers C$2 billion less than the original contract signed in 2011.

The refinery is designed to process about 70,000 barrels per day of diluted bitumen from Alberta's oil sands into low-sulfur diesel and other products.

The facility incurred a C$500 million operating loss last year, according to a government budget update at the end of June.

Energy Minister Sonya Savage said the government made the new deal to correct a bad agreement that had iron-clad provisions it was unable to escape.

"We took all the risk and had no ability to control or mitigate that risk to control costs or to have any say in how the refinery was operated," she told reporters. "With this deal, we save C$2 billion and we have a seat at the table."

Savage said failure by the government to take an equity stake would have meant Alberta taxpayers "were on the hook, with no way to get out of the contract and no way to really have a say in cost controls or in the operations of the refinery."

Under the original agreement, North West Redwater Partnership was owned equally by North West Refining and a subsidiary of CNR.

The change of ownership will mean the Alberta government is no longer paying processing fees and profits each month.

Richard Masson, the former chief executive officer of the Alberta Petroleum Marketing Commission, which is supplying 75% of the refinery feedstock, said the commission likely decided it would be better off to be an owner of Sturgeon rather than having one of the original partners "go out of business and put the whole project at risk."

—GARY PARK

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HILCORP WELL

of the new well results from a recent farmout agreement between Hilcorp and Chugach Electric Association. Hilcorp and Chugach Electric jointly own the Beluga River gas field, with Hilcorp as field operator. There are untested rock strata below the currently producing gas reservoirs.

The farmout agreement requires Hilcorp to drill the new well to test rock formations at depths below 7,000 feet, where Chugach Electric owns a 100% working interest. Under the agreement, upon completion of the well Hilcorp would acquire a 33.33% working interest in the deeper formations, thus aligning the working interest in these formations with the working interests in the shallower sections of the unit.

Depending on what is found in the deeper formations, Hilcorp may also perforate the new well at shallower depths in the Sterling and Beluga formations, the proposed POD amendment says.

—ALAN BAILEY

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OIL PRICES

delayed, extended, and then postponed indefinitely.

The UAE said that the 2018 benchmark date which was used to establish the baseline production levels for the purposes of the DOC doesn't reflect the UAE's investments in subsequently installed capacity. As a result, the UAE has been required to shut in a greater percentage of its production capacity relative to other DOC participants.

Under the agreement on the dispute, announced July 14, the UAE baseline will increase to 3.65 million bpd in April 2022 from the current baseline of 3.2 million bpd, according to sources cited by the Wall Street Journal. UAE had asked initially for its baseline to be raised to 3.8 million bpd. Oil markets slid lower on the news.

The market turned sour later in trading and prices nosedived into the close, after U.S. Energy Information Administration data showed declines in implied gasoline demand in the previous week.

Alaska North Slope crude skidded $1.97 to close at $74.65. Brent lost $1.73 to close at $74.76, and West Texas Intermediate plunged $2.12 to close at $73.13.

Bears prevailed, despite a positive supply note in EIA reports that crude stockpiles had declined more than expected, posting an eighth consecutive draw.

Iran sanctions relaxed

The bearish action came on the heels of an unexpected announcement made by the United States, that it was suspending some financial sanctions on Iran.

The State Department told Congress July 13 that it would waive sanctions on Iran's illicit oil trade to allow the country to access frozen funds from South Korea and Japan.

The waiver, signed by Secretary of State Antony Blinken, allows the "transfer of Iranian funds in restricted accounts to exporters in Japan and the Republic of Korea," according to a notification sent to Congress by the State Department.

The secretary of state had previously signed a similar waiver to "allow funds held in restricted Iranian accounts in Japan and Korea to be used to pay back Japanese and Korean companies that exported non-sanctioned items to Iran," a State Department source told the Washington Free Beacon.

"These repayment transactions can sometimes be time consuming, and the secretary extended the waivers for another 90 days," the spokesperson said.

The State Department said funds will not be released to directly to Iran under the waiver.

"Allowing these funds to be used to repay exporters in these jurisdictions will make those entities whole with respect to the goods and services they exported to Iran, address a recurring irritant in important bilateral relationships, and decrease Iran's foreign reserves," the waiver said.

Industrial demand may strain supply

A rolling average of U.S. total oil products supplied lifted to the highest seasonal level in the week ending July 2, based on government data going back three decades.

With gasoline and diesel demand already restored to pre-pandemic levels, the average — an indicator of consumption — was driven higher on a surge of petroleum use in products such as plastic, asphalt, lubricants and other industrial needs, Bloomberg reported July 13.

Recovery in demand for jet fuel continues to lag that of road fuels, but as jet fuel demand comes roaring back, the specter of a supply crunch looms.

Jet fuel use remains 24% below July 2019, suggesting markets could tighten and prices could climb when air travel normalizes.

Petrochemical producers have added plastic manufacturing capability along the U.S. Gulf Coast in the in the decade since fracking technology boosted production of oil, gas, and low-cost natural gas liquids.

In the pandemic, plastic producers were positioned to fill the need for more product delivery packaging, as well as to fill an urgent need to provide protective equipment to health-care workers.

Consumption of more than a dozen products has risen, including butane for gasoline blending, lubricants for heavy equipment, and propane — with Americans grilling at home during the pandemic.

U.S. weekly oil production is near 11 million bpd, about 2 million bpd less than early 2020 levels. Supply is so tight, earlier in July WTI futures rose to the strongest level relative to Brent since October.

Some Rocky Mountain area refiners are scrambling to secure feedstock because production in the region has been the slowest to recover, and inventories at Cushing, Oklahoma, are at the lowest level since March 2020. ●

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Oil Patch Bits

Weston appoints Bove as president & CEO

Weston Solutions Inc. recently announced the appointment of Lawrence J. Bove, PE as president and chief executive officer effective Jan. 1, 2022. Currently Weston's chief operating officer, Bove will assume the role from Alan J. Solow, who announced his plans to retire as chief executive officer and assume the role as chairman of the board effective Jan. 1, 2022. With this succession of leadership, a six-month transition period initiated as of June 16 will allow Bove a smooth transition into this new role while also giving time to select his successor and allow for that transition.

Bove reflects the proud history that is Weston Solutions' foundation with more than 38 of his 42 years' experience within Weston starting as staff engineer in wastewater engineering to progressively advancing roles including project manager, client account manager, vice president-profit center manager, senior vice president-division general manager to chief operating officer in 2014. Over the course of his career, Bove has gained broad expertise in serving federal, state, and local government and industrial clients.

Upon Alan Solow's announced retirement, he looked no further than his highly successful chief operating officer to fill his shoes. Solow states: "I have had the opportunity to work side-by-side with Larry for many years and firmly believe he brings the knowledge, experience, and sense of integrity to lead the company aligned with our core values. Weston has a bright future and Larry will take this company forward with a new vision of growth and prosperity for all of our employee owners." For more information visit www.westonsolutions.com.

LAWRENCE J. BOVE

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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TAPS MAINTENANCE

program "identified the need for maintenance" there and thus the company is replacing eight thermal VSMs and installing 60 freestanding thermosyphons to provide passive cooling to the ground.

"The project is an example of Alyeska's proactive risk-based maintenance program," Egan said.

About 57 miles northwest of Fairbanks near Livengood, the permafrost on Lost Creek Hill is starting to thaw which is causing the slope to creep down — the pipeline lies below that slope.

Tony Strupulis, state pipeline coordinator in the Alaska Department of Natural Resources' Division of Oil and Gas, approved the project, which Alyeska applied for on Feb. 27, 2020. Other permits/authorizations from various agencies were also required.

Strupulis told Tracy Sinclare, the weekend meteorologist for KTUU, that no damage to the pipeline has occurred: "A little bit of tilting of the support structures, but it's all within the allowable limits of the pipeline."

Strupulis told Petroleum News there is no reason for panic — the support structures are not in immediate danger of collapse. But, he added, DNR remains "very mindful" about thawing permafrost for pipeline safety.

"The design philosophy is, 'If it's frozen, keep it frozen,'" Strupulis said.

DNR's 2020 analysis

In DNR's November 2020 analysis of Alyeska's Lost Creek Hill project, the agency said the reason behind installing the passive cooling system to stabilize the ground is to protect the integrity of TAPS from permafrost degradation.

The analysis also said the new cooling system "consists of approximately 100 free-standing heat pipes" — a number with further analysis that has been dropped to 60 – "to be installed by driving steel casings 40 to 60 feet into the ground with thermosyphons inserted inside the casings. The system also includes a 3-foot layer of insulating wood chips and horizontal ventilation pipes to be placed in the thermal improvement area to assist with cooling the subsurface. The bent VSMs would be replaced and embedded to depths between 50 and 60 feet and installed with thermosyphons by driving steel casings."

JUDY PATRICK

TAPS, which Alyeska has operated for more than 44 years, includes 420 miles of above-ground pipe on vertical support members, or VSMs, to accommodate permafrost conditions.

Equipment that may be used during the 120-day project timeline, DNR said, included "drill rigs, cranes, tractor sidedumps, articulated haul trucks, excavators, front-end loaders, skid steers, wood chip spreaders, dozers, a fuel truck and a water truck."

DNR engineers headed out

Engineers from DNR will soon be going out to the work site to review the progress of the project at a time when Alyeska is in the thick of construction.

DNR will also examine the project area upon completion of the construction activities to ensure all lands are in a condition acceptable to the department.

In its application, Alyeska provided the following project timeline, although the company did say that the work sequence may be altered slightly depending on field conditions at the time:

1. Mobilize personnel and equipment (around June 15).
2. Assemble heat pipes in Fairbanks.
3. Selective brushing of the work pad and temporary land use area.
4. Haul in gravel from a nearby pit.
5. Relocate the drive lane.
6. Excavate under the mainline for access to the westerly thermal improvement area.
7. Install temporary pads to support the drill rig at the bents.
8. Install new upgraded VSMs at bents 40, 41, 43 and 44.
9. Install cross beams and support structures at the bents.
10. Install … steel casings and FSHPs on the inclined slope.
11. Recharge heat pipe thermosyphons with carbon dioxide.
12. Install vent pipes and place layer of wood chips.
13. Restore and revegetate the work area as required.
14. Site clean-up and demobilize. ●

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BP REVIEW

by 4.5% and carbon emissions from energy usage to have dropped by 6.3%. The carbon intensity of energy, a measure of how much carbon is emitted per unit of energy, fell by 1.8%, the Statistical Review says.

That rate of fall in carbon emissions is around the rate of fall needed over the next 30 years, if the world is to meet the carbon reduction targets set in conjunction with the 2015 Paris agreement on climate targets. But the drop in carbon emissions in 2020 resulted from a major fall in economic activity, a situation that makes continuing emission drops for the same reasons unlikely. On the other hand, the decline in world economic output in 2020 implies a carbon cost of nearly $1,400 per metric ton, a figure that does not seem unduly high — the challenge is to reduce carbon emissions without causing major damage to people's way of life, Dale commented.


SPENCER DALE

Oil demand in 2020 fell by a massive 9.3%, or 9.1 million barrels per day. Thanks in particular to the crash in transportation related demand, this fall was much larger than had been predicted from modeling.

Initial oversupply

The onset of the pandemic, between December 2020 and April 2021, saw oil supplies continuing as normal while demand completely collapsed. The oil price dropped dramatically, with the West Texas Intermediate index briefly dropping into negative territory in April, as storage facilities filled, Dale commented.

Then, between April and August, the oil supply rate dropped significantly, with production cuts in particular in the OPEC plus countries and the United States. In the United States, in addition to allowing natural production declines, oil wells were shut in, both in shale oil plays and in conventional oil fields. At the same time, a partial easing of pandemic lockdowns in various parts of the world resulted in a convergence of oil production and consumption rates.

Between August and the end of 2020, with oil demand edging up while oil production constraints were partially reduced, around half of the excess oil stocks from earlier in the year were eliminated while the oil price recovered to around $50 per barrel.

Dale suggested that a lesson from this sequence of events is that OPEC plus is willing and able to stabilize oil markets during short term market shocks of the type experienced in 2020. However, questions remain over OPEC's potential response to a more sustained fall in oil demand, such as would result from a global transition to net zero carbon emissions, he cautioned.

Natural gas demand

In contrast with oil, the global demand for natural gas fell by only around 2%, a demand drop that was in line with model predictions and that was much smaller than that of oil. The drop was similar to that observed in 2009, in the aftermath of the global financial crisis. The fall in demand in 2020 was softened by a drop in gas prices and consequent buoyancy in the use of gas for power generation.

Spencer Dale, BP chief economist, characterized the impact of the pandemic on global energy in 2020 as "unmatched in modern peacetime," with the largest falls in energy demand and carbon emissions since World War II.

Characterizing the gas supply situation in Europe as a contest between Russian pipeline gas and US liquified natural gas, Dale commented that, while Russian gas exporters appeared willing to lose some market share in 2020, European LNG imports increased. However, the likelihood that the Russian suppliers were simply responding to a short-term market phenomenon, rather than a possible long-term decline in gas demand, needs to be considered, Dale cautioned, citing similarities with OPEC's response to the short-term drop in oil demand.

And, during the summer, when European LNG pricing fell below LNG facility operating costs, there was a significant shutdown of US LNG exports.

Electricity consumption

Interestingly, while global electricity consumption only dropped 0.9% in 2020, with reduced industrial demand being partially offset by increased domestic use, total renewable energy production, including wind, solar and geothermal production, but excluding hydro, was impressively resilient to the pandemic and saw its highest ever annual increase. Moreover, the past five years have seen a growth of around 60% in global renewable power production, with the production of wind and solar power more than doubling.

The increase in renewable energy production in 2020 came largely as a counterbalance to a loss of coal-fired power generation, which experienced one of its highest annual declines on record. However, given the increases in coal-fired generation in recent years, the reduction in 2020 only took this form of generation back to 2015 levels. And the reduction of coal-fired generation in emerging market economies will require the increased use of natural gas.

Carbon reduction goals

Reflecting on the global response to the Paris accord on climate change, Dale commented that there are now 10 countries, plus the European Union, that have passed laws with net zero carbon emissions targets. Another 34 countries have proposed similar legislation or carbon reduction policies. And more than 3,000 companies have now stated objectives around net zero emissions. There has also been a major upsurge in investments related to environmental, social and governance objectives.

However, the various national pledges still do not go far enough to meet the Paris agreement goals, and the world has yet to see a marked improvement in carbon dioxide emissions, Dale cautioned. The emissions reductions observed in 2020 will likely, for the most part, prove transitory. And, worldwide, more energy is needed — although there have been significant improvements in global energy access in recent years, about 10% of the world's population still does not have access to electricity. Moreover, access to energy is vital for productive uses as well as for household consumption.

Major increase in renewables

On the other hand, in 2020 the capacity of wind and solar power generation increased by 230 gigawatts, an increase 50% larger than the largest previous annual increase. China accounted for about half of the 2020 increase. The renewable energy capacity increased by an average of 18% per year between 2015 and 2020, particularly driven by falling costs: a 40% cost reduction for wind and a 55% cost reduction for solar. In China, in particular, manufacturing costs have dropped as manufacturing capacity has scaled up.

However, Dale cautioned that the expanded use of renewable energy sources will not be sufficient in itself to achieve net zero carbon emissions. Improved energy efficiency and other energy technologies such as hydrogen, together with carbon, capture use and storage, will also be needed. ●

Editor's note: Part 2 will appear in the July 25 issue and will cover a panel discussion on the findings of the Statistical Review.

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