Petroleum news

page 3 Q&A: Neuman says gas pipeline a priority; revenue issue at $50 oil

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EXPLORATION & PRODUCTION

New Liberty plan

Hilcorp proposes a gravel production island for Beaufort Sea oil field

By ALAN BAILEY
Petroleum News

Hilcorp Alaska has filed a development plan for the Liberty oil field with the Bureau of Ocean Energy Management, BOEM spokesman John Callahan told Petroleum News on Dec. 30. In November Hilcorp purchased a 50 percent interest in Liberty from BP and became field operator. The field is on the federal outer continental shelf of the Beaufort Sea, east of the Endicott field, off the central North Slope. (See map, page 31)

Suspended in 2012

Over the course of several years BP had proposed various ways to develop Liberty. Eventually, after abandoning a plan to develop the field using ultra-extended reach drilling from a surface location at the Endicott field, the company was considering a new plan for field development. BOEM had given BP until the end of 2014 to file its new plan. In taking over operatorship of the field, Hilcorp was presumably faced with that filing

> *The subsea line from Liberty will have a double-walled pipe-in-pipe structure, similar in design, presumably, to the subsea line from the Oooguruk field to the west.*

see LIBERTY PLAN page 31

PIPELINES & DOWNSTREAM

Expansion a divider

Tesoro, HEA ask why all should pay for KBPL work; Enstar says it benefits system

By ERIC LIDJI
For Petroleum News

A proposal to increase east-to-west deliverability across Cook Inlet is revealing some of the potential challenges of consolidating four regional pipelines into a single system.

Tesoro Alaska Co. LLC and Homer Electric Association Inc. are questioning whether the cost of the regional expansion project should be included in system-wide shipping rates.

Enstar Natural Gas Co. believes the project would bolster the overall system.

The Hilcorp Alaska LLC subsidiary Kenai Beluga Pipeline LLC is seeking regulatory approval to upgrade an existing compressor and add two new compressors at the Kenai Pipeline Junction to increase shipments from natural gas

> *Hilcorp recently created Kenai Beluga Pipeline to merge four regional transmission pipelines into a single system. The consolidation carried broad support from utilities and producers across the region.*

see EXPANSION PROJECT page 30

FINANCE & ECONOMY

Canada's upstream reels

Double whammy from glut of oil and gas; companies edge toward layoffs, default

By GARY PARK
For Petroleum News

With oil prices ending their biggest dive since 2008 and natural gas prices now getting hammered, the Canadian petroleum industry is facing a double whammy of unmatched proportions as it faces the possibility of layoffs in the thousands as big LNG and oil sands projects get shelved and the threat of bankruptcies.

The only glimmer of hope lies in the merger and acquisition market until either United States producers or OPEC member countries give up ground in their battle for market share amid a supply glut.

Otherwise, the industry will rely on bone-chilling winter temperatures to drive up demand for heating fuel, causing a price blip.

> *The M&A sector enjoyed a robust year in 2014 and could see more of the same this year as cash-strong companies grab distressed assets, analysts say.*

2014 robust for M&A

The M&A sector enjoyed a robust year in 2014 and could see more of the same this year as cash-strong companies grab distressed assets, analysts say.

Data provider Infomart estimated US$63 billion was deployed in M&A activity in 2014, quadruple the value of deals in 2013, ending with the C$13 billion offer for Talisman Energy by Spain's Repsol.

see UPSTREAM REELS page 32

Mining News goes weekly

NORTH OF 60 MINING news

page 17 Redstar plans winter drilling near the historic Apollo mine

www.MiningNewsNorth.com — The weekly mining newspaper for Alaska and Canada's North — Week of January 11, 2015

NEWS NUGGETS

New JV chases copper, gold near Pebble

Kijik Corp. and Alaska Earth Sciences Inc. Dec. 30 announced the formation of Chuchuna Minerals Company, a joint venture partnership to advance exploration at the Groundhog copper-gold project, situated immediately north of the Pebble project in Southwest Alaska. Alaska Earth Sciences, an Anchorage-based geological consulting firm that discovered the Groundhog prospect, will own 51 percent of Chuchuna Minerals; the remaining 49 percent will be owned by Kijik, the Alaska Native village corporation for Nondalton, the nearest community to the Groundhog property. Kijik brings local experience and resources to the project, which is expected to improve the development of community engagement and work force development programs. Results from a number of geophysical surveys over several years infer that Groundhog lies along the northeast margin of the Kaskanak batholith and is intersected by a north-northeast-trending corridor of distinctive intrusives. Alaska Earth Sciences said these surveys reveal very large conductive and resistive bodies in northeast trending structures on the Groundhog property. Multiple occurrences of porphyry-style mineralization and breccias occur within this belt, including Pebble West and East and several other significant discoveries. Chuchuna Minerals will be seeking an option partner to continue exploration.

Progress report for Livengood

International Tower Hill Mines Ltd. Jan. 5 reported progress toward optimization of the Livengood gold project in Interior Alaska. The 2014 program included metallurgical work; mine production scheduling studies; power supply alternatives review; and alternative camp reviews. The company says this work has developed an improved production schedule, as compared to the project's 2013 feasibility study and generated detailed work plans for 2015. These plans include additional metallurgical tests and engineering, including confirmation of the flow sheet and optimizing the operating costs. Once defined, the operating costs generated from this work will be used to evaluate and optimize the project configuration

see NEWS NUGGETS page 18

ALASKA

Pebble critics laud oil-gas drilling ban

Mine development proponents say petroleum exploration moratorium should have little relevance to future of copper-gold-molybdenum project

By ROSE RAGSDALE
For Mining News

On the face of it, President Barack Obama's decision to place a ban on offshore oil and gas drilling in Alaska's Bristol Bay Region appears to have handed opponents of the Pebble Project another weapon in their ongoing fight to block development of the enormous copper-gold-molybdenum deposit.

But Pebble supporters say a moratorium on petroleum exploration in Bristol Bay has little or no relationship to the merits of the mine project.

Oil and gas drilling in Bristol Bay has long been a contentious issue, dating back to the 1980s when industry interest in the area increased.

But little drilling occurred before the 1989 Exxon Valdez oil spill in Prince William Sound prompted Congress to bar drilling in Bristol Bay and buy back leases that had already been issued at an ultimate cost of more than $100 million.

President Bill Clinton issued a moratorium on Bristol Bay drilling in 1998. Congress lifted its ban in 2003, but Clinton's order was only overturned by President George W. Bush in 2007, when plans were made to hold a lease sale in 2011.

In 2010, Obama canceled the 2011 lease sale and put a seven-year moratorium on oil and gas activity in Bristol Bay.

In recent years, Republicans have tried multiple times to require a Bristol Bay lease sale but failed to pass such legislation.

Obama moved Dec. 16 to permanently bar oil and gas drilling in the North Aleutian Basin, including Bristol Bay off the coast of southwestern Alaska.

The area is "too precious for us to be putting out to the highest bidder," Obama said in a video message announcing his decision.

In a memo to the Interior Department, the president extended protections for an area estimated to provide 40 percent of U.S. wild-caught seafood.

Interior Secretary Sally Jewell said Obama's action caps decades of work from the community to protect the region's economic and cultural heritage.

"With its pristine waters, rich fisheries and strong tourist economy, Bristol Bay is a treasure that should be off limits for oil and gas development," Jewell added in a statement.

see PEBBLE page 18

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Does the Bristol Bay drilling ban presage trouble for Pebble? Find out more in the Jan. 11 issue of Mining News, inside.

Walker changing AGDC board; nixes confidentiality agreements

GOV. BILL WALKER

Alaska Gov. Bill Walker has removed three public members from the board of the Alaska Gasline Development Corp. and instructed commissioners serving on the board not to sign confidentiality agreements.

Legislators who led in the development of AGDC have expressed their disappointment.

Calling it a "paradigm shift" in the way the state will conduct business with Alaska's gas, the statement from the governor's office said "there will be transparency in the process."

see AGDC BOARD page 30

AIDEA cancels North Slope LNG concession agreement with MWH

On Monday Jan. 5 the Alaska Industrial Development and Export Authority formally canceled the concession agreement with engineering firm MWH for the construction and operation of a North Slope liquefied natural gas facility for the supply of gas to Fairbanks and the Alaska Interior, AIDEA spokesman Karsten Rodvik told Petroleum News in a Jan. 6 email. The concession agreement had been scheduled to terminate at the end of December, but with the possibility of a 90-day extension. Apparently MWH had requested a possible extension of the deadline but has now withdrawn that request.

"MWH had previously withdrawn its request for a 90-day extension of the concession agreement," Rodvik said. "Monday's action was the formal termination necessary for

see LNG AGREEMENT page 26

contents

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ON THE COVER

GOVERNMENT

Neuman wants numbers run at $50-$60 oil

Incoming House Finance co-chair sees gas pipeline as priority, but also wants understanding of oil revenue at current lower prices

By STEVE QUINN
For Petroleum News

Rep. Mark Neuman enters his sixth term in office having been named co-chair of the House Finance Committee. It comes just as oil prices have hit five-year lows pushing slightly past $50 a barrel at a time when the state's budget is based on $105 a barrel.

For Neuman, a Big Lake Republican, this is his third stint on the Finance Committee, his most recent term serving as vice-chair. Neuman also served as the House Resources co-chair prior to joining the Finance Committee and works as a co-chair for the in-state gas caucus.

Neuman says he hopes the in-state gas caucus resumes its role as a collaborative body that helps advance a natural gas pipeline project.

Neuman discussed his views with Petroleum News on priorities for this year.

Petroleum News: As a co-chair of the in-state gas caucus, do you foresee this group meeting this year?

Neuman: We want to start out as soon as we can in the session to make sure everybody is as knowledgeable as possible with updates from the Alaska Stand Alone Pipeline and the Alaska LNG to see where we are at. So we'll have meetings as soon as we can. If nothing else, we'll have them in House Finance. Either way, we'll try to make sure we have updates from those two pipeline projects.

Petroleum News: What do you think the value has been to having an in-state gas caucus when you already have a Resources Committee and a Finance Committee that examine these issues pretty thoroughly?

Neuman: It's nice to have a committee that's made up of both bodies, House and Senate, Republicans and Democrats, asking questions about in-state gas. The mix of questions is different. Each body generally is looking at different aspects or if there is a piece of legislation that goes through the Senate first then to the House, or the other way. I think the mix of questions that you get is much better because of the makeup of the structure of the in-state gas caucus.

Quite frankly, we haven't sat down just yet and put together an agenda, so I still think it's very valuable.

Petroleum News: Now the ASAP project is somewhat on hold, at least when it comes to new spending, what does that due to the in-state line project?

Neuman: I don't know how much on hold it is. There is a state entity managing both projects. They are still doing a lot of critical work. I don't think they've missed a step There is still funding at least through this fiscal year to keep them going. There is plenty of work to do.

Petroleum News: So what value do you see with the concurrent work on the in-state line and the big line?

Neuman: Well, the extensive permitting that has to go on, and as a Legislature we need the best information we can get as soon as we can in terms of funding these projects and including them in the budget, and further evaluations. When we get to phase two, the state's participation is vital so we need to get all the information we can get. That's what they are working on right now, making sure we get all that information.


REP. MARK NEUMAN

Petroleum News: What do you think the state can accomplish this session, even if it doesn't come through a new bill, toward advancing a gas line?

Neuman: At this point, I'm not sure. I haven't had recent updates from either of those projects. As far as what the Legislature can do, we'll have to listen to requests that are put forward. If they need other operating or capital funds for those projects, we'll have to evaluate where they are at for the feasibility of each project.

We'll start by getting the most recent update on each project, look at the funding request then evaluate where we are going to go moving forward.

Petroleum News: So what do you see as the priority for the Legislature, at least in this first year?

Neuman: I know people mention is it more throughput or is it a gas pipeline? A gas pipeline where they develop gas and oil out of the same wells is going to have the same affect. So trying to make sure we get a gas pipeline up and running, again that will attract private investment dollars because we have long-term reliable energy. Then at the same time we are bringing more throughput out of those same wells. The unique thing about many of the wells being developed is you're getting oil and gas out of there. I think it's a benefit both ways, but oil is still king. We still make much more money out of oil. We are developed structurally for the state to provide a majority of its revenue stream through oil. We have to be doing both. We have to provide for an in-state gas line long-term and provide for as much oil production today for the short term.

Petroleum News: Are you optimistic that despite the low oil price issues that you face, progress can be made toward advancing a project, either line, this year?

Neuman: A gas pipeline is absolutely critical to Alaska's future. We have to continue to develop new ways to expand and diversify our economy. A gas pipeline, I think, is critical to that, making sure we have long-term reliable energy available so that industries who want to invest in Alaska and turn Alaska's resources into jobs, their risk assessments are going to be based on developing the infrastructure. I think that is the best way to do it to attract their capital dollars. The state doesn't have capital dollars so we have to find ways to make sure we attract outside dollars into the state to develop our resources.

Either gas line is absolutely critical to that — and to continue lowering costs to long-term reliable energy. I'm not going to say cheap energy. I don't think there is such a thing as cheap energy. That's all a matter of perspective, but long-term reliable energy is critical to the future of Alaska, so yes we have to continue with these projects.

Petroleum News: Getting to your new appointment as co-chair, with this low-price environment and it being a stark change from when you adjourned, how do you approach this?

Neuman: I think the best way to approach this is look toward the future and not the past. We have a $3.5 billion deficit. How do we strategize a plan that reduces that deficit for the next five years? Is it going to be taking 20 percent for the next five years? We've yet to finalize a strategy of how we are going to do that. Looking to the past is the past. Looking forward into the future in how we are going to address this deficit, which will include infrastructure projects which will bring more revenue.

Everything has to be on the table, both formula and non-formula programs.

There will be some dramatic reductions in state government. Trying to prepare the municipalities for that is going to be critical by being as straightforward as we can. We need to say the state does not have the money to provide for things that we have in the past. There is going to be some severe reductions.

The state has to take a position, has to prepare a budget, a fiscally responsible budget. If we don't have the money, we can't spend it. It will be our responsibility to reduce that budget but do it in a purposeful way so that we don't collapse the economy at the same time.

Petroleum News: Have you had a

see **NEUMAN Q&A** *page 29*

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www.PetroleumNews.com

ADDRESS
P.O. Box 231647
Anchorage, AK 99523-1647

NEWS
907.522.9469
publisher@petroleumnews.com

CIRCULATION
907.522.9469
circulation@petroleumnews.com

ADVERTISING
Susan Crane • 907.770.5592
scrane@petroleumnews.com

Bonnie Yonker • 425.483.9705
byonker@petroleumnews.com

FAX FOR ALL DEPARTMENTS
907.522.9583

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● EXPLORATION & PRODUCTION

NSB worried about Repsol program

Government says small spills in 2012 and 2013 should raise the bar for exploration activities in the Colville River delta

By ERIC LIDJI
For Petroleum News

The North Slope Borough is concerned about a three-well North Slope exploration program Repsol E&P USA Inc. plans to conduct this winter near the Colville River delta.

The borough questioned whether Repsol should be exempt from a provision requiring industrial facilities to be a certain distance from waterways. The borough raised the issue in light of two spills that occurred during exploration work in prior years of the program.

In comments with the Alaska Division of Oil and Gas, the borough also challenged other aspects of the program, particularly the access it provides for subsistence activities.

The local subsidiary of the Spanish supermajor is permitting five well locations for its program and plans to select three locations once it finishes processing geologic data.

The state recently approved the exploration program. The state considers exploration programs at a high level before companies seek specific permits for drilling activities.

In addition to detailing work plans, oil companies use exploration plans to explain how they will to comply with "mitigation measures" meant to limit environmental impacts or to request exemptions to certain provisions, if they cannot be reasonably accommodated.

Protection buffers an issue

Repsol asked the state for an exemption from a mitigation measure requiring facilities to be at least 500 feet from fish-bearing waterways and at least 1,500 feet from current drinking water sources "to the extent practicable." The company wants to place temporary drilling pads near some fish-bearing streams and near the Colville River.

"It seems unreasonable to grant a waiver from waterbody protection buffers and allow drilling as close as 37 feet from a small lake and 180 feet from the Colville River given the acknowledged risks associated with drilling into gas-laden formations in the area and the areal extent of the recent spills," the borough wrote in an Oct. 6 letter to the state.

Repsol said it chose the proposed well locations with an eye toward drilling vertical wells. Vertical wells are significantly quicker and easier to drill than directional wells. Locating wells directly above a specific geologic target can be challenging in the Colville River delta, which is a crosshatch of streams, tributaries and lakes. Additionally, the company claimed that its proposed well locations were no closer to water bodies than its previous well in the region, none of which negatively impacted waterbodies in the region.

The borough believes Repsol should be required to explicitly compare the cost and speed of vertical and directional wells to determine whether an exemption should be justified.

The state ultimately approved the exemption because exploration wells involve temporary facilities. Should Repsol decide to develop the region, it would be able to use a large directional rig operated from a permanent gravel pad set farther from the river.

In early 2012, crews working for Repsol hit a shallow pocket of natural gas while drilling the Qugruk No. 2 exploration well in the Colville River delta. A subsequent blow out vented gas and sprayed some 1,000 barrels of water-based drilling mud onto the snow surrounding the rig. No oil was spilled, nor were there any injuries or major damage.

In early 2013, a hose burst during a flow test on the Qugruk No. 6 exploration well, which was a new well drilled near the original Qugruk No. 2 well. Some 90 barrels of hydraulic fracturing fluids, diesel and crude oil sprayed onto a containment area around the drilling rig and misted onto a 0.63-acre section of nearby snow-covered tundra.

Other concerns

The borough also cited several other concerns with the program, particularly with the access it provides for subsistence activities, which is required under existing regulations.

For example, Repsol ice roads are currently open to residents of Nuiqsut. The borough wants the roads to be open to all North Slope Borough residents. Repsol believes it is only authorized to open the roads to Nuiqsut residents and Kuukpik Corp. shareholders.

The state Division of Mining, Land and Water, which regulates certain land use on the North Slope, wrote, "We believe that both parties have legitimate concerns. Local residents should be allowed reasonable access to subsistence harvest lands. Industry should be allowed to establish minimum safety buffers around certain infrastructure. We support industry working with local municipalities to develop measures that both provide for the safety of workers and the public, as well as allowing for subsistence access." ●

Contact Eric Lidji at ericlidji@mac.com

● EXPLORATION & PRODUCTION

Newfoundland emerging from the gloom

Province's offshore attracts region's highest single work commitment from trio of operators, following 'breakthrough' Statoil finds

By GARY PARK
For Petroleum News

Boosters of offshore oil prospects in Eastern Canada have always been eager to draw parallels with the Gulf of Mexico, not least the untapped potential of their region.

They thrive on pointing out that Canada's Atlantic waters have seen only 563 wells drilled in the past 33 years, a tiny fraction of the thousands in the Gulf.

But, in recent years, they have struggled to keep the comparisons valid as the tallies of dry holes, abandoned exploration licenses and production stumbles in the offshore Newfoundland and Nova Scotia plays have overpowered any other statistics.

In the last four years there has also been an unsettling decline in production from the only three producing projects — Hibernia, Terra Nova and White Rose — to about 230,000 barrels per day from 275,000 bpd.

The talk has increasingly turned to the prospects of more major global companies packing their bags and heading for less daunting and costly plays.

High bid

But that mood experienced a sudden reversal in December when the government regulator for offshore Newfoundland posted the highest single bid on record for its exploration rights.

A consortium of ExxonMobil Canada (with a working interest of 40 percent), Suncor Energy and ConocoPhillips (with 30 percent each) made a successful bid of C$559 million for 657,000 acres in the Flemish Pass about 300 miles northeast of St. John's.

ExxonMobil was also involved in two other top bids, partnering with Suncor in a C$21 million work commitment for 714,000 acres in the nearby Carson Basin, while securing solo rights for C$16.7 million to 270,000 acres in the Jeanne d'Arc region.

Robert Cadigan, president and chief executive officer of the Newfoundland and Labrador Oil & Gas Industries Association, said the Flemish pass bid was evidence of a growing interest in Newfoundland's offshore, which he believes is on the brink of a new era and is roughly in the same position as Norway four decades ago.

There were no bids for three other parcels.

ExxonMobil operating Hibernia

ExxonMobil and Suncor are veteran players in Atlantic Canada, with ExxonMobil operating the fixed platform at Hibernia, the region's pioneering oil production project, and developing the C$6.4 billion Hebron project, which is targeting its first oil by the end of 2017.

Both projects have Suncor as a partner. Suncor also operates the Terra Nova floating production, storage and offloading system in a joint venture that includes ExxonMobil.

ConocoPhillips is a fresh face in the region, linking up in mid-2014 in the Shelburne exploration licenses offshore Nova Scotia, where drilling is scheduled to begin in late 2015, operated by Shell Canada with a 50 percent stake. ConocoPhillips has 30 percent and Suncor the remaining 20 percent.

Statoil discoveries

The Flemish Pass parcel is part of the region where Norway's Statoil made a headline-grabbing strike estimated at 600 million barrels of 34 degree API recoverable oil at Bay du Nord in 2013, having earlier found oil at its Harpoon license where the players have yet to offer an estimate of recoverable oil and the nearby Mizzen Field, which officials say holds 100 million-200 million barrels.

Orjan Birkeland, Statoil's vice president of exploration in Canada, rates the series of finds as a "breakthrough" after several years of exploration.

"The important thing here is that the area has a lot of growing room," he told a November conference in St. John's.

"There are several prospects that have been defined within this area," Birkeland said, adding that Flemish Pass prospects are being targeted in a current 18 month drilling program that is expected to last until mid-2016.

He said that so far one well and one sidetrack have been drilled into Bay du Nord, "so there are a lot of hurdles we need to clear before we mature it further."

Birkeland said Statoil is still examining approaches to the logistical challenges posed by the Flemish Pass, including ice management and the distance from land.

Statoil has listed Newfoundland as a "core priority for our global exploration."

On brink of new era

Robert Cadigan, president and chief executive officer of the Newfoundland and Labrador Oil & Gas Industries Association, said the Flemish pass bid was evidence of a growing interest in Newfoundland's offshore, which he believes is on the brink of a new era and is roughly in the same position as Norway four decades ago.

Turning belief into reality is a matter of great concern to the Newfoundland government which is faced with predictions that offshore production is headed for steady decline from 280,000 barrels per day currently to about 90,000 bpd in 2030, unless there is a dramatic change of fortunes.

The province is more on edge than Canada's other petroleum producing regions, having based its 2014-15

see NEWFOUNDLAND page 7

● EXPLORATION & PRODUCTION

ANS production up 1.6% month-over-month

December average 546,388 bpd, up from 537,664 bpd; but down 3.7% from 567,600 bpd in December '13; Cook Inlet production down 5%

By KRISTEN NELSON
Petroleum News

Alaska North Slope crude oil production averaged 546,388 barrels per day in December, up 1.62 percent from a November average of 537,664 bpd, but down 3.74 percent year-over-year from a December 2013 average of 567,600 bpd.

Most volumes reported by the Alaska Department of Revenue — Endicott, Kuparuk, Lisburne, Prudhoe Bay — were up month-over-month. Revenue's Tax Division reports ANS production consolidated by major production centers, with daily production and monthly averages.

More detailed data, including Cook Inlet and individual North Slope fields and pools, is reported by the Alaska Oil and Gas Conservation Commission on a month-delay basis.

Volumes for Endicott, operated by Hilcorp Alaska, averaged 9,847 bpd in December, up 8.23 percent (749 bpd) from a November average of 9,098 bpd. Endicott includes production from Sag Delta, Eider, Minke and the Badami field, operated by Savant Alaska. Miller Energy Resources, which owns Cook Inlet Energy, closed on the acquisition of Savant Alaska in December. AOGCC November data for Badami show production of 1,010 bpd, down 2.5 percent, 26 bpd, from an October average of 1,036 bpd.

> *Cook Inlet production averaged 17,894 bpd in November, down 5 percent from an October average of 18,836 bpd and the first time since July that the basin has produced an average of fewer than 18,000 bpd.*

December production from BP Exploration (Alaska)-operated Lisburne, part of greater Prudhoe Bay, averaged 24,900 bpd, up 7.54 percent (1,745 bpd) from a November average of 23,155. Lisburne production includes Point McIntyre, Niakuk and Raven.

Prudhoe up 2.3%

December production from the BP-operated Prudhoe Bay field averaged 320,919 bpd, up 2.3 percent (7,214 bpd) from a November average of 313,705 bpd. Prudhoe volumes include satellite production from Aurora, Borealis, Midnight Sun, Orion, Polaris, Sag River, Schrader Bluff and Ugnu, as well as from the Hilcorp Alaska-operated Milne Point and Northstar fields.

AOGCC data for November show Milne Point production at 24,431 bpd, up 34.4 percent, 6,254 bpd, from an October average of 18,177 bpd. Northstar, also operated by Hilcorp, averaged 9,155 bpd in November, up 4.8 percent, 421 bpd, from an October average of 8,735 bpd.

The ConocoPhillips Alaska-operated Kuparuk River field averaged 142,477 bpd in December, up 0.05 percent, 77 bpd, from a November average of 142,400 bpd. Kuparuk includes satellite production from Meltwater, Northeast West Sak, Tabasco, Tarn and West Sak, as well as from the Eni-operated Nikaitchuq field and the Caelus Alaska-operated Oooguruk field.

AOGCC data show Oooguruk production at 12,802 bpd in November, down 10.67 percent, 1,529 bpd, from an October average of 14,330 bpd, and Nikaitchuq production at 24,431 bpd in November, up 1.11 percent, 268 bpd, from an October average of 24,163 bpd. Nikaitchuq and Oooguruk combined account for nearly 26 percent of the volumes reported under Kuparuk by Revenue, while Milne Point and Northstar account for nearly 11 percent of the volumes reported under Prudhoe Bay.

Alpine production down

The ConocoPhillips-operated Alpine field was the only North Slope area reported by Revenue as showing a month-over-month decline, averaging 48,245 bpd in December, down 2.2 percent from a November average of 49,306. Alpine includes production from satellites at Fiord, Nanuq and Qannik, with the main Alpine field accounting for 67 percent of the field's production.

Cook Inlet down 5%

Cook Inlet production averaged 17,894 bpd in November, down 5 percent from an October average of 18,836 bpd and the first time since July that the basin has produced an average of fewer than 18,000 bpd.

Only two fields had month-over-month production increases, Beaver Creek and Trading Bay, both operated by Hilcorp Alaska.

Beaver Creek, Cook Inlet's smallest field, averaged 119 bpd in November, up

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NEWFOUNDLAND

budget on average Brent prices of US$105 a barrel.

Cadigan and industry officials are encouraged by changes announced a year ago by the Canada-Newfoundland Labrador Offshore Petroleum Board to introduce a new land tenure system that gives license-holders two years in known areas and four years in unexplored prospects — compared with only one year previously — to review the data and make more informed decisions.

Worldwide interest

"That's actually huge," said Rod Starr, senior vice president western hemisphere with TGS-NOPEC Geophysical Co.

He said that now the regulator has scheduled calls for bids for the next seven to 10 years there is "worldwide interest" in the region, including by companies that have never been active in licensing seismic data offshore Labrador.

TGS has linked up with Petroleum Geo-Services and the Newfoundland government's Nalcor Energy over the past three years to map out 18,150 square miles of seismic data and is about to start work on another 11,580 square miles to provide information for companies to assess the crude oil and natural gas potential.

Jim Keating, Nalcor's vice president of oil and gas, said more 2-D seismic was gathered in 2014 than in any single year since 1983.

Cadigan said the regulatory changes are a "game-changer (in areas that would cause) geologists to salivate. They are so large. In terms of data, they are similar to discoveries made in West Africa."

In addition to charting work by TGS and PGS, Shell has completed 3-D seismic imaging off Nova Scotia as part of its C$970 million work commitment in that deepwater area.

BP holds exploration licenses in four blocks covering 5,400 square miles in water depths ranging from 330 feet to 9,800 feet.

Barry Munro, oil and gas leader with Ernst & Young, said Atlantic Canada has little cause to panic over last year's decision by the United States to consider allowing seismic work in its Atlantic offshore, noting that the U.S. offshore is seen as more gas than oil prone, while the Canadian offshore is well advanced with infrastructure and companies are clear about the regulatory system for drilling exploratory wells and producing from them. ●

Contact Gary Park through publisher@petroleumnews.com

● NATURAL GAS

FNSB and FNG spar over evidence

The borough wants FNG to provide comprehensive information about affiliates; the utility believes the request is an attack

By ERIC LIDJI
For Petroleum News

What information is relevant when a utility wants to increase its rates?

As Fairbanks Natural Gas seeks to increase its rates, the Fairbanks North Star Borough wants regulators to force the utility to provide comprehensive information about its finances and operations, the finances and operations of its affiliates and its failed bid to construct a North Slope liquefied natural gas facility. Fairbanks Natural Gas believes the requests are merely part of "ongoing public relations attacks" against the utility.

The borough's initial requests came as part of the "discovery" phase of the proceedings, which is when parties to a legal case can request evidence before a trial begins.

Over the latter half of 2014, Fairbanks Natural Gas responded to 54 requests from the borough and 75 from the state Attorney General, the company recently told the Regulatory Commission of Alaska. The processing yielded more than 5,000 pages.

But Fairbanks Natural Gas balked at some of the borough's requests. The utility said some fell outside of the scope of the proceedings ("irrelevant") and others were more trouble than they were worth ("unduly burdensome"). The Fairbanks North Star Borough believes the additional information will help regulators develop a "full record" and wants the Regulatory Commission of Alaska to force Fairbanks Natural Gas to provide it.

A representative example: The Fairbanks North Star Borough wants Fairbanks Natural Gas to provide operating costs for its Point MacKenzie LNG terminal from 2008 to 2012, in addition to the 2013 operating costs already on record for the purposes of a "test year."

Generally speaking, rate cases require regulators to determine how much money a utility needs to make to conduct its operations and how much profit the utility should earn.

The process involves a "test year,"

> ***Fairbanks Natural Gas spent a decade adjusting its rates more or less at will before voluntarily agreeing to rate regulation, as part of a 2013 settlement with the state.***

where actual operating costs from a recent year are used to determine how much revenue the utility needs to earn. Because Fairbanks Natural Gas filed its case in late June 2014, the utility is using 2013 as its test year. "The cost of producing any good or service in 2008 is not an accurate indicator of the cost of producing a similar good or service now," an attorney for the utility recently told the RCA.

The Fairbanks North Star Borough believes the request is justified because Fairbanks Natural Gas transferred ownership of the terminal to an affiliate in 2013. The borough wants to make sure certain operating costs were "backed out" of the proposed rates.

In other places, Fairbanks North Star Borough said information from earlier years and from Fairbanks Natural Gas' affiliates would "assist in sorting through the complicated structure of (Fairbanks Natural Gas) and its relations with its affiliate entities."

The Fairbanks North Star Borough made its initial discovery requests in early October, and Fairbanks Natural Gas responded later that month. In mid-December, the borough asked regulators to force the utility to provide the remaining information. The utility made its case against providing the information shortly before the end of the year.

The two sides are waging a similar battle in a separate but related case. Fairbanks Natural Gas wants regulatory approval for a liquefied natural gas supply agreement with the Hilcorp Alaska LLC subsidiary Harvest Alaska LLC. The agreement is a prerequisite for a proposed sale of the facility from the Fairbanks

see **RATE CASE** *page 10*

continued from page 7

ANS PRODUCTION

1 percent from an October average of 118 bpd. Trading Bay, Cook Inlet's second-largest field, averaged 3,353 bpd in November, up 1.5 percent from an October average of 3,303 bpd.

Cook Inlet Energy's two oil fields, Redoubt Shoal and West McArthur River, had the largest month-over-month production declines, 26.6 percent and 19.4 percent respectively. Redoubt Shoal produced 757 bpd in November, down 274 bpd from an October average of 1,031 bpd, while West McArthur River produced 1,340 bpd in November, down 322 bpd from an October average of 1,662 bpd.

Production at Hilcorp's McArthur River field, the inlet's largest, averaged 5,311 bpd in November, down 5.45 percent, 306 bpd, from an October average of 5,617 bpd.

Middle Ground Shoal, operated by ExxonMobil subsidiary XTO, averaged 1,947 bpd in November, down 2.9 percent, 58 bpd, from an October average of 2,005 bpd.

Two Hilcorp-operated fields had the smallest month-over-month declines: Granite Point averaged 2,777 bpd, down 0.82 percent, 23 bpd, from an October average of 2,800 bpd, and Swanson River averaged 2,291 bpd in November, down 0.41 percent, 9 bpd, from 2,300 bpd in October.

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

Contact Kristen Nelson at knelson@petroleumnews.com

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RATE CASE

Natural Gas affiliate Titan to Harvest.

The Fairbanks North Star Borough wants regulators to investigate a 2013 transfer of the facility to Titan, which Fairbanks Natural Gas believes is irrelevant to the matter at hand.

Back and forth

Fairbanks Natural Gas spent a decade adjusting its rates more or less at will before voluntarily agreeing to rate regulation, as part of a 2013 settlement with the state.

Over that decade, the company became increasingly complex.

Pentex Alaska Natural Gas Co. LLC acquired Fairbanks Natural Gas in 2004 and subsequently created numerous subsidiaries. Fairbanks Natural Gas manages gas distribution throughout the city of Fairbanks. Titan Alaska LNG LLC owns the 50,000-gallon per day terminal that liquefies Cook Inlet gas. Arctic Energy Transportation LLC owns the equipment used to truck that LNG to Fairbanks. Cassini LNG Storage owns storage facilities. Polar LNG LLC sponsored a proposed North Slope LNG facility.

The Fairbanks North Star Borough became greatly suspicious of that corporate structure and was also annoyed about rising rates and unmet promises to expand the system. And so, in 2012, the Fairbanks North Star Borough and the cities of Fairbanks and North Pole formed a competing municipal gas distribution utility called the Interior Gas Utility.

The Interior Gas Utility and Fairbanks Natural Gas sparred in 2013, as each sought permission to provide service throughout much of the borough. The proceedings became heated at a September 2013 public hearing. The Regulatory Commission of Alaska ultimately gave the authority to the Interior Gas Utility but chastised the utility for making "insinuations," "assertions" and "accusations" against Fairbanks Natural Gas. ●

Contact Eric Lidji at ericlidji@mac.com

● FINANCE & ECONOMY

Wood Mackenzie looks ahead to 2015

Report from consultancy says many IOCs will struggle with Brent less than $70 per barrel; possibility of mergers, buyers' market

By KRISTEN NELSON
Petroleum News

In mid-December, with oil prices in the $70 per barrel range, Wood Mackenzie's Paul McConnell said concerns about the oil market "will be inescapable in 2015." McConnell, Wood Mackenzie principal analyst for global trends, was introducing a report by the consultancy, Horizons: What to look for in 2015.

In early January, with the U.S. Energy Information Administration reporting a December average price of $59 a barrel and January prices below $50, that statement rings even more true.

McConnell said there is no sign that the Organization of the Petroleum Exporting Countries will limit supply, and if economic growth is weaker than expected, that "could put even more pressure on prices," with oil companies forced to adapt and the possibility of a buyers' market emerging in 2015.

China is another focus, he said. "There are signs that this critical driver of energy and metals markets over the last decade or more is beginning to mature, with far-reaching implications for commodity demand."

Over the longer term, "deep-seated geopolitical, economical and technological trends may point to a new era of weak hydrocarbon demand growth," McConnell said, with that scenario representing a risk to energy companies in the future.

Oil markets

The economic outlook is "flat to negative" for Europe and Japan, Wood Mackenzie said in the report, making the strength of oil demand growth in 2015 a major concern. Demand growth is expected to be the same as in 2014, "markedly slower than that seen in 2013," putting "oil prices under renewed pressure in the first few months of 2015."

The report said oil demand growth in 2015 will not be enough to absorb new supply that could come into the market, and "the nature and scale of the response to low oil prices from non-OPEC producers will be a theme from the very start of the year." If non-OPEC response is not adequate to bring the market back into balance, then attention will shift to OPEC, whose next meeting is scheduled for June.

Wood Mackenzie said its view is that Saudi Arabia is not reconsidering its November decision to keep production at present levels. If OPEC leaves production unchanged it will suffer the consequences of a period of "very weak prices"; alternatively, it could cut production, triggering a price increase but also allowing non-OPEC producers back into the market.

On the natural gas side, while Chinese demand has slowed, the report said "long-term growth prospects remain compelling."

But Wood Mackenzie said there are concerns "that China will struggle to absorb contracted LNG, which will double over the next three years." The report said suppliers are hoping for a cold winter, "but the background of a low oil price environment will place pressure on LNG prices."

Buyers' market could emerge

The report said corporate valuations are heavily discounted as investors digest low oil prices with companies weighing options leading to the potential that "distressed sales could precipitate the emergence of a buyers' market in 2015."

"Those with the financial strength to withstand weak prices will be well positioned for the next cycle," which a survey of operators expects to be in 2016-18, a timeframe Wood Mackenzie said was in line with its view.

The reports said two-thirds of the international oil companies in its corporate service coverage group require Brent prices of more than $90 a barrel to break even through 2015-16.

see **2015 OUTLOOK** *page 26*

● ENVIRONMENT & SAFETY

Using radar to detect oil in ice and snow

Ground penetrating radar has emerged as a valuable tool in locating spilled oil in Arctic onshore and offshore conditions

By ALAN BAILEY
Petroleum News

In recent years the use of portable radar equipment, referred to as ground penetrating radar, has become a valuable technique for detecting oil that has been spilled in or under ice and snow in Arctic regions. And at the Dec. 18 meeting of the Alaska Geological Society, Esther Babcock, a geoscientist with GeoTek Alaska Inc., described how radar technology combined with modern computer systems can enable people to detect an otherwise hidden oil layer just a few centimeters thick.

Babcock commented that an awareness of the ground penetrating properties of radar came about literally by accident when, in the 1950s, an aircraft crashed in Greenland, with a suspected fault in the aircraft's radar altimeter being blamed for the pilot flying the aircraft into the ice that covers the land. It turned out that the radar signal had actually penetrated the ice cover, thus resulting in a false indication of the aircraft's altitude relative to the ice surface.

However, the practical uses of ground penetrating radar particularly moved ahead in the mid-2000s, thanks to advances in the technology that the technique requires, Babcock said.

Reflected radio waves

GPR works in a similar manner to seismic surveying, but uses radio waves rather than sound waves to locate subsurface objects and structures. A radio wave is directed into the subsurface, while a surface radio receiver detects echoes of the electromagnetic radiation, reflected from those subsurface features. Computer processing of detected echoes, done in a very similar manner to that involved in seismic data processing, enables images of the subsurface to be constructed.

Reflections of the radio waves occur where there is a boundary between materials with contrasting electrical properties, say between a layer of snow and a layer of ice.

However, while a seismic survey can penetrate to depths of thousands of feet, a GPR survey can only image near-surface features.

With radio waves having relatively high frequencies and short wavelengths, GPR data can resolve subsurface features to relatively fine levels of detail. However, while a seismic survey can penetrate to depths of thousands of feet, a GPR survey can only image near-surface features. Babcock said that the radio signals in a GPR survey cannot penetrate seawater and are blocked by materials such as water-saturated clay.

Optimum frequency

In fact, the optimum frequency to use in a GPR survey becomes a tradeoff between the resolution of subsurface detail and the depth penetration — the higher the frequency, the finer the resolution but the shallower the maximum penetration depth. In practice, when viewing a GPR image of a subsurface layer, the top and bottom surfaces of the layer tend to merge and become indistinguishable as the layer thickness thins to about one-eighth of the wavelength of the radio waves used in the survey, Babcock said. However, through appropriate data processing, it is possible to infer layer thicknesses, even at the limits of GPR detection, using characteristics such as the amplitude, phase and frequency of the reflected signals, she said.

And this matters in an Arctic oil spill response situation, given the tendency for an oil pool to spread out over or under an ice sheet, to form a thin oil layer. A radio frequency of 500 megahertz, a frequency that is often employed in an Arctic GPR survey, can enable a layer 4 to 5 centimeters thick to be detected, Babcock said. And data processing can enable resolutions finer than that, she said.

Successful tests

Measurements of the electrical properties of snow, ice and oil indicate that it should be possible to locate the boundaries between these materials using GPR surveys. And tests in the field at Svalbard and in a tank at the U.S. Army Corps of Engineers' cold regions test facility have shown that the technique does indeed work. People have successfully demonstrated the use of the technique to image oil in snow, under snow, in ice, or under ice, Babcock said.

However, testing of the technique has revealed that the electrical properties of sea ice tend to be anisotropic. In other words, they are different in different directions. This appears to happen because sea currents cause ice crystals to align as they form, with the salts that precipitate during ice crystallization forming aligned brine channels. Dealing with this issue in a GPR survey involves running the survey with the radio signals polarized in two perpendicular directions and then combining the results during the subsequent data processing, Babcock said.

Practical to use

A GPR survey involves the use of compact, easily portable equipment. And, at Svalbard, a successful test was conducted using a helicopter survey, with the helicopter moving slowly a few meters above the ground. Unlike other oil detection approaches, GPR enables measurements of layer thicknesses over a continuous area, with a few boreholes used to ground truth the GPR data and tie the data together.

The use of GPR can present benefits in terms of reduced data collection times, reduced exposure of personnel to Arctic conditions and the need for fewer people out on the ice, Babcock commented. ●

Contact Alan Bailey at abailey@petroleumnews.com

● ENVIRONMENT & SAFETY

AOGA, API sue over ringed seal listing

Trade organizations claim that there is no evidence linking climate change with the survival outlook for the Arctic subspecies

By ALAN BAILEY
Petroleum News

The Alaska Oil and Gas Association and the American Petroleum Institute have taken the National Marine Fisheries Service to court over the Fisheries Service's 2012 listing of the Arctic ringed seal as threatened under the Endangered Species Act. In a complaint filed in the federal District Court in Alaska on Dec. 23, the two oil industry trade associations asked the court to find that the listing violates both the Endangered Species Act and the Administrative Procedure Act.

The listing of the ringed seal is one of a series of listings by federal agencies based on the theory that, under the impacts of global warming, the predicted long-term decline in Arctic sea ice may threaten any species that depends on the ice for its habitat, regardless of the species' current abundance.


NATIONAL MARINE FISHERIES SERVICE

The Arctic ringed seal, listed as threatened under the Endangered Species Act, has a lifestyle dependent on sea ice.

'Arbitrary and capricious'

The trade associations argue that the National Marine Fisheries Service was "arbitrary and capricious" in determining that the Arctic ringed seal, an "abundant, wide-ranging, genetically diverse and otherwise healthy" subspecies is under threat. The International Union for Conservation of Nature has categorized the ringed seals as of "least concern" in the organization's ranking of the conservation status of various plant and animal species, the trade associations wrote in their court filing. The conservation organization has said that the ringed seal has a population of millions, with a broad distribution, the trade associations wrote.

"There are no scientific data linking the effects of climate change in the Arctic and the health, reproduction, survival or conservation of Arctic ringed seals," the trade associations wrote. "Moreover, there are no data to support and, accordingly, NMFS did not establish either an extinction threshold for Arctic ringed seals or the probability of the Arctic ringed seals reaching an extinction threshold within any specified time frame."

NATIONAL MARINE FISHERIES SERVICE

The proposed region of critical habitat for the Arctic ringed seal includes the entire U.S. economic zone in the Beaufort Sea, the Chukchi Sea and the northern part of the Bering Sea.

Unjustified timeframe

The trade associations also said that the Fisheries Service had arbitrarily used climate projections out to the year 2100, rather than projections to the mid-21st century, as has been the custom in other Arctic species listings, when coming to the conclusion that the ringed seals are under threat.

"NMFS has not provided a rational explanation, based on record evidence, supporting its reliance on 2100 as the foreseeable future, nor has NMFS rationally explained its changed position on this issue," the trade associations wrote.

The Fisheries Service said that the snow caves that the seals use to nurse and protect their pups constitute a particular problem as the climate warms.

In December the Fisheries Service published a proposed designation of critical habitat for the Arctic ringed seal. The proposed critical habitat region includes all areas where sea ice may be found and thus encompasses the entirety of the U.S. Beaufort and Chukchi seas, and the northern part of the Bering Sea. Features of the critical habitat include the sea ice that the seals use for lairs, and for activities such as basking and molting. The features also include the seals' primary prey. (See map)

Snow caves

The Fisheries Service said that the snow caves that the seals use to nurse and protect their pups constitute a particular problem as the climate warms. The late formation of ice in the fall, late winter rain and the early spring breakup of sea ice all threaten the caves, while a decline in snow depths may result in future depths too shallow for cave formation, that agency has said.

The oil industry, as represented by the trade associations, worries about the potential impact of the listing of the seals on offshore activities — under the terms of the Endangered Species Act, any federal action such as the processing of a federal permit application will trigger an agency consultation over potential impacts of a permitted activity on a listed species. A finding of potential harm to the species or its critical habitat will trigger the need for mitigation measures to prevent the harm.

The trade organizations wrote in their court filing that they and their member companies, while pursuing energy development and production, are committed to the protection of the Alaska Arctic and the adjacent Arctic outer continental shelf, and that they want to ensure that the ringed seals are conserved according to the best available science. ●

Contact Alan Bailey at abailey@petroleumnews.com

● FACILITIES

State drops plans for road to Umiat

Study of proposal began with roads to resources under former Gov. Murkowski; EIS work dropped in October by Parnell administration

By KRISTEN NELSON
Petroleum News

Plans for a road from the Dalton Highway to the Umiat oil field were terminated by the administration of former Gov. Sean Parnell.

The U.S. Army Corps of Engineers said in a Jan. 5 Federal Register notice that it has ended work on an environmental impact statement for the project. The Corps had published notice of intent to prepare an EIS for the project in May 2011.

The Corps said that in the summer of 2013 the Alaska Department of Transportation and Public Facilities decided to re-evaluate plans for future EIS work on the project and in response to that decision the Corps suspended work and closed the EIS project. The Corps confirmed in October with DOT&PF had the state no future plans to proceed with the project and the Corps terminated work on the EIS, although it said withdrawal of the permit application by DOT&PF and termination of the EIS process does not prevent the state from reapplying at a later time.

The road project has yielded criticism from local groups worried about the impact of the road on rural life and from those who categorized the project as "corporate welfare."

Linc Energy Ltd. acquired a controlling interest in the Umiat oil field in June 2011. The U.S. Navy discovered the field in 1946, but the field is far from infrastructure and has never been developed.

Linc working Umiat

Linc Energy Ltd. acquired a controlling interest in the Umiat oil field in June 2011. The U.S. Navy discovered the field in 1946, but the field is far from infrastructure and has never been developed. Producing oil from Umiat would likely require a 100-mile road and a pipeline to take oil to a connection with the trans-Alaska oil pipeline.

Plans for development of roads in remote parts of the state began under the administration of former Gov. Frank Murkowski, a program called roads to resources.

While Linc would like the state to build the road, the company has said it believes the field would be economic without it.

Linc had planned a five-well exploration program for 2012, but ultimately postponed the program because of "logistical and weather issues" including "low snow levels which affected snow road development."

Weather complicated plans for 2013 and Linc was unable to start the Umiat No. 18 well until March 2013.

In 2014, after analyzing Umiat No. 18 samples, Linc cancelled a flow test at the well and in 2014 drilled a horizontal well, the Umiat No. 23H — a flow test from that well produced a sustained rate of 250 barrels of oil per day.

Linc said last year that while Umiat development is a ways off, initial development could include as many as 70 wells. ●

Contact Kristen Nelson at knelson@petroleumnews.com

ENVIRONMENT & SAFETY

EPA amends oil, gas emissions standards

The Environmental Protection Agency has amended its standards for the control of emissions from oil and gas development and production, In August 2012 the agency published a final rule defining new standards that particularly applied to natural gas production — the amendments relate to some issues that people have raised with these new standards.

The new standards, designed to limit the emission of volatile organic compounds and sulfur dioxide from natural gas wells and gas processing plants, mandated the use of reduced emission completions, known as "green completions," for most gas wells. The standards also set performance targets for emissions control for gas processing and storage equipment.

The amendments to the rule that EPA has now finalized recognize the need for greater clarity over the regulation of emissions during the hydraulic fracturing of gas wells, taking into account the various stages involved in a "fracking" operation. The amendments also address some issues relating to the regulation of storage vessels and gas compressors.

The amendments also correct an error in the 2012 rule that had placed some equipment used for the processing of light liquids and gas vapors on the Alaska North Slope under the regulations — apparently gas processing plants on the North Slope are exempt from this particular area of the regulations.

—ALAN BAILEY

EXPLORATION & PRODUCTION

NordAq mobilizing drilling rig

NordAq Energy Inc. is mobilizing equipment for its winter exploration program.

The independent recently moved the Doyon Arctic Fox rig to Deadhorse in preparation for its trip to Smith Bay, where the company is drilling the Tulimaniq No. 1 exploration well this winter, NordAq President Robert Warthen told Petroleum News on Dec. 26.

The company plans to drill the well near the delta of the Ikpikpuk River. The well is primarily designed to collect rock samples and obtain vertical seismic information, although the company said it would perform a production test if the well encounters oil-bearing zones.

—ERIC LIDJI

NORTH OF 60 MINING news

page 17 Redstar plans winter drilling near the historic Apollo mine

www.MiningNewsNorth.com The weekly mining newspaper for Alaska and Canada's North Week of January 11, 2015

NEWS NUGGETS

New JV chases copper, gold near Pebble

Kijik Corp. and Alaska Earth Sciences Inc. Dec. 30 announced the formation of Chuchuna Minerals Company, a joint venture partnership to advance exploration at the Groundhog copper-gold project, situated immediately north of the Pebble project in Southwest Alaska. Alaska Earth Sciences, an Anchorage-based geological consulting firm that discovered the Groundhog prospect, will own 51 percent of Chuchuna Minerals; the remaining 49 percent will be owned by Kijik, the Alaska Native village corporation for Nondalton, the nearest community to the Groundhog property. Kijik brings local experience and resources to the project, which is expected to improve the development of community engagement and work force development programs. Results from a number of geophysical surveys over several years infer that Groundhog lies along the northeast margin of the Kaskanak batholith and is intersected by a north-northeast-trending corridor of distinctive intrusives. Alaska Earth Sciences said these surveys reveal very large conductive and resistive bodies in northeast trending structures on the Groundhog property. Multiple occurrences of porphyry-style mineralization and breccias occur within this belt, including Pebble West and East and several other significant discoveries. Chuchuna Minerals will be seeking an option partner to continue exploration.

Progress report for Livengood

International Tower Hill Mines Ltd. Jan. 5 reported progress toward optimization of the Livengood gold project in Interior Alaska. The 2014 program included metallurgical work; mine production scheduling studies; power supply alternatives review; and alternative camp reviews. The company says this work has developed an improved production schedule, as compared to the project's 2013 feasibility study and generated detailed work plans for 2015. These plans include additional metallurgical tests and engineering, including confirmation of the flow sheet and optimizing the operating costs. Once defined, the operating costs generated from this work will be used to evaluate and optimize the project configuration

see NEWS NUGGETS page 18

ALASKA

Pebble critics laud oil-gas drilling ban

Mine development proponents say petroleum exploration moratorium should have little relevance to future of copper-gold-molybdenum project

By ROSE RAGSDALE

For Mining News

On the face of it, President Barack Obama's decision to place a ban on offshore oil and gas drilling in Alaska's Bristol Bay Region appears to have handed opponents of the Pebble Project another weapon in their ongoing fight to block development of the enormous copper-gold-molybdenum deposit.

But Pebble supporters say a moratorium on petroleum exploration in Bristol Bay has little or no relationship to the merits of the mine project.

Oil and gas drilling in Bristol Bay has long been a contentious issue, dating back to the 1980s when industry interest in the area increased.

But little drilling occurred before the 1989 Exxon Valdez oil spill in Prince William Sound prompted Congress to bar drilling in Bristol Bay and buy back leases that had already been issued at an ultimate cost of more than $100 million.

President Bill Clinton issued a moratorium on Bristol Bay drilling in 1998. Congress lifted its ban in 2003, but Clinton's order was only overturned by President George W. Bush in 2007, when plans were made to hold a lease sale in 2011.

In 2010, Obama canceled the 2011 lease sale and put a seven-year moratorium on oil and gas activity in Bristol Bay.

In recent years, Republicans have tried multiple times to require a Bristol Bay lease sale but failed to pass such legislation.

Obama moved Dec. 16 to permanently bar oil and gas drilling in the North Aleutian Basin, including Bristol Bay off the coast of southwestern Alaska.

PEBBLE LIMITED PARTNERSHIP

The area is "too precious for us to be putting out to the highest bidder," Obama said in a video message announcing his decision.

In a memo to the Interior Department, the president extended protections for an area estimated to provide 40 percent of U.S. wild-caught seafood.

Interior Secretary Sally Jewell said Obama's action caps decades of work from the community to protect the region's economic and cultural heritage.

"With its pristine waters, rich fisheries and strong tourist economy, Bristol Bay is a treasure that should be off limits for oil and gas development," Jewell added in a statement.

see PEBBLE page 18

● ALASKA

Redstar targets early 2015 exploration

Crews re-evaluate high-grade trends at Unga with low-cost program prior to winter drilling at the site of state's first gold mine

By SHANE LASLEY

Mining News

With a new management team in place, roughly C$2 million of cash in the bank and an improved understanding of its high-grade gold mineralization, Redstar Gold Corp. is preparing to launch an early 2015 drill program at its Unga project, found in the Aleutian Arc of Southwest Alaska.

Unga – where Redstar's 2014 surface exploration program grabbed rock samples with grades of up to 401 grams per metric ton gold and 266 g/t silver – is a high-grade gold property that encompasses the historic Apollo gold mine, considered to be the first underground gold operation in Alaska.

Redstar Chairman Jacques Vaillancourt said, "The Unga project gives Redstar 100 percent consolidated control of an emerging, high-grade epithermal gold-silver district which has been overlooked for the past 30 years, largely due to previously fragmented ownership."

In May, Redstar raised C$3.3 million through a private placement financing. But the junior explorer chose not to launch a capital-sapping drill program. Redstar opted, instead, to spend the summer season mapping, sampling and re-evaluating the highest-priority targets that the legendary high-grade project has to offer.

Most of these top prospects were accessible with all-terrain vehicles along existing roads and trails, eliminating the need for helicopter support.

As a result, Redstar still had more than C$2.2 million in working capital at the end of September, enough to carry out a drill program slated for early 2015.

"The program at Unga was designed ultimately to allow the company to maximize our potential for drilling high-grade gold mineralization while minimizing expenditure; to clearly delineate the potential for expanding areas of known mineralization; and to generate new targets for future exploration," Redstar President and CEO Toby Mayo explained at the end of the field program.

Mayo, the former president of Cancordia Resource Corp., was appointed president and CEO of Redstar in September. Jesse Grady, a geologist with extensive Alaska exploration experience, joined the team as vice president of exploration.

"This new and talented team will be taking the company and its lead Unga project forward," said Vaillancourt. "We believe that Unga, with its dual trends of epithermal low to medium sulfidation formation with gold showings over 19 kilometers (12 miles) is currently amongst the most prospective projects going."

JOSEPH Z. SILVA COLLECTION

Located on Unga Island near Sand Point, Apollo is considered the first underground gold mine built in Alaska.

Consolidating Unga

Redstar acquired the Shumagin project from Kentucky-based NGAS Production Co. – NGAS subsequently was acquired by Houston Texas-based Magnum Hunter Resources Corp. – in 2011. This claim group includes two blocks of patented claims – one of which covers Apollo-Sitka, a historic mine site that produced some 150,000 ounces of gold between 1891 and 1922; and the other covers the parallel Shumagin Trend.

Following the purchase of Shumagin, Redstar struck a deal with Full Metal Minerals to earn an initial 60 percent interest in the Unga-Popov property, a large claim group that covers the strike and down dip extension to at least three high-grade gold trends outlined on the patented claims.

In November, Redstar completed the consolidation of the Unga project by negotiating a deal with Full Metal that assigned all interests in the property to Redstar, including an exploration agreement with option to lease with the Aleut Corp., the area's Alaska Native regional corporation.

"The strategic transaction between (Full Metal), the Aleut Corp. and Redstar completes the consolidation of the Shumigan and Unga-Popov properties, which together comprise the Unga Project," said Mayo. "The transaction, which gives Redstar undivided control of a district-scale exploration area covering about 250 square kilometers (96.5 square miles), will afford the company greater flexibility and control over future exploration."

Understanding Apollo-Sitka

Redstar's 2014 field program, which kicked off in July, investigated the highest-priority targets along the Apollo-Sitka and Shumigan trends. Each of these sub-parallel trends are some six miles (9.5 kilometers) long and cut across the entire southeast corner of Unga Island.

The initial focus of this program was on a 2,500-meter-long corridor of alteration and veining along the southwest-oriented Apollo-Sitka trend. The area sampled centered on the Apollo Mine area and included the Sitka Mine area to the northeast; Empire Ridge to the southwest; and the Rising Sun prospect to the southeast.

In December, Redstar reported encouraging results from the selective rock chip sampling of exposed bedrock in this area, with the best specimens returning assays of 401 g/t gold and 266 g/t silver. Results from continuous chip trench sampling within the hanging wall of the historic Sitka stope produced results of up to 30.5 g/t gold and 128 g/t silver.

Redstar reports that a continuous gold-silver geochemical soil anomaly of more than 100 parts per billion (up to 821 ppb) gold and more than 1.3 g/t (up to 21.5 g/t) silver covering the Sitka and Apollo mine areas has been extended by roughly 1,300 meters to the southwest from Apollo through Empire Ridge.

The Empire Ridge prospect area has received minimal surface work, and Redstar plans geological mapping of this important geochemical anomaly in future exploration programs.

"The surface results have expanded our understanding of the Apollo-Sitka trend as a highly prospective gold and silver system, which has provided us with additional target areas to expand upon," said Mayo.

Extending Shumigan

Crews also investigated Shumigan and Aquila, two prospective areas situated at opposite ends of the Shumigan trend.

At the Shumigan prospect, located at the northeast end of the trend, a soil sample grid of roughly 750 meters by 200 meters tested the western extension of known surface and sub-surface mineralization along inferred structures.

Redstar said the results from this survey identifies a gold and silver geochemical soil signature of 20-50 ppb (up to 615 ppb) gold and greater than 0.5 g/t (up to 6.8 g/t) silver over areas of historical trenching, extending the anomaly to the southwest by some 400 meters.

Rock chip sampling of outcropping vein breccias and stockwork at Shumigan produced results of up to 9.93 g/t gold and 74.4 g/t silver.

see **REDSTAR** *page 18*

NORTHERN NEIGHBORS

NORTHQUEST LTD. Jan. 6 reported final results from its 2014 drill program at the Pistol Bay gold project in Nunavut. The best hole of the campaign cut 134.4 meters grading 1.36 grams per metric ton gold at the Vickers target. Twelve of the 13 drill holes completed at Vickers in 2014 intersected the gold zone. Northquest said this drilling extended the Vickers zone for 200 meters to the east of all previous drilling. The best hole at Vickers, previously reported, cut 221.7 meters averaging 1.65 g/t gold. The company also reported results from drilling at the Sako and Bazooka targets. For 2015, Northquest plans to complete infill drilling in the area of the 2014 holes at Vickers; as well as explore the zone for extensions to east and west.

COPPER NORTH MINING CORP. Jan. 5 reported that its 2014 exploration program at the Carmacks Copper Project in central Yukon Territory found copper-gold-silver mineralization in at least 15 zones, defining mineralized north-east-dipping shear structures that extend for at least 5,000 meters. The current proposed mining area – zones 1, 7, 7a and 4 – spans 600 meters of the main structure. Work last year consisted of geologic mapping, trenching, induced polarization and magnetic geophysical survey and diamond drilling and focused on expansion of the proposed mining area. Copper North says it plans to complete a larger program in 2015 aimed at expanding the mineral resource and extending the potential mine life at Carmacks.

CWN MINING ACQUISITION CORP. Jan. 5 said it has completed an option to acquire a 100 percent interest in the Top project, net of a 2 percent royalty reserved for YES Exploration. Top is a gold property situated about 200 kilometers (125 miles) northwest of Whitehorse, Yukon Territory. This constitutes CWN's qualifying transaction as defined under TSX Venture Exchange policy. In concert, CWN raised C$4 million through a non-brokered private consisting of 8 million common shares at C50 cents per share.

—COMPILED BY SHANE LASLEY

Contact North of 60 Mining News:

Publisher: Shane Lasley • e-mail: publisher@MiningNewsNorth.com

Phone: 907.229.6289 • Fax: 907.522.9583

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Shane Lasley	PUBLISHER & NEWS EDITOR
Rose Ragsdale	EDITOR-IN-CHIEF (contractor)
Mary Mack	CEO & GENERAL MANAGER
Susan Crane	ADVERTISING DIRECTOR
Heather Yates	BOOKKEEPER & CIRCULATION MANAGER
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Forrest Crane	CONTRACT PHOTOGRAPHER
Tom Kearney	ADVERTISING DESIGN MANAGER
Renee Garbutt	ADVERTISING ASSISTANT
Mapmakers Alaska	CARTOGRAPHY

ADDRESS • P.O. Box 231647
Anchorage, AK 99523-1647

NEWS • 907.229.6289
publisher@miningnewsnorth.com

CIRCULATION • 907.522.9469
circulation@petroleumnews.com

ADVERTISING
Susan Crane • 907.770.5592
scrane@petroleumnews.com
Bonnie Yonker • 425.483.9705
byonker@petroleumnews.com

FAX FOR ALL DEPARTMENTS
907.522.9583

Several of the individuals listed above are independent contractors

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NEWS NUGGETS

and capital costs, including determination of the optimum scale for the project. In order to better position Livengood for a construction decision when warranted by market conditions, environmental baseline studies continue at the project.

Good news at Golden Summit

Freegold Ventures Ltd. Jan. 6 said results from recently completed metallurgical tests of the oxide mineralization at Golden Summit near Fairbanks are extremely encouraging. Gold extractions of more than 80 percent were achieved within 14 days on coarse crushed material. The column test was permitted to run for 65 days and final gold extractions were 85 percent. Freegold says these results compare favorably with earlier bottle roll test results on coarse crushed material. Results of these tests will be incorporated into the preliminary economic assessment currently underway for Golden Summit. Freegold undertook the additional metallurgical work to examine the potential for an initial heap leach operation on the oxide component.

—COMPILED BY SHANE LASLEY

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REDSTAR

At the Aquila prospect, situated at the southwestern end of the Shumigan trend, a series of reconnaissance soil lines returned around 50 ppb (up to 197 ppb) gold and up to 3.51 g/t silver. A single select rock sample of a narrow breccia vein sampled within an intense alteration zone returned 90.2 g/t silver.

In addition to the field work, Redstar geologists completed an in-depth review of historical drilling carried out at the Shumigan prospect.

"We continue to receive encouraging results at our Unga Gold Project in Alaska, which add to our understanding of the geological system as a whole, most notably a demonstrable relationship between phreatomagmatic breccias (formed when upwelling magma encounters water) and high-grade gold mineralization as part of a larger, district-scale epithermal-magmatic-related system. This exciting development has opened up additional avenues of exploration into what could be a significantly larger system than previously thought," explained Mayo. "Furthermore, the work of re-interpreting historic core and geological data has provided us with additional insight and exploration targets, which will help guide our upcoming drilling campaign for early in 2015." ●

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PEBBLE

In reacting to Obama's action, U.S. Sen. Lisa Murkowski, R-Alaska, noted the current lack of petroleum industry interest in the North Aleutian Basin and said she had no objection to the move at this time.

Murkowski, who took over as chairman of the Senate Energy Committee when the U.S. Senate re-convened Jan. 6, questioned the timing of the President's action and expressed her continued frustration with the administration's priorities.

"It is incredibly frustrating that this administration looks at Alaska – with oil production at a fraction of the level it could be at, and with low oil prices about to force steep across-the-board budget cuts – and decides that conservation is our most pressing need," she said in a statement. "… What we need are decisions to open lands and waters in Alaska, not the familiar and frustrating pattern of shutting everything down."

The decision to withdraw the area from all future oil and gas leasing eliminates the sunset date to a withdrawal that President Obama issued in 2010 and was set to expire in 2017. The Interior department previously dropped the North Aleutian Basin from its 2012-2017 leasing plan, so Obama's announcement largely represents the continuation of an existing policy. The prohibition will remain in place until lifted by the Obama administration or a future administration.

Next up: Pebble

The Pebble deposit, which is located in a broad valley about 20 miles north of Lake Iliamna, is one of the greatest stores of mineral wealth ever discovered. Its current resource estimate includes 5.94 billion metric tons in measured and indicated resources containing 55 billion pounds copper, 67 million ounces gold and 3.3 billion lbs. molybdenum; and 4.84 billion metric tons in inferred resources containing 26 billion lbs. copper, 40 million oz gold and 2.3 billion lbs. molybdenum. Quantities of silver, palladium and rhenium also occur in the deposit.

While the president's action drew widespread praise from environmental groups, media outlets and others who lauded Obama for his leadership in protecting a place so important to Alaskans, it also sparked new calls for similar protections for inland waterways near the huge Pebble copper-gold-molybdenum deposit.

"Today, President Obama permanently protected the offshore areas of Bristol Bay from oil & gas drilling and exploration," said Nell Williams, deputy director of Trout Unlimited - Alaska Program in a statement. "Now the need for protecting the region's headwater streams from the Pebble Mine is clearer than ever.

"Headwater streams are where Bristol Bay's salmon spawn, and are critical to the health of the resource and sustainable industry in Bristol Bay. The Clean Water Act section 404(c) is the next logical step to ensure that Bristol Bay continues to thrive for many years to come," Williams added.

"The executive order not only protects the region from drilling, but draws national attention to the effort of opposition to the Pebble Mine proposal," wrote The Good Men Project on its website. "In November, nearly two-thirds of Alaskans voted in favor of ballot measure 4, giving the state Legislature power to approve or reject the Pebble Mine proposal. State and federal agencies have to approve the proposal as well, after the Legislature would have to conclude that the project would not harm the region's fishing industry. The mine would be one of the largest of its kind in the world, creating 10.8 billion tons of waste rock, requiring dams to store the waste liquid from the mining operation," according to a Dec. 17 post.

Setback for EPA

The U.S. Environmental Protection Agency has taken steps in recent years to block development of the Pebble deposit using its authority under Clean Water Act section 404(c).

Pebble Limited Partnership, the proposed mine's developer, recently won a preliminary injunction in federal court against the EPA, and the judge directed the agency to suspend all actions against the project until the legal issues raised by the developer can be heard in front of his court.

As for the ban on oil and gas drilling in Bristol Bay, Pebble spokesman Mike Heatwole said, "It is our view that the action on oil and gas leasing in Bristol Bay does not have implications for us. Our claims are on State of Alaska land."

Moreover, "we have said all along that our mine plan, when we release one and initiate the permitting process, must coexist with the fishery. As you've heard us state on many occasions, this is why we have undertaken an extensive environmental studies program over the past 10 years to help us design a responsible plan for Pebble," said Heatwole, who also noted that the project has spent more than $150 million on those studies.

"I found the President's announcement baffling because there's been no activity there and little or no interest in the region from the oil and gas industry for some time," said Deantha Crockett, executive director of the Alaska Miners Association.

Crockett, who also called Obama's move "interesting", said she can't help wondering if the action might be a prelude to something else. And while the EPA has repeatedly said its recent actions to block Pebble's development as a hardrock mine is not directed at any other mining projects, she, likewise, can't help but wonder about that agency's motives.

"I have no idea if the ban on oil and gas drilling in Bristol Bay is a sign of things to come or not. But any such action by the federal government is always a concern," Crockett said. "In a logical world, it wouldn't have anything to do with mining, but this is not necessarily a logical world." ●

NATURAL GAS

New mines could consume some ANS gas

By BILL WHITE

Researcher/writer for the Office of the Federal Coordinator

OFFICE OF THE FEDERAL COORDINATOR

Other possible mines

The Alaska business community likes to talk about three other mining prospects that could tap the Alaska LNG gas stream: the Pebble copper-gold play, Livengood gold and the Ambler mining district. (See map)

BILL WHITE

All of these prospects are less certain of development than Donlin.

Pebble. Pebble would be to Donlin what a mountain is to a mesa. It would be bigger than even the Red Dog zinc and lead mine in Alaska's Northwest Arctic.

Where Donlin boasts an estimated 40 million ounces of gold in its reserves, Pebble hosts an estimated 107 million ounces of gold. And gold isn't Pebble's No. 1 prize. Copper is. An estimated 80 billion pounds of it. Pebble also holds molybdenum (used in making steel), rhenium (used in jet engines) and palladium (used in automobile emissions controls).

Pebble, if it's developed, would need a power plant perhaps twice the size of Donlin's — Pebble's development plan is still a work in progress, so it's unclear at this point what the mine's specs would be. The developer — Canadian junior mining company Northern Dynasty Minerals — hopes to use natural gas at the mine site, whether from Cook Inlet or the North Slope. One early assessment, from 2011, estimated the mine would need 50 million cubic feet of gas per day.

Financing such a massive development is one high

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GAS FOR MINES

hurdle for Pebble. Two others are political and environmental. The deposit lies amid headwaters of two of the five river systems that comprise the Bristol Bay watershed — which supports the world's largest wild sockeye-salmon commercial fishery. The region also hosts subsistence fishing and high-end sports fishing lodges. Opposition to development is organized, entrenched and vocal.

Atop this, in 2014 the Environmental Protection Agency proposed to protect the Bristol Bay fisheries by restricting mining in the region under its Clean Water Act powers. A final decision is pending.

Livengood. The Livengood prospect has one advantage over all the others: location. It's on the Alaska road system, about 70 miles northwest of Fairbanks.

Although Alaska LNG's proposed 800-mile pipeline would pass Livengood, the mine's 2013 feasibility study doesn't envision tapping the gas stream directly.

Rather, the developer, International Tower Hill Mines, a junior Canadian mining company, sees the Fairbanks electric utility boosting its power supply, perhaps with a gas-fired turbine at a generating plant outside Fairbanks, while the mining company builds a 50-mile, 239-kilovolt transmission line to the mine site. All in all, a $129 million project. The annual power bill would run about $113 million, about one-third of the mine's operating costs.

International Tower Hill Mines estimates the Livengood gold resource at about 20 million ounces — "measured, indicated and inferred," in the industry's language. That's about half the size of Donlin's, but sizable nonetheless.

Livengood would produce nearly 600,000 ounces of gold a year for 14 years, making it one of the world's more substantial gold mines.

But the project is stalled. The 2013 feasibility study concluded each ounce would cost $1,474 to produce. Gold was last above that price in early 2013. It averaged about $1,250 an ounce in the first nine months of 2014.

Management currently is "open to strategic alliance, while considering all appropriate financing options," according to a recent presentation.

Ambler mining district. For several years, the state has discussed building a road to the Ambler district to jump-start mining there.

Ambler is remote, on the Brooks Range flanks in northern Alaska. It's just above the Arctic Circle. The coast is far away. The nearest road is far away.

To create access, the state has drawn plans to punch a spur from that nearest road — the Dalton Highway, a two-lane north-south supply artery to North Slope oil fields. A state agency, the Alaska Industrial Development and Export Authority, has taken plans for a $500 million, 216-mile, one-lane tool road to Alaska Native groups and local communities in advance of pursuing federal permitting, including an environmental impact statement. Some groups support the plan; some oppose it.

The Ambler road is modeled after a late-1980s 52-mile toll road and port the state built to help the Red Dog mine. That road is widely regarded within Alaska as a smart use of state resources — it's even made money for the state.

What would be at the end of the 216-mile road to the Ambler district?

Geologists believe the area is rich in copper, zinc, gold and other minerals.

AIDEA officials like to talk about a variety of companies probing Ambler's prospects, but really only one is talking with a lot of bravado.

NovaCopper, a Canada-based junior mining company, has rights to a variety of public and private mining claims in the large district and is focused on two — one called Arctic and the other called Bornite.

Its 2013 "preliminary economic assessment" outlines a $718 million development that would mine copper, zinc, lead, silver and gold and make lots of money, according to the company's 2013 annual report. The estimate "includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves." Translation: A lot more exploration is needed to prove up the mineral reserves.

In August 2014, the company issued a press release noting it "expects to be a consumer of LNG" from a small-scale state-led project to truck LNG to Fairbanks from a small plant that would be built on the North Slope. That assumes the AIDEA toll road to Ambler gets built. The road also would be how the mine would get its production to market.

State officials have talked about the Sun and Smucker prospects in the Ambler district, too. A Canadian junior called Andover Mining Corp. has rights to those.

In early 2014, Andover went bankrupt after failing to work out a reorganization plan with its creditors.

A golden legacy

Commercial mining in Alaska dates almost to when the United States acquired the territory from Russia in 1867.

Far-north mining became a new pathway for American migration in the late 19th century as the east-west frontier ran out at the Pacific coast and a few of the most adventurous, avaricious and optimistic shifted their course northward. Mining was a key catalyst for industrial development during Alaska's first 70 years as a U.S. territory.

Into northland lore strode such miners as Joe Juneau (Southeast), Skookum Jim (Klondike), Felix Pedro (Fairbanks) and the three lucky Swedes (Nome).

The early decades involved mostly small-scale stuff, except for some larger gold discoveries near the state capital of Juneau.

The big event — the Klondike gold rush in 1898 — actually happened just across the border in Canada's Yukon. But aftershocks were felt across Alaska as hordes of dreamers the Klondike drew, and others, found gold elsewhere — in beach sands near Cape Nome on the Alaska's west coast, near Chena Slough in the territory's Interior, and so on.

Gold wasn't the only treasure unearthed. A network of mines at Kennecott running from 1911 to 1938 produced a bonanza of copper. Coal mining began in 1917. Mercury mining near Sleetmute. Marble quarried on Prince of Wales Island. Tin on the Seward Peninsula. Platinum at the fabulously named site of Goodnews Bay.

Gold was Alaska mining's bedrock business, but World War II blasted that industry apart. A federal order shut down gold mines as not critical to the war effort. Most big operations never restarted. The industry hobbled forward on mostly small placer operations until the big Fort Knox open-pit mine started in the mid-1990s. Two large underground mines since have opened as well, cashing in on higher gold prices.

The copper, mercury, marble, tin and platinum mining

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● FINANCE & ECONOMY

Article details Anchorage's centennial

By ERIC LIDJI

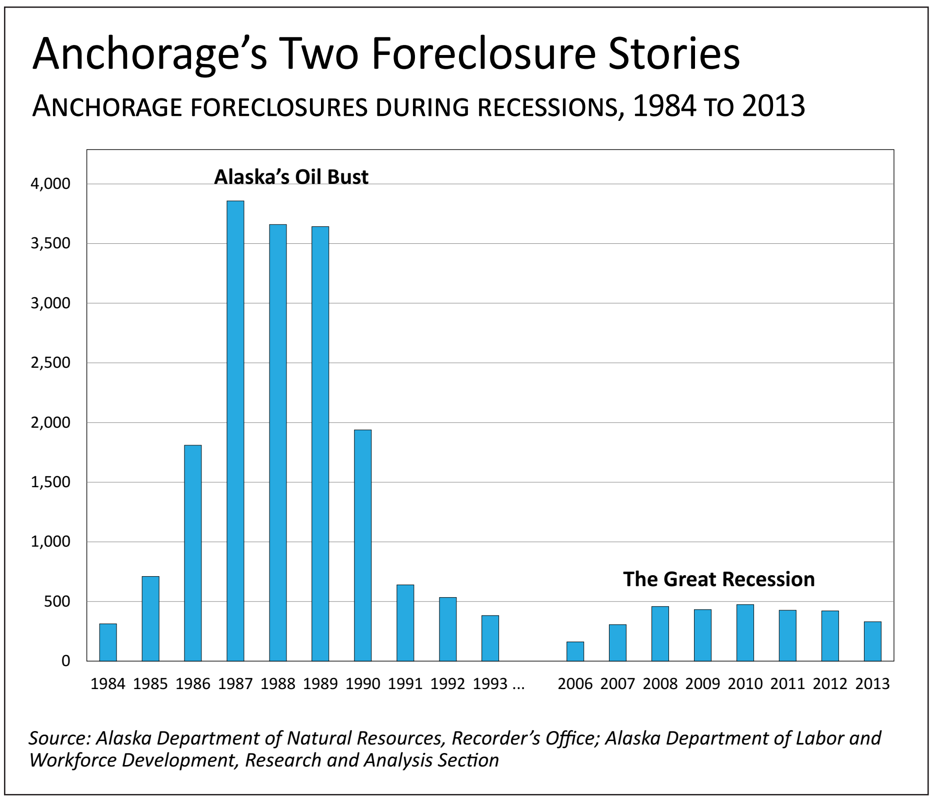
For Petroleum News

With the city of Anchorage celebrating its centennial this year, a report from the Alaska Department of Labor and Workforce Development details the events that have shaped the economy of Alaska's largest city, including the booms and busts of oil development. (See graph)

An article in the December 2014 issue of Alaska Economic Trends chronicles the economic history of Anchorage from its early Native beginnings, to the brief tent camp established in 1915 to prepare for construction of the Alaska Railroad, to an expanded military presence through World War II, the rise of international air transportation and the discovery of oil on the Kenai Peninsula. "When Alaska achieved statehood in 1959, Anchorage's economy was small but in satisfactory shape, with the military and federal government at the forefront," state economist Neal Fried wrote. "However, federal primacy faced a challenge with the discovery of oil on the Kenai Peninsula."

The Anchorage oil industry began in 1954, when Phillips Petroleum established its headquarters in the city. Other oil companies soon followed. The discovery of the Swanson River oil field in 1959 started commercial production in Cook Inlet. By the time Cook Inlet production peaked in 1970, Anchorage had become an administrative hub for companies developing the newly discovered Prudhoe Bay field on the North Slope.

With activities related to the construction of the trans-Alaska oil pipeline, payroll employment in Anchorage doubled to 80,000 jobs between 1970 and 1975, according to Fried. The tripling price of oil in the early 1980s, and rising production in Alaska, gave the Anchorage economy another boost once the pipeline came online, bringing 57,000 people to the city



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GAS FOR MINES

are long gone.

But mining's aura glows over Alaska like the aurora. Riding a sternwheeler on the Chena River in Fairbanks, the "Golden Heart City," visiting a gold dredge site and panning for gold remain popular draws for package tourists today.

Long anticipated side effect

The Alaska mining industry's ether has vibrated through the years with the possibility that North Slope gas would flow to market.

In the 1970s, the thinking was that roads built for a gas pipeline project would break new ground for the mining industry.

"Mining could be expected to grow somewhat because of the increased access to mineral rich areas," said a 1976 environmental impact statement for two pipeline projects under consideration then. Neither was built.

In the early 2000s, Alaska's governor formed a Natural Gas Policy Council to figure out how to get North Slope gas to market. A University of Alaska Fairbanks geological engineering professor testified about what a gas pipeline could do for the mining industry.

Alaska has 15 major "mineral occurrences" near the gas pipeline corridor through Interior Alaska, he said. The 50 percent probability gross value of these minerals is $157 billion.

The new mines could employ as many as 20,000 people, the governor's council reported. "The economic and employment impact of developing these mineral resources could exceed that of Prudhoe Bay." Gas from the pipeline could help address the largest single cost of mining — energy, the council said.

In 2011, the project plan for a smaller-scale state-backed North Slope gas pipeline serving Alaska also cited the benefits for mining: "The project has the potential to stimulate existing industries and encourage new industrial activities, including mining."

Guessing gas demand

Alaska's current natural gas demand — outside of oil-field operations — averages about 200 million cubic feet a day for power generation and heat.

Looking at the mining prospects and counting cubic feet, the industry could boost that statewide total maybe 15 to 50 percent. Though 50 percent would mean everything goes well. And 0 percent is also a real possibility.

Donlin Gold, if the mine is developed, would need about 30 million cubic feet a day.

Pebble, if the mine is built, would need perhaps 50 million cubic feet a day, ideally from Cook Inlet, the North Slope or a combination of the two.

A gas-fired turbine to feed electricity to a Livengood gold mine, if it's developed, would burn about 8.5 million cubic feet a day, according to a 2013 report on Fairbanks-area gas demand.

It's unclear how much gas Ambler mines would demand if any get developed.

Smaller mine prospects could gain as well. Many, particularly within reach of Alaska's roads, are in various stages of exploration. These, too, could benefit from the availability of abundant gas if they get developed and the Alaska LNG project is built.

However much North Slope gas mines would consume, natural gas could be a cheaper, more environmentally friendly source of energy than diesel fuel. It could help shave one of the highest costs of doing business in cold, remote, rugged locations: the cost of heating buildings and powering the massive machinery of mining.

Part 1 of this story ran in the Jan. 4 issue.

Editor's note: This is a reprint from the Office of the Federal Coordinator, Alaska Natural Gas Transportation Projects, online at www.arcticgas.gov/new-mines-could-consume-some-north-slope-gas.

● GOVERNMENT

AEA researches affordable rural energy

State agency follows up on commitment in Alaska natural gas pipeline legislation to find ways to alleviate rural energy costs

By ALAN BAILEY
Petroleum News

Although most discussion around Senate Bill 138, the bill authorizing the state of Alaska's involvement in the Alaska liquefied natural gas export project, has focused on the LNG project itself, the bill also contained provisions aimed at helping state residents who will not enjoy direct access to North Slope gas, assuming that a gas export line is built.

That part of the bill has triggered what is referred to as the Alaska Affordable Energy Strategy, an initiative aimed at finding ways of alleviating the current high cost of energy for many Alaska rural communities. The Alaska Energy Authority has taken on a project to develop a plan and recommendations to the Legislature for implementing the strategy. And on Dec. 9 during Law Seminars International's annual Energy Markets and Regulation in Alaska conference Neil McMahon, AEA program manager for the project, talked about what his agency is doing to achieve the project's aims.

McMahon said that AEA has until Jan. 1, 2017, to complete the project. Under Senate Bill 138 perhaps 20 percent of state revenues from the gas export line would be channeled into assistance for areas of the state that do not have access to the North Slope gas, he said.

Several challenges

McMahon said that the challenges in bringing affordable energy to rural Alaska include the low energy demand in small rural communities at remote locations, where economies of scale in energy delivery are difficult to achieve. Distances around the state are very large, while the typically cold climate can present operational challenges, including increased risks of equipment breakdowns.

The cold climate, perhaps with temperatures of 50 below, also makes energy supply reliability an imperative, McMahon commented.

"To some extent, reliability is as important as any other function when we're looking at a rural power system," McMahon said. "If there's not a backup we do not want things to go wrong because that then puts people's lives at stake."

Climate can also have a major impact on the feasibility of implementing different forms of renewable energy in different parts of the state. In especially cold regions, for example, the freezing of water over much of the year may preclude the implementation of hydropower, McMahon said.

Evaluate by region

As an initial step into its affordable rural energy project, AEA has been assessing the energy status and future energy potential in 12 regions that roughly correspond to the Native regional corporation regions defined under the Alaska Native Claims Settlement Act. Some 77 percent of electricity production takes place in the Alaska Railbelt, between the southern Kenai Peninsula and the city of Fairbanks, McMahon said. Much of the rest of the state's production occurs in Southeast Alaska, with other parts of the state only accounting for 1 to 2 percent, he said.

For their energy needs, many rural communities depend on fuel that is shipped by barge. The fact that fuel can only be delivered during the annual season of ice-free water increases the fuel price risk for the communities and locks in prices between deliveries, McMahon commented. Storage for the fuel is also expensive, he said.

An examination of the cost of electricity in different rural communities across the state, taking into account the impact of power cost equalization, the state funding program for reducing rural residential electricity costs, shows anomalies in the resulting cost of residential power for some communities relative to others. These anomalies probably reflect variations in the efficiency with which power is delivered, McMahon said. Some rural communities have upwards of 30 to 40 percent power loss along power transmission and distribution lines, while in some places the efficiency of power generation is only 60 percent of what is specified under power cost equalization standards, he said.

Energy access

On the assumption that access to natural gas and renewable energy sources can alleviate the cost of energy, the AEA team has taken available data for individual communities and categorized the communities according to their ability to access either, both or none of these energy resources. From a regional perspective, it is apparent that the Railbelt has access to natural gas, and to renewable energies in the form of hydropower and wind power. Southeast Alaska has access to hydropower for elec-

see RURAL ENERGY page 25

GOVERNMENT

Walker, Richards delegate authority

Gov. Bill Walker and Attorney General Craig Richards have delegated authority on matters related to work they did as private attorneys.

Richards, in a Dec. 26 delegation, delegated authority to Chief Assistant Attorney General Martin Schultz "to take or withhold official action" affecting matters Richard was involved in prior to become attorney general, including: appeals and other proceedings arising out of trans-Alaska pipeline system property tax assessments; application of Alaska's tax cap to the City of Valdez; imposition of taxes on the Alyeska Valdez Marine Terminal; Valdez's challenge to jurisdiction of the State Assessment Review Board; Valdez's challenge concerning taxability of vessels; challenge to the Point Thomson settlement; and matters involving the state "and in which I or Walker & Richards, LLC previously represented a client other than the State."

The delegation would remain in effect so long as Richards has a financial in any receivables of Walker & Richards.

Richards said he expects those interests to terminate no later than Feb. 1.

The governor's Dec. 29 delegation of authority is to Lt. Gov. Byron Mallott and includes: appeals and other matters arising out of trans-Alaska pipeline system property tax assessments for 2007 through 2015; application of the Alaska tax cap to Valdez; imposition of taxes on the Alyeska Valdez Marine Terminal; Valdez's challenge to jurisdiction of the State Assessment Review Board; Valdez's challenge on taxability of vessels; the challenge to the Point Thomson settlement; and any other matter involving the state and in which Walker or Richards previously represented a client other than the state.

The governor said the delegation would remain in effect as long as he has a financial interest in any of these matters.

—PETROLEUM NEWS

PIPELINES & DOWNSTREAM

State approves Badami rate decrease

State regulators have approved a large decrease in Badami Pipeline shipping rates.

Under the new rates, Nutaaq Pipeline LLC will charge $5.21 to ship a barrel of oil from the Badami unit to an interconnection with the Endicott Pipeline, down from $12.25.

While the documentation supporting rate change is confidential, the 57.5 percent reduction over 2014 rates "appears to be attributable to a decrease in the cost of service as a result of the net carryover mechanism, coupled with an anticipated increase in throughput," the Regulatory Commission of Alaska wrote in a Dec. 30 ruling.

The rates went into effect Jan. 1. As with many smaller North Slope pipelines, Badami Pipelines rates are calculated using a predetermined methodology. The commission approves those rate changes at the beginning of each year on a provisional basis, and the rates become permanent on a daily basis. Each day, rates for the previous day become permanent unless a customer protests, at which point the commission would investigate.

Rates have varied greatly

Shipping rates on the Badami Pipeline have been swinging greatly in recent years. In November 2013, operator BP Exploration (Alaska) Inc. decreased shipping rates to $9.42 per barrel, down from $12.25 per barrel, while claiming it was eligible for a maximum rate of $21.97 per barrel under a rate setting methodology approved by the state. In April 2014, after taking over the pipeline, Nutaaq increased the rate back to $12.25 per barrel.

Nutaaq is a joint venture between unit-operator Savant and Arctic Slope Regional Corp.

The Badami Pipeline is the easternmost operating pipeline on the North Slope, although it will lose that distinction when ExxonMobil Corp. brings the Point Thomson unit into production, in early 2016. At that point, the Badami Pipeline will became a conduit for bringing Point Thomson liquids to market, in addition to bringing Badami unit oil to market.

—ERIC LIDJI

● FINANCE & ECONOMY

North Dakota, Alaska locked in rivalry

Oil, population trump Alaska; latest census data moves ND back to 47th place, which Alaska held for decade; ND now No. 2 in oil

By JAMES MACPHERSON
Associated Press

Forget South Dakota. North Dakota's most similar sister state these days is some 2,000 miles away.

Alaska and North Dakota — which once had little more in common than wintry weather and elbow room — have for the past several years been locked in a state sibling rivalry over population numbers and crude oil output.

"It shocks me how much we have in common with Alaska, and it's not just the cold," said Kevin Iverson, manager of the census office at the North Dakota Commerce Department in Bismarck.

North Dakota is bettering Alaska on crude production and the number of residents now, thanks to the Lower 48 state's economic miracle led by its oil bonanza. The United States' unlikely economic darling that is North Dakota comes in contrast to slipping crude production on The Last Frontier.

Recent U.S. Census Bureau data show North Dakota recaptured the 47th most populous state from Alaska, which had held the ranking for the past decade. North Dakota had an estimated 739,482 residents in 2014, up more 15,600 residents from the prior count and a record level. The 2.2 percent increase was the biggest in the nation.

Alaska lost more than 500 residents between 2013 and 2014, ending the year with a population pegged at about 736,700. It was among only six states to lose population, data show.

Bakken production

North Dakota's fortunes have swung radically in recent years with advanced drilling technology in the rich Bakken shale and Three Forks formations that have thrust the state to the nation's No. 2 oil producer behind Texas. North Dakota, which was barely a top-10 oil producer a decade ago, passed Alaska in 2012 to become the second-leading oil-producing state in the U.S.

Oil output in North Dakota is pegged at more than 1.1 million barrels daily, or more than double Alaska's oil production, which peaked in 1988 at 2 million barrels daily but has dropped to less than one-fourth of that at present.

Two of North Dakota's 17 oil-producing counties in the western part of the state — McKenzie and Mountrail — are now producing more than all of Alaska.

North Dakota's present day position seemed inconceivable in 2003 when it was the only state to lose population and Alaska vaulted past. Only Vermont and Wyoming had fewer residents than North Dakota then, and both of those states had population increases, the Census Bureau said.

Demographers projected at that time that Vermont and Wyoming would leapfrog over North Dakota by decade's end, leaving North Dakota with the dubious distinction of being the least-populated state in the nation.

Migration change

The Census Bureau later estimated that about 21,000 North Dakotans left between 2000 and 2007, the year the state's oil boom began in earnest. North Dakota has since added nearly 84,000 residents and has about 25,000 more jobs than takers, giving it the lowest unemployment rate in the nation, less than 3 percent.

Iverson, North Dakota's demographer, said the explosion of oil development has made population estimates difficult, if not impossible.

"There is a real danger of doing popu-

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CENTENNIAL

between 1980 and 1985. "By the mid-1980s, both private and public investment in the economy outpaced demand," Fried wrote. "Then oil prices collapsed, kicking the chair out from under an already softening economy." The Anchorage economy grew again with the response to the Exxon Valdez oil spill in March 1989.

Over the quarter century since, "no single event or series of events drove Anchorage's economy," according to Fried. But low oil prices in the 1990s and high oil prices starting in the mid-2000s both impacted the Anchorage economy. Higher paying resource extractions jobs are likely why per capita income in Anchorage increased from 16 percent above the national average in 2000 to 25 percent above it in 2012, according to Fried.

The complete article is available online at http://labor.state.ak.us/trends/. ●

Contact Eric Lidji at ericlidji@mac.com

● GOVERNMENT

Sullivan sworn in as Alaska's new senator

By BECKY BOHRER

Associated Press

Republican U.S. Sen. Dan Sullivan was sworn in at the start of the new Congress on Jan. 6, becoming Alaska's junior senator.

An Alaska contingent that included Gov. Bill Walker and state lawmakers were in Washington, D.C., for the event. Sullivan said he was honored and humbled by the turnout. He said the joke was that the "Alaska invasion" — which he numbered at more than 200 people — brought with it the snow that blanketed the area.

He said he doesn't think agencies like the U.S. Environmental Protection Agency and U.S. Army Corps of Engineers are challenged enough in their issuance of regulations, and he plans to ask them what their specific authority is for any new regulations they impose.

Sullivan, a former state attorney general and Natural Resources commissioner, rounds out an all-Republican congressional delegation for Alaska that also includes Sen. Lisa Murkowski and Rep. Don Young.

Sullivan defeated first-term incumbent Democrat Mark Begich by about 6,000 votes in November. The race was contentious and closely watched nationally as Republicans sought to wrest back control of the Senate, which they ultimately did.

Co-sponsor

One of Sullivan's first orders of business was signing on as a co-sponsor to legislation, which the White House threatened to veto, that would approve the Keystone XL oil pipeline. Sullivan said moving forward with the project — which would move oil sands crude from Canada to refineries on the U.S. Gulf Coast — would be good for the country and for jobs and show that the U.S. is willing to move forward on a broader energy policy.

President Barack Obama has said the project would benefit Canadian oil companies but would not be a huge benefit to American consumers. Sullivan said it's important to look at energy markets regionally and geographically, from a North America perspective.

Committees

Sullivan said he is excited to get to work and pleased with his committee assignments, which he said were his top picks.

Sullivan will serve on the committees of Commerce, Science and Transportation; Environment and Public Works; Armed Services; and Veterans' Affairs. Sullivan is a Marine Corps reservist.

He said his priorities include moving the economy ahead through less regulation. He said he doesn't think agencies like the U.S. Environmental Protection Agency and U.S. Army Corps of Engineers are challenged enough in their issuance of regulations, and he plans to ask them what their specific authority is for any new regulations they impose. That's a basic question that doesn't get asked enough, he said.

He also said he wants to ensure that veterans are cared for and to keep on top of efforts to reduce the backlog for care within the Veterans Affairs system.

Sullivan said the plan is for his daughters to finish out the school year in Alaska; his eldest, he said, is a high school senior. ●

EXPLORATION & PRODUCTION

US rig count tumbles by 29 to 1,811

Oilfield services company Baker Hughes Inc. says the number of rigs drilling for oil and natural gas in the U.S. plummeted by 29 the week ending Jan. 2 to 1,811.

The Houston firm said in its weekly report that 1,482 rigs were drilling for oil and 328 for gas. One was listed as miscellaneous. A year ago 1,751 rigs were active.

Of the major oil- and gas-producing states, none showed any gains.

Texas plunged by 12, California dropped by six, Colorado fell by three, Louisiana declined two and Alaska, Arkansas, New Mexico, Ohio, Pennsylvania and Wyoming were down one apiece.

Kansas, North Dakota, Oklahoma, Utah and West Virginia were unchanged.

The U.S. rig count peaked at 4,530 in 1981 and bottomed at 488 in 1999.

—ASSOCIATED PRESS

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RURAL ENERGY

tricity.

Only two communities, Barrow and Nuiqsut on the North Slope, currently have access to natural gas but not to renewable energy, McMahon said.

Many communities have access to biomass in the form of firewood or wood pellets, as a form of renewable energy for heating buildings. However, southwest Alaska has relatively little biomass and no natural gas, McMahon said.

Different strategies

McMahon said that AEA is going to use its assessment of the current energy situation to evaluate different ways in which the state can help rural communities, with strategies depending on where the various communities are situated relative to the availability of gas or renewables. In all cases improved energy efficiency, including the improved operational efficiency of energy systems, will be helpful. Other possibilities are improved facilities for fuel transportation, including perhaps assistance with the transportation and storage of natural gas. The development of new renewable systems such as wind power is another possibility. ●

Contact Alan Bailey at abailey@petroleumnews.com

FINANCE & ECONOMY

How lower oil could fuel more US hiring

In June, when oil cost $107 a barrel, U.S. employers added a healthy number of jobs — 267,000. Now, with oil below $50, hopes are rising that hiring in the United States is poised to intensify.

Goldman Sachs forecasts that if oil stays near its current price, the economy will add 300,000 more jobs this year than if the price had remained at its June level. Stronger job growth is foreseen at retailers, auto dealers, shipping firms, restaurants and hotels — all of which will likely show gains in Jan. 9's jobs report for December.

From gas-station prices to utility bills, consumers and businesses are now enjoying savings on basic energy costs. It means more people can splurge on purchases from clothing and appliances to vacations and dinners out. That stronger demand will likely require some businesses to step up hiring, which would circulate more money through the economy and perhaps fuel further job growth.

Just as critically, cheaper gas is suppressing overall U.S. inflation. Lower prices keep down yields on U.S. Treasurys. Lower yields, in turn, serve the housing market by reducing mortgage rates and potentially producing more construction jobs. This week, for example, the average rate on a 30-year fixed mortgage sank to 3.73 percent, its lowest point since May 2013.

"These lower oil costs are a tax cut for everybody — except the energy producers," said Joseph LaVorgna, chief U.S. economist at Deutsche Bank. "It gives us an acceleration in employment."

Not everyone will benefit. U.S. oil and gas drillers risk layoffs if energy prices don't recover. Industry suppliers such as U.S. Steel blamed the falling prices in announcing plans this week to lay off 756 workers who make tubing for the oil sector.

At the same time, those losses, represent a modest portion of the U.S. job market. The energy sector employs about 1.4 percent of all U.S. employees, according to Deutsche Bank calculations.

—ASSOCIATED PRESS

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LNG AGREEMENT

AIDEA to move forward with investigating alternatives for bringing natural gas to Interior Alaska."

Under the terms of the concession agreement, MWH had been trying to achieve financial close by Dec. 30 for the plan to construct the North Slope plant. However, during an AIDEA board meeting on Dec. 16 it became clear that some of the project deliverables required for that close were not complete. Participants in that meeting also expressed concerns about the projected cost of liquefied natural gas in Fairbanks, based on estimated costs for the various components of the supply chain for delivering the LNG from the North Slope.

The plan was to sell LNG to Fairbanks Natural Gas, Interior Gas Utility and Golden Valley Electric Association, the gas and electrical utilities in Fairbanks.

According to a Dec. 22 letter from Ted Leonard, executive director of AIDEA, to Chris Brown, MWH Alaska regional manager, on Dec. 15 Brown had asked the AIDEA board about a possible extension to the Dec. 30 deadline for the concession agreement. Leonard, in his letter, encouraged MWH to achieve the original deadline but offered an extension to March 30, subject to certain conditions. Those conditions included a requirement that MWH subsidiary Northern Lights Energy would no longer have an exclusive concession to build and operate the plant. The conditions also included specific target dates by which final pricing for the project must be submitted and by which service agreements with Fairbanks gas and power utilities must be completed.

In a letter to AIDEA dated Dec. 30, Brown said that MWH was withdrawing its concession agreement extension request because of a lack of utility consensus on the direction of the project; because of the AIDEA stipulated conditions for extending the agreement; and because the firm contracted to build the plant was standing down its team that has been working on the plant design. Presumably referencing Kiewit, the company slated to build the plant, Brown said that the contractor had notified MWH that it was re-assigning its engineering team and archiving its design work, given the political risk facing the project and given the uncertainty over continued AIDEA funding.

Brown said that significant progress has been made in the execution of the project, including the development of a cost estimate for the LNG plant, the award of an operations and maintenance contract for the plant; and the execution of an agreement for private investment in the plant.

But the stand down by the construction contractor could now cause financial close for the project to take longer than 90 days, Brown said.

A key factor in the project is the potential cost of gas in Fairbanks, with a target cost of $15 or less per thousand cubic feet for Fairbanks residents. In his letter Brown said that MWH had offered to supply the Fairbanks utilities with LNG at a preliminary price of $13.

During the Dec. 16 board meeting an MWH presentation on the estimated costs of the LNG supply chain pointed to a total cost in the range of $18 to $20.50 per thousand cubic feet of gas, including the cost of storing and regasifying the LNG in Fairbanks, and distributing the gas to consumers. Golden Valley Electric Association and Fairbanks Natural Gas told the board that they were willing to continue pursuing the project, but the Interior Gas Utility expressed a view that the time had come to seek alternative ways of supplying gas to Fairbanks.

Rodvik told Petroleum News that AIDEA will now need to consider all possible options for achieving the project objectives.

"AIDEA is fully committed to the goal of bringing affordable energy to the Interior, and we appreciate the effort that MWH put into helping bring the North Slope LNG plant closer to reality," Rodvik said. "MWH achieved a great deal during 2014, and we thank the entire MWH team for all of their hard work."

—ALAN BAILEY

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2015 OUTLOOK

"At US$70 per barrel Brent, companies under financial pressure are weighing up their options: cut discretionary spend, cut dividends/buybacks, or sell assets. We have already seen a trickle of announcements on the first two themes and we expect that to become a torrent into the new year," the report said.

A combination of distressed asset sales and distressed corporate sales could result in a buyers' market, the report said. There could also be large-scale corporate consolidations, the report said, with unconventional players and highly leveraged international E&Ps "with big spending commitments" forced to merge.

Falling hydrocarbon demand?

With the agreement on emission targets between China and the U.S., "suggesting that efforts to reduce CO_2 output may now come more easily than expected," and Europe seeking to solve its problem of reliance on Russian natural gas by moving toward greater energy efficiency and more renewables, "could the world already be on a path towards falling hydrocarbon demand?" the report asked.

The United Nations Climate Change Conference scheduled for Paris in December 2015 could mean something more than movement toward agreement to reduce CO_2, the report said, it could be a signal "that we are already moving to a less energy and carbon-intensive world," something which would have great impact on energy companies. ●

Contact Kristen Nelson at knelson@petroleumnews.com

FINANCE & ECONOMY

Shrinking oil bill sends US deficit lower

The U.S. trade deficit fell in November to the lowest level in almost a year, thanks to the country's swiftly shrinking thirst for foreign oil.

The deficit — imports minus exports — narrowed to $39 billion during the month, down 7.7 percent from a revised October deficit of $42.2 billion, the Commerce Department reported Jan. 7.

U.S. exports slipped 1 percent to $196.4 billion amid lower sales of commercial airliners.

Primarily due to oil, imports posted a steeper drop of 2.2 percent to $235.4 billion. The volume of crude imported in November hit its lowest level since 1994, while the average price hit a two-year low of $82.95 a barrel. A simultaneous boom in domestic oil production has also cut the country's reliance on imported oil.

The November deficit was the lowest since a trade gap of $37.4 billion in December 2013. Through the first 11 months of 2014, the deficit is running 5.1 percent above the same period in 2013.

Economists predict that the oil market will continue to reduce the U.S. trade deficit and potentially bolster the overall economy. To be sure, a lower bill for foreign oil is likely to be offset somewhat by a stronger dollar, which makes U.S. goods more expensive in overseas markets, and economic weakness in such key export markets as Europe and Japan.

"The trade gap will continue to shrink apace until the oil import tab stops falling like a rock," said Patrick Newport, an economist at Global insight.

The November deficit was the lowest since a trade gap of $37.4 billion in December 2013. Through the first 11 months of 2014, the deficit is running 5.1 percent above the same period in 2013.

For the first 11 months of 2014, U.S. energy exports are up 9.6 percent compared with the same period in 2013, putting them on track to hit a record even with the recent fall in prices.

—ASSOCIATED PRESS

GOVERNMENT

Acting heads named at Division of O&G

The Alaska Department of Natural Resources' Division of Oil and Gas is seeing management changes as the Walker administration takes over.

Bill Barron, named division director in May 2011 by then-DNR Commissioner Dan Sullivan, resigned as division director effective Jan. 2. Jonne Slemons, the former deputy director, has retired.

According to the division's website, Paul Decker has been named acting director, and Jim Shine has been named acting deputy director.

In a Jan. 6 note to DNR directors, Marty Rutherford, acting DNR commissioner, said she and incoming Commissioner Mark Myers "are committed to filling the permanent director position within the next 30 days."

In the interim, she said, Decker and Shine have agreed to fill the positions on an acting basis.

DNR posted background information on both men on the division's website.

Decker is a geologist with 26 years of experience in oil and gas, 10 of those in the resource evaluation section in the division and five as section manager. He worked 16 years in the oil industry, from 1988 to 2004 in new ventures exploration and development for ARCO, Phillips and ConocoPhillips in Anchorage. He holds Ph.D. and M.S. degrees in structural geology from the University of Wisconsin-Madison and a B.S. degree in geology from Fort Lewis College in Durango, Colorado.

Shine, an attorney, has been a special project assistant to the DNR commissioner since 2012.

In that role Shine worked on the review and analysis of administrative appeals, development of legislation associated with oil and gas matters, and review and analysis of permitting and regulatory efforts and proposals.

Prior to joining DNR, Shine practiced law in Anchorage in the environment, energy and resources practice group at Perkins Coie LLP. Shine has a law degree from the University of Denver and a B.A. in English from Western State College in Gunnison, Colorado.

—PETROLEUM NEWS

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STATE RIVALRY

lation projections based on oil," he said. "The problem for small rural states like North Dakota and Alaska is that population is driven by migration change and that change is driven by economics."

Alaska demographer David Howell, based in Juneau, said most residents there are aware of North Dakota's newfound oil wealth.

"We know what's going on with oil in North Dakota and it's something people here are always keeping track of," he said. "People are talking about the boom down there."

The recent population estimates, however, do not paint a gloom-and-doom picture for Alaska, Howell said. The state's overall economy remains strong, he said.

"Certainly the statewide (population) estimates show a slight decrease, but it is not a huge drop by any means," Howell said.

—Bismarck statehouse correspondent James MacPherson is a former longtime Alaska resident.

Petroleum news

Oil Patch Bits

Scott Selzer named chief operating officer of AES

SCOTT SELZER

ASRC Energy Services Inc. is pleased to announce that Scott Selzer has accepted the position of senior vice president, chief operating officer effective Dec. 19, 2014.

Selzer began his career with AES in 2006 as a chemical technician and inventory specialist delivering chemicals and maintaining inventory on the North Slope. He was promoted to business unit manager-AES BP Alaska in 2009, business unit manager-AES CPAI Alaska in 2011 and became general manager of operations and maintenance of AES in 2012.

Selzer has more than 30 years of experience in the oil and gas industry, including operations and maintenance of oil rigs in Southwest Kansas where he began his career. His experiences led him to design, construct and operate his own petroleum distribution business in Kansas which grew to encompass a multi-state distribution network. He has extensive skills and experience working with oilfield operations and maintenance, project management, project accounting, transportation, logistics, and business development.

"Scott is a strong, passionate leader who is familiar with AES' business lines as well as our corporate values," said Jeff Kinneeveauk, AES president and CEO. "His unwavering commitment to safety coupled with his extensive experience in the Alaska oil and gas industry will prove a valuable asset to our executive management team as we continue to move forward in pursuit of our goals."

His previous positions include director of manufacturing and engineering at Blue Rhino/Ferrell Gas, operations manager for CIC on the North Slope and operations manager for Carlile Transportation Systems. He attended Hesston College in Kansas with an emphasis on aviation. Selzer is a licensed pilot with single-engine, instrument and multi-engine ratings.

Companies involved in Alaska and northern Canada's oil and gas industry

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NEUMAN Q&A

chance to be in some meetings with the governor and if so, how did they go?

Neuman: Yes, I think the meetings went good. It's very obvious to me that he's new and a lot of the department heads are new. He's trying to feel his way through the process, and get it figured out, and get his arms around this massive new job he's got, and all the intricacies behind it. I think the most important thing here is the operating budget and how we will get a hold of that. I've committed personally to Gov. Walker to do all that I can to work in a cooperative fashion. I don't believe in adversarial type of positions. The Legislature will have its opinions and the governor will have his, and that's fine. Our difference is our strength. There is not a day that goes by when I don't say that. That doesn't mean we can't be civil and work this out.

I don't think there is enough knowledge within the administration to get into specific details, on projects or specific departments within the state operating budget. I've spent several hours with Pat Pitney and talked with several commissioners so far. I feel confident we will work through this. We don't have a choice. That's the bottom line. We don't have a choice. The people who we work for expect us to do our job and that is to come out of this with a plan for a sustainable budget and we are going to do it.

Petroleum News: There has been some early pushback from the Legislature on some of his appointments such as Mark Myers, Mary Rutherford and Jim Whitaker, who bring philosophical differences that have been aired during previous administrations.

Neuman: Well Bill Walker was elected to be the chief executive of the state of Alaska by the people of Alaska. It's his right to be able to select those people to his cabinet. We will work with them. Do I have concerns? I think we all probably have concerns one way or another. I think we will give them a fair chance to hear what they have to say, what their outlooks for the future are, then we'll make some decisions.

Petroleum News: The oil tax debate seems to be laid to rest with the voters weighing in during the interim. Can this help the Legislature move forward without having it hang over their heads?

Neuman: No I don't. I think there is always going to be a continued debate on oil taxes. There always has been. There always will be. My concern is when we did it, people who were advising us by predicting oil under very different scenarios. So the information that we received may not be as accurate as what we are seeing now. If you start punching in $50 in those calculations as opposed to $105, there is a big difference on the output and the amount of money the state has. We will have to go back and look at some of that from the $50 aspect, to make sure we have a good analysis. I already have my staff looking at it. When we look at the calculations for what the state brings in for the production taxes, for the different corporate taxes, what we are paying for credits, it makes a big, big difference if it's $50 oil or if it's $105 oil. So that will continue to part of the discussion.

Petroleum News: So is this review of the tax structure or is this a broader review of a greater range of prices?

Neuman: Well, right now it's a broader review of a different range of prices. We have to have a good analysis of the state's income. When we did SB 21 it was based on the price of oil being twice what it is. It was being predicted to continue to increase several percentages every year when we are seeing this dramatic drop. I quite frankly even, at the time, didn't think the price of oil was going to increase. I thought we needed to be on the conservative side looking at what's going on with the Lower 48 and Keystone. Soon you'll have all of Canada's oil going down the heart of America. That's going to be hard to bring the price of oil back up, I think. We are going to have to go back and bring a full analysis again on how this all works at $50 oil. I think that's just prudent.

Petroleum News: What about the production side? It was promoted on more production and the state is down about 4 percent on a calendar year. Is one year enough to start assessing its value?

Neuman: We are seeing a reduction in the decline in throughput. We are slowing the decline. That's a good thing. But one year is not enough. Again, the structure at SB 21: Look at the credits. They are a big part of a lot of the new oil being developed now. Right now, I just don't know. It's too early in the process to predict any outcomes other than we just make sure we start punching in the $50 or $60 oil.

We have to make sure we have a good picture of the state's income and look at how do we sit there and develop an operating budget and meet our constitutional mandates within that budget without the most accurate analysis of how much revenue we will be receiving as a state. You have to make the money before you start spending it.

Petroleum News: On to the Arctic. The U.S. will become chair of the Arctic Council. What kind of interest do you have in this and what kind of role would you like to see Alaska have?

Neuman: I was one of the original appointments to the Arctic policy commission and worked on the plan for economic development and wildlife.

As the only Arctic state in the United States, certainly I want to see Alaska take a lead role in any Arctic development. I think the biggest problem not facing just Alaska, but all states, is federal intervention. There is nothing better than local control. I think Alaska needs to make sure we have the authority and opportunities to express our goals and see Alaska's goals going forward without federal intervention.

Petroleum News: What about infrastructure? That's been listed as a priority for Arctic policy and development.

Neuman: Right now, it will have to be based on its own merits, the cost to the state and the value back to the state. I think there are opportunities to develop infrastructure. We looked at a lot of different ports and electrical intertie, which can carry an expansion of broadband, and how that could lower the cost of education. There is a tremendous amount of opportunity for infrastructure development in the Arctic.

Again, I think the state investing in those opportunities and then the net-back value to the state by having a more developed infrastructure, how is that going to affect more private industry investment into the state. That's how I tend to look at these types of projects and the state's involvement: what can the state do to attract private investment dollars.

Petroleum News: Speaking of attracting investment, I know the governor has said he would like to review how the state is incentivizing independents coming into to explore. How do you feel about that?

Neuman: Everything has got to be on the table. I feel the more companies that we can have investing in the state of Alaska, it behooves us to do that, as long as the net back is a positive to the state.

Petroleum News: Do you have any closing thoughts?

Neuman: Until we really start as a Legislature to develop a plan of attack, it's still too early in the game to predict what we are going to do with oil and gas. We haven't had an opportunity to sit down as a caucus, as a Legislature as a whole to develop a long-range plan with where we are going to go with $50 oil.

With the extreme stress we will have on our operating budget, we are still at the beginning of the game. Right now it's too early in the game to have any of those discussions beyond conceptual ideas.

That's our strength: gather the ideas that we have from some of the people who have been in the game for years but also hear new ideas from new guys coming in. We need to throw them out on the table and see what comes out in the mix.

It's still early in the game. We have a new governor and a new cabinet. Some of us have been working on oil and gas stuff for a little while so we'll have to get started right away.

It's my goal as co-chair of finance to get the discussions started as soon as we can, learn what kind of revenue streams we have coming in, what our costs are to the state and go from there. First you have to paint the picture, then you have to make the decisions. ●

Contact Steve Quinn at squinnwrite@gmail.com

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EXPANSION PROJECT

fields on the east side of Cook Inlet to gas powered facilities on the west side, where gas production is declining.

Hilcorp recently created Kenai Beluga Pipeline to merge four regional transmission pipelines into a single system. The consolidation carried broad support from utilities and producers across the region. Among the features of the consolidated system is a postage-stamp rate, meaning all customers pay the same rate to use any part of the system.

The expansion project is expected to cost some $16 million and could nearly triple operating costs, according to Kenai Beluga Pipeline. If regulators allow the company to recover project costs through its rates, those rate increases could theoretically impact all customers, even those with no interest in east-to-west shipments. Kenai Beluga Pipeline has estimated that the project could increase rates by 4.8 cents per thousand cubic feet the next time the utility evaluates its shipping rates, which is scheduled for early 2016.

Under the terms of the concession agreement, MWH had been trying to achieve financial close by Dec. 30 for the plan to construct the North Slope plant.

Tesoro objections

"While Tesoro does not intend to challenge the use of a postage-stamp rate methodology in (Kenai Beluga Pipeline's) anticipated rate filing, it does not follow that all capital costs associated with the project are appropriate to include in such a calculation," Tesoro attorney Robin Brena told the Regulatory Commission of Alaska in comments on Jan. 2.

Tesoro wants regulators to investigate whether the project is needed, or at least whether Kenai Beluga Pipeline "has sufficiently considered alternative project configurations."

The refiner questions why all customers on the consolidated system should pay for a project intended largely to bolster supplies for facilities on the west side of Cook Inlet.

The company also wants to know how a proposed Enstar project to connect the Cook Inlet Natural Gas Storage Alaska LLC facilities to the existing transmission grid might impact the proposed Kenai Beluga Pipeline expansion project. If the Enstar project pulls customers away from Kenai Beluga Pipeline, it might jumble project economics.

Homer Electric concerns

Homer Electric Association shares many of those concerns.

The utility previously questioned the existing postage stamp rates on the consolidated system and now questions whether the expansion project should increase those rates.

According to Homer Electric Association, Kenai Beluga Pipeline "has made no showing that the additional compression proposed in the expansion project benefits all shippers on its system nor a compelling case that the additional compression is needed at all."

Like Tesoro, Homer Electric Association is asking regulators to investigate the proposal.

Enstar disagrees

Enstar unequivocally supports the proposal.

"Enstar supports the application because it provides critical operational redundancy, improves the trans-Inlet transmission capacity, and supports efficient management of pipeline pressures," Enstar President Jared Green wrote to the commission on Dec. 31.

By adding two compressors, the expansion project would provide much needed backup at the Kenai Pipeline Junction, according to Enstar. The additional support, and the increased east-to-west capacity, is especially needed to protect the system during "cold weather scenarios." The additional capacity would also provide a useful short-term alternative should any of four existing marine pipelines in Cook Inlet fail, Green wrote.

Enstar proposed a similar transmission system upgrade at a public meeting in May 2013.

The commission is currently scheduled to rule on the expansion project by June 5. ●

Contact Eric Lidji at ericlidji@mac.com

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AGDC BOARD

On Jan. 6 the governor removed Al Bolea, Drue Pearce and Richard Rabinow from the board, retaining John Burns, the board chair, and Dave Cruz, all named to the board in September 2013 by former Gov. Sean Parnell.

A meeting of the board is set for Jan. 8.

Bolea and Rabinow are both former oil company executives. Pearce was an Alaska legislator for 17 years and Senate president for two terms.

In a Jan. 7 statement House Speaker Mike Chenault and Rep. Mike Hawker, architects of House Bill 4, which established AGDC, expressed disappointment at the governor's decision.

Transparency

At the AGDC board meeting scheduled for Jan. 8 in Anchorage members will be expected to sign confidentiality agreements prior to an executive session closed to the public, the governor's press release said.

"I am committed to a transparent government in which Alaskans are part of the conversation about our resources," Walker said. "I cannot allow my Cabinet members to sign confidentiality agreements meant to keep information away from the public."

Walker has instructed cabinet members on the board, Department of Labor Commissioner Heidi Drygas and Department of Commerce Acting Commissioner Fred Parady, not to sign the confidentiality agreement.

AGDC is the state's business participant in the Alaska LNG project, the partnership between BP, ConocoPhillips, ExxonMobil, the state and TransCanada, to advance a liquefied natural gas project taking Alaska North Slope natural gas to Far Eastern markets as LNG.

Legislators disappointed

In a Jan. 7 statement House Speaker Mike Chenault and Rep. Mike Hawker, architects of House Bill 4, which established AGDC, expressed disappointment at the governor's decision.

The two said they believe the three fired board members were critical to advancing natural gas commercialization.

Chenault, R-Nikiski, said he spoke to Walker after the firings were announced. "I'm disappointed that Gov. Walker has chosen to eliminate these board members, who have proven their worth and commitment to Alaska in the progress made already," he said in a statement.

Chenault said it would be difficult to replace the 60 years of knowledge those board members have, "and in particular, the expertise of Dick Rabinow, who is the only board member to have actual gasline construction experience under his belt."

Hawker, R-Anchorage, said he was disappointed by the governor's action. "I'm deeply concerned that this signals a wholesale change of course for Gov. Walker on gas commercialization," he said, noting that "an overwhelming majority of legislators" voted to create AGDC.

Confidentiality issue

On the confidentiality issue Hawker said: "In creating AGDC, the Legislature carefully weighed the need for confidentiality in some issues with the need for public accountability" and "struck a balance between transparency to Alaskans, and the need to protect commercially sensitive information, third-party private company information, and information that, if known, could adversely impact the price Alaskans receive for its gas."

Hawker added that all the key business agreements crafted under confidentiality agreements "will, by law, be brought back to the Legislature for a fully transparent, public vetting and approval."

Sen. Cathy Giessel, R-Anchorage, Turnagain Arm, continuing chair of Senate Resources, said in a Jan. 7 statement that while the governor has the authority to remove members of the board, "for an administration that has vowed to get Alaska's natural gas to market, this deprives the state of necessary tools for success in a global scale LNG project." On the issue of confidentiality agreements, Giessel said: "It is foolhardy to think that a project in the billions of dollars, in competition with other sites around the world, does not benefit the people of Alaska by confidential briefings and negotiations to maintain a competitive edge."

—KRISTEN NELSON

Contact Kristen Nelson at knelson@petroleumnews.com

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LIBERTY PLAN

deadline.

Hilcorp's new development plan for the field involves the construction of an artificial gravel island, rather like the Northstar field, also in the Beaufort Sea.

Hilcorp spokeswoman Lori Nelson has told Petroleum News that Hilcorp has decided to move its plan for Liberty through the regulatory process but that the company has not yet decided whether to proceed with developing the field.

Part of a package

Hilcorp's purchase of its 50 percent interest in Liberty came as part of a package of Arctic Alaska properties that the company purchased from BP, including the Northstar and Endicott fields in the Beaufort Sea, and a 50 percent interest in the Milne Point field, in the central North Slope. Hilcorp specializes in breathing new life into aging fields — during a talk to the Alaska Support Industry Alliance in October, Greg Lalicker, president of Hilcorp Energy, commented that his company's immediate focus on the North Slope will be to increase oil production rates from aging fields such as Milne Point. A decision on developing Liberty would depend on an investigation into whether the development would be viable and whether the field would be likely to make money in a reasonable timeframe, Lalicker said.

Up to 150 million barrels

According to an overview document for Hilcorp's new plan for Liberty, the field's production is expected to peak at 60,000 to 70,000 barrels per day within two years of field startup, with an anticipated total production of 80 million to 150 million barrels over a field life of 15 to 20 years.

Hilcorp proposes initiating commercial production from the field within three years of obtaining field regulatory approvals and of sanctioning the financing of field development, the overview says.

Development would include the construction of a reinforced gravel drilling and production island about five miles offshore, in Foggy Island Bay, in a water depth of 19 feet. Facilities on the island will separate produced water and natural gas from the field's oil production, with the water and gas being injected into the field reservoir to provide pressure support and enhance oil recovery. A single-phase subsea pipeline will carry produced crude oil to shore, from where an onshore pipeline will connect to the existing Badami pipeline, for shipping the oil to the trans-Alaska pipeline via the Endicott pipeline. The subsea line from Liberty will have a double-walled pipe-in-pipe structure, similar in design, presumably, to the subsea line from the Oooguruk field to the west.

Nine wells

Hilcorp says that field development would involve the implementation of five production wells and four injector wells. However, the surface layout of the island will accommodate up to 16 wells, in case additional wells are needed to increase oil recovery or to act as replacement wells, Hilcorp's plan overview says. Given the excellent fluid and rock properties in the subsurface, it will be possible to use conventional wells drilled from the artificial island directly over the field reservoir, the overview says.

Once the drilling is commissioned, the drilling operations will take place contin-

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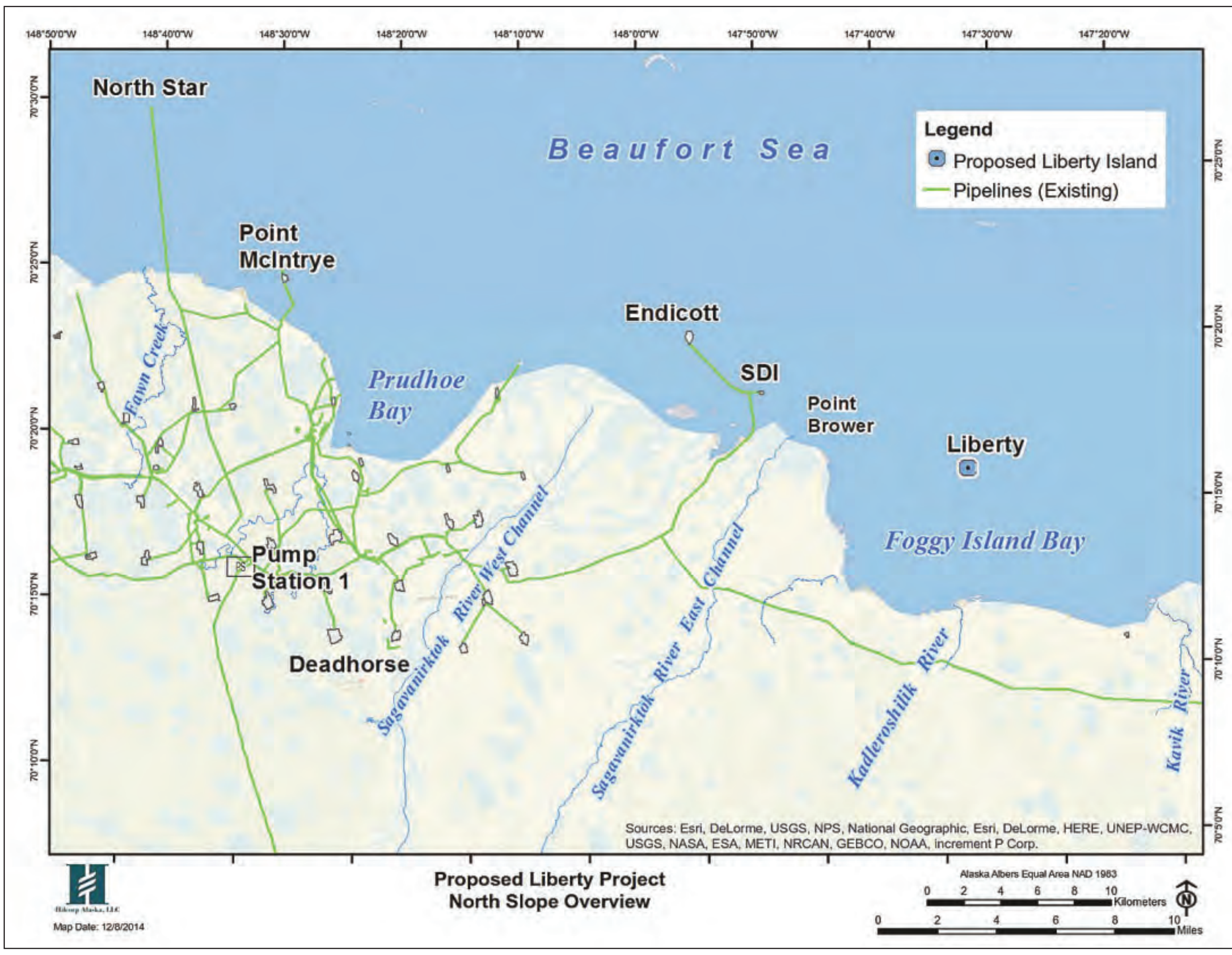

HILCORP ALASKA LLC

The undeveloped Liberty field lies in federal waters of the Beaufort Sea, to the east of the Endicott field. BP abandoned a plan to develop the field using ultra-extended reach drilling from the Endicott satellite island, marked "SDI." Hilcorp has filed a development plan involving the construction of an offshore gravel island.

HILCORP ALASKA LLC

A conceptual view of what the Liberty production and drilling island may look like. The design and layout of the island may change if development moves ahead.

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LIBERTY PLAN

uously for about two years. However, drilling through the reservoir section will only take place during the summer open-water season, or during the winter sea-ice season, the overview says.

BP plans

Hilcorp's plan appears similar in concept to the original plan for the field that BP considered after discovering the field in 1997. But BP subsequently abandoned that plan in favor of a concept involving the drilling of ultra-extended reach wells from Endicott, a plan that some perceived as environmentally attractive, especially given that the Endicott is close to shore and connected to the shore by a causeway.

The subsea line from Liberty will have a double-walled pipe-in-pipe structure, similar in design, presumably, to the subsea line from the Oooguruk field to the west.

BP moved ahead, making necessary extensions to one of the Endicott islands, conducting an offshore 3-D seismic survey to enable detailed well planning and even commissioning a special type of drill-pipe steel that would withstand the high torques involved in the extremely long Liberty wells. The company commissioned the construction of a massive drilling rig from Parker Drilling and duly assembled the rig on the extended Endicott island.

But all came to naught.

Under scrutiny

Following BP's Deepwater Horizon blowout in the Gulf of Mexico, the Liberty project fell under great scrutiny, with questions raised over the environmental risks associated with the very challenging project. Then, in November 2010 BP announced that it was suspending the project, saying that the Liberty drilling rig required an engineering review. That review pointed to the need for substantial modifications to a number of the rig's systems, with the possibility of the cost of the project doubling and of a delay of several years before drilling could commence.

Work on Liberty remained on hold. But in June 2012 BP announced that it had abandoned the extended reach drilling project. And in the fall of 2013 the company said that it had reverted to the original artificial island concept for field development. In January 2014 BP applied to BOEM for approval to conduct a geotechnical and sea-bottom investigation in the Beaufort Sea in connection with the artificial island plan.

Now, with Hilcorp having acquired the operatorship of the field, the artificial island concept is still in play. In November Janet Weiss, president of BP Exploration (Alaska) Inc. told the Resource Development Council's annual conference that Hilcorp had developed "a great concept" for Liberty that would make the field more competitive than previously thought. ●

Contact Alan Bailey at abailey@petroleumnews.com

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UPSTREAM REELS

Terry Marshall, a senior vice president at Moody's Canada, told the Financial Post that there is "absolutely greater opportunity for acquisitions. The nature of the industry is the big and the strong take out the weak and the small at times like these."

Consulting firm Wood Mackenzie said the prospect of large-scale corporate consolidation may be greater than at any time in 15 years, driven by buyers who believe in the long-term outlook for oil climbing back above US$80 a barrel.

There is one school of thought among analysts, bolstered by the Talisman deal, that unless companies are strongly placed in the hedge market they can only survive so far on slashing dividends or capital budgets.

The historical trend of gas prices being up when oil is down, or vice versa, no longer seems to apply, with Canadian gas for next-day delivery at the AECO trading hub in Alberta ending the year at C$2.80 a gigajoule (slightly larger than a million British thermal units), compared with C$4.13 a year earlier.

But Canada has retained a number of power-players in the M&A field as shown last year when Encana paid US$7.9 billion to acquire U.S. shale operator Athlon Energy, Canadian Natural Resources bought the Canadian oil and gas assets of Devon Energy for C$3.12 billion and Baytex Energy unloaded US$2.67 billion for Australia's Aurora Oil & Gas.

Sale signs expected

The betting now among some observers is that the first two months of 2015 will see for sale signs springing up around companies that are grappling with asset impairments, potential write downs and are incapable of renegotiating lines of credit.

Crescent Point Energy, one of the leading E&P companies in the Canadian sector of the Williston Basin, is setting itself up as hunter rather than prey.

Chief Executive Officer Scott Saxberg is ready to take advantage of opportunities.

"Guys that have to sell in a down market usually sell their best assets," he told Bloomberg.

The struggle to survive will be toughest for some of the smaller oil sands companies, many of whom are sitting on vast resources that are not needed or that they can't raise the financial backing to develop.

Cash interest payment delayed

Southern Pacific Resource Corp. acted like the first canary in the coal mine on Dec. 30 when it "elected not to make the cash interest payment" of C$5.175 million due Dec. 31 on its outstanding 6 percent convertible unsecured subordinated debentures.

The company said in a statement that it had 30 days from the payment date to find the cash "before an event of default will occur."

Otherwise the firm said it will continue working with stakeholders and advisors to "consider the next steps for the company in its strategic review and capital restructuring process."

Connacher Oil and Gas, which has traveled a long, bumpy road, hired the Bank of Montreal in December to "devise and implement a strategy to address" its capital structure and Laricina Energy picked the Bank of Montreal, Peters & Co. and Morgan Stanley in November to explore strategic options that could end in an auction.

Support companies feel impact

These early signs of floundering in the oil sands have already started spilling over to support companies, with Houston-based Civeo "temporarily" closing down two lodges near Fort McMurray that provide accommodation for laborers and releasing 30 percent of its employees, noting that its occupancy rate was down 50 percent from a year ago.

"As it became evident during the fourth quarter that capital spending budgets among major oil companies were going to be cut, we began taking steps to reduce marketed room capacity, control costs and curtail discretionary capital expenditures," said Bradley Dodson, Civeo's chief executive officer.

Those steps mirror the budget cuts by several leading oil sands producers, with Cenovus Energy applying the brakes to spending on three expansion projects; Baytex Energy and MEG Energy chopping previously announced 2015 budgets; Norway's Statoil shelving its undeveloped Corner project; and Canadian Natural Resources serving notice that it could quickly remove C$2 billion from its capital program.

If commodity prices remain low for another couple of months that will likely trigger much deeper cost-cutting, said Martin Pelletier, portfolio manager at Trivest Wealth Counsel, while Laura Lau, fund manager at Brompton Group, warned some companies will be forced to write down the value of some reserves that are no longer economically viable to develop.

"I think there's another round of cuts to come," Lau said. "A lot of companies have initially done a budget with an oil price starting with a 5."

Gas also down

The historical trend of gas prices being up when oil is down, or vice versa, no longer seems to apply, with Canadian gas for next-day delivery at the AECO trading hub in Alberta ending the year at C$2.80 a gigajoule (slightly larger than a million British thermal units), compared with C$4.13 a year earlier.

Storage levels are well below those at the end of 2013, which were drawn down to multi-year lows by the end of March, when a number of analysts were off base with their predictions that inventories would be rebuilt in time for the heating season in November.

Unless there is a sustained deepfreeze in the first quarter of 2015, there's not much chance of prices rebounding because there is even greater supply growth entering the new year than there was a year ago, said Martin King, a FirstEnergy Capital analyst.

FirstEnergy's numbers show Western Canada supplies are at 14.5 billion cubic feet per day, compared with 13.4 bcf per day at the end of 2013, while gas in storage has shrunk over the same period to 70 bcf from 127 bcf.

With all of British Columbia's leading edge LNG projects getting deferred, there is every reason to expect that low gas prices will persist and possibly get worse over the next few years. ●

Contact Gary Park through publisher@petroleumnews.com