UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Alaska Gasline Development Corporation
BP Alaska LNG, LLC
Conoco Phillips Alaska LNG Company
ExxonMobil Alaska LNG, LLC
TransCanada Alaska Midstream, LP

Docket No. PF14-21-000

SUPPLEMENTAL COMMENTS REGARDING ALTERNATIVE ROUTE AND SITE ANALYSIS FOR THE AKLNG PROJECT

THE CITY OF VALDEZ, ALASKA
THE ALASKA GASLINE PORT AUTHORITY

Dated: April 14, 2017

SUPPLEMENTAL COMMENTS REGARDING ALTERNATIVE ROUTE AND SITE ANALYSIS FOR THE AKLNG PROJECT

THE CITY OF VALDEZ, ALASKA
THE ALASKA GASLINE PORT AUTHORITY

I. INTRODUCTION AND DISCUSSION

The City of Valdez and the Alaska Gasline Port Authority hereby submit these comments to the Federal Energy Regulatory Commission ("FERC") in Docket No. PF14-21, regarding the Environmental Impact Statement ("EIS") required by the National Environmental Policy Act ("NEPA") for the Alaska Liquefied Natural Gas Project ("AKLNG Project"). These comments supplement the comments submitted on February 9, 2017,[1] and are intended to protect and advance the vital interests of the State of Alaska and the United States of America implicated in the development of the AKLNG Project by promoting a thorough review of project alternatives and the full assessment of the respective risks of the alternative routes. Specifically, these comments address the environmental and economic risks of the Nikiski Alternative in light of the recent leaks in seafloor pipelines in Cook Inlet and the difficulties encountered in trying to repair the leaks.

A. The Recent Leaks in Hilcorp Cook Inlet Pipelines Demonstrate the Significant Risks of the Nikiski Alternative's Seafloor Pipeline.

On February 7, 2017, a Hilcorp helicopter spotted gas bubbling from the ocean above the seafloor route of a gas pipeline in Cook Inlet not far from Nikiski.[2] By February 14, 2017, the Alaska Department of Environmental Conservation ("ADEC") estimated the rate of the spill at

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[1] Comments Regarding Alternative Route and Site Analysis for the AKLNG Project, submitted by the City of Valdez, Alaska; the Mayor of the Fairbanks North Star Borough, Alaska; the Mayor of the City of Fairbanks, Alaska; the Mayor of the City of North Pole, Alaska; and the Alaska Gasline Port Authority (February 9, 2017) ("Alaska Municipalities' Comments").

[2] Appendix A at 1.

225,000 to 325,000 cubic feet of gas per day,[3] a local environmental group issued a Notice of Violation and Intent to File Suit under the Clean Water Act due to the environmental harm of the spill,[4] and ADEC requested information from Hilcorp on the options for monitoring and mitigating the spill.[5] On February 20, 2017, Hilcorp informed ADEC that it did not anticipate deploying repair divers to fix the leak until at least mid-to-late March due to conditions in the Inlet, including "the broken ice, exacerbated by high tidal flows and limited daylight" which made it too dangerous for divers.[6]

Though Hilcorp stated that the volume of gas being released likely posed a low risk to human or marine life,[7] the U.S. Pipeline and Hazardous Materials Safety Administration ("PHMSA") concluded that the leaking line posed a risk to public safety and the environment and ordered the line shut down if not repaired by May, noting that Hilcorp had learned the leak began in December 2016.[8] The agency accepted Hilcorp's assertions that immediate repair posed an extreme risk to divers and other repair personnel.[9] On April 7, 2017, PHMSA confirmed a leak from another Hilcorp gas line in Cook Inlet that was quickly shut down, in addition to a small release of crude oil due to an apparent impact of a natural object to the platform.[10]

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3 Appendix B at 1.

4 Appendix B at 2.

5 Appendix B at 3.

6 Appendix C at 1.

7 Appendix C at 2.

8 Appendix D at 1.

9 Appendix D at 3.

10 Appendix E at 1-2.

Divers did not reach the leak that began in December 2016 until April 8, 2017, two months after the leak was publicly reported,[11] and discovered a 2-inch gash in the pipe caused by rock abrasion.[12] Millions of cubic feet of natural gas have spilled from the pipeline into Cook Inlet, and environmental advocates are demanding that federal authorities conduct immediate inspections of all pipelines in light of the area's earthquakes and strong tides.[13]

B. The Valdez Alternative Avoids the Significant Risks of Building and Operating a Large Gas Pipeline in Cook Inlet.

Prior comments have addressed the extreme and hazardous oceanographic conditions in Cook Inlet,[14] as well as the impacts of the Nikiski Alternative to the Endangered Cook Inlet Beluga Whale Critical Habitat.[15] In the public discussion surrounding the months-long Hilcorp gas spill, experts have come forward to confirm that Cook Inlet's winter conditions are too dangerous for divers due to "large pans of moving ice with the Inlet's strong tides"[16] which along with the Inlet's "powerful winds" and "black water" make it "the most dangerous place in North America for commercial diving" according to construction diver who worked in the Inlet over four decades.[17] Given the inability of Hilcorp to repair its leaking line for several months, the risks of routing the AKLNG project through Cook Inlet with the Nikiski Alternative are clear.

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11 Appendix F at 4.

12 Appendix G at 1.

13 Appendix H at 1-2.

14 Alaska Municipalities' Comments at 17-22.

15 Alaska Municipalities' Comments at 23-31.

16 Appendix D at 2.

17 Appendix F at 1.

As stated in prior comments, the Valdez Alternative provides ice-free conditions year-round and relatively minor tides,[18] and avoids any issues with seafloor pipelines like those recently made plain in Cook Inlet. The potential environmental and economic impact of a leak from AKLNG is a significant risk that only weighs the analysis further in favor of the Valdez Alternative.

II. CONCLUSION

As shown in prior comments, every objective analysis over the past four decades, including those conducted by FERC itself, has concluded that the Valdez Alternative is superior to the Nikiski Alternative for gas line projects substantially similar to the AKLNG Project. The events in Cook Inlet over the last several months have only underscored this conclusion with the demonstrated environmental and economic risks of a seafloor pipeline leak in Cook Inlet. The Valdez Alternative's avoidance of any such risks is yet another advantage that strongly supports a determination by FERC that the Valdez Alternative best advances the goals of NEPA and is both the preferred alternative and the environmentally preferable alternative for the AKLNG Project.[19]

Submitted April 16, 2017.

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[18] Alaska Municipalities' Comments at 43-44.

[19] Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, 46 Fed. Reg. 18026 (March 23, 1981) ("The "agency's preferred alternative" is the alternative which the agency believes would fulfill its statutory mission and responsibilities, giving consideration to economic, environmental, technical and other factors. . . . The environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in NEPA's Section 101.").

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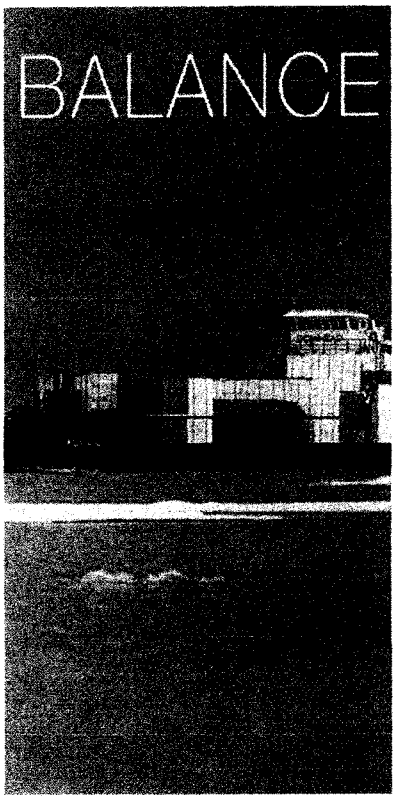
APPENDIX A

Energy

'Low risk' gas leak from undersea pipe suspected after helicopter crew spots bubbles in Cook Inlet

Author: Alex DeMarban Updated: February 9 Published February 8



Hilcorp Alaska said on Wednesday an undersea pipeline carrying natural gas to shore in Cook Inlet may be leaking.

The company suspects gas is coming from the 8-inch pipeline that runs from Platform A, said Lori Nelson, external affairs manager at Hilcorp. The possible leak was spotted Tuesday by a helicopter pilot, who saw bubbling above the pipeline route.

The size of the leak is too small to trigger deployment of U.S. Coast Guard response personnel, Coast Guard Petty Officer 1st Class Bill Colclough said Wednesday. He said he did not know the size of the leak, but said the Coast Guard will assist in any cleanup effort.

The gas production facility, installed in 1964 by Shell, is the oldest offshore platform in the Inlet. It is located about 5 miles offshore in the Middle Ground Shoal field, northwest of Kenai.

Former Democratic Alaska Sen. Hollis French, now regulating oil and gas wells as a commissioner on the Alaska Oil and Gas Conservation Commission, worked on the platform in 1978 after arriving in Alaska.

Colclough said a report of the leak was submitted to the Coast Guard's National Response Center Wednesday morning.

Nelson, the Hilcorp spokeswoman, did not immediately respond to questions about the estimated size of the leak. But in an emailed statement, she said Hilcorp has notified "appropriate agencies" and hired contractor Cook Inlet Spill Prevention and Response.

The spill-response organization has "determined the situation to be 'low risk' and will be helping establish Hilcorp's response plan," Nelson said.

"Further, no sheen has been observed in the area. Hilcorp personnel are working to identify the source of the bubbling and will take appropriate action when a safe plan forward is established," Nelson said.

Based in Houston, Texas, Hilcorp has become the dominant oil and gas producer in the Inlet since arriving in 2011, rapidly buying assets as other companies have abandoned the aging basin. It also operates oil fields on the North Slope.

The company has helped boost sagging production by updating old wells and other facilities. But the regulatory commission has also hammered the company with fines, saying it has a "history of noncompliance" in Alaska.

Natural Gas

APPENDIX B

Energy

Group to sue Hilcorp over Cook Inlet gas line leak

Author: **Alex DeMarban** Updated: February 16 Published February 15

Homer-based Cook Inletkeeper said in a statement to reporters that the leak from an 8-inch undersea pipeline owned and operated by Hilcorp threatens water quality, fish, endangered beluga whales and the climate.

The Homer-based organization posted a video on YouTube taken from the air, showing turbulence on the water from the escaping gas, and what appear to be large rippling rings near pans of ice.

The rate of the spill was estimated on Tuesday at between 225,000 to 325,000 cubic feet of gas per day, according to the Alaska Department of Environmental Conservation. Based on that number and average household consumption rates made public by Enstar Natural Gas Co., the amount of wasted gas would have been enough to fuel about 390 homes a day in December.

Hilcorp said Wednesday that it has slowed the leak rate to 210,000 to 310,000 cubic feet a day.

Bob Shavelson, executive director of Cook Inletkeeper, said the video was taken soon after the discovery of the leak. The water disturbance was originally spotted by a Hilcorp helicopter on Feb. 7. The company has described it as a "bubbling" above the pipeline route, a term Shavelson has asserted does not do justice to the size of the leak. He compared it to a cauldron.

Hilcorp has reduced flow through the leaking gas line since its discovery, reducing the estimated size of the leak, a state official said.

Cook Inletkeeper also provided reporters with a copy of a "Notice of Violation and Intent to File Suit," addressed Wednesday to Hilcorp Energy Company chief executive Jeffery Hildebrand, based in Houston, Texas. The letter says notice must be provided under the Clean Water Act 60 days before the start of a civil action.

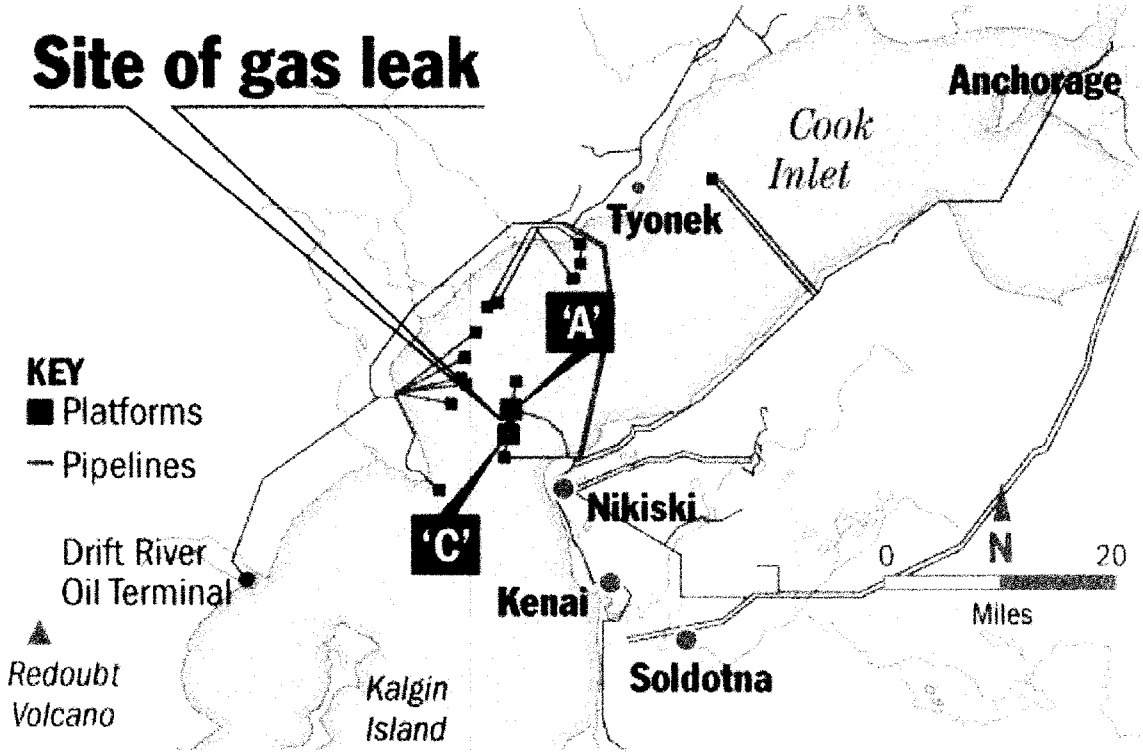
Signed by Shavelson, the letter argues that methane from the "illegal discharge" could reduce oxygen levels in the water column, harming animals. The letter also says methane, the key component in the gas, is a powerful greenhouse gas that can contribute to global warming.

[Coast Guard warns mariners to be cautious around Cook Inlet gas leak]

The letter said Hilcorp is violating federal law because it does not have a permit under section 402 of the Clean Water Act "to discharge pollutants to waters of Cook Inlet."

Shavelson has urged state regulators to order the leaking pipeline shut down until repairs are made and the leak is stopped.

"Inletkeeper's letter today is meant to provide a back-stop in the event Hilcorp opts to continue to put profits over fish, wildlife and water quality in Cook Inlet, and to press Hilcorp to address the larger issue of relying on antiquated infrastructure as part of its Cook Inlet business model," Shavelson said in the statement to reporters.



The leak is about 3½ miles offshore, northwest of Kenai.

Lori Nelson, external affairs manager at Hilcorp Alaska, said on Tuesday that the company is monitoring ice conditions and will dispatch divers when it can be done safely. The pipeline provides fuel gas for four offshore platforms in the Inlet, Nelson said Wednesday. She said shutting down the pipeline would risk it "taking in water, freezing and potentially rupturing."

And she added in a statement Wednesday that the company needed to keep the line pressurized. Without a minimum pressure, the line could fill with water, allowing residual crude oil to escape from what was previously used as a crude oil pipeline, she said.

Nelson said Hilcorp personnel have shut down "non-essential equipment" on the platforms.

"This step has been taken in order to reduce natural gas flow to the minimum operational gas pressure possible without jeopardizing employee safety or the environment," Nelson said.

Daily overflights in helicopters have revealed no sheen, she said.

"Hilcorp continues to work in cooperation with multiple state and federal agencies to ensure a safe and effective response to the natural gas leak on a Cook Inlet fuel gas line," she said.

Hilcorp announced in July 2015 it would purchase two offshore platforms and other facilities associated with the Middle Ground Shoal field from XTO Energy, a subsidiary of Exxon Mobil. The platforms, producing about 1,750 barrels of oil daily when the announcement was made, were built in the mid-1960s.

The Alaska Department of Environmental Conservation does not regulate natural gas, only liquid products. But it is monitoring the release, and does have authority for any release of hazardous substances to the environment.

"DEC is looking into a number of legal authorities, including the Clean Water Act, under which we can respond to this release, but first and foremost, we are focusing on this situation being safely and expeditiously mitigated," said a statement provided by Candice Bressler, public information officer for DEC.

The agency sent an "interest letter" to Hilcorp Alaska on Friday requesting information, such as Hilcorp's range of options for reducing the leak's environmental impact. Among other things, the agency also wants to know what monitoring activities the company will undertake to assess the environmental impact of the "hazardous substance" that is being released, according to Bressler.

The company has until Monday to respond, Bressler said.

Kenai Peninsula **Natural Gas**

About this Author

Alex DeMarban

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APPENDIX C

Energy

Hilcorp: Repairs to leaking gas line in Cook Inlet not expected until at least mid-March

Author: Alex DeMarban Updated: February 24 Published February 24

Hilcorp Alaska told a state regulator in a letter on Monday that it does not anticipate deploying repair divers to fix a Cook Inlet natural gas leak until at least "mid-to-late March," due to sea ice and other conditions.

Also, in a written update sent to reporters Friday, the company said it has worked with environmental experts and consultants who have determined the leak's risks to humans and wildlife to be low.

The update on the gas leak involving Hilcorp's 8-inch undersea pipeline did not provide information about the leak rate, which was pegged last week at between 210,000 and 310,000 cubic feet of gas a day. The leak, discovered Feb. 7 when a Hilcorp helicopter spotted roiling water, is located in the Middle Ground Shoal oil field northwest of Kenai.

Based on that number and average household consumption rates made public by Enstar Natural Gas Co., the amount of wasted gas would have been enough to fuel about 370 homes a day in December.

Hilcorp has said it can't shut down the gas line, which carries a fuel supply to generate heat, light and power on four offshore platforms in Cook Inlet. The pipeline is about 80 feet below the water, the Alaska Department of Environmental Conservation has said.

"With respect to repair, the conditions in the Inlet – the broken ice, exacerbated by high tidal flows and limited daylight – prevent the immediate dispatch of divers to inspect and contain the leak in the pipeline," Hilcorp Alaska said in a 10-page letter on Monday to a DEC official.

"Given the typical weather patterns affecting ice formation and dissipation in Cook Inlet, we currently anticipate that the earliest that conditions will allow diving will be in mid-to-late March," the company said in the letter, obtained Friday by watchdog group Cook Inletkeeper, following a public records request to the state agency.

On Feb. 10, DEC had sent a letter to Hilcorp seeking information such as options for reducing and assessing the leak's environmental impact.

Hilcorp has said it needs to keep the line pressurized. Without a minimum pressure, the line could fill with water, allowing residual crude to escape from what was previously used as a crude oil pipeline.

Hilcorp's letter said the "choice is between the current methane release" and "one or more oil spills, along with other potential damage and additional risks," such as power loss on platforms that could put crews in danger and possibly damage platforms and other infrastructure.

The company has taken steps to reduce the amount of gas flowing through the line, in turn reducing the amount of leaking methane, by reducing a variety of platform operations.

In its update to reporters, Hilcorp did not provide its anticipated repair period but said it had "mobilized equipment and briefed personnel for repairs." The statement was issued by Lori Nelson, external affairs manager at Hilcorp Alaska, who did not return a phone call Friday afternoon.

Cook Inletkeeper last week issued a notice of intent to sue to Hilcorp, citing concerns under the Clean Water Act, including over methane that could reduce oxygen levels in the water column, posing a threat to animals.

In its statement to reporters, Hilcorp said consultants have conducted preliminary modeling of the amount of methane dissolving in the water column. They have estimated that "concentrations would likely be approximately 1/500th of the concentration level that may be harmful to fish," based on a standard provided by DEC.

The consultants are still refining their evaluation, the company said.

Experts working with Hilcorp have also reviewed several environmental studies, including some performed by federal agencies, to determine that "potential impact to marine life is minimal based on the volume of gas being leaked," the company said.

Hilcorp said the National Oceanic and Atmospheric Administration has performed calculations indicating "that the volume of gas being released to the atmosphere likely poses a low risk to humans."

Bob Shavelson of Cook Inletkeeper said on Friday the company could take steps to address the problem, like hiring an ice-management vessel to maintain ice-free conditions, so a remote-operated vehicle can be sent underwater to begin inspections.

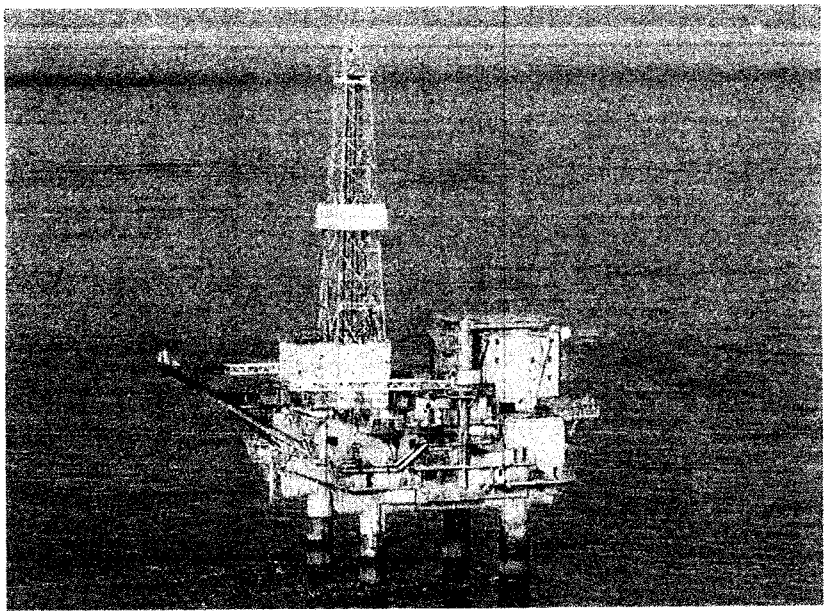
"They're saying we can't do anything until the ice clears," he said. "So they admit they can't respond to an event in Cook Inlet in winter. If they can't do that, they shouldn't be doing business here."

APPENDIX D

Energy

Cook Inlet gas line leak is a hazard and must be repaired, feds say

Author: Alex DeMarban Updated: March 7 Published March 6



Hilcorp Alaska Platform A was built in the mid-1960's and was owned by Shell at that time. The leaking pipeline delivers natural gas used as fuel for this platform and three others. (2010 archive photo Curtis Smith / Shell)

A federal regulatory agency has concluded that a leaking natural gas line in Cook Inlet poses a risk to public safety and the environment, and says it should be shut down if not repaired by May.

In its 11-page notice of a proposed order, the U.S. Pipeline and Hazardous Materials Safety Administration also provides new information about the leak, including that pipeline owner Hilcorp Alaska learned it began in December. The company didn't publicly disclose the leak until Feb. 7, when it said a helicopter overflight detected gas bubbles.

A Homer environmental leader, in his own overflight, said it looked more like a "cauldron" and took a video to prove it. The video showed a massive, roiling leak.

The federal agency said the company's current inspections of the 8-inch steel pipeline aren't adequate to detect damage, such as from corrosion or gouges by rocks.

Hilcorp Alaska didn't respond to requests for comment.

The pipeline, built in 1965, delivers gas for fuel from shore for four aging offshore platforms in Cook Inlet. Two of those platforms produce small amounts of oil and two are unmanned with no active production, yet still require electricity for such things as lights for navigational aids.

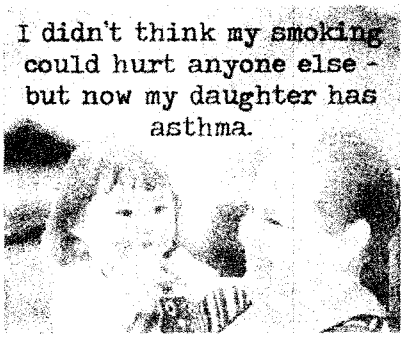
Hilcorp Alaska has 30 days to challenge the proposed safety order, comply with it or work with PHMSA to address the problem, according to the notice issued Friday by Chris Hoidal, director of PHMSA's western region in Lakewood, Colorado.

The Alaska Department of Environmental Conservation has also said it wants a plan from Hilcorp. The DEC said Hilcorp needs to explain by Monday, March 13, how the company would shut down the oil wells on the platforms and evacuate gas from the line to control the release, should such a step be required.

By Wednesday, the state agency said, Hilcorp should present a monitoring and sampling plan to assess risks to fish, wildlife and the environment, including endangered Cook Inlet beluga whales. The agency could call for the pipeline and platforms to be shut down if an analysis showed the benefits of doing so outweighed the risks, said Geoff Merrell, Central Alaska region manager for DEC.

PHMSA has jurisdiction over the pipe and its operation, and could make its own decision to shut down the pipeline, he said. DEC has jurisdiction over the leaking gas, which the state agency considers a hazardous substance.

The PHMSA letter also indicates repairs may not come as early as originally hoped. Hilcorp has said repairs by divers cannot begin until at least mid-March, in part because of a combination of large ice pans and extreme tides that would put personnel and boats in danger.



Hoidal, however, says Hilcorp has indicated late March will be the earliest start date. The sea ice is expected to clear sometime between then and the end of April, allowing divers to safely access and fix the leak.

"The serviceability of the pipeline will remain impaired until at least this time," Hoidal wrote.

Hilcorp appears to be "shooting straight" about its assertion that the Inlet is too dangerous now for divers, said Dan Magone, who has overseen commercial repair dives out of Dutch Harbor for decades.

Magone said on Monday that he had not heard of the leak in Cook Inlet, having just returned from three weeks spent removing a beached vessel in Akutan in the Aleutian Islands.

But Magone, general manager at Resolve Magone Marine, said diving anyway is dangerous; add large pans of ice moving with the Inlet's strong tides and the danger increases substantially.

"If ice was the only hazard, you might figure out a plan, but it's not," said Magone, who has led commercial diving projects in Cook Inlet in the summer but not in winter. "It is a challenging place to work."

According to PHMSA's notice, Hilcorp had observed an increase in gas line flow in late January, leading it to launch helicopter "surveillances." The aerial searches led to the discovery of the leak after a helicopter spotted roiling waters on Feb. 7 above a section of the pipe.

Later, Hilcorp's analysis of gas flow showed that the line began leaking in "late December," Hoidal said.

Hoidal said that Hilcorp's inspections of the pipeline's condition are inadequate.

"The annual side-scan sonar or multi-beam echo-sounder survey, or both, that Hilcorp currently performs, do not provide sufficient information to determine whether there are external loads on the pipe, eroded pipe, rock impingements, metal loss, dents, gouges, dielectric coating deterioration, and/or missing 1-inch thick concrete weight coating," he wrote.

The leaking portion of the gas line carried oil until it was converted to carry gas in 2005. The leak is located about 3 ½ miles from shore, northwest of Kenai.

Initial reports put the leak at 225,000 to 325,000 cubic feet of gas per day, enough to fuel about 390 homes a day in Southcentral Alaska in December, a cold month when gas use was high.

Later, Hilcorp Alaska on Feb. 15 pegged the leak at 210,000 to 310,000 cubic feet a day, after steps were taken to reduce gas flowing through the line by reducing activity on the platforms. PHMSA's letter is based on that lower amount.

Hoidal says the federal agency accepts Hilcorp's assertions that "immediate repair" of the leak poses an "extreme risk" to divers and other repair personnel. He says that option is "not viable."

The agency also agrees with Hilcorp that the risk of shutting down the gas line includes a crude oil leak. Seawater might enter the pipeline and flush out residual oil. Also, without fuel gas to help power oil production on two of the platforms, a separate pipeline carrying crude oil might freeze, causing a rupture in that line.

But Hoidal also lists potential dangers, including a leak that could worsen and increase the threats to wildlife such as beluga whales. The federal notice to Hilcorp says that continued operation without "corrective measures" presents a risk to "public safety, property and the environment."

The agency made that decision after accounting for such factors as the pipeline's age, the hazardous material that's leaking, the Inlet's wildlife and the geographical characteristics around the pipeline.

The agency notes the same line leaked twice in 2014, in June and August. The leaks were 40 yards apart, about two-thirds of a mile from the current leak, Hoidal said.

The previous gas line owner, XTO Energy, found that the leaks were caused by rock abrasion in areas where the pipeline is not continuously supported by the seabed. XTO Energy sold the pipeline and other facilities to Hilcorp Alaska in 2015.

Pipelines in the Inlet are threatened by vibrations from turbulent water when they aren't supported by the seabed, allowing them to potentially strike rocks.

In calling for permanent repairs to the pipeline by May 1, PHMSA wants a plan from Hilcorp on how it would shut down the pipeline, including purging gas from the line but maintaining enough pressure with a "non-hazardous" substance to prevent saltwater from entering.

The agency also calls for long-term steps to improve inspections and make other repairs to the aging line, if needed, after the sea ice has melted.

That includes using "high-resolution" sonar or related technology to inspect the line to find sections that aren't supported by the seabed and may be subject to vibration or "excessive bending."

Unsupported sections at least 10 feet long must be visually inspected to look for corrosion and damage, the letter said.

Lois Epstein, a licensed engineer who served for several years on a federal advisory committee addressing pipeline issues, said it's clear from the proposed order that Hilcorp could have done more to prevent the leak.

That attitude won't help the company's effort to get federal permitting approval for a much more remote oil project known as Liberty that it has proposed in the Beaufort Sea, she said.

"People are going to remember this," said Epstein, Arctic program director for The Wilderness Society.

Natural Gas

About this Author **Alex DeMarban**

Alex DeMarban is a longtime Alaska journalist who covers the oil and gas industries and general assignments for Alaska Dispatch News.

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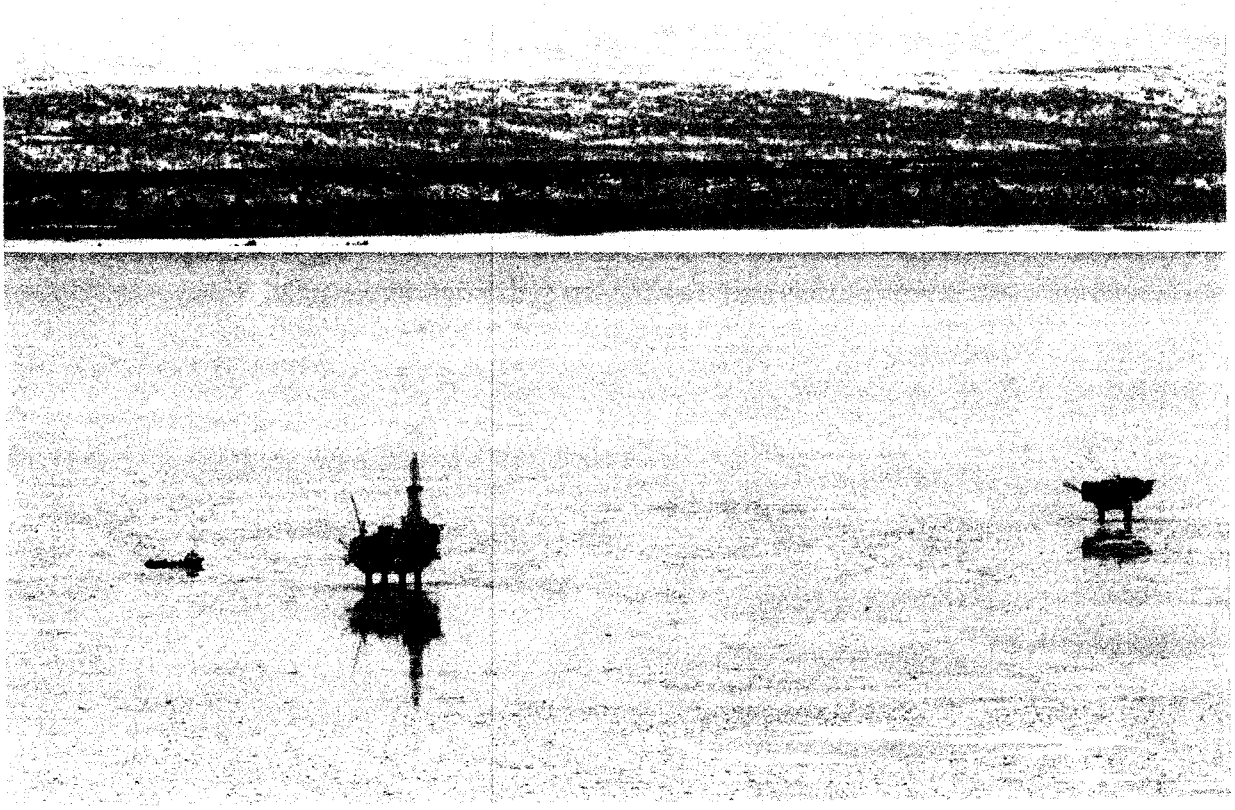
APPENDIX E

Energy

Federal regulators say they are investigating a third Hilcorp pipeline leak in Cook Inlet

Author: Alex DeMarban Updated: 3 days ago Published 5 days ago



Hilcorp platforms Steelhead, left, and Grayling in Cook Inlet on Sunday, April 2, 2017. (Bill Roth / Alaska Dispatch News)

Federal pipeline regulators said Friday they are investigating a third recent leak from a subsea pipeline in Cook Inlet — this one involving produced natural gas from a pipeline at the Steelhead platform — although the platform operator said Friday that several helicopter flights spotted no release.

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Darius Kirkwood, a spokesman with the U.S. Pipeline and Hazardous Materials Safety Administration, said the agency confirmed on Friday that there was a leak.

And Hilcorp Alaska, the operator, said in a statement that flights were conducted after gas meters reported a "discrepancy" in the volume of gas shipped from the Steelhead platform to a shore-based processing facility on the west side of Cook Inlet. The discrepancy was between a meter on the platform side of the pipe and a meter on the shore side.

"As a precaution, we started emptying the (Steelhead) A pipeline of natural gas on Saturday, and that process was completed early Monday morning," Hilcorp said in a statement released by Lori Nelson, external affairs manager at Hilcorp Alaska. "The line now contains filtered seawater."

"There is no risk of the discharge of oil or gas into the Inlet with the line in its current state," Hilcorp's statement said.

Nelson said she did not know the size of the "discrepancy." The company's announcement did not state whether a leak had occurred.

The announcement comes as the company faces increased scrutiny from watchdog groups and state and federal regulators.

On Feb. 7, Hilcorp discovered a natural gas leak from a pipeline delivering fuel gas to Platform A northwest of Nikiski.

Also, on Saturday, workers on the Anna platform in western Cook Inlet discovered a small release of crude oil following what felt like a violent impact of a natural object to the platform. Several sheens and bubbles were spotted. Hilcorp quickly shut down oil production at the Anna platform and filled that line with filtered seawater to stop oil from leaking.

Inspections of the oil line, including an integrity review from inside the pipe in June, found that line to be in sound condition, Hilcorp said Friday.

"Additionally, the small volume of the release (estimated to be less than 3 gallons) suggests that the pipeline may not be the root cause" of the sheen, the company said. "Whether the cause is found to be the pipeline or otherwise, appropriate action will be taken."

Hilcorp said Friday that the leaking natural gas line to Platform A, in the Middle Ground Shoal field, prompted the company to begin a comprehensive review of all its pipelines in Cook Inlet. The review included the pipeline at the Steelhead platform.

The Steelhead platform was built in 1986. The pipeline delivers natural gas from the Trading Bay Unit to a production facility on the west side of Cook Inlet.

The causes of the leaks are not known, but many of the platforms and related facilities were built decades ago starting in the mid-1960s, prompting critics to suggest that aging facilities in the silty, fast-moving corrosive water is a key factor. Hilcorp began acquiring properties in Cook Inlet in 2011 and is now the dominant producer there. Conservation groups are seeking an inspection by regulators to assess the condition of all facilities in the Inlet.

Hilcorp plans to send divers down as early as Saturday to begin repairing the leaking gas line northwest of Nikiski, if conditions permit. Sea ice has prevented repairs so far this winter by the threat it posed to divers' surface tethers.

Kirkwood, with PHMSA, said he didn't have estimates of the latest leak on Friday.

"I can confirm the pipeline was shut down and that we are investigating," he said.

Hilcorp said it will "leave the line (at Steelhead) filled with seawater until a later time when we are able to further investigate and address the meter discrepancy."

About this Author

Alex DeMarban

Alex DeMarban is a longtime Alaska journalist who covers the oil and gas industries and general assignments for Alaska Dispatch News.

9 Comments

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APPENDIX F

Energy

Legendary diver recounts Cook Inlet dangers when now-leaking gas line was installed

Author: Alex DeMarban Updated: 1 day ago Published 2 days ago

Owen Boyle of Nikiski is geared up for a dive on an oil platform in Cook Inlet sometime in the 1960s. He worked as a commercial diver in the dangerous waters of Cook Inlet for 40 years and was inducted into the Association of Diving Contractors International Hall of Fame in February. (Photo courtesy of Owen Boyle)

Historic footage and the recollections of a legendary commercial diver highlight the challenges Hilcorp Alaska faces as it dispatches divers to patch one of its undersea pipelines.

Owen Boyle, a Cook Inlet construction diver for four decades until 2004, helped install the original platforms and pipelines in Cook Inlet as the basin became a major oil and gas province in the mid-1960s. Boyle said the basin is the most dangerous place in North America for commercial diving, with its black water and some of the world's strongest tides.

Boyle, now 85, is one of two divers inducted this year into the Commercial Diving Hall of Fame of Houston, Texas. Last summer, he published a memoir about his Cook Inlet career, "Diving Blind into Danger."

[Antiquated Cook Inlet pipelines targeted amid busy season for oil and gas leaks]

Boyle helped install in 1965 the pipeline that's now leaking Hilcorp's natural gas northwest of Nikiski, where he lives. It was the first pipeline installed in Cook Inlet, extending 7 miles from the coast to the first offshore oil field and platform in Alaska. Boyle returned to inspect or repair that steel, 8-inch pipeline many times over the years.

"We had to take good care of that pipe. We knew it was vulnerable," Boyle said.

The Inlet's powerful winds and tides complicated the pipeline installation from the outset, according to an original, 13-minute documentary of the undertaking, posted to YouTube by the nonprofit watchdog Cook Inletkeeper.

The feat helped pioneer modern oil and gas development in rugged Alaska, inviting comparisons to Shell's more recent effort to crack open the U.S. Arctic Ocean to development.

But where Shell failed in the Arctic, abandoning its exploration there in 2015, Shell and several other companies found success in the early days in Cook Inlet. Shell originally operated the first pipeline and Platform A in Cook Inlet's Middle Ground Shoal field. The company also produced the documentary.

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"Oil has been found in Alaska, and now it must be brought to market," says the narrator, as winds howl and sea ice crunches against what appears to be a massive leg of the production platform built in 1964.

As the pipeline was lowered to the seafloor, Boyle and others made multiple dives to check its joints and make sure it wasn't damaged or sitting on rocks.

The pipe was guided to the bottom by a giant steel structure that acted like a ramp, extending into the water off the end of a barge. At 400 feet long and weighing 140 tons, that steel structure was "the biggest piece of construction equipment ever fabricated in Alaska," the documentary said.

[Hilcorp finds 2-inch gash in leaking natural-gas line in Cook Inlet]

The pipe slid down beside a twin backup pipeline. Either could be operated if the other line failed and couldn't be repaired until winter ended, the film shows.

The now-leaking pipeline initially carried crude oil but was later converted to ship natural gas as fuel.

The gas leak, from a pipe about 80 feet underwater, was discovered Feb. 7 as surface water roiled, though data shows it began in December.

Fixing the pipeline won't be an easy job for divers.

"The treacherous tidal currents and the black, zero visibility water create extreme diving hazards," said a description for Boyle's book on Amazon. "No diver has ever been killed in Cook Inlet, but there have been a lot of close calls."

Jobs have to be done blindly in Cook Inlet, even dangerous ones such as cutting metal with a torch during salvage operations, Boyle said. Divers need a "good feel for things," along with diving partners and support crew to keep them safe, Boyle said.

The diving is especially difficult north of the forelands where the Platform A pipe is located. The Inlet narrows significantly at the forelands, and the tide runs faster there than farther south. Rivers there also contribute lots of dirty glacial silt, Boyle said.

Boyle remembers a time during the pipeline installation when a strong tide turned the barge sideways as pipe was being placed in the water, putting pressure on the pipe.

Every available tugboat sped to the rescue, "pushing on each side and pulling on the other side" to keep the barge straight, he said.

"It saved the pipeline," he said. But that section ended up with a "long, gentle curve," and some of its protective concrete coating cracked off, he said.

Divers checked the pipeline and found it to be "acceptable" for use. Is that where the gas leak is? Boyle said he doesn't know.

The 1965 documentary depicts one such action-packed day, when multiple tugs fight stiff winds and currents to restrain the barge.

The film touts the pipe's engineering. The walls were built "twice as thick as normal" and coated with an inch of concrete. A concrete spiral rib encircled the pipe — research had showed it could reduce the "high-frequency vibrations caused by the currents," the film's narrator said.

Despite those steps, later pipes installed in the Inlet were even "thicker and stouter, with more coating" to protect them, Boyle said.

Boyle spent about the last 15 years of his career working for American Marine Corp. — the company preparing to repair the gas leak for Hilcorp.

"They'll fix it," Boyle said, citing the company's strong safety standards.

Until he quit diving, Boyle's work protecting the pipe often involved placing sandbags around lengthy stretches of pipeline that weren't supported by the seafloor, stabilizing it against vibrations in the strong tidal currents.

"It did a lot to save the pipe," he said. "It's worked a long time."

Swaths of unsupported pipe are threatened by turbulence and could grind against rocks in Cook Inlet, the U.S. Pipeline and Hazardous Materials Safety Administration said in its response to the leak.

Hilcorp Alaska reported Monday that inspection dives had begun over the weekend. They said divers located a 2-inch gash at the bottom of the pipeline, atop a boulder embedded in the seafloor. Divers were taking steps to install a temporary repair clamp.

Rock abrasion at unsupported sections was blamed for two leaks in the gas line in summer 2014, prompting repairs by former pipeline owner XTO Energy, the agency said.

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"We did a pretty good job in early years inspecting that thing," Boyle said.

But "that tide keeps rolling things around," and new gaps open beneath the pipelines.

Boyle said he agrees with Hilcorp's decision that it was too dangerous to send down divers until temperatures warmed enough to clear the ice, as they did over the weekend.

"You can't put divers out there when the ice is running around," he said.

About this Author **Alex DeMarban**

Alex DeMarban is a longtime Alaska journalist who covers the oil and gas industries and general assignments for Alaska Dispatch News.

7 Comments

APPENDIX G

Energy

Hilcorp finds 2-inch gash in leaking natural gas line in Cook Inlet

Author: Alex DeMarban Updated: 3 days ago Published 3 days ago

Repair divers inspecting a natural gas leak at a Hilcorp Alaska pipeline in Cook Inlet have found a gash that appears to have been caused by a boulder on the seafloor.

With the recent warm weather and the melting of Cook Inlet ice, Hilcorp was able to send contract divers to two locations — the leaking gas line, by Platform A, and an oil pipeline that was suspected of leaking crude near the Anna platform. After inspecting the Anna pipeline, Hilcorp said it was not the source of a small crude oil leak on April 1.

At the site of the leaking gas line, divers worked over the weekend to locate the hole and are preparing to install a temporary clamp to prevent further methane leaks. The gas is used to fuel operations at Platform A and three other platforms.

The gas leak was discovered Feb. 7 when a Hilcorp helicopter spotted roiling water. The leak site is located northwest of Nikiski, on an 8-inch steel pipeline running to Platform A.

The damaged area of pipe was about 2 inches in length, on the "very bottom of the pipeline resting on a boulder embedded in the seafloor," Hilcorp said in a statement issued Monday by Lori Nelson, the company's spokeswoman.

Two leaks on the same gas line in 2014 were repaired by the pipeline's previous operator, XTO Energy. Those were also blamed on rock abrasion.

Hilcorp said that once the temporary repair is completed, the company will further inspect the pipeline and permanently repair the leak.

The leak was initially reported as about 275,000 cubic feet of gas daily but was later reduced to 100,000 cubic feet of gas daily, on average, after oil production was stopped at the Middle Ground Shoal field.

Meanwhile, the company said a subsea pipeline off the Anna platform was not the source of oil sheens spotted on Cook Inlet's water on April 1. But that hasn't changed the view of a federal agency that ordered the company to take action addressing what it says was a crude oil leak from a pipeline.

"There's been no change to our approach," Darius Kirkwood, a spokesman with the Pipeline and Hazardous Materials Safety Administration, said on Monday.

Hilcorp has said that less than three gallons of oil spilled. The company continues to investigate the cause of the sheens, it said in the Monday statement issued by spokeswoman Nelson.

On Saturday, Hilcorp completed a pressure test of the 1.6-mile pipeline running between the Anna and Bruce platforms in western Cook Inlet. Divers also inspected it after sea ice was no longer a danger to divers' surface tethers.

The pipeline was found to be intact, without damage and in good working order, Hilcorp said.

The eight-hour hydrostatic test, using water in the pipeline and increasing the pressure beyond the pipeline's maximum operating pressure, was observed by state and federal agencies, the company said. The results of the test, the inspections and the small amount released confirm that the pipeline was not the source of the sheens, Hilcorp said.

Multiple sheens were spotted for a short period on April 1, as well as bubbling, after workers on the Anna platform felt a strong impact to the platform. The largest sheen was reported to be about 10 by 12 feet in size.

Suspecting the 8-inch pipeline, the company quickly shut it down. Hilcorp directed oil still in the pipeline to the Bruce platform, replacing it with filtered seawater.

PHMSA issued a corrective action order late last week to Hilcorp, requiring the pressure test, the visual inspection and other steps, in response to a crude oil release from the pipeline.

The order requires that Hilcorp submit a final report by July analyzing the root cause of the failure, including lessons learned.

About this Author **Alex DeMarban**

Alex DeMarban is a longtime Alaska journalist who covers the oil and gas industries and general assignments for Alaska Dispatch News.

7 Comments

APPENDIX H

AP

U.S. News

Leak raises concerns about aging Alaska seafloor pipelines

By DAN JOLING
Today

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ANCHORAGE, Alaska (AP) — Alaska's picturesque Cook Inlet is home to endangered beluga whales and wild salmon — and a spider web of oil and natural gas pipelines on the sea floor, many of them placed there five decades ago.

Cook Inlet's petroleum production is often overshadowed by Alaska's giant North Slope oil fields, but the inlet is in the spotlight as millions of cubic feet of natural gas spew from an underwater pipeline owned by the inlet's largest petroleum producer, Hilcorp Alaska LLC.

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The federal agency that oversees pipeline safety has "strongly recommended" that Hilcorp develop a safety management system for its pipelines.

Environmental advocates are demanding immediate pipeline inspections by federal authorities, not Hilcorp, in the area with earthquakes and some of the world's strongest tides.

"The age of the pipelines significantly increased the risk of failure, especially when coupled with the harsh offshore Cook Inlet environment," Kristen Monsell, an attorney for the Center for Biological Diversity, wrote in a letter to the federal Pipeline and Hazardous Material Safety Administration.

Hilcorp has not said whether it will craft the safety management system but insists the age of its pipeline system does not pose a threat and would not affect maintenance and inspection requirements already enforced by state and federal regulators.

"Hilcorp is ready, willing and able to make the necessary investments to keep us working in Alaska for many years to come," said David Wilkins, Hilcorp Alaska senior vice president, in an emailed response to questions.

The inlet lined by mountains stretches 180 miles (290 kilometers) from the Gulf of Alaska to Anchorage. Humpback whales, Steller sea lions, northern sea otters and salmon swim in its waters.

Besides earthquakes that periodically rattle Cook Inlet, tides fluctuate more than 25 feet (7.6 meters) and are so strong that they move car-size boulders along the sea

floor, said Lynda Giguere, spokeswoman for the Cook Inlet Regional Citizens Advisory Council, set up after the Exxon Valdez oil spill to promote environmentally safe marine transportation.

Hilcorp entered the Alaska market in 2012 and owns 15 of the 17 Cook Inlet petroleum platforms. The gas leak is in a pipeline carrying processed natural gas from shore to four platforms, where it's burned to provide electricity.

An analysis of gas flow indicated the pipeline probably started leaking in mid-December and initially spewed up to 310,000 cubic feet (8,780 cubic meters) of natural gas per day. Hilcorp lowered pressure in the line to reduce the flow to 85,000 to 115,000 cubic feet (2,407 to 3,257 cubic meters) per day.

Divers on Monday in 80 feet (24.4 meters) of water found a 2-inch (5-centimeter) gash on the bottom of the line where it rests on a boulder embedded in the sea floor. Repairs are underway.

On April 1, Hilcorp shut down a separate pipeline carrying crude oil from a production platform after workers felt an impact, saw bubbles surfacing from the water and spotted oil on the surface.

Based on the size of the slicks, Hilcorp estimated that less than 3 gallons (11.5 liters) of oil spilled. Hilcorp said tests showed the pipeline was not the source of the spill and an investigation is underway to find it.

Also on April 1, Hilcorp shut down a pipeline that carries natural gas from a production platform to an onshore

processing facility after discovering that volumes produced did not match what was received.

Fourteen of Hilcorp's 15 platforms were built in 1968 or earlier. The company has spent $165 million on maintenance and infrastructure in Cook Inlet and plans to spend an additional $31 million in 2017, Wilkins said.

The pipelines made of steel have special corrosion protection treatment and are covered in a cement-based product to keep them weighed down.

While environmentalists say older pipelines pose greater risks, Wilkins said the industry and even some regulators disagree.

He cited former National Transportation Safety Board Chairwoman Deborah Hersman, who said in 2013 that age is not an issue for adequately maintained and inspected pipelines.

"Steel pipelines can last indefinitely with proper maintenance, inspections and steps to prevent corrosion," Wilkins said.