



April 27, 2023

Mr. Reice Haase  
Deputy Executive Director  
North Dakota Industrial Commission  
600 East Boulevard Avenue, Department 405  
State Capitol, 14th Floor  
Bismarck, ND 58505-0840

Dear Mr. Haase:

Subject: Quarterly Progress Report Entitled “iPIPE – intelligent Pipeline Integrity Program”  
Contract No. G-046-88; UND Project – Fund 43500-UND0022445  
EERC Funds 23121 and 23211

Attached is the quarterly progress report on the subject project for the period of January 1, 2023 – March 31, 2023.

If you have any questions, please contact me by phone at (701) 777-5402 or by email at [amcrae@undeerc.org](mailto:amcrae@undeerc.org).

Sincerely,

DocuSigned by:  
A blue ink signature of T. Austin McRae is displayed within a blue DocuSign signature box.

2CF0ADB88C44D7...  
T. Austin McRae  
Research Engineer  
Integrated Petroleum Systems

TAM/bjr

Attachment

c: Brent Brannan, North Dakota Industrial Commission  
Karen Tyler, North Dakota Industrial Commission



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# IPIPE – INTELLIGENT PIPELINE INTEGRITY PROGRAM

Quarterly Progress Report

*(for the period of January 1, 2023 – March 31, 2023)*

*Prepared for:*

Reice Haase

North Dakota Industrial Commission  
600 East Boulevard Avenue, Department 405  
State Capitol, 14th Floor  
Bismarck, ND 58505-0840

Contract No. G-046-88

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April 2023

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**iPIPE – INTELLIGENT PIPELINE INTEGRITY PROGRAM**  
**Quarterly Progress Report**  
**January 1, 2023 – March 31, 2023**

**EXECUTIVE SUMMARY**

This document is a quarterly report for activity conducted by the intelligent Pipeline Integrity Program (iPIPE), led by the Energy & Environmental Research Center, for the North Dakota Industrial Commission Oil and Gas Research Program. The goal of iPIPE is to develop and demonstrate cutting-edge technology that can prevent and/or detect pipeline leaks.

Activity in Quarter 1 2023 focused on one remaining effort:

- Dedicated Space-Based Hyperspectral Imaging – Orbital Sidekick (OSK) is a company that is providing unmatched resolution for hyperspectral imaging from space to identify hydrocarbons such as methane. iPIPE supported OSK in the first launch of OSK's Aurora satellite via SpaceX rideshare in 2021. The learnings from the Aurora program are being applied to OSK's GHOSat satellite constellation, with launch planned for April 2023. The program is a vertical integration of satellite technology to align with industry metrics.

**iPIPE – INTELLIGENT PIPELINE INTEGRITY PROGRAM**  
**Quarterly Progress Report**  
**January 1, 2023 – March 31, 2023**

**BACKGROUND**

During a May 2017 meeting with North Dakota pipeline operators, Governor Doug Burgum challenged industry to apply advanced technologies to eliminate pipeline leaks in North Dakota. In response to the Governor’s challenge, industry chose a proactive path and engaged in a 3½-year program, led by the Energy & Environmental Research Center (EERC), to advance development and application of emerging technologies to prevent and detect pipeline leaks. The intelligent Pipeline Integrity Program (iPIPE) intends to assist in the development of multiple emerging technologies to prevent and detect pipeline leaks by engaging with technology providers to refine not-yet-commercial products specifically for buried gathering pipelines in North Dakota and then demonstrate technology application on working gathering pipelines.

The goal of this project is to develop and demonstrate cutting-edge technology that can prevent and/or detect gathering pipeline leaks. This goal is supported by accomplishment of the following objectives:

- Select the most promising emerging (near-commercial) technologies for demonstration.
- Assist technology providers in refinement of their products.
- Demonstrate multiple technologies on working gathering pipelines.
- Document results of technology demonstrations.
- Facilitate adoption of technologies into North Dakota pipeline operations.

Multiple demonstrations of emerging technologies on working pipelines will simultaneously assist technology providers in refining designs, pave a path toward full commercialization in the North Dakota market and beyond, prepare pipeline operators for adoption of the new tools, and improve the performance and economics of gathering pipeline operations in North Dakota and beyond. With demonstrated success, additional consortium members (pipeline operators) will join the effort, thus enabling field testing of more technologies and further proliferating new technology among all pipeline operators.

Members of the industry-led consortium during Quarter (Q) 1 2023 included DCP Midstream, Enbridge, Energy Transfer Partners, Equinor, Goodnight Midstream, Hess Corporation, Marathon Petroleum Logistics (MPLx), ONEOK, and TC Energy.

The following summarizes program activities from January 1, 2023, through March 31, 2023.

## ACCOMPLISHMENTS DURING REPORTING PERIOD

- Program-level activities
  - Program management
    - ◆ On February 22, 2023, iPIPE attended an investor meeting hosted by Orbital Sidekick (OSK) in San Jose, California. The event included a tour of the satellite-manufacturing facility and opportunity to view the GHOS 1 and 2 satellites prior to transport to the launch facility.
  - Program meetings
    - ◆ The iPIPE 2.0 Member Forum was held on January 13, 2023, at the EERC. Content included strategic program direction and partnerships, discussion of common challenges, and 2023 project groundwork.
      - The program included guests and presentations from the North Dakota Pipeline Authority (NDPA), North Dakota Industrial Commission (NDIC), and the American Petroleum Institute (API).
      - Membership made final decisions and provided direction to kick off iPIPE 2.0 project work including field demonstration hosts.
    - ◆ On February 17 and March 17, 2023, iPIPE held monthly member meetings to update all members on program status. The goal of these meetings is to keep members apprised of a variety of program topics, including recruitment, finances, strategic direction, and technology development project status, and discuss and make decisions regarding the course of the iPIPE Program. No monthly member meeting was held in January as it was effectively rolled into the Member Forum.
  - Member recruitment
    - ◆ Discussions continued with a number of companies regarding membership in the consortium. Some of these companies have approached the program regarding membership requirements and benefits, while others have been previously approached by the program and/or existing consortium members.
  - Program media mentions
    - ◆ Since inception, iPIPE has now been highlighted in more than 95 public multimedia and print articles. A partial listing of known media mentions is provided in Appendix A.
- Technology selection
  - The EERC continues to engage with companies from around the globe, offering emerging (not yet commercial) technologies as they discover or are directed to iPIPE. Additional technology providers will be sought through iPIPE 2.0.
- Demonstration execution – Satelytics Phase IV
  - Satelytics has completed its analysis of land movement detection using a current stereo pair of images and stereo pairs-generated historical data.
  - The independent EERC evaluation report for this task has been drafted and is under internal review.
- Demonstration execution – OSK

- OSK was able to briefly capture and downlink imagery from its satellite to validate the capabilities of its sensor. However, OSK was unable to task the sensor because of a mechanical failure and eventually lost the limited capabilities because of a second failure at a critical electrical conduit. As a result of the satellite failure, OSK provided a proposal to update the subcontract at the EERC’s request. The EERC has successfully negotiated with OSK, and a contract modification was executed in July 2022. Update meetings on the status of the next generation of satellites and their path to launch have generally occurred on a biweekly basis.
- The launch of the first two GHOSat satellites is expected in April 2023.
- Demonstration execution – Pipeline-Risk
  - Pipeline-Risk has delivered its final report, completed its construction of a risk-learning system for gathering lines, and demonstrated its abilities using member-provided data.
  - The independent EERC evaluation report is being drafted.
- Demonstration execution – TOKU
  - TOKU has completed its demonstration of pipeline-monitoring equipment, analysis of leak simulation data, and refinement of algorithms and has submitted its final report.
  - The independent EERC evaluation report for this task has been drafted and is under internal review.

## MEMBERSHIP AND FINANCIAL INFORMATION

The original budget proposed to the NDIC Oil and Gas Research Program (OGRP) totaled \$3,714,000, as shown in Table 1. To demonstrate additional resources provided by new members, additional financial commitment from NDIC, and significantly increased in-kind cost share provided by technology providers and program members, an updated budget is presented in Table 2. Table 2 demonstrates the rapid growth of this program. Table 3 presents greater detail on the expected budget and actual expenses incurred by the program to date.

**Table 1. iPIPE Original Budget**

<b>Sponsors</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
NDIC – Cash	\$403,320	\$405,226	\$393,454	\$398,000	\$1,600,000
Industry – Cash	\$264,000	\$450,000	\$450,000	\$450,000	\$1,614,000
Industry and Technology Provider – In-Kind	\$125,000	\$125,000	\$125,000	\$125,000	\$500,000
<b>Total</b>	<b>\$792,320</b>	<b>\$980,226</b>	<b>\$968,454</b>	<b>\$973,000</b>	<b>\$3,714,000</b>

**Table 2. iPIPE Updated Budget**

<b>Sponsors</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
NDIC – Cash	\$565,909*	\$735,730*	\$438,772*	\$859,589	\$2,600,000
Industry – Cash	\$352,000*	\$700,000*	\$850,000*	\$675,000	\$2,577,000
Industry and Technology Provider – In-Kind	\$525,878*	\$1,074,077*	\$949,051*	\$500,000	\$3,049,006
<b>Total</b>	<b>\$1,443,787</b>	<b>\$2,509,807</b>	<b>\$2,237,823</b>	<b>\$2,034,589</b>	<b>\$8,226,006</b>

\* Reflects actuals for these years.

**Table 3. iPIPE Expected Budget and Expenses to Date**

<b>Sponsors</b>	<b>Expected Budget</b>	<b>Actual Expenses as of 3/31/23</b>	<b>Balance Remaining of Expected Budget</b>
NDIC Share – Cash	\$2,600,000	\$2,241,258	<b>\$358,742</b>
Industry Share – Cash	\$2,577,000	\$2,431,712	<b>\$145,288</b>
Industry – In-Kind	\$375,000	<i>DCP</i> \$60,500 <i>Enbridge</i> \$126,436 <i>Energy Transfer</i> \$0 <i>Equinor</i> \$153,230 <i>Goodnight</i> \$37,135 <i>Hess</i> \$228,093 <i>MPLx</i> \$17,936 <i>Oasis</i> \$40,069 <i>ONEOK</i> \$5,000 <i>TC Energy</i> \$0 <u><i>Whiting</i></u> <u>\$9,042</u> <b>TOTAL</b> \$677,441	<b>\$0</b>
Technology Providers – In-Kind	\$3,076,597*	<i>Satellytics</i> \$1,713,450 <i>Direct-C</i> \$185,867 <i>Ingu</i> \$88,266 <i>Orbital Sidekick</i> \$1,321,061 <i>Toku</i> \$190,990 <u><i>Pipeline Risk</i></u> <u>\$50,000</u> <b>TOTAL</b> \$3,549,634	<b>\$0</b>
<b>Total</b>	<b>\$8,628,597*</b>	<b>\$8,900,046</b>	<b>\$504,030**</b>

\* Includes budget estimates from proposals for 2020 technology development projects and an estimate of anticipated 2021 in-kind from technology providers.

\*\* This amount does not include industry in-kind contributions provided in excess of the expected budget.

The program continues to solicit additional members to contribute to this program. As additional members join the program, Tables 2 and 3 will be updated to show the additional financial resources brought to the program.

Project progress, as represented by the project schedule presented in the original NDIC OGRP proposal, is shown in Figure 1.

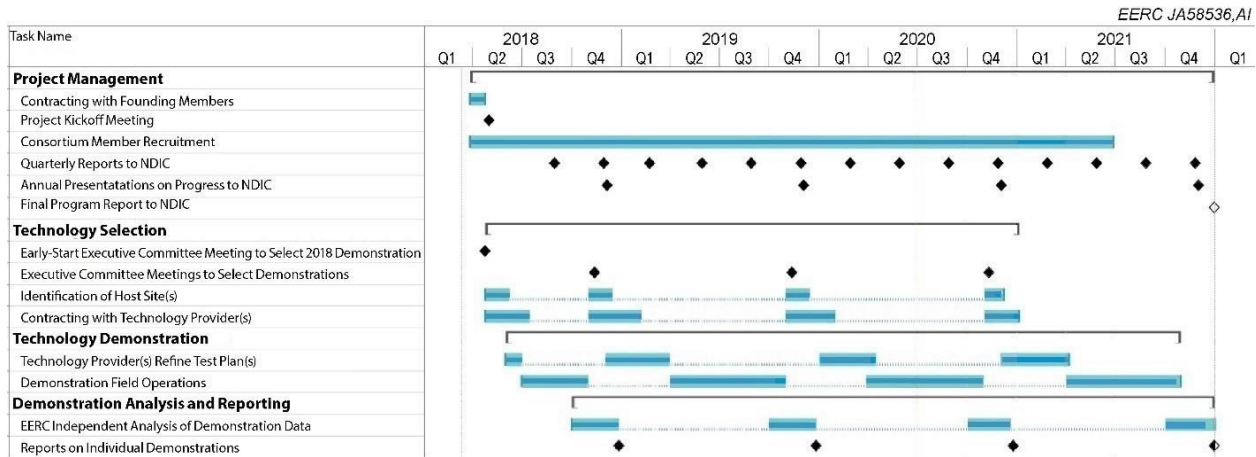


Figure 1. Project progress.

## FUTURE ACTIVITIES

The planned activities for the next quarter are detailed below:

- Program-level activities
  - The EERC will work with consortium members and stakeholders to continue iPIPE on its successful path beyond the original 2018–2021 timeline with iPIPE 2.0.
  - iPIPE will continue ongoing and start new discussions with potential program members.
- Technology selection
  - The EERC will remain engaged with and on the lookout for providers of relevant, promising, emerging technology, with iPIPE continuing beyond its original 3½-year timeline into iPIPE 2.0.
- Demonstration execution – Satelytics Phase IV
  - The EERC will complete and distribute its independent review of this project. This will result in full project completion.
- Demonstration execution – OSK
  - The EERC will continue to remain updated prior to the expected April 2023 launch of the first two GHOS<sub>t</sub> satellites. Project scope will continue upon successful commissioning.
- Demonstration execution – Pipeline-Risk
  - The EERC will complete and distribute its independent review of this project. This will result in full project completion.
- Demonstration execution – TOKU

- The EERC will complete and distribute its independent review of this project. This will result in full project completion.



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**APPENDIX A**

**PARTIAL LISTING OF iPIPE MEDIA MENTIONS**

# Partial List of Articles Highlighting iPIPE:

Updated April 1, 2023

Title	Date	URL
Industry Responds to Governor's Initiative to Improve Pipeline Technology; Program Funding Approved by North Dakota Industrial Commission		<a href="https://www.ndoil.org/industry-responds-to-governors-initiative-to-improve-pipeline-technology-program-funding-approved-by-north-dakota-industrial-commission/">https://www.ndoil.org/industry-responds-to-governors-initiative-to-improve-pipeline-technology-program-funding-approved-by-north-dakota-industrial-commission/</a>
Satelytics Selected to Participate in the intelligent Pipeline Integrity Program (iPIPE)	5/18/2018	<a href="https://mailchi.mp/satelytics/satelytics-chosen-to-participate-in-iPIPE-project?e=922473135e">https://mailchi.mp/satelytics/satelytics-chosen-to-participate-in-iPIPE-project?e=922473135e</a>
ND Implements Intelligent Pipeline Project	5/22/2018	<a href="http://northamericanshalemagazine.com/articles/2380/nd-implements-intelligent-pipeline-project">http://northamericanshalemagazine.com/articles/2380/nd-implements-intelligent-pipeline-project</a>
North Dakota Governor Doug Burgum Provides Remarks This Morning at the Williston Basin Petroleum Conference in Bismarck, Thanks Hess and the Industry for Innovation Through iPIPE Program.	5/23/2018	<a href="https://twitter.com/HessCorporation/statuses/999315208261853185">https://twitter.com/HessCorporation/statuses/999315208261853185</a>
North Dakota Pipeline Leak Detection Initiative Announced	5/25/2018	<a href="https://extension.psu.edu/north-dakota-pipeline-leak-detection-initiative-announced">https://extension.psu.edu/north-dakota-pipeline-leak-detection-initiative-announced</a>
New Consortium Sets Goal of Improving Pipelines	5/26/2018	<a href="https://www.mrt.com/business/oil/article/New-consortium-sets-goal-of-improving-pipelines-12941971.php">https://www.mrt.com/business/oil/article/New-consortium-sets-goal-of-improving-pipelines-12941971.php</a>
Industry Responds to Governor's Initiative to Improve Pipeline Technology; Program Funding Approved by North Dakota Industrial Commission	5/26/2018	<a href="https://www.oilandgasonline.com/doc/industry-governors-initiative-pipeline-program-north-dakota-industrial-commission-0001">https://www.oilandgasonline.com/doc/industry-governors-initiative-pipeline-program-north-dakota-industrial-commission-0001</a>
New Consortium Sets Goal of Improving Pipelines	5/27/2018	<a href="https://www.timesunion.com/business/oil/article/New-consortium-sets-goal-of-improving-pipelines-12941971.php">https://www.timesunion.com/business/oil/article/New-consortium-sets-goal-of-improving-pipelines-12941971.php</a>
Principal Engineer Jay Almlie Discusses the iPIPE Program on Energy Matters Radio	5/31/2018	<a href="https://www.youtube.com/watch?v=ZQuwsK0z2aM">https://www.youtube.com/watch?v=ZQuwsK0z2aM</a>
North Dakota Selects Ingu Solutions for Demonstration of Cutting-Edge Leak Detection and Prevention Technology for Oil and Gas Pipelines	5/31/2018	<a href="https://ingu.co/iPIPE/">https://ingu.co/iPIPE/</a>
Leak Detection Project Kicks Off This Summer	6/1/2018	<a href="https://myemail.constantcontact.com/Here-are-the-week-s-top-North-Dakota-energy-stories-.html?soid=1102657032033&amp;aid=NpwT2Ynl17c">https://myemail.constantcontact.com/Here-are-the-week-s-top-North-Dakota-energy-stories-.html?soid=1102657032033&amp;aid=NpwT2Ynl17c</a>
How a Canadian Solution to Detecting Pipeline Leaks Is Being Used in North Dakota	6/5/2018	<a href="https://www.bnnbloomberg.ca/video/how-a-canadian-solution-to-detecting-pipeline-leaks-is-being-used-in-north-dakota~1410402">https://www.bnnbloomberg.ca/video/how-a-canadian-solution-to-detecting-pipeline-leaks-is-being-used-in-north-dakota~1410402</a>
iPIPE Program Helps Solve Pipeline Leaks in ND	6/6/2018	<a href="http://www.kfyrtv.com/content/news/iPIPE-Program-helps-solve-pipeline-leaks-in-ND--484747291.html">http://www.kfyrtv.com/content/news/iPIPE-Program-helps-solve-pipeline-leaks-in-ND--484747291.html</a>
Startup Uses Small Sensors to Check North Dakota Oil Pipes	6/10/2018	<a href="https://www.alvareviewcourier.com/story/2018/06/10/interesting-items/startup-uses-small-sensors-to-check-north-dakota-oil-pipes/37406.html">https://www.alvareviewcourier.com/story/2018/06/10/interesting-items/startup-uses-small-sensors-to-check-north-dakota-oil-pipes/37406.html</a>
Sensors to Monitor Oil, Brine Gathering Lines Coming to ND	6/12/2018	<a href="https://www.westfargopioneer.com/news/science-and-nature/4459638-sensors-monitor-oil-brine-gathering-lines-coming-nd">https://www.westfargopioneer.com/news/science-and-nature/4459638-sensors-monitor-oil-brine-gathering-lines-coming-nd</a>
Pipe Sensors to Monitor Gathering Lines	6/12/2018	<a href="https://bismarcktribune.com/business/local/pipe-sensors-to-monitor-gathering-lines/article_cd64586c-1d52-52df-83e6-b661d3b95f0a.html">https://bismarcktribune.com/business/local/pipe-sensors-to-monitor-gathering-lines/article_cd64586c-1d52-52df-83e6-b661d3b95f0a.html</a>
Startup Uses Small Sensors to Check North Dakota Oil Pipes	6/21/2018	<a href="https://www.apnews.com/9d65538034a24711a4a84d4e2bb38efe">https://www.apnews.com/9d65538034a24711a4a84d4e2bb38efe</a>
Startup Uses Small Sensors to Check North Dakota Oil Pipes	6/21/2018	<a href="https://www.usnews.com/news/best-states/north-dakota/articles/2018-06-21/startup-uses-small-sensors-to-check-north-dakota-oil-pipes">https://www.usnews.com/news/best-states/north-dakota/articles/2018-06-21/startup-uses-small-sensors-to-check-north-dakota-oil-pipes</a>
Startup Uses Small Sensors to Check North Dakota Oil Pipes	6/21/2018	<a href="https://m.washingtontimes.com/news/2018/jun/21/startup-uses-small-sensors-to-check-north-dakota-o/">https://m.washingtontimes.com/news/2018/jun/21/startup-uses-small-sensors-to-check-north-dakota-o/</a>
iPIPE: Taking a Bite Out of Leaks	6/25/2018	<a href="http://blogs.und.edu/und-today/2018/06/taking-a-bite-out-of-leaks/">http://blogs.und.edu/und-today/2018/06/taking-a-bite-out-of-leaks/</a>
iPIPE: Taking a Bite Out of Leaks	6/29/2018	<a href="http://www.northdakotaagconnection.com/story-state.php?id=688&amp;yr=2018">http://www.northdakotaagconnection.com/story-state.php?id=688&amp;yr=2018</a>
Industry Demonstrates Commitment to Stopping Pipeline Leaks	7/17/2018	<a href="http://northamericanshalemagazine.com/articles/2444/industry-demonstrates-commitment-to-stopping-pipeline-leaks">http://northamericanshalemagazine.com/articles/2444/industry-demonstrates-commitment-to-stopping-pipeline-leaks</a>
Testing of New Pipeline Inspection Device Begins in Bakken	7/18/2018	<a href="https://www.spe.org/en/ogf/ogf-article-detail/?art=4404">https://www.spe.org/en/ogf/ogf-article-detail/?art=4404</a>

Title	Date	URL
Testing of New Pipeline Inspection Device Begins in Bakken (link not active)	7/18/2018	<a href="https://www.spe.org/en/print-article/?art=4404">https://www.spe.org/en/print-article/?art=4404</a>
6 Companies Collaborating on Pipeline Leak Detection	8/15/2018	<a href="https://www.willistonherald.com/news/companies-collaborating-on-pipeline-leak-detection/article_bbce3194-a098-11e8-8bac-1b765123019e.html">https://www.willistonherald.com/news/companies-collaborating-on-pipeline-leak-detection/article_bbce3194-a098-11e8-8bac-1b765123019e.html</a>
More Skin in the Game: New Technology to Find, Fix Leaks	8/20/2018	<a href="https://pgjonline.com/magazine/2018/august-2018-vol-245-no-8/features/more-skin-in-the-game-new-technology-to-find-fix-leaks">https://pgjonline.com/magazine/2018/august-2018-vol-245-no-8/features/more-skin-in-the-game-new-technology-to-find-fix-leaks</a>
Burgum Highlights Oil Industry's Progress, Challenges at ND Petroleum Council's Annual Meeting in Fargo	9/25/2018	<a href="https://www.governor.nd.gov/news/burgum-highlights-oil-industry%E2%80%99s-progress-challenges-nd-petroleum-council%E2%80%99s-annual-meeting">https://www.governor.nd.gov/news/burgum-highlights-oil-industry%E2%80%99s-progress-challenges-nd-petroleum-council%E2%80%99s-annual-meeting</a>
Burgum Highlights Oil Industry's Progress, Challenges at ND Petroleum Council's Annual Meeting in Fargo	9/25/2018	<a href="https://votesmart.org/public-statement/1287849/burgum-highlights-oil-industrys-progress-challenges-at-nd-petroleum-councils-annual-meeting-in-fargo#.XDz9tVxKjmE">https://votesmart.org/public-statement/1287849/burgum-highlights-oil-industrys-progress-challenges-at-nd-petroleum-councils-annual-meeting-in-fargo#.XDz9tVxKjmE</a>
The Digital Oilfield: How Digital Technologies Are Changing the Oil Industry in ND and Nationwide	9/30/2018	<a href="http://www.prairiebusinessmagazine.com/business/energy-and-mining/4506605-digital-oilfield-how-digital-technologies-are-changing-oil">http://www.prairiebusinessmagazine.com/business/energy-and-mining/4506605-digital-oilfield-how-digital-technologies-are-changing-oil</a>
Progress for Partners Key to Energy & Environmental Research Center (link not active)		<a href="https://www.ndliving.com/content/progress-partners-key-energy-environmental-research-center">https://www.ndliving.com/content/progress-partners-key-energy-environmental-research-center</a>
API Banquet Salutes Stars of Bakken Oil and Gas	11/19/2018	<a href="https://www.willistonherald.com/news/api-banquet-salutes-stars-of-bakken-oil-and-gas/article_a006f78e-eb98-11e8-a353-abe9fc1170fc.html">https://www.willistonherald.com/news/api-banquet-salutes-stars-of-bakken-oil-and-gas/article_a006f78e-eb98-11e8-a353-abe9fc1170fc.html</a>
Energy Matters: iPIPE Receives Industry Innovation Award	12/3/2018	<a href="https://www.youtube.com/watch?v=L21Er2Xu4aw">https://www.youtube.com/watch?v=L21Er2Xu4aw</a>
Energy Matters with iPIPE	12/12/2018	<a href="https://www.satelytics.com/blog/oil-gas-solutions/2018-energy-matters-with-iPIPE/">https://www.satelytics.com/blog/oil-gas-solutions/2018-energy-matters-with-iPIPE/</a>
Developing Technology to Prevent Pipeline Leaks	1/3/2019	<a href="https://mydigitalpublication.com/publication/?i=547462&amp;p=&amp;pn=#{%22issue_id%22:547462,%22page%22:34}">https://mydigitalpublication.com/publication/?i=547462&amp;p=&amp;pn=#{%22issue_id%22:547462,%22page%22:34}</a>
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iPIPE Selects Orbital Sidekick as Partner for Pipeline Monitoring Project	11/19/2020	<a href="https://www.prnewswire.com/news-releases/ipipe-selects-orbital-sidekick-as-partner-for-pipeline-monitoring-project-301177019.html">https://www.prnewswire.com/news-releases/ipipe-selects-orbital-sidekick-as-partner-for-pipeline-monitoring-project-301177019.html</a>
Orbital Sidekick Secures \$16 Million Series A to Commercialize Hyperspectral Satellite Monitoring Solutions for Energy and Defense Sectors	4/13/2021	<a href="https://www.prnewswire.com/news-releases/orbital-sidekick-secures-16-million-series-a-to-commercialize-hyperspectral-satellite-monitoring-solutions-for-energy-and-defense-sectors-301267276.html">https://www.prnewswire.com/news-releases/orbital-sidekick-secures-16-million-series-a-to-commercialize-hyperspectral-satellite-monitoring-solutions-for-energy-and-defense-sectors-301267276.html</a>
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Orbital Sidekick Selected as Partner for Intelligent Pipeline Integrity Program (iPIPE)	10/6/2022	<a href="https://www.prnewswire.com/news-releases/orbital-sidekick-selected-as-partner-for-intelligent-pipeline-integrity-program-ipipe-301642433.html?tc=eml_cleartime">https://www.prnewswire.com/news-releases/orbital-sidekick-selected-as-partner-for-intelligent-pipeline-integrity-program-ipipe-301642433.html?tc=eml_cleartime</a>