VERIFIED DIRECT TESTIMONY OF ADAM S. WITTORP

INTRODUCTION

Q1. Please state your name, business address and job title.

A1. My name is Adam S. Wittorp. My business address is 1500 165th Street, Hammond, Indiana 46324. I am Manager of Gas Control of Northern Indiana Public Service Company LLC ("NIPSCO" or the "Company").

Q2. Please briefly describe your educational and employment background.

A2. I hold a Bachelor of Science degree in Electronics Engineering Technology and a Master's degree in Educational Technology from DeVry University. I also hold a Master's degree in Project Management and an MBA from Keller Graduate School of Management. I hold current Project Management Professional (PMP) and NERC Reliability Coordinator certifications with the Project Management Institute and North American Electric Reliability Corporation, respectively. I started my employment with NIPSCO in 2013, working in the NERC Compliance and Training group. In 2015 I moved into NIPSCO's Gas Control Department where I have held positions of increasing responsibility including Gas Control

Specialist-CRM and Team Leader Support. I am a Qualified Gas Controller and have been responsible for the development of gas supply strategies as well as the training of others in the Gas Control Department in a variety of areas.

Q3. What are your responsibilities as Manager of Gas Control?

A3. As Manager of Gas Control, I am responsible for managing exempt and Bargaining Unit employees responsible for forecasting Gas System demand, meeting pipeline targets, responding to abnormal operating conditions, and daily closing. I am responsible for ensuring safe operation of the pipeline and maintain compliance with a wide range of applicable regulations and am also responsible for implementing improvements to processes to improve efficiency, recognition of abnormal conditions, and response.

Q4. Have you previously testified before the Indiana Utility Regulatory Commission?

A4. No.

Q5. What is the purpose of your testimony?

A5. The purpose of my testimony is to provide an overview of the design, configuration and operation of the NIPSCO gas transmission, distribution, and storage systems in support of NIPSCO's 7-Year Gas TDSIC Plan for the period January 2020 through December 2025 ("2020-2025 Gas Plan" or "Plan"). My testimony is intended to provide background for the discussion of NIPSCO Witnesses Becker and Bull relating to the operational and policy rationale supporting the 2020-2025 Gas Plan. I also address the impact that the projects undertaken in NIPSCO's current 7-Year Gas Plan ("Gas Plan 1") have had on NIPSCO's gas system and the relationship between those projects and the projects proposed in this case from the perspective of system operations.

Q6. Are you sponsoring any attachments to your direct testimony in this Cause?

A6. Yes. I am sponsoring the following attachments, all of which were prepared by me or under my direction and supervision:

Attachment 4-A	NIPSCO Transmission, Distribution, and Storage System Map
Attachment 4-B	NIPSCO 483 pounds per square in gauge ("PSIG") System Map

Attachment 4-C	Examples of in-line inspection ("ILI") tools ("pigs")
Attachment 4-D	Examples of damage found by ILI on NIPSCO 30" pipeline
Attachment 4-E	Progression of Projects from Gas Plan 1 through the 2020-2025 Gas Plan

NIPSCO'S GAS TRANSMISSION SYSTEM

Q7. Please describe NIPSCO's gas transmission system.

A7. NIPSCO's gas transmission system is an integrated, multiple citygate and multiple pressure system that includes 695.07 miles of United States Department of Transportation ("DOT") transmission main that ranges from 4" to 36" in diameter. All of this transmission main is steel that is cathodically protected.

Q8. How does NIPSCO categorize its system between transmission and distribution?

A8. NIPSCO's system is categorized two ways. "DOT transmission" refers to lines that are considered to be transmission rather than distribution for the purpose of federal safety, design, operation and maintenance, and integrity management requirements and reporting. The DOT standards categorize pipelines on an engineering basis using a variety of measurements. The

DOT regulations are similarly geared around engineering-based analysis and practices.

NIPSCO categorizes its pipelines for cost allocation and accounting purposes based on the Federal Energy Regulatory Commission ("FERC") Uniform System of Accounts ("USA") that are based primarily on the function served by a pipeline rather than its physical characteristics. Based on the FERC USA, NIPSCO operates more than 1,500 miles of transmission pipeline. Pipelines smaller than those categorized as transmission under either measure are considered to be distribution.

Q9. Please explain what is meant by "multiple citygate?"

A9. A "citygate" is a custody transfer point where NIPSCO receives deliveries from third parties. "Multiple citygate" refers to the fact that NIPSCO receives gas deliveries at multiple take points or "citygates" on the NIPSCO transmission system. The NIPSCO system has 38 citygates, which are interconnection points with seven interstate pipelines – Natural Gas Pipeline Company of America ("NGPL"), ANR Pipeline Co., Crossroads Pipeline, Panhandle Eastern Pipeline Co., Trunkline Gas Co., Vector Pipeline and Northern Border Pipeline. The citygates and interstate

pipelines can be clearly seen on Attachment 4-A, which is a map showing an overview of the NIPSCO Transmission, Distribution, and Storage System. In addition to these 38 citygates with interstate pipelines, NIPSCO also interconnects with two bio-gas plants that supply gas into the NIPSCO system – Renewable Dairy Fuels and Windy Ridge Fuels. Both of these plants operate in Fair Oaks, Indiana.

Q10. Please explain what is meant by "multiple pressure system."

A10. A "multiple pressure system" refers to the fact that NIPSCO's transmission infrastructure is a collection of distinct pressure systems, some of which are interconnected through pressure regulation, while others operate independently. There are four major high pressure components to the NIPSCO transmission system – the "600 PSIG loop," the "483 PSIG system," the "720 PSIG system", and the "295 PSIG system." These systems are named based on their maximum allowable operating pressure ("MAOP") in PSIG (or "lb." or "#"). The remainder of the transmission system is operated at lower pressures.

Q11. Please provide an overview of how the combination of flow control and pressure control works on the NIPSCO system.

A11. NIPSCO's transmission system is controlled both by pressure control and by flow control. The combination of controls allows NIPSCO flexibility in the amount of gas delivered through most of its 38 interstate pipeline interconnection points, which provides for safe, reliable and cost effective service and for more efficient operation of the system. NIPSCO flow control systems manage system pressure within a range by adjusting the flows of gas into the system from each supply source rather than by bringing all supplies. Conversely, pressure control is designed to maintain a set pressure appropriate to satisfy customer needs and operate below MAOP without regard to flow rate. The advantage of flow control systems is that they allow for more direct manipulation of supply volumes to match contract amounts which allows the operator to more readily take advantage of favorably priced supply resources with less focus on matching system pressure. For example, an operator with flow control may be able to maximize the flow of cheaper gas from one pipeline and restrict the flow of more expensive gas from another while still maintaining system pressure. Flow control systems are widely used among interstate pipeline systems.

Q12. Please provide an overview of NIPSCO's large transmission pressure systems.

A12. The 600 PSIG loop interconnects with all seven interstate pipelines and extends from the Illinois state line to the Fort Wayne area. It branches northeast towards South Bend, Indiana and south through Royal Center, Indiana. This current system configuration is represented in slide 1 of Attachment 4-E. The 600 PSIG loop can be operated at various pressures from approximately 350 PSIG up to the MAOP of the pipeline system. It serves as the backbone of the NIPSCO transmission system. The majority of the take points on the 600 PSIG loop are electronically flow controlled from NIPSCO's Gas Control in Hammond, Indiana, allowing NIPSCO to take advantage of gas supply from all of the major production regions. The 600 PSIG loop is used primarily to move gas across the system and balance supplies received from the various pipelines.

NIPSCO's 483 PSIG system primarily feeds a group of very high demand, very high load factor customers located in the northwest corner of the system. In the summer months, the 483 PSIG system handles over half of the entire NIPSCO system send-out. Attachment 4-B is a map showing the details of the 483 PSIG system. Many of the large industrial customers are fed from a single line from NIPSCO's Highland Junction hub, meaning that there is only a single point of delivery. NIPSCO's Highland Junction hub

functions as a gathering point for gas delivered to NIPSCO from NGPL, Vector, ANR, and Crossroads interstate pipelines. From an operational perspective, this means that any condition adversely impacting that feed could potentially interrupt service to some of NIPSCO's largest customers. The 483 PSIG system is typically flow controlled from ANR and Vector while gas from the NGPL pipeline is free flowing into the 483 PSIG system. The 483 PSIG system is not currently interconnected with the 600 PSIG loop, and, as a result, deliveries made across that system cannot be balanced against NIPSCO's flows from its other pipelines and must instead be balanced directly on one of the three pipelines directly interconnecting to it.

NIPSCO's 720 PSIG system is a small system that connects the ANR, Vector, and Crossroads citygates mentioned above to the 483 PSIG system. The pipelines that makeup this system go from Crown Point, Indiana to Highland, Indiana and also serve some distribution.

NIPSCO's 295 PSIG system is supplied from the 483 PSIG system and the 600 PSIG loop and interconnects with ANR and Trunkline for pressure support. It is used primarily to deliver gas to NIPSCO's distribution system

assets. While there are some flow control capabilities with the 295 PSIG system, it is primarily a pressure control asset and is ideal for supporting laterals, large customers, and lower pressure systems.

Q13. Are there nuances to the feed to the 483 PSIG system?

A13. Yes. The feed from NGPL to Highland Junction that is the primary feed to the 483 PSIG system is two parallel lines. One pipeline is 30" in diameter and the other pipeline was, up until prior to Gas Plan 1, a combination of 22" and 36". Typically, gas pipelines are either of constant diameter or of reducing diameters as the pipeline proceeds downstream. The combination of 22" and 36" makes any use of ILI tools impossible because the inline tools used cannot adapt to pipelines of varying diameters. The effective capacity of the 22" and 36" pipeline equals that of a 24" diameter pipeline. Part of Gas Plan 1 implementation has resulted in replacement of the 22" and 36" pipeline with a 24" pipeline.

Q14. Are there limitations in the capacity of the 600 PSIG loop?

A14. Yes. Although the 600 PSIG loop offers a great deal of flexibility, it is still limited. For this reason, it is necessary for NIPSCO to define three (previously five) separate transportation zones as described in NIPSCO's

approved gas tariff. These zones delineate areas within the NIPSCO service territory which interstate pipeline transportation customers, pool operators, and Choice marketers may use to deliver gas volumes to specific areas of the NIPSCO system.

Q15. How are the transmission systems in the eastern part of NIPSCO's service territory configured?

A15. The former Northern Indiana Fuel & Light Company system incorporates both flow control and pressure control, and is operated similarly to the 295 PSIG system. It is interconnected with the Panhandle Eastern and ANR interstate pipelines and is tied to the remainder of the system through its interconnection with the Crossroads pipeline.

Q16. How are the transmission systems in the former Kokomo Gas & Fuel Company ("Kokomo") service territory configured?

A16. Unlike the rest of the NIPSCO system that is operated on a combined flow control and pressure controlled basis, the Kokomo area is essentially a pressure controlled system, fed by a single interstate pipeline. While there is limited connectivity with the balance of the NIPSCO system on the north

end of the Kokomo system, it is operated similar to a freestanding small local distribution company ("LDC") (which it was at one time).

Q17. Do transportation customers have restrictions in the delivery of gas into the NIPSCO system?

A17. Yes. To retain system integrity, it is important to have rules describing the limits of daily delivery for transportation customers. One rule is that these customers are daily balanced. In other words, there are rules to ensure that the volumes delivered into the NIPSCO system each day are close to the amount of gas being consumed by the customer. There are additional details on the transportation rules described in the Company's approved gas tariff.

NIPSCO'S GAS DISTRIBUTION SYSTEM

Q18. Please describe NIPSCO's gas distribution system.

A18. NIPSCO's gas distribution system is a dispersed/multiple citygate, integrated transmission/distribution and multiple-pressure-based system providing gas service to approximately 835,000 customers. At the end of 2018, the Company had 17,578 miles of distribution class (non-DOT transmission class) pipelines.

Q19. Are there any unique portions of the NIPSCO distribution system?

A19. Yes. Part of NIPSCO's distribution system in the Kokomo area was designed and built to operate as a "low pressure system," that is, one that is intended to operate below 1.0 PSIG. Low pressure systems are typically older, and present particular challenges from an operational perspective in light of today's higher operating pressures. For example, low system pressures preclude the use of pressure regulation at the customer premise, an important safety layer of protection for NIPSCO's customers. Materials used in these older systems tend to be bare steel or iron, and meter installations tend to be inside the customer premises rather than outside as more modern practice dictates. Water infiltration, leak migration and potential safety issues associated with inadvertent pressure changes and leak dissipation in open areas are characteristic of these systems, and unique operation qualification and training are required to properly operate and maintain them.

Q20. Does the comparative modernity of the majority of the NIPSCO transmission and distribution system eliminate reliability and safety concerns?

A20. No. However, with zero miles of known cast iron pipe and less than 0.5% of the entire system being composed of bare steel after recent replacement,[1] NIPSCO's system is not subject to the same challenges facing other LDCs with older facilities.

NIPSCO STORAGE FACILITIES

Q21. Does NIPSCO own and operate any type of on-system storage operations?

A21. Yes. NIPSCO owns and operates two on-system storage operations: (1) an underground gas storage facility headquartered in Royal Center, Indiana ("RCUGS"), and (2) a liquefied natural gas ("LNG") facility in Rolling Prairie, Indiana. In addition, NIPSCO utilizes the operating pressure range of its system ("line pack") for short duration storage.

Q22. Do customers benefit from the RCUGS, LNG and line pack offerings?

A22. Yes. Customers benefit from NIPSCO's storage options because access to storage facilities enhances cost effectiveness and reliability of service. While storage is available from third-party providers, there are pre-planning requirements and other management issues that may inhibit the

[1] Please see NIPSCO's 2018 Annual Gas Distribution Report filed with the DOT.

ability to use the stored gas when it is necessary. NIPSCO is able to call on its storage facilities during the course of normal operations as well as to supply gas when unexpected events occur. For example, on a day when the temperature is much lower than projected, NIPSCO can call on its own storage facilities rather than acquire gas on the market during peak periods or rely on third-party storage and transportation options that may not be sufficiently flexible to ensure gas is available when needed.

Q23. Please describe NIPSCO's RCUGS operation.

A23. This aquifer storage field is commonly referred to as Trenton or Royal Center. An aquifer storage facility is comprised of a porous rock formation capped by a non-porous rock formation. A series of wells are drilled through the non-porous rock and gas is pumped into the porous rock formation, displacing water present in the porous rock. The pressure of the displaced water allows the gas to be recovered when needed. Trenton has a working capacity of 4,000 million cubic feet ("MMCF") of gas. The working capacity is the amount of gas that can be injected and withdrawn in one annual cycle. NIPSCO plans to inject and withdraw all 4,000 MMCF of working capacity each year. Storage injection is typically from August to November and storage withdrawal is typically from December to March.

Q24. Please describe NIPSCO's LNG operation.

A24. NIPSCO's LNG facility takes natural gas and refrigerates it to its boiling point of -260° Fahrenheit. By increasing the temperature of the liquefied gas, the gas is vaporized and available for injection into NIPSCO's gas systems. When full to capacity, the LNG facility has ten days of deliverability at its maximum daily vaporization capability. The LNG facility is utilized to supplement system supply on "critical" winter days of high customer demand. Operationally, the peaking resource is held in reserve for these critical days, as the liquefaction capability of the facility requires about 40 days to replenish the amount of LNG consumed on a single maximum vaporization day.

Q25. Please describe under what situations LNG might be utilized?

A25. Each year NIPSCO does a design day supply plan to project the system demand on a design day to ensure there is adequate supply to meet the projected demand. A "design day" is a severely cold day that has a one in thirty-three year probability of occurrence. LNG deliverability is part of the design day supply plan. Without LNG, NIPSCO would need to contract for transportation assets to supply the extreme demands associated with a design day. LNG is used in this circumstance to maintain system pressure.

Q26. Apart from design day, under what other circumstances might LNG be used?

A26. Each day the system load is forecasted and supply is arranged to cover the forecasted load. One of the greatest influences on the variation of load is the change in temperature. If the actual temperatures are much colder than the temperatures that were forecasted, the load will be greater than the supply that was scheduled. In this circumstance, the LNG facility would be used to fill the gap to help avoid loss of customer service and / or pipeline penalties.

Q27. How can LNG support future customer needs?

A27. It is expected that there will be greater use of natural gas for the purposes of electric generation on the NIPSCO system. Electric generation load has unique characteristics that can require very high take rates over short periods of time with very little notice. The LNG facility is the ideal tool to help balance the system in these events and help avoid loss of customer service and / or pipeline penalties. This facility, in combination with the transmission projects proposed in this filing, can also assist in supporting NIPSCO's other large industrial customers.

Q28. How does LNG give NIPSCO flexibility in supply options?

A28. There are often pipeline outages when interstate pipelines do integrity management ("IM") work. One example of this occurred in October of 2012 when Natural Gas Pipeline Company's IM work caused two of NIPSCO's largest delivery points to be shut down for the month. During this outage NIPSCO was on the verge of vaporizing from the LNG facility to maintain pressures. More recently, LNG was used multiple times during the Polar Vortex of 2014 to mitigate risk associated with struggling interstate pipelines that serve the NIPSCO system and again in early 2019 to meet demand needs during cold winter days near/at design day conditions. Additionally, having another layer of protection from a supply standpoint allows NIPSCO to fully utilize contracted balancing services with interconnected interstate pipelines.

Q29. You previously stated that NIPSCO's customers benefit from line pack. Please describe line pack.

A29. When more gas enters the system from the interstate pipelines than is delivered to the customers, the gas is stored in the pipelines and the pressure in the pipelines increases. When more gas leaves than enters the system, gas stored in the pipeline is used and the pressure in the pipeline

decreases. Line pack is the amount of gas stored in the high pressure loop as the pressure ranges between about 350 PSIG and 550 PSIG. One significant limitation in line pack is its extreme short term availability. While the availability of stored gas from RCUGS and LNG can be planned weeks ahead, the availability of line pack is dependent on the pressure in the line at that moment in time and thus cannot be relied upon as a firm source of storage. Line pack is unique in that since pressure changes in the system are managed by the pressures supplied by the interstate pipelines, line pack is a no cost benefit NIPSCO is able to provide to its customers.

IMPACT OF GAS PLAN 1 PROJECTS.

Q30. Have the projects in Gas Plan 1 positively impacted the operation of NIPSCO's gas system.

A30. Yes. The work performed as part of Gas Plan 1 has helped to reduce risk through pipeline replacements, increased compatibility with ILI, and generally upgraded many system assets. Additionally, as I discuss below, Gas Plan 1 projects have also laid the groundwork for future projects (including those incorporated into the 2020-2025 Gas Plan) that will improve safety, deliverability, reliability, and supply diversity to current and future customers.

Q31. Please summarize the benefits to the NIPSCO system from Gas Plan 1.

A31. Broadly, Gas Plan 1 advanced a wide range of projects including improvements to NIPSCO's on-system storage facilities, expansion of service into rural areas, and replacement of uncoated steel pipeline. More specifically, station equipment and control systems have been upgraded to newer, supported technologies that should improve reliability and reduce maintenance into the future. Multiple pipelines that crossed over waterways or were exposed underwater were bored underneath the ground to reduce atmospheric corrosion and physical damage risks. The 20" line over the Indiana Harbor ship canal, the Burns Ditch crossing, Eel River crossing, and St. Mary's River Crossing are just a few that benefitted from the Gas Plan 1 crossings project.

Q32. Please explain the benefit to the NIPSCO system associated with the Stateline to Highland Junction Project.

A32. The replacement of the 22"/36" pipeline from the Illinois state line to Highland Junction with 24" pipeline, as shown in Figure 1, has permitted

Figure 1: Installation of the 24" pipeline

the retirement of some at-risk pipeline, allowed for ILI ("pigging"), and the compilation of enhanced documentation of construction, specifications, and testing. As a result, this pipeline can now be inspected with the latest technologies while at the same time minimizing impact to customers. Additionally, antiquated equipment was removed at Highland Junction to improve operation and reduce risk. Inspection facilities were also installed at the Illinois state line on the 30" pipeline to prepare for future inspections.

Q33. What is ILI and why is it important?

A33. ILI, or also known as "pigging", is a procedure where pipeline operators can insert tools into pipelines for maintenance and inspection. Although

there are a few methods to move these tools down the pipeline, the preferred method is to push these tools through pipelines using the flow of gas. There are several tool designs that can be used to accomplish different goals. Cleaning pigs are used to remove liquids or debris from the pipeline, while gauge pigs are used to ensure the more sophisticated smart tools can pass through without damage. Smart tools or "Smart pigs" are equipped with a range of sensors and other electronics that can identify characteristics and issues with the pipeline from the inside of the pipeline rather than requiring excavation and service interruption. These devices can also be used upon completion of construction to inspect the new line and create a baseline for future inspections. Attachment 4-C is a series of photos showing an assortment of ILI tools that can be used for a variety of maintenance, assessment, and investigational purposes.

Q34. Were other lines made ILI compatible as a result of Gas Plan 1?

A34. Yes. Inspection facilities were also constructed across the NIPSCO system, notably on the dual 30" lines from North Hayden to Tassinong, see Figures 2 and 3. This allowed NIPSCO to use smart tools to inspect these lines to look for mechanical damage, corrosion, stress corrosion cracking, and installation defects. This revealed minor issues consistent with the vintage

of the pipeline, but also uncovered some serious mechanical damage under a ditch line that otherwise may not have been found, resulting in the removal and replacement of the damaged pipeline section.

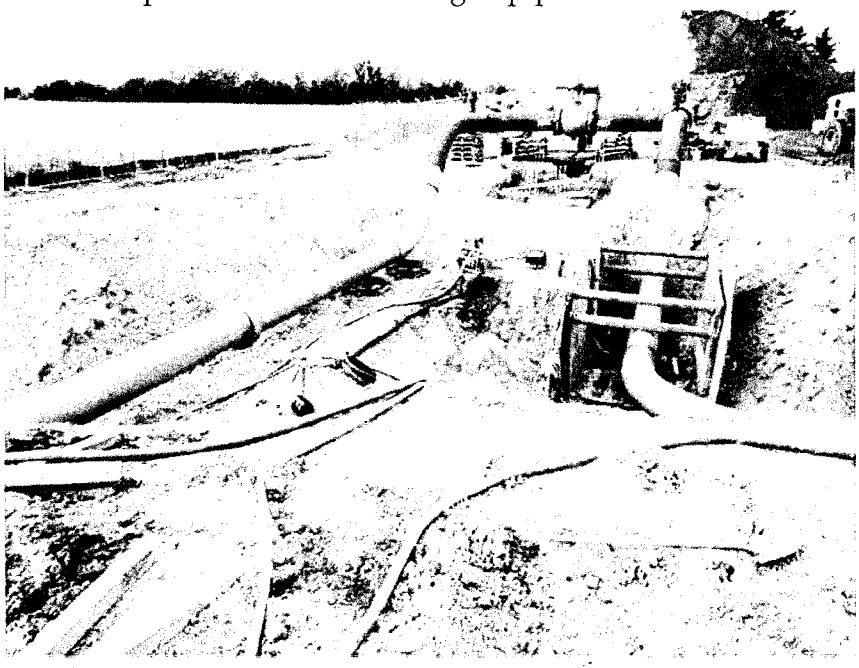


Figure 2: Installation of ILI Facilities

Figure 3: In-service ILI Facilities

Attachment 4-D shows examples of pipeline anomalies on the NIPSCO system identified through ILI installed as part of Gas Plan 1. In addition, the 24" pipeline from Royal Center to Laketon was made ILI compatible in 2017, and was inspected in June to August of 2018 to check for issues that might impact safety and reliability. This allowed NIPSCO to proactively identify several pipeline risks and develop plans to make repairs and replacements reducing the risk that could have otherwise resulted in emergency response and potential customer impact.

Q35. What benefit to the NIPSCO system is provided by the Aetna to LaPorte Project in Gas Plan 1?

A35. The 22" pipeline from Aetna to LaPorte has been paralleled with a new 24" pipeline as part of Gas Plan 1. The new 24" pipeline is a part of the 600 PSIG transmission loop and is operated at a higher pressure than the 22" pipeline it parallels. This has provided increased pressure support for some customers while also providing a path for a high pressure back-feed into the 483 PSIG system. In the future, the 22" pipeline currently operated at a 295 PSIG MAOP will be de-rated to a lower pressure rather than retired. Lower pressure operation will reduce risks associated with legacy construction techniques and testing methodology while also providing a

parallel path to provide gas to NIPSCO's distribution customers in the event of scheduled or unscheduled maintenance on the new 24" pipeline in the future.

Q36. Please explain the benefit of the Highland Junction to Grant Street project in Gas Plan 1.

A36. A portion of the 295 PSIG system is comprised of parallel 36" and 30" diameter pipelines beginning at Highland Junction and continuing to the current Aetna Station in Gary, Indiana where it connects to the 22" portion of the system that further continues to the South Bend, Indiana area. Those current parallel lines feed a regulator station at Grant Street and allow gas from the 295 PSIG system to flow south toward Crown Point, Indiana along a 16" diameter pipeline. The 30" from Highland to the current Grant Street Station will be upgraded and recommissioned to allow for the retirement of the parallel 36". A new Grant Street Station will then feed the 16" diameter pipeline to Crown Point, Indiana, and new regulator stations are being constructed to supply the existing distribution systems.

TRANSITION FROM GAS PLAN 1 TO THE 2020-2025 GAS PLAN

Q37. What impacts will the 2020-2025 Gas Plan investments NIPSCO Bull describes have on the overall operation of the NIPSCO gas system?

A37. The 2020-2025 Gas Plan continues NIPSCO's replacement of at-risk facilities and builds upon some of the work completed or in process from Gas Plan 1.

Q38. Has completion of the Aetna to LaPorte transmission line permitted NIPSCO to complete other work in the 2020-2025 Gas Plan?

A38. Yes. Two of the transmission projects in the 2020-2025 Gas Plan, Projects TP10 (Aetna to Tassinong) and TP11 (Aetna to 483# System), can be completed and provide benefits to NIPSCO's customers now that the Aetna to LaPorte project is in service. While those projects could potentially have been performed prior to that time, those pipeline segments would have provided very limited operational and customer benefits until the Aetna to LaPorte line is in service. TP10, TP11, and the Aetna to Laporte project form an interconnected network and a sub-portion of the 600PSIG system commonly referred to as the 600PSIG "Mini-Loop." This is further discussed below.

Q39. Have you prepared an attachment that shows the progression of projects from Gas Plan 1 through the 2020-2025 Gas Plan?

A39. Yes. Attachment 4-E is a graphic representation of the progression of TDSIC transmission projects that depicts the sequence of the projects to be completed to realize the overall system operational benefit. The first slide shows the NIPSCO transmission systems as it existed before Gas Plan 1. Slide two shows through the end of Gas Plan 1. Slide three shows the progression of transmission projects to the end of the 2020-2025 Gas Plan. Slide four shows the overview of the entire NIPSCO transmission system at the end of the 2020-2025 Plan.

Q40. Please explain that progression.

A40. The secondary feed into the 483 PSIG system is intended to provide another route for gas to flow into that portion of our system that serves residential, as well as, some of the largest industrial customers. These large customers are vital to the economy of the area and are dependent upon reliable delivery of large volumes of gas on a 24 hours a day, 7 days a week, 365 days a year basis. This back-feed will also provide a path for gas from all Zone A pipelines to physically reach the 483 PSIG system that supplies these customers and will also provide access to other pipelines carrying shale gas supplies coming from the East. In order to push gas into this system, the pressure must be higher than that of the operating pressure of

the current 483 PSIG system thereby necessitating an expansion of the 600 PSIG loop to serve the pressure requirements. The installation of the 24" pipeline from Aetna to LaPorte was completed in 2018, permitting NIPSCO to continue other projects leading to the back-feed to the 483 PSIG system.

Q41. Were completion of Projects TP11 and TP12 delayed from the original Gas Plan 1?

A41. Yes. Had the Aetna to LaPorte work not been completed first, the back-feed into the 483 PSIG system would have lacked the pressure necessary to provide for deliveries, thereby defeating the purpose of that line. Delaying those projects also permitted further analysis that determined that the pipeline size from Tassinong to Aetna should be increased from 16" to 24" while adding a new interstate pipeline point of delivery ("POD") to support the 600 PSIG loop and provide the additional flow necessary to accommodate additional demand from the 483 PSIG system. This results in a better system solution that is also more cost effective. It is more cost effective because it avoids the need for a separate project in the future that could have entailed the installation of an additional pipeline to provide the required additional capacity.

Q42. Does the 2020-2025 Gas Plan continue to expand ILI compatibility on the NIPSCO system?

A42. Yes. Upon completion of the projects included in Gas Plan 1 through December 31, 2018, 18% of NIPSCO's transmission pipeline is now ILI compatible as opposed to 1% before Gas Plan 1. Upon final completion of the projects included in Gas Plan 2 and projects approved under Ind. Code 8-1-8.4 (the FMCA Statute), approximately one-third of NIPSCO's transmission pipeline will be ILI compatible.

Q43. Please summarize other benefits of the 2020-2025 Gas Plan.

A43. Upon completion of the projects in Gas Plan 1 and the 2020-2025 Gas Plan, the NIPSCO system will have increased operational flexibility, less pipeline integrity risk, and provide more supply availability for customers. The additional POD station along the Tassinong to Aetna 24" will provide another connection that can potentially be used to receive shale gas. The Aetna to 483 PSIG system back feed will provide redundancy to an extremely important portion of our system, and will also allow gas from all of the Zone A pipelines to reach facilities served from the 483 PSIG system. Additionally, the 483 PSIG system can also benefit from the pressure support provided by the LNG plant that previously could only serve the

600 PSIG loop and its downstream pressure systems. The upgrade and recommissioning of the 30" from Highland Junction to Grant Street, the Aetna to LaPorte 24", and the Tassinong to Aetna 24" pipelines will allow the retirement or repurpose of the 30" and 36" laterals between Highland Junction and Aetna. Finally, by replacing pipeline that previously could not be inspected via ILI, it allows us to inspect the pipeline in the future with the latest technologies and minimize impact to customers.

Q44. Does this conclude your prepared direct testimony?

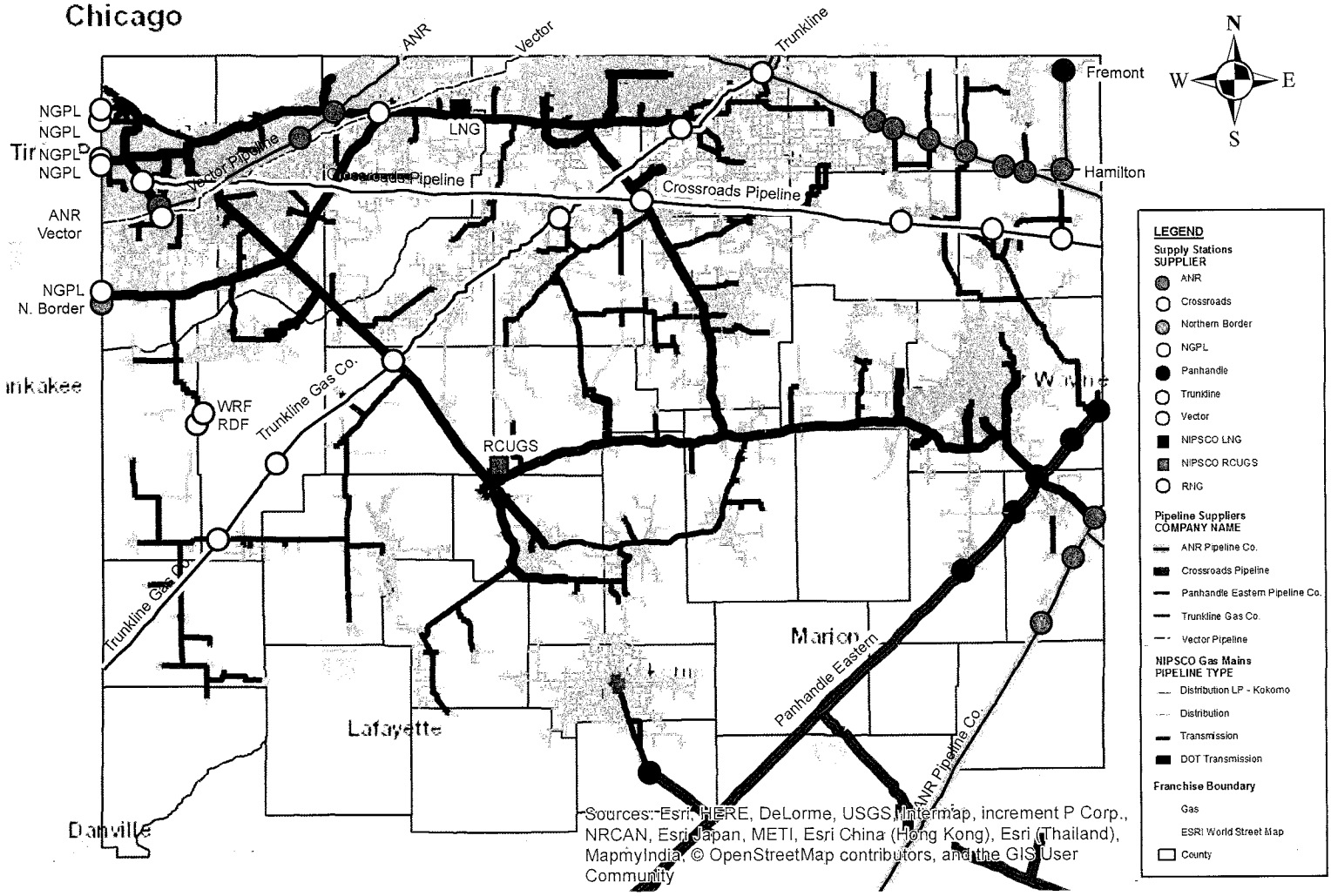
A44. Yes.

VERIFICATION

I, Adam S. Wittorp, Manager of Gas Control of Northern Indiana Public Service Company LLC affirm under penalties of perjury that the foregoing representations are true and correct to the best of my knowledge, information and belief.

Adam S. Wittorp

Dated: December 31, 2019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Trunkline Gas Co.
Lafayette
Marion
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Danville
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Crossroads Pipeline
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Trunkline Gas Co.
Vector Pipeline
NIPSCO Gas Mains
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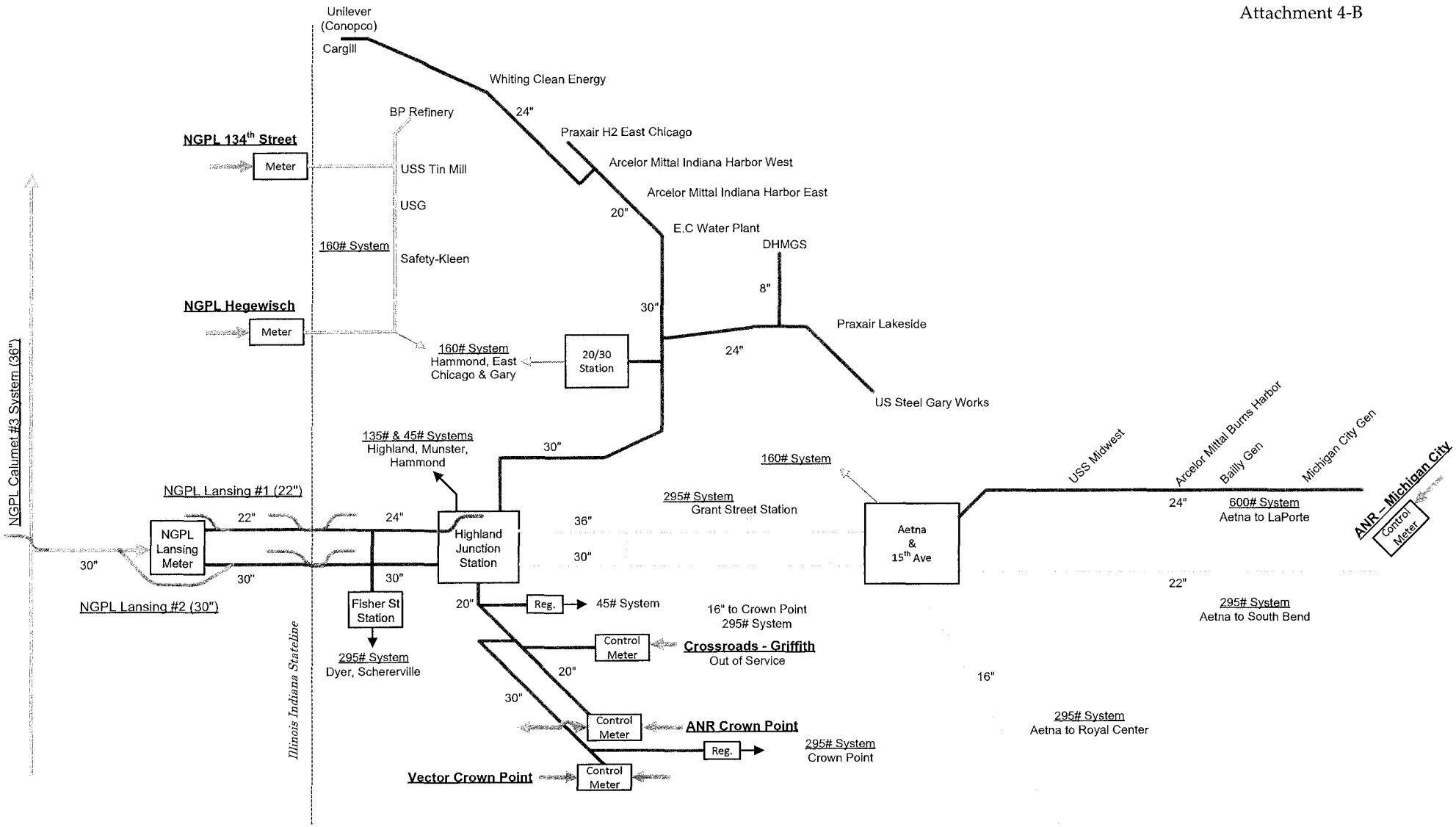
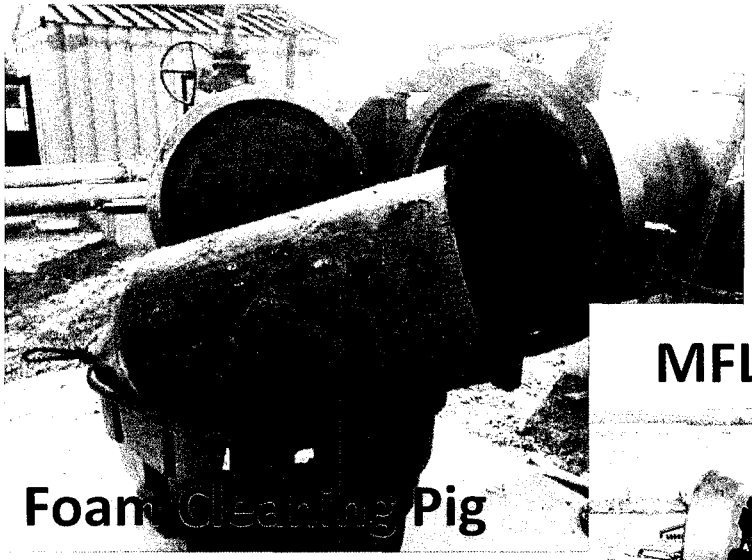
Transmission
DOT Transmission
Franchise Boundary
Gas
ESRI World Street Map
County
Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Attachment 4-B

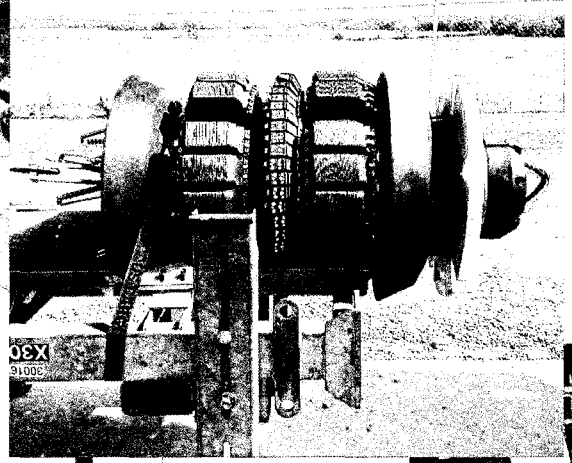


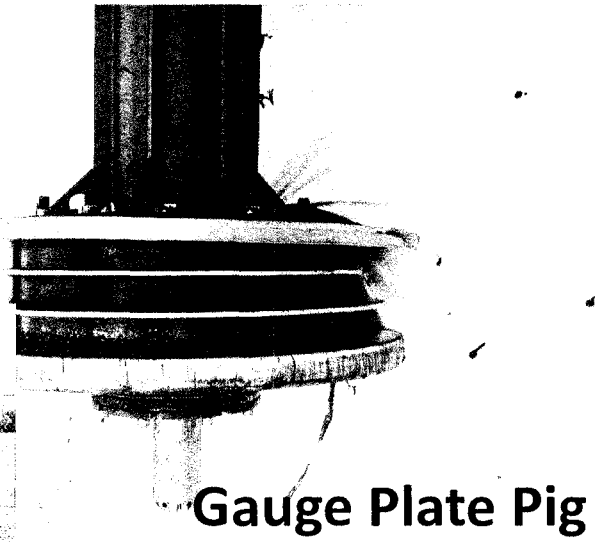
Examples of ILI Tools (Pigs)



Foam Cleaning Pig

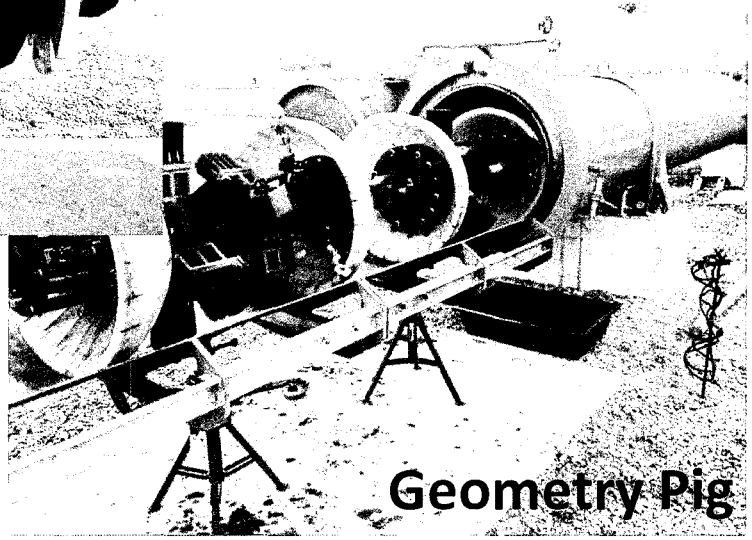
MFL (Smart Pig)





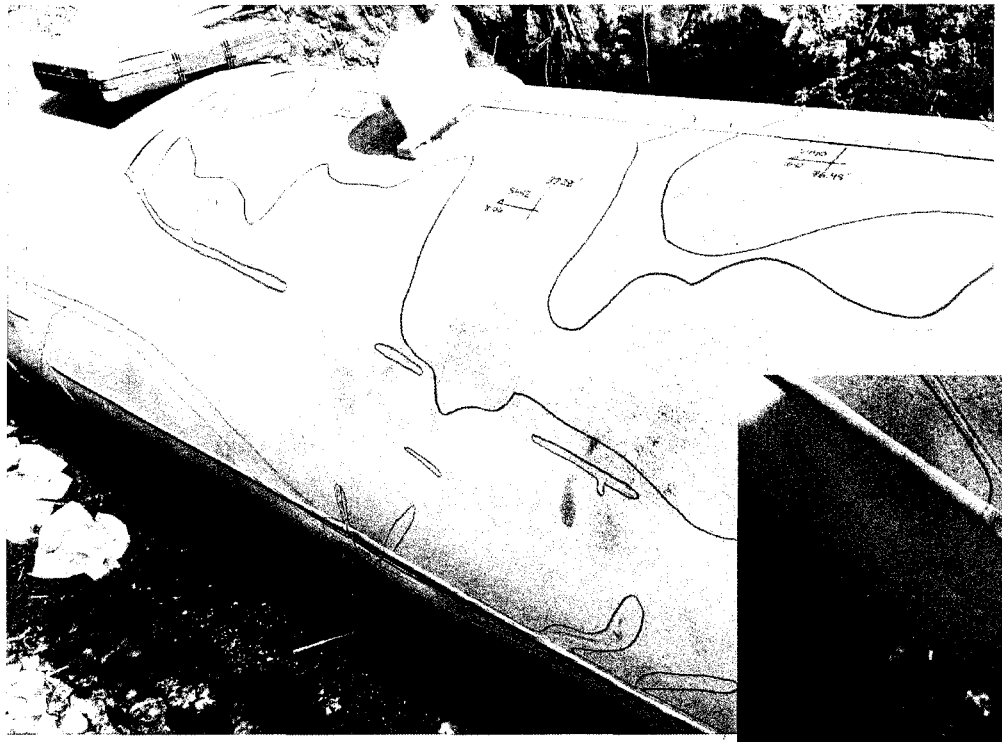
Gauge Plate Pig

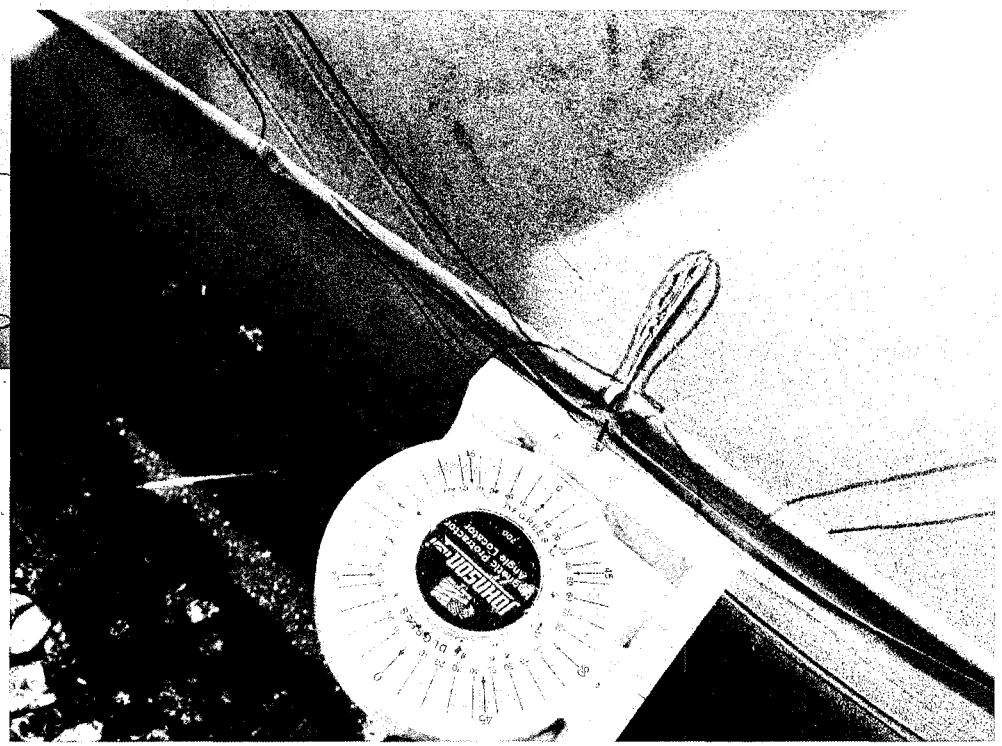
Brush Cleaning Pig



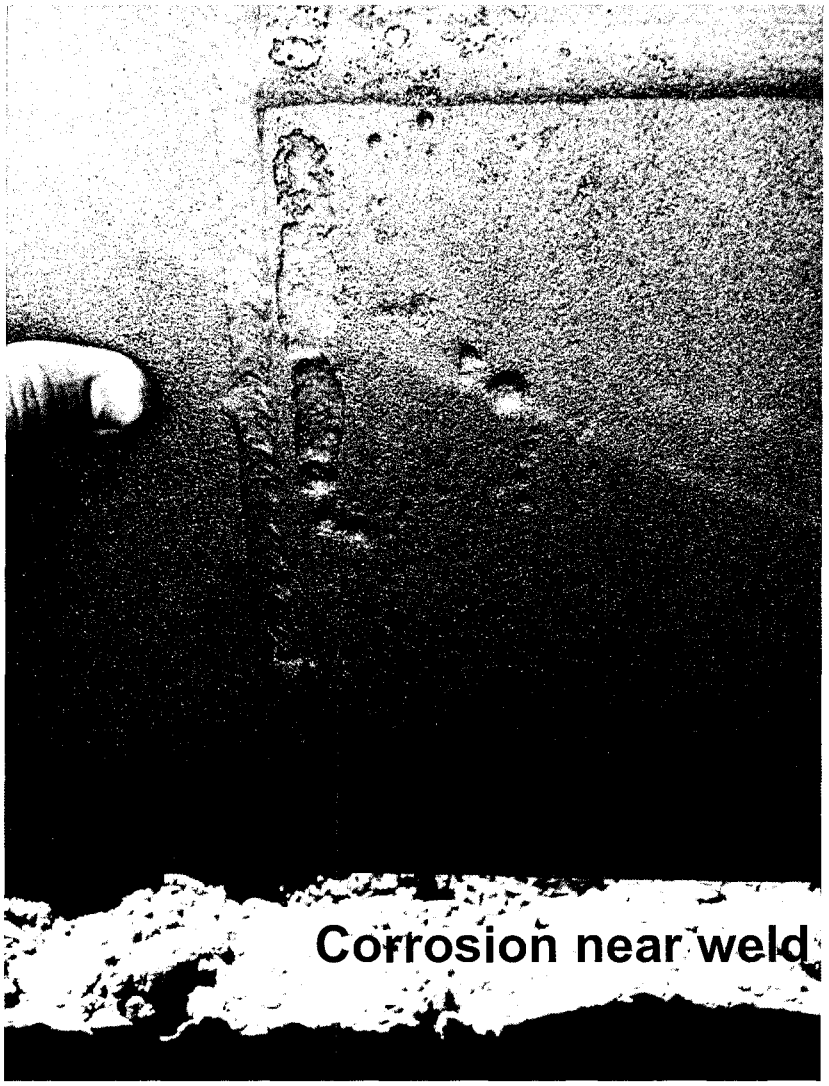
Geometry Pig

Mechanical Damage and Corrosion Discovered by ILI



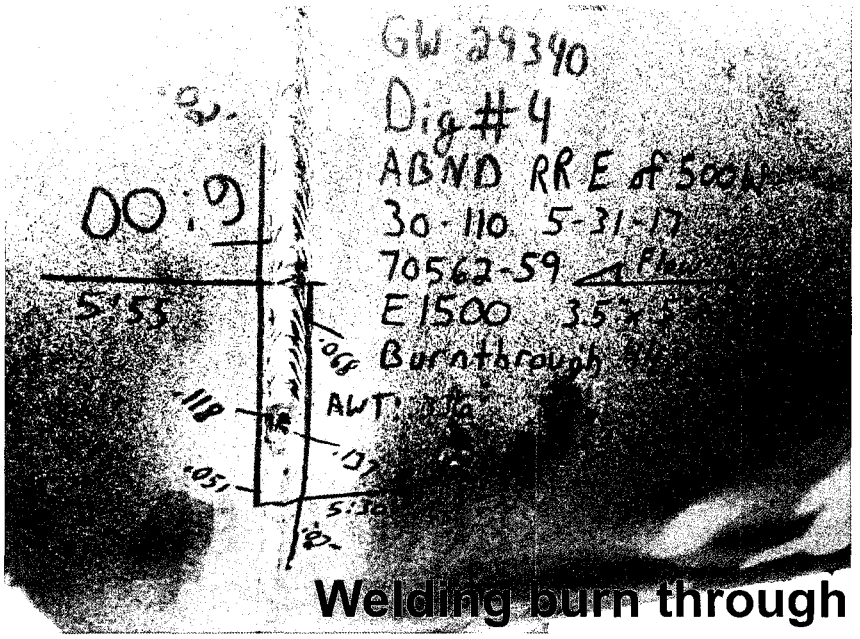


Defects Detected by In Line Inspection



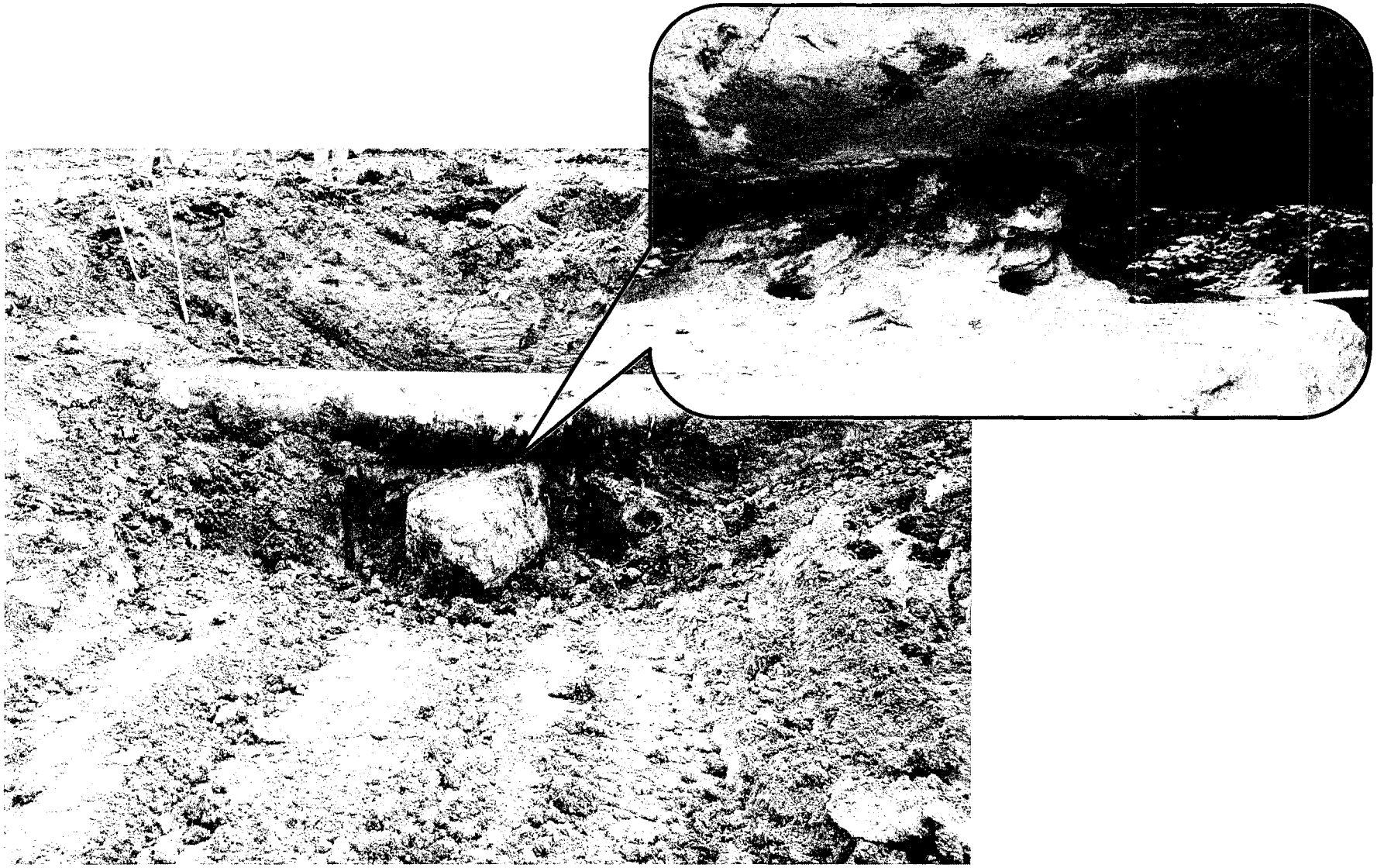
Corrosion near weld

Crack in weld

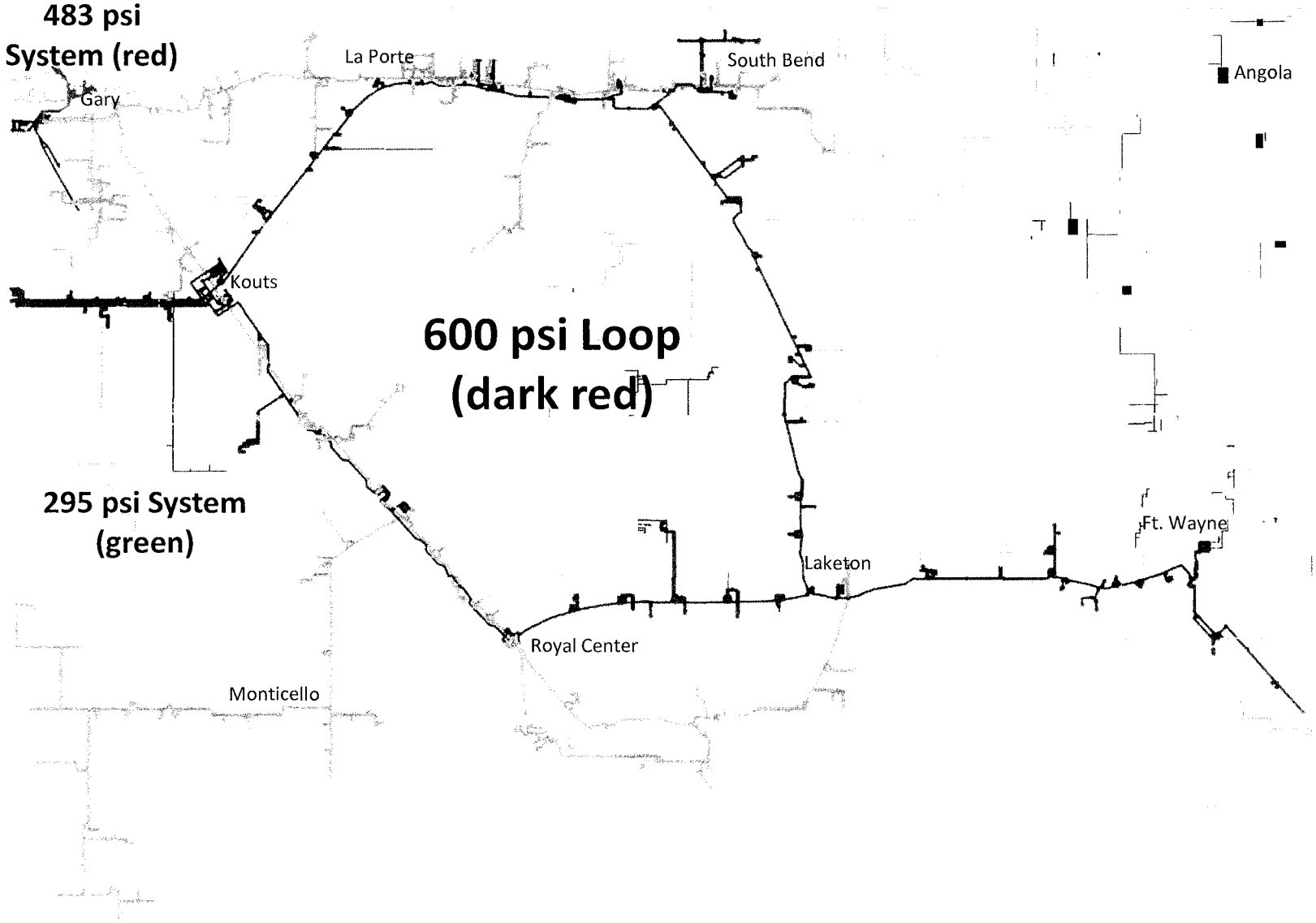


Welding burn through

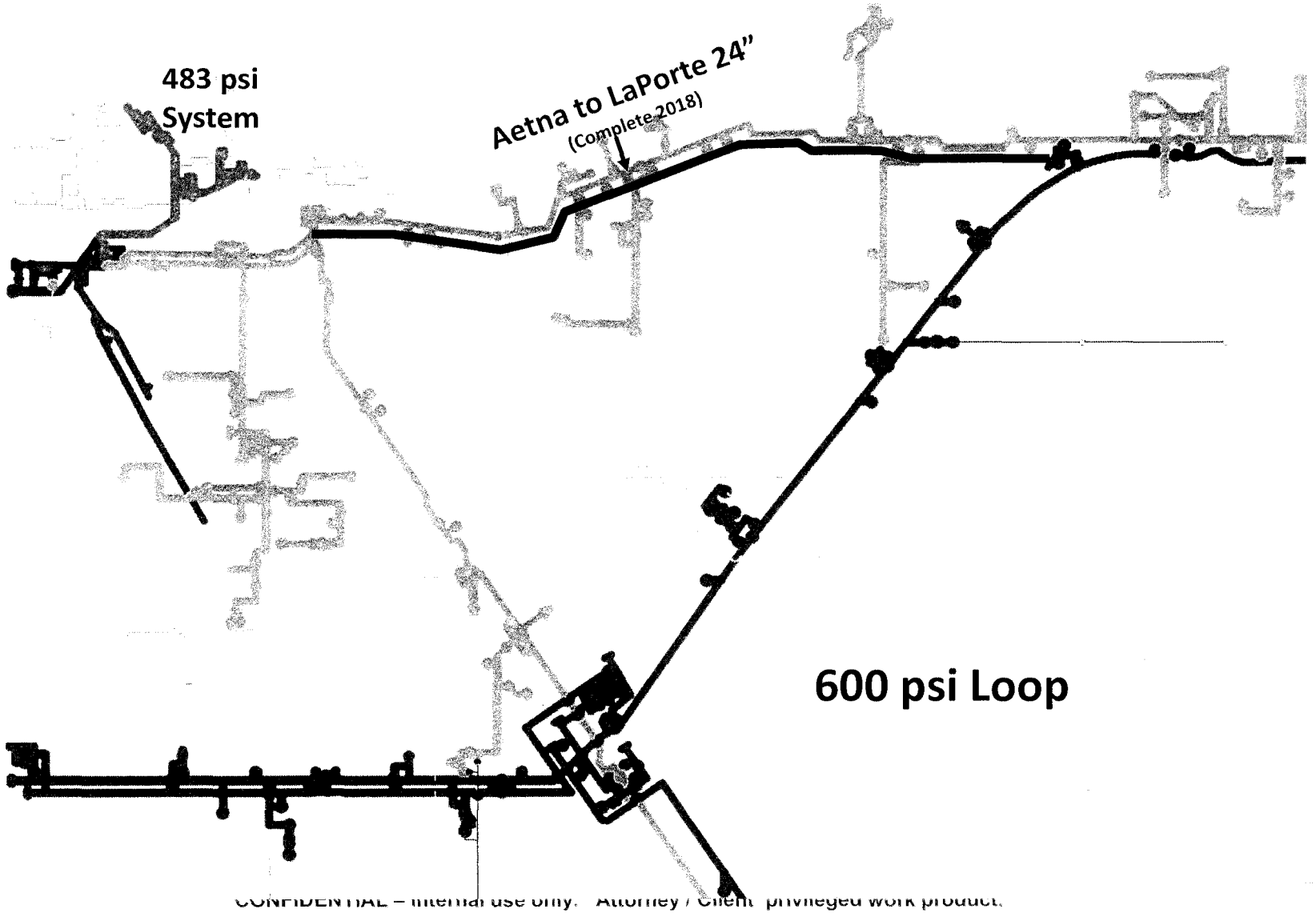
Pipe Dent Detected through ILI



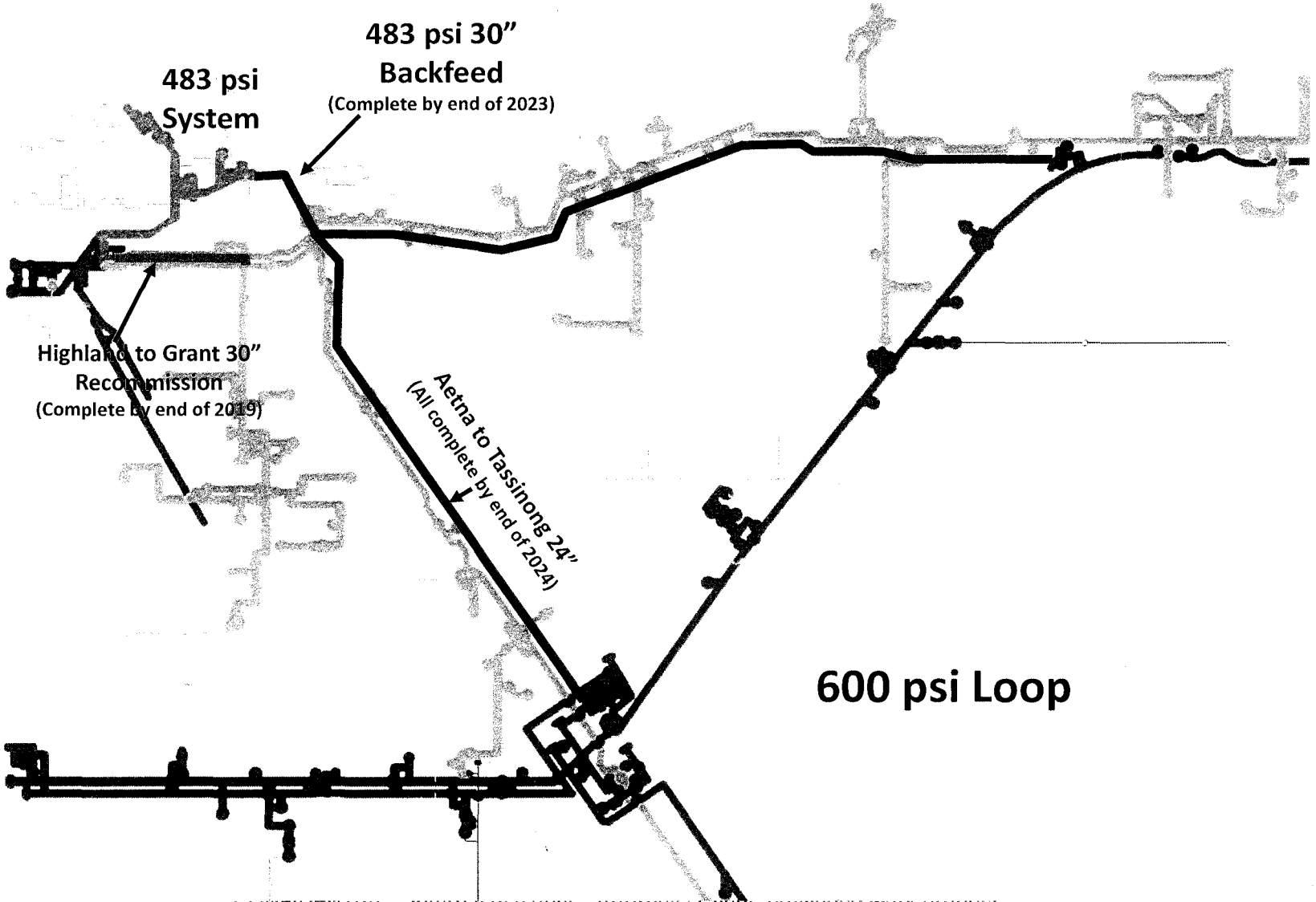
Overview of NIPSCO Transmission System Before TDSIC



Gas Plan 1 Pipeline Installation



2020-2025 Gas Plan Pipeline Installation



Overview of NIPSCO Transmission System w/Mini-Loop