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**A Report by the Staff of the
Public Utilities Commission of Ohio**

In the Matter of the Investigation of
Columbia Gas of Ohio, Inc. Relative to its
Compliance with the Natural Gas Pipeline
Safety Standards and Related Matters.

Case No. 19-0452-GA-GPS

February 22, 2019

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**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Investigation of)	
Columbia Gas of Ohio, Inc. Relative to its)	Case No. 19-0452-GA-GPS
Compliance with the Natural Gas Pipeline)	
Safety Standards and Related Matters.)	

To the Honorable Commission:

Staff has conducted an investigation in the above matter and hereby submits its findings and recommendations in this Gas Pipeline Safety Staff Report.

The findings and recommendations reached in this Staff Report are presented for the Commission's consideration and do not purport to reflect the views of the Commission, nor should any party consider the Commission as bound in any manner by the findings and recommendation set forth herein.

Respectfully submitted,



Robert P. Fadley
Director
Service Monitoring and Enforcement Department

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I. Background

Columbia Gas of Ohio, Inc. (Columbia) provides natural gas service to more than 1.385 million customers through 20,011 miles of pipeline. Columbia is a natural gas company¹ subject to the jurisdiction of the Public Utilities Commission of Ohio (Commission) under Title 49 of the Ohio Revised Code (R.C.) and rules adopted by the Commission in the Ohio Administrative Code (Ohio Adm.Code).²

Among other things, the Commission's rules adopt the federal gas pipeline safety regulations contained at 49 C.F.R. 40, 49 C.F.R. 191, 49 C.F.R. 192, and 49 C.F.R. 199 (Pipeline Safety Regulations).³ The Pipeline Safety Regulations require gas pipeline operators to provide notice of an "incident" to appropriate regulatory authorities.⁴ Therefore, this case was initiated after the Commission's Gas Pipeline Safety Staff (Staff) was notified by Columbia and subsequently conducted an investigation of a house fire at 4149 Case Road, Avon, Ohio that occurred on August 2, 2017.

Staff has concluded that the house fire which occurred at 4149 Case Road, Avon, Ohio was caused by a release of natural gas from an improperly abandoned natural gas service line that was damaged due to excavation. The line was improperly abandoned in June of 2010 and was still pressurized with gas. Columbia also failed to provide accurate pipeline facility location information to a line locating contractor (Utilquest) leading to a failure to mark the line prior to underground excavation.

II. Summary of Events Leading to the Natural Gas Incident

Between 1975 and 1979, the property owner of 4149 Case Road in Avon installed a two-inch plastic service line to supply gas to a greenhouse on the property.⁵ The service line was constructed using polyethylene (PE) plastic manufactured in 1975 by Celanese⁶ meeting the

¹ See R.C. 4905.03(E).

² See, e.g., Ohio Adm.Code 4901:1-16.

³ See Ohio Adm.Code 4901:1-16-03.

⁴ See 49 C.F.R. 191.5.

An "incident" under 49 C.F.R. 191.3 includes: "(1) An event that involves a release of gas from a pipeline... and that results in one or more of the following consequences: ... (ii) Estimated property damage of \$50,000 or more..."

⁵ Staff concludes that the line was installed sometime between its manufacture in 1975 and April 31, 1979, the date on the service line order attached as Appendix I: Exhibit 8.

⁶ The inscription on the two-inch pipeline indicates it was manufactured in 1975. See Appendix I: Exhibit 9.

pipe specifications of American Society of Testing and Materials (ASTM) D2513. Columbia has no records showing when the tap for this service line was installed or when gas was first supplied to this service line.⁷

Columbia records show that on or about May 1, 1979,⁸ a survey was made of the service line at 4149 Case Road. The service line order (Tap Card) is designated as one created by "survey" instead of "installation," so the lines had already been present before the Tap Card was created.⁹ This Tap Card is the only record of a service line existing at the property. The Tap Card describes a system with two meters on it. This Tap Card and Columbia work order records describe a system with one one-inch polyethylene plastic service line supplying gas to two meters located at the residence at 4149 Case Road, a residential meter and a second commercial meter. Columbia work order records indicate these were manifold meters (meters fed from a common source of supply located on the same meter setting) and generally show the residential meter was supplied from a one-inch line while the commercial meter was supplied from a two-inch line, however on some work order records the size of the lines are reversed. The Tap Card uses a "+" to identify the primary meter, and a "*" to designate the secondary meter. There are no other Columbia records showing the presence of a second service line at the property, and the property Tap Card does not show the service line extending to the former greenhouse. The commercial meter at the former greenhouse was not supplied from the service line described on the property Tap Card, but instead supplied from a two-inch service line off a second tap approximately 8 feet away from the residential meter tap.

On November 8, 2012, gas service to the greenhouse was discontinued.¹⁰ The meter at the greenhouse was removed and a locking device was installed at the meter stop. The two-inch service line was not disconnected from the distribution main and remained pressurized at 42 psig.¹¹

In July of 2017, the current homeowner employed Kyle's Excavating to install a new water service line at the property.¹² Representatives from Kyle's Excavating contacted the Ohio Utility Protection Service (OUPS) on July 15, 2017 in order to have gas lines in the work area marked prior to excavation activities as required by R.C. 3781.28.¹³

⁷ See Columbia Incident Report # 20170075-16707; Part H, at page 9, attached as Appendix I: Exhibit 3.

⁸ The service line order attached as Appendix I: Exhibit 8 lists the date as April 31, 1979, which Staff noted as an inaccuracy, as there are only 30 days in April.

⁹ See Columbia Service Line Order for 4149 Case Road, attached as Appendix I: Exhibit 8.

¹⁰ See Columbia Service History for 4149 Case Road, attached as Appendix I: Exhibit 11 at page 3.

¹¹ See Appendix I: Exhibit 11 at page 3.

¹² See Statement of Robert J. Simoneau Jr., attached as Appendix I: Exhibit 2, at page 1.

¹³ See Statement of Kyle Urig, Appendix I: Exhibit 1 at page 2.

On July 27, 2017, a Utilquest¹⁴ employee responded to the locate request and correctly marked a four-inch steel gas main and the one-inch polyethylene plastic service line providing gas directly to the residential property.¹⁵ The abandoned two-inch plastic service line in question did not appear on the maps or records provided to Utilquest by Columbia and was therefore not marked on the property. The abandoned service line was not installed with tracer wire for locating and the associated curb box was buried and not visible.

On Wednesday, August 2, 2017 at 1020 hours, a natural gas release occurred at the residence at 4149 Case Road in Avon, Ohio.¹⁶ The release was caused when an excavator damaged the unmarked two-inch plastic natural gas service line.¹⁷ At 1021 hours, the representative from Kyle's Excavating called 911 and was advised by the 911 operator to evacuate the area.¹⁸ The area was evacuated and the leaking gas ignited at approximately 1024 hours, causing a fire at the residence.¹⁹

At 1024 hours, the homeowner called 911 to report that the house was on fire.²⁰ The Avon Fire Department received the first alarm at 1024 hours, and arrived at 1031 hours.²¹ At 1034 hours, Columbia was notified by the Avon Fire Department and at 1121 hours arrived on the scene.²² At 1300 hours, Columbia used a squeeze-jack to stop the flow of gas in the plastic pipe by pinching the pipe together, which eliminated the flow of gas and extinguished the fire.²³ At 1331 hours, the Avon Fire Department cleared the scene.²⁴

III. Staff Investigation

When a gas-related incident occurs, Staff conducts an investigation concurrently and in cooperation with the natural gas company. The purpose of the investigation is to determine the root cause of the incident and to identify steps to be taken to prevent similar incidents from

¹⁴ Columbia uses "Utilquest," a private contractor, to locate and mark lines in response to requests through the one-call system.

¹⁵ See PUCO Natural Gas Pipeline Failure Incident Report for 4149 Case Road, attached as Appendix I: Exhibit 10 at page 9.

¹⁶ *Id.*

¹⁷ See Appendix I: Exhibit 1 at page 1.

¹⁸ See Appendix I: Exhibit 10 at page 9.

¹⁹ *Id.*

²⁰ See Appendix I: Exhibit 10 at page 9.

²¹ *Id.*; Appendix I: Exhibit 4.

²² *Id.*; Appendix I: Exhibit 4.

²³ See Appendix I: Exhibit 10 at page 10.

²⁴ *Id.*

occurring in the future. In this case, Staff's focus was on Columbia's actions, policies, and procedures and if they contributed to the incident.

Columbia has no records of the installation of the service line in question. The Columbia Operation and Maintenance procedures in effect between 1975 and 1979 required that a service line order form be completed for any work on a Columbia service line. The service line order form records information about the components used and location of the one-inch service line. No service line order form exists in Columbia's records for the two-inch service line, which had been feeding the old greenhouse at 4149 Case Road, Avon, Ohio. This failure to record the existence of the service line contributed directly to the incident.

Columbia's Operation and Maintenance procedures GS 1740.010 "Abandonment of Facilities" states: "When abandoning service lines, the piping must be disconnected from the gas supply and customer's house lines, and the abandoned pipe end(s) sealed." As a result of Columbia's failure to record the existence of the two-inch service line, this procedure was not followed when service to the greenhouse on the property was discontinued on November 8, 2012. On August 2, 2017, the two-inch idle service line was still connected to the main and remained pressurized at 42 psig, which is the operating pressure of the associated main.

Columbia Job Order 12-9977763-00 describes work performed at 4149 Case Road, Avon on November 8, 2012. The job order contains instructions to abandon the service line, however a note on the job order record reads "Meter abandon (greenhouse torn down) Tap being used for house."²⁵ Based on the notes on the job order, Staff concludes that the Columbia employees performing the work made an assumption that the greenhouse and home on the property were being supplied by a manifold meter system on the same service line. The Columbia Tap Card showed a single service line connecting the main to a meter at 4149 Case Road but did not show an extension of the service line to the abandoned greenhouse. In reality, the greenhouse and the home were supplied by two taps and two roughly parallel service lines running approximately five to eight feet apart from each other.

Based on the information presented by Columbia in this matter, it appears that the Tap Card was most likely not checked prior to abandoning the service line. Columbia procedures do not require the review of tap cards at a property address prior to disconnection. If it had been checked, the fact that no service line extension was shown on the Tap Card could have prompted further investigation of the status of the piping on the property.

Staff also notes that Columbia took approximately 45 minutes to arrive at the scene once contacted by the Avon Fire Department, and was at the scene of the fire for approximately one

²⁵ See Appendix I: Exhibit 11 at page 3.

hour and 40 minutes before it stopped the flow of gas that was feeding the fire. Staff's investigation revealed that the Columbia employees at the scene assumed the two-inch damaged service line was associated with a local production operation and did not want to take action to stop the flow of gas on a pipeline that they presumed was not owned by Columbia.

On August 16, 2018, Staff issued a Notice of Probable noncompliance (PNC) to Columbia, finding that Columbia failed to locate the abandoned two-inch plastic service line in question while responding to the locate request ticket made through the Ohio Utilities Protection Service. In the PNC, Staff identified the following probable noncompliance with portions of the federal pipeline safety regulations found in sections: 49 C.F.R. 192.13(c), 192.613(a), 192.614(c), 192.703(c), and 192.727(b).

Also on August 16, 2018, Staff issued a Compliance Order to Columbia, ordering Columbia to complete four compliance actions within thirty days and two actions within ninety days.

On September 24, 2018, Columbia responded to Staff's Compliance Order and indicated that it had completed the required thirty-day compliance actions.

On November 14, 2018, Columbia submitted its second response to Staff's Compliance Order, indicating it was in compliance with Staff's ninety-day compliance actions.

After reviewing Columbia's responses to Staff's Compliance Order, Staff has determined that Columbia satisfied the directives in the Compliance Order.

IV. Discussion of Violations

After reviewing the results of the investigation, Staff concludes that the following violations of the Pipeline Safety Regulations (49 C.F.R. 192) caused or contributed to this incident:

49 C.F.R. 192.13 *(c) Each operator shall maintain, modify as appropriate, and follow the plans, procedures, and programs that it is required to establish under this part.*

Columbia did not follow its Operation and Maintenance procedure GS 1740.010 "Abandonment of Facilities."²⁶ Section 3.2 "Abandoning Service Lines" states "When abandoning service lines, the piping must be disconnected from the gas supply and customer's house lines, and the abandoned pipe end(s) sealed." Columbia employees removed the meter from the greenhouse, but did not disconnect the abandoned two-inch service line from the gas supply.

²⁶ See Appendix I: Exhibits 5-7.

49 C.F.R. 192.613 *(a) Each operator shall have a procedure for continuing surveillance of its facilities to determine and take appropriate action concerning changes in class location, failures, leakage history, corrosion, substantial changes in cathodic protection requirements, and other unusual operating and maintenance conditions.*

Columbia failed to identify the unusual operating conditions at 4149 Case Road, Avon, Ohio and take appropriate action between 1979 and 2017. The Columbia Tap Card dated 1979 describes a service line to two separate meters and two separate accounts. However, the map on the Tap Card shows a single service line extending to the location of the meter at the residence and nothing extending to the former greenhouse approximately 200 feet away. The Tap Card also shows the service line to the meter at the residence was a one-inch plastic line, but the meter at the greenhouse was connected to a two-inch riser. These descriptions are inconsistent and identifiable while performing leak surveys, meter reads, a riser replacement in 1998, and during meter abandonment in 2012.

49 C.F.R. 192.614 *(c) The damage prevention program required by paragraph (a) of this section must, at a minimum:*

(5) Provide for temporary marking of buried pipelines in the area of excavation activity before, as far as practical, the activity begins.

Columbia failed to mark a two-inch idle service line at 4149 Case Road, Avon, Ohio after receiving notice of an intent to excavate in the area through the OUPS one-call system. The company's records did not indicate the existence of the two-inch idle service line, instead identifying a tandem line stretching from the original service line and residential meter to the greenhouse.

49 C.F.R. 192.703 *(c) Hazardous leaks must be repaired promptly.*

Columbia failed to promptly repair the hazardous leak involved in this matter when it took approximately 45 minutes to arrive at the scene after being contacted by the fire department and then approximately one hour and 40 minutes to stop the flow of gas once responders arrived.

49 C.F.R. 192.727 *(b) Each pipeline abandoned in place must be disconnected from all sources and supplies of gas; purged of gas; in the case of offshore pipelines, filled with water or inert materials; and sealed at the ends. However, the pipeline need not be purged when the volume of gas is so small that there is no potential hazard.*

Columbia failed to physically disconnect the service line from the gas supply when abandoning the two-inch idle service line at 4149 Case Road, Avon, Ohio. The meter was removed, but the line was not purged and the pipe was not disconnected from the source of gas. The employees of Columbia failed to notice that the line they were disconnecting was a two-inch service line, while the meter attached to the residence was a one-inch service line, a situation that indicated there had to be a second service line.

V. History of Noncompliance and Related Violations

This recent incident is one in a series of violations arising out of Columbia's failure to maintain records of its pipeline system. Staff conducted a review of previous instances of violations of the Pipeline Safety Regulations cited against Columbia issued over the past three years. Columbia received eight citations over the previous three years, six of which were related to poor or nonexistent records documenting the physical location of Columbia lines.

On February 20, 2015, Columbia was cited for inaccurately identifying two segments of distribution main piping in Norwalk, Ohio as customer-owned piping.²⁷

On June 30, 2015, Columbia was cited for a failure to accurately mark a distribution main in Sunbury, Ohio.²⁸ One of the causes of this failure was inaccurate records regarding the line location.

On June 23, 2015, Columbia was cited for a failure to properly abandon a service line that resulted in a home explosion at 3418 Sunningdale Way, Upper Arlington, Ohio. The investigation of this explosion is documented in Commission Case No. 15-1351-GA-GPS.

On June 13, 2016, Columbia was cited for a failure to accurately locate underground gas lines in Oberlin, Ohio.²⁹ System maps maintained by Columbia were inaccurate and showed incorrect line locations.

On February 15, 2017, Columbia was cited for a failure to accurately locate underground gas lines that led to excavation damage and a fire at 2845 West Broad Street, Columbus, Ohio.³⁰

²⁷ See Notice of Probable Non-compliance issued February 20, 2015, attached as Appendix I: Exhibit 12.

²⁸ See Notice of Probable Non-compliance issued June 30, 2015, attached as Appendix I: Exhibit 13.

²⁹ See Notice of Probable Non-compliance issued June 13, 2016, attached as Appendix I: Exhibit 14.

³⁰ See Notice of Probable Non-compliance issued February 15, 2017, attached as Appendix I: Exhibit 15.

Maps maintained by Columbia were unclear, which resulted in an erroneous determination that gas pipelines were not present in the excavation area.

On December 5, 2017, Staff investigated a customer complaint and determined that Columbia failed to accurately locate underground gas lines at 6501 Angola Road, Holland, Ohio.³¹ Maps maintained by Columbia were inaccurate and showed incorrect line locations. The damaged line was installed in 2012.

Additionally, gas pipeline operators are required to report information on excavation damages on an annual basis as part of an annual report required by the Pipeline Safety Regulations, 49 C.F.R. 191.11. The annual report submitted by Columbia for calendar year 2016 shows total of 1,656 excavation damages with 583,508 excavation tickets to which Columbia responded. This results in an average of 2.8 excavation damages per 1,000 line locate requests received, which is slightly better than the state-wide average of 2.88 damages per 1,000 locate requests.

Columbia's report categorizes the cause of excavation damages into one of three categories:

- One-Call Notification Practices Not Sufficient – damages resulting from no notification made to the one-call center, or incorrect/insufficient information provided to the one-call center.
- Locating Practices Not Sufficient – damages resulting from lines that cannot be found or located, lines were incorrectly or insufficiently marked, or incorrect maps/records.
- Excavation Practices Not Sufficient – damages resulting from failure to maintain markings, failure to use hand tools where required, failure to maintain clearance, etc.

Columbia reported 685 excavation damages due to "Locating Practices Not Sufficient" out of 1,656 total damages, or 41.4 percent of the total. All other distribution operators in the state (including municipal and co-operative systems) reported in total 711 excavation damages due to "Locating Practices Not Sufficient" out of 2,156 total damages, or 33 percent of the total. A statistical test between these two populations show that Columbia has a higher rate of damage due to "Locating Practices Not Sufficient" than other distribution operators in Ohio.³²

³¹ See Complaint Investigation Report for 6553 Angola Road dated November 11, 2017, attached as Appendix I: Exhibit 16.

³² See Appendix II: "Statistical Methodology" for more information on how Staff performed this statistical test.

VI. Conclusions

Staff concludes that the root cause of the house fire at 4149 Case Road, Avon, Ohio was a failure to maintain adequate records regarding the location of the two-inch service line installed in the mid to late 1970's. Columbia never had documentation that the tap and service line were part of the system and, therefore, the line was not properly marked when Columbia was notified of an excavation in the area. The problem was compounded by Columbia field personnel making an incorrect assumption that the greenhouse meter and home meter were part of the same service line when discontinuing service in 2012, which resulted in the line not being properly abandoned. The line locator did not notice the capped and locked riser at the former greenhouse meter bar and only located the portion of the service line to the house.

Staff also notes that the house fire was allowed to burn for more than an hour and a half because the Columbia responders failed to consider the possibility that the damaged service line was owned by Columbia. Employees relied too heavily on the incorrect Tap Card record for the property instead of observing and appropriately responding to conditions at the scene.

Staff finally notes that available records support the conclusion that Columbia may have a more significant problem with excavation damage caused by incomplete or inadequate records than other Ohio operators. Although Columbia generally has a good record of compliance with other Pipeline Safety Regulations, Staff has cited Columbia six times in the past three years for violations associated with incomplete or inaccurate line location records. Data from operator-submitted annual reports indicates that Columbia has a higher proportion of excavation damages caused by insufficient locating practices than other Ohio operators.

VII. Recommendations

Within Compliance Order, Staff required the following corrective actions to be completed within thirty days in order to ensure Columbia returned to compliance with pipeline safety regulations:

1. The Commission ordered Columbia to perform certain actions to revise and update its training curriculum as part of the Commission's investigation into a home explosion in Upper Arlington on March 21, 2015.³³ One of these requirements was that "Columbia employees will be trained to review the work location and identify

³³ See *In the Matter of the Investigation of Columbia Gas of Ohio Relative to Compliance with the Natural Gas Pipeline Safety Standards and Related Matters*, Case No. 15-1351-GA-GPS, Finding and Order (Jan. 20, 2016), attached as Appendix I: Exhibit 17.

abnormalities associated with facilities upon arrival at the work location.”³⁴ Staff concludes Columbia’s actions to comply with this requirement from the Commission were ineffective in this instance. Columbia’s first responders allowed the gas to continue to feed the fire at the house instead of consider the possibility that its Tap Card records may have been inaccurate. Staff recommends a management review of the actions taken by company personnel at the scene in order to comply with this Commission order to ensure Columbia employees consider the possibility that maps and other records may be inaccurate, particularly for older systems, when considering taking actions to protect public safety.

2. Columbia should review its procedures for abandoning service meters and assess whether a review of the tap card(s) at the property prior to taking any action to abandon a meter short of excavating the service line and plugging it at the main should be required.
3. Columbia should review its Operator Qualification training materials for personnel involved in meter connection and disconnection, line locating, and other covered tasks such as leak surveys and class location surveys that involve inspecting pipeline systems in the field. Materials should emphasize that tap cards and other records of line locations may not be accurate, particularly for older pipeline systems, and that inconsistencies between records and field observations should be more fully investigated. The Columbia employees involved in the meter disconnection, line locating and emergency response all relied on inaccurate records and did not react to observed conditions in the field by further investigating the locked off meter set at the abandoned greenhouse, attempting to locate curb boxes, etc.
4. Columbia should review its emergency response procedures to ensure expected response times and actions to stop the flow of gas are sufficient. Columbia took approximately 45 minutes to arrive at the scene after being contacted by the fire department, and then took approximately one hour and 40 minutes to stop the flow of gas once responders arrived. Staff finds that Columbia should have recognized the possibility that the damaged line may have been an undocumented service line and taken more aggressive action to investigate the source in an attempt to stop the flow of gas feeding the house fire.

Staff determined that Columbia’s September 24, 2018 response letter memorializes appropriate remediation to address the aforementioned matters.

³⁴ See Appendix I: Exhibit 17 at paragraph 5(e).

Within Compliance Order, Staff also required the following corrective actions to be completed within ninety days in order to ensure Columbia returned to compliance with pipeline safety regulations:

1. Columbia should perform a review of excavation damages with a reported cause of “Locating Practices Not Sufficient” for the purpose of identifying what parts of the Columbia system are more likely to experience problems with insufficient or inadequate records.
2. Columbia should review and update its current procedures for identifying high-risk one-call tickets. Tickets in portions of the Columbia system with a higher relative risk of incomplete and/or inaccurate records should be marked by more experienced locators that can better recognize inconsistencies in the field.

Staff determined that Columbia’s November 14, 2018 response letter memorializes appropriate remediation to address the aforementioned matters.

Furthermore, within the Compliance Order, Staff additionally stated:

In addition to each of the aforementioned recommendations, Staff recommends the Commission require Columbia to develop and implement a holistic approach to ensuring similar instances do not reoccur. Staff further recommends that in developing this holistic plan, Columbia consider remedies beyond those considered through the resolution of the Upper Arlington matter. Staff recommends that the Commission require Columbia to file such plans on the docket in this matter.

Staff continues to recommend that Columbia address this holistic approach toward compliance.

Finally, given the severity of the violations, Staff recommends that a forfeiture of \$400,000.00 be assessed pursuant to R.C. 4905.95(B)(1)(b) against Columbia for failure to comply with the Pipeline Safety Regulations requirements that led to this incident.

Appendix I – Exhibits

Exhibit 1	Statement of Kyle Urig, dated August 17, 2017
Exhibit 2	Statement of Robert J. Simoneau, Dated August 20, 2017
Exhibit 3	Columbia Gas of Ohio Incident Report #20170075-16707
Exhibit 4	Avon Fire Department Report 17-00001800
Exhibit 5	Columbia Gas of Ohio O&M Procedure Standard Number 1740.010; (Effective April 1, 2010)
Exhibit 6	Columbia Gas of Ohio O&M Procedure Standard Number 1100.010; (Effective June 30, 2017)
Exhibit 7	Columbia Gas of Ohio O&M Procedure Standard Number 1742.010; (Effective August 1, 2010)
Exhibit 8	Columbia Gas of Ohio Service Line Order for 4149 Case Road
Exhibit 9	Photo of unmarked service line made of Celanese Two-Inch Gas Pipe.
Exhibit 10	PUCO Natural Gas Pipeline Failure Investigation Report #1186041 for incident dated 08/02/17 at 4149 Case Road in Avon, Ohio
Exhibit 11	Columbia Gas Service History for 4149 Case Road
Exhibit 12	Notice of Probable Non-compliance issued February 20, 2015
Exhibit 13	Notice of Probable Non-compliance issued June 30, 2015
Exhibit 14	Notice of Probable Non-compliance issued June 13, 2016
Exhibit 15	Notice of Probable Non-compliance issued February 15, 2017
Exhibit 16	Complaint Investigation Report for 6553 Angola Road, dated November 11, 2017
Exhibit 17	<i>In the Matter of the Investigation of Columbia Gas of Ohio Relative to Compliance with the Natural Gas Pipeline Safety Standards and Related Matters, Case No. 15-1351-GA-GPS, Finding and Order (Jan. 20, 2016)</i>

Exhibit 1

Statement of Kyle Urig, dated August 17, 2017

Statement

Incident Location 4149 CASE RD - NORTH RIDGEVILLE

Name Kyle Urig - Kyle's Excavating LLC - owner/operator

Date 8-17-17

Address 4305 Storey Ridge Rd. - Avon, Ohio 44011

Contact Number 440 - 396 - 4948

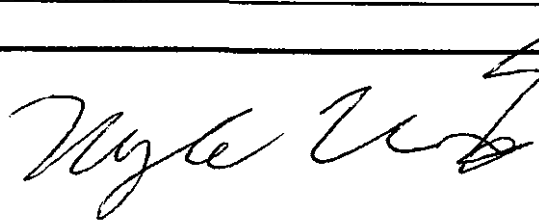
On 8-2-17, myself and my employee were installing a new water line going to the house on 4149 Case Rd. After digging at the meter pit and making our tap, we dug approximately 50-60' off the meter pit heading south east towards the house. I then positioned my excavator on the north side of the house and began digging back north to connect to my original trench. After digging down to the footer tile of the house, and curling my boom inwards - the teeth of my bucket struck the gas line which was not marked. I immediately backed my machine from the trench, instructed the home owner to get everyone out of the house, shovelled around the marked shut off valve for the line going to the house, and turned it off. While turning off the gas, the ~~gas~~ ^{gas} ignited and flames engulfed the "B"/North side of house. 911 was called reporting a working structure fire and open spraying gas line on fire. I began searching all around the property for a shut off but could not find anything. After fire departments arrived the home owner informed us of a riser that was east of the house next to a back building.

The fire cheif asked for us to dig that line off^{up} and crimp it. After doing this there was no change in the flow of gas. We attempted locating other points to shut the flow off but nothing was successful. After numerous attempts telling columbia gas officials to try finding the line on the west side of house, they did and as soon as that was crimped off the flow of gas stopped and fire was out. columbia gas employees stated the line was not marked, not on their maps, and they were un-aware it was there.

Before we started any digging, my 811 ticket was submitted and they marked all lines. The line hit was not marked, or did not have any markings anywhere near it.

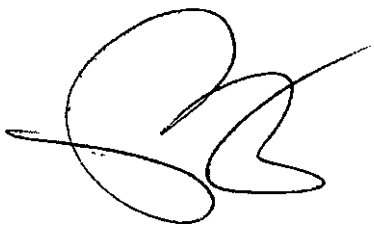
I can be reached at 440-396-4948 for any questions.

Signature



10:34

8-17-17



8-17-17

Exhibit 2

Statement of Robert J. Simoneau, Dated August 20, 2017

August 20, 2017

Robert John Simoneau, Jr.
4149 Case Rd., Avon, OH 44011
440-897-2156

4149 Case Rd., Avon, OH 44011 - Fire 8/2/17

Keith Topovski
Gas Pipeline Safety Compliance Investigator
Public Utilities Commission
Keith.topovski@puc.state.oh.us

Mr. Topovski,

On the morning of August 2, 2017 a 2-man crew was digging a trench for the installation of a city water line from the right-of-way to the house. I had contracted KMU Excavating to do the work. At approximately 10:15 AM the man operating the track hoe hit an unmarked gas line that was approximately 3 feet out from the house, running parallel to the house. I was present with my 3-year old son at the time that the line was hit and witnessed all of the events throughout the remainder of the day.

One man was in the trench and the force of the ruptured gas line practically lifted him out of the hole. He came out covered in dirt, but did not appear otherwise injured. The track hoe operator immediately backed the equipment away from the line and the 2 men went to the gas shut off valve to the house that was marked. They tried to shut off the gas, but it did not stop. Within 1-1/2 to 2 minutes, the gas ignited. The men called 911. After a couple of minutes, I also called 911 and was told that the fire department was on its way. A few minutes later, I called 911 again to ask if the gas company had been contacted and if they were on their way because the gas was not shut off and now the house was on fire.

The fire department arrived shortly after and got their hoses hooked up to the hydrant directly across the street from the house. The 2 men working on the water line had removed the caps from the hydrant while we were waiting for the fire department.

When the fire department arrived, they immediately starting hosing down the house from both inside and out. They understood that the gas had not shut off, so many of us on the scene began looking for other possible locations for a valve. Columbia Gas had still not arrived. About 30 minutes into this search, the Avon Fire Chief wondered aloud "where is the gas company?" Approximately 30-45 minutes after the event began, I saw the first Columbia Gas representative, although I am not sure about how much time had gone by. During the chaos, I may have lost track of the time. All other times are fairly accurate because I have time stamped photos.

The gas company representative immediately said that it was not their line and must be from a well in the area. People from nearby properties and people from around the city who are familiar with the property were called and all arrived to help locate a well. Of course, we were unsuccessful.

During this time, I repeatedly asked the Columbia Gas representative to do something to help get the line shut off. He repeatedly insisted that it was not their line. The man I was speaking to had arrived in a Columbia Gas van. The van was marked with the number #07546. I asked if they could dig a hole to see

if it was their line. He said no. I asked if it was possible that the line was not marked. He said no. I asked how he was so sure that this was not their line. He told me specifically, "There is no way that that is our line. I can 100% guarantee you that this is not our line." I asked, "How are you so sure?" He replied "Because there is too much gas coming out of that line. That has to be at least 100 pounds of pressure coming out of that line. Our lines could never move that much gas. Our lines have no more than 60 pounds of pressure, so I am absolutely sure that is not our line." The many local fire departments that had arrived, myself, the contractors and many local residents continued to frantically look for a well.

Approximately 2 hours had gone by with the gas burning and the fire department pouring water on my house to keep it from going completely up flames, when an additional service crew from Columbia Gas arrived. They took out tracing equipment to see if they could pick up a line from somewhere in the field adjacent to the house. They found nothing. Shortly thereafter, one of the men said "Why don't we just dig a hole and see if we can find the line?" They debated amongst themselves as to where would be the best place to dig and decided on a location a few feet away from the gas main, in the direction of the house. Within 10 minutes, they had located the line. It was a plastic line so they crimped the line shut and the fire went out. It was now somewhere around 1:00 PM or a little after.

Then the Columbia Gas crew moved over and dug a hole at the gas main, directly following the plastic line. Two men climbed in the hole and started digging around the line by hand. Shortly after, they had located where the line was connected to the Columbia Gas main with a shut off valve. The both looked up at the many people gathered around the hole and both said "It's our line." They shut the valve off.

This should never have occurred. The contractor had a track hoe on site and could have helped find the line. The gas company rep refused. They even offered to dig by hand. They were refused. In the meantime, representatives from several fire departments in the area came to our aid and did an absolutely remarkable job of keeping the whole house from catching fire. They worked in rotating shifts to keep water directly sandwiching the exterior wall of the house to stop the spread. As a result of the more than 2 hour delay in taking action, our home suffered severe water damage in addition to the fire damage. We have now been displaced from our home and are living in a hotel with 3 small boys. A 3-year old and 13-month old twins.


No one from Columbia Gas, particularly the representative driving van #07546, made any attempt to apologize or make any type of acknowledgement about what had just happened. The two Columbia Gas reps who arrived late on the scene and took it upon themselves to search out the line, did not an acknowledgement to me when I specifically thanked them for stepping in. The rest of them were just shameful, which was obvious to everyone on the scene who repeatedly wondered aloud "What are they doing? Why aren't they doing anything?"

Since then, Columbia Gas has had dozens of people at our property many times to "investigate". Now they are very interested in figuring out what happened, and every one of them has been as courteous and helpful as they can possibly be. Unfortunately, that wasn't true on the day of the fire.

Robert John Simoneau, Jr.

Exhibit 3

Columbia Gas of Ohio Incident Report #20170075-16707

NOTICE: This report is required by 49 CFR Part 191. Failure to report can result in a civil penalty not to exceed 100,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed \$1,000,000 as provided in 49 USC 60122.		OMB NO: 2137-0522 EXPIRATION DATE: 8/31/2020	
 U.S Department of Transportation Pipeline and Hazardous Materials Safety Administration	Original Report		
	Date:	09/01/2017	
	No.	20170075- 16707	
		(DOT Use Only)	
INCIDENT REPORT - GAS DISTRIBUTION SYSTEM			
A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2137-0522. All responses to this collection of information are mandatory. Send comments regarding the burden or any other aspect of this collection of information, including suggestions for reducing the burden to: Information Collection Clearance Officer, PHMSA, Office of Pipeline Safety (PHP-30) 1200 New Jersey Avenue, SE, Washington, D.C. 20590.			
INSTRUCTIONS			
Important: Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at http://www.phmsa.dot.gov/pipeline/library/forms .			
PART A - KEY REPORT INFORMATION			
Report Type: (select all that apply)		Original:	Supplemental:
		Yes	Final:
		Yes	
Last Revision Date		12/01/2017	
1. Operator's OPS-issued Operator Identification Number (OPID):		2596	
2. Name of Operator		COLUMBIA GAS OF OHIO INC	
3. Address of Operator:			
3a. Street Address		290 W NATIONWIDE BLVD	
3b. City		COLUMBUS	
3c. State		Ohio	
3d. Zip Code		43215	
4. Local time (24-hr clock) and date of the Incident:		08/02/2017 10:24	
5. Location of Incident:			
5a. Street Address or location description		4149 Case Rd.	
5b. City		Avon	
5c. County or Parish		Lorain	
5d. State:		Ohio	
5e. Zip Code:		44011-2107	
5f. Latitude:		41.42824	
Longitude:		-82.0614	
6. National Response Center Report Number:		1186041	
7. Local time (24-hr clock) and date of initial telephonic report to the National Response Center:		08/02/2017 14:11	
8. Incident resulted from:		Unintentional release of gas	
9. Gas released:		Natural Gas	
- Other Gas Released Name:			
10. Estimated volume of gas released - Thousand Cubic Feet (MCF):		150.300	
11. Were there fatalities?		No	
- If Yes, specify the number in each category:			
11a. Operator employees			
11b. Contractor employees working for the Operator			
11c. Non-Operator emergency responders			
11d. Workers working on the right-of-way, but NOT associated with this Operator			
11e. General public			
11f. Total fatalities (sum of above)			
12. Were there injuries requiring inpatient hospitalization?		No	
- If Yes, specify the number in each category:			
12a. Operator employees			
12b. Contractor employees working for the Operator			
12c. Non-Operator emergency responders			
12d. Workers working on the right-of-way, but NOT associated with this Operator			
12e. General public			
12f. Total injuries (sum of above)			
13. Was the pipeline/facility shut down due to the incident?		Yes	
- If No, Explain:			
- If Yes, complete Questions 13a and 13b: (use local time, 24-hr clock)			

13a. Local time and date of shutdown:	08/02/2017 13:48
13b. Local time pipeline/facility restarted:	08/15/2017 09:52
- Still shut down? (* Supplemental Report Required)	
14. Did the gas ignite?	Yes
15. Did the gas explode?	No
16. Number of general public evacuated:	0
17. Time sequence (use local time, 24-hour clock):	
17a. Local time operator identified Incident - effective 10-2014, "Incident" changed to "failure"	08/02/2017 10:59
17b. Local time operator resources arrived on site:	08/02/2017 11:21
PART B - ADDITIONAL LOCATION INFORMATION	
1. Was the Incident on Federal land?	No
2. Location of Incident	Private property
3. Area of Incident:	Underground
Specify:	Under soil
If Other, Describe:	
Depth of Cover:	30
4. Did Incident occur in a crossing?	No
- If Yes, specify type below:	
- If Bridge crossing -	
Cased/ Uncased:	
- If Railroad crossing -	
Cased/ Uncased/ Bored/drilled	
- If Road crossing -	
Cased/ Uncased/ Bored/drilled	
- If Water crossing -	
Cased/ Uncased	
Name of body of water (If commonly known):	
Approx. water depth (ft):	
PART C - ADDITIONAL FACILITY INFORMATION	
1. Indicate the type of pipeline system:	Investor Owned
- If Other, specify:	
2. Part of system involved in Incident:	Service
- If Other, specify:	
2a. Year "Part of system involved in Incident" was installed:	Unknown
3. When "Main" or "Service" is selected as the "Part of system involved in Incident" (from PART C, Question 2), provide the following:	
3a. Nominal diameter of pipe (in):	2
3b. Pipe specification (e.g., API 5L, ASTM D2513):	ASTM D2513
3c. Pipe manufacturer:	Celanese
3d. Year of manufacture:	Unknown
4. Material involved in Incident:	Plastic
- If Other, specify:	
4a. If Steel, Specify seam type:	
None/Unknown?	
4b. If Steel, Specify wall thickness (inches):	
4c. If Plastic, Specify type:	Polyethylene (PE)
- If Other, describe:	
4d. If Plastic, Specify Standard Dimension Ratio (SDR):	11
Or wall thickness:	
4e. If Polyethylene (PE) is selected as the type of plastic in Part C, Question 4.c:	
- Specify PE Pipe Material Designation Code (i.e. 2406, 3408, etc.)	2306
Unknown?	
5. Type of release involved :	Mechanical Puncture
- If Mechanical Puncture - Specify Approx size:	
Approx. size: in. (axial):	1.50
in. (circumferential):	2.00
- If Leak - Select Type:	
- If Other, Describe:	
- If Rupture - Select Orientation:	
- If Other, Describe:	
Approx. size: (widest opening):	
(length circumferentially or axially):	
- If Other - Describe:	

PART D - ADDITIONAL CONSEQUENCE INFORMATION	
1. Class Location of Incident :	Class 3 Location
2. Estimated Property Damage :	
2a. Estimated cost of public and non-Operator private property damage paid/reimbursed by the Operator – effective 6-2011, "paid/reimbursed by the Operator" removed	\$ 64,000
Estimated cost of gas released – effective 6-2011, moved to item 2f	
2b. Estimated cost of Operator's property damage & repairs	\$ 0
2c. Estimated cost of Operator's emergency response	\$ 5,261
2d. Estimated other costs	\$ 14,401
- Describe: Main line camera insertion and vacuum excavation for property	
2e. Property damage subtotal (sum of above)	\$ 83,662
Cost of Gas Released	
2f. Estimated cost of gas released	\$ 507
Total of all costs	\$ 84,169
3. Estimated number of customers out of service:	
3a. Commercial entities	0
3b. Industrial entities	0
3c. Residences	1
PART E - ADDITIONAL OPERATING INFORMATION	
1. Estimated pressure at the point and time of the Incident (psig):	41.00
2. Normal operating pressure at the point and time of the Incident (psig):	41.00
3. Maximum Allowable Operating Pressure (MAOP) at the point and time of the Incident (psig):	50.00
4. Describe the pressure on the system relating to the Incident:	Pressure did not exceed MAOP
5. Was a Supervisory Control and Data Acquisition (SCADA) based system in place on the pipeline or facility involved in the Incident?	No
- If Yes:	
5a. Was it operating at the time of the Incident?	
5b. Was it fully functional at the time of the Incident?	
5c. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume or pack calculations) assist with the detection of the Incident?	
5d. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the confirmation of the Incident?	
6. How was the Incident initially identified for the Operator?	Notification from Emergency Responder
- If Other, Specify:	
6a. If "Controller", "Local Operating Personnel, including contractors", "Air Patrol", or "Ground Patrol by Operator or its contractor" is selected in Question 6, specify.	
7. Was an investigation initiated into whether or not the controller(s) or control room issues were the cause of or a contributing factor to the Incident?	No, the facility was not monitored by a controller(s) at the time of the Incident
- If "No, the operator did not find that an investigation of the controller(s) actions or control room issues was necessary due to:" (provide an explanation for why the operator did not investigate)	
- If Yes, Specify investigation result(s) (select all that apply):	
- Investigation reviewed work schedule rotations, continuous hours of service (while working for the Operator), and other factors associated with fatigue	
- Investigation did NOT review work schedule rotations, continuous hours of service (while working for the Operator), and other factors associated with fatigue	
- Provide an explanation for why not:	
- Investigation identified no control room issues	
- Investigation identified no controller issues	
- Investigation identified incorrect controller action or controller error	
- Investigation identified that fatigue may have affected the controller(s) involved or impacted the involved controller(s) response	
- Investigation identified incorrect procedures	
- Investigation identified incorrect control room equipment operation	
- Investigation identified maintenance activities that affected control room operations, procedures, and/or controller response	
- Investigation identified areas other than those above	
Describe:	

PART F - DRUG & ALCOHOL TESTING INFORMATION	
1. As a result of this Incident, were any Operator employees tested under the post-accident drug and alcohol testing requirements of DOT's Drug & Alcohol Testing regulations?	No
- If Yes:	
1a. How many were tested:	
1b. How many failed:	
2. As a result of this Incident, were any Operator contractor employees tested under the post-accident drug and alcohol testing requirements of DOT's Drug & Alcohol Testing regulations?	No
- If Yes:	
2a. How many were tested:	
2b. How many failed:	
PART G - CAUSE INFORMATION	
<i>Select only one box from PART G in shaded column on left representing the Apparent Cause of the Incident, and answer the questions on the right. Describe secondary, contributing, or root causes of the Incident in the narrative (PART H).</i>	
Apparent Cause:	G3 - Excavation Damage
G1 - Corrosion Failure – only one sub-cause can be picked from shaded left-hand column	
Corrosion Failure Sub-Cause:	
- If External Corrosion:	
1. Results of visual examination:	
- If Other, Specify:	
2. Type of corrosion:	
- Galvanic	
- Atmospheric	
- Stray Current	
- Microbiological	
- Selective Seam	
- Other	
- If Other, Describe:	
3. The type(s) of corrosion selected in Question 2 is based on the following:	
- Field examination	
- Determined by metallurgical analysis	
- Other	
- If Other, Describe:	
4. Was the failed item buried under the ground?	
- If Yes:	
4a. Was failed item considered to be under cathodic protection at the time of the incident?	
- If Yes, Year protection started:	
4b. Was shielding, tenting, or disbonding of coating evident at the point of the incident?	
4c. Has one or more Cathodic Protection Survey been conducted at the point of the incident?	
If "Yes, CP Annual Survey" – Most recent year conducted:	
If "Yes, Close Interval Survey" – Most recent year conducted:	
If "Yes, Other CP Survey" – Most recent year conducted:	
- If No:	
4d. Was the failed item externally coated or painted?	
5. Was there observable damage to the coating or paint in the vicinity of the corrosion?	
6. Pipeline coating type, if steel pipe is involved:	
- If Other, Describe:	
- If Internal Corrosion:	
7. Results of visual examination:	
- If Other, Describe:	
8. Cause of corrosion (select all that apply):	
- Corrosive Commodity	
- Water drop-out/Acid	
- Microbiological	
- Erosion	
- Other	

- If Other, Specify:	
9. The cause(s) of corrosion selected in Question 8 is based on the following: <i>(select all that apply)</i> :	
- Field examination	
- Determined by metallurgical analysis	
- Other	
- If Other, Describe:	
10. Location of corrosion <i>(select all that apply)</i> :	
- Low point in pipe	
- Elbow	
- Drop-out	
- Other	
- If Other, Describe:	
11. Was the gas/fluid treated with corrosion inhibitor or biocides?	
12. Were any liquids found in the distribution system where the Incident occurred?	
Complete the following if any Corrosion Failure sub-cause is selected AND the "Part of system involved in incident" (from PART C, Question 2) is Main, Service, or Service Riser.	
13. Date of the most recent Leak Survey conducted	
14. Has one or more pressure test been conducted since original construction at the point of the Incident?	
- If Yes:	
Most recent year tested:	
Test pressure:	
G2 – Natural Force Damage – only one sub-cause can be picked from shaded left-handed column	
Natural Force Damage – Sub-Cause:	
- If Earth Movement, NOT due to Heavy Rains/Floods:	
1. Specify:	
- If Other, Specify:	
- If Heavy Rains/Floods:	
2. Specify:	
- If Other, Specify:	
- If Lightning:	
3. Specify:	
- If Temperature:	
4. Specify:	
- If Other, Specify:	
- If Other Natural Force Damage:	
5. Describe:	
Complete the following if any Natural Force Damage sub-cause is selected.	
6. Were the natural forces causing the Incident generated in conjunction with an extreme weather event?	
6.a. If Yes, specify <i>(select all that apply)</i> :	
- Hurricane	
- Tropical Storm	
- Tornado	
- Other	
- If Other, Specify:	
G3 – Excavation Damage – only one sub-cause can be picked from shaded left-hand column	
Excavation Damage – Sub-Cause:	Excavation Damage by Third Party
- If Previous Damage due to Excavation Activity: Complete the following ONLY IF the "Part of system involved in Incident" (from Part C, Question 2) is Main, Service, or Service Riser.	
1. Date of the most recent Leak Survey conducted	
2. Has one or more pressure test been conducted since original construction at the point of the Incident?	
- If Yes:	
Most recent year tested:	
Test pressure:	
Complete the following if Excavation Damage by Third Party is selected.	
3. Did the operator get prior notification of the excavation activity?	Yes
3a. If Yes, Notification received from: <i>(select all that apply)</i> :	
- One-Call System	Yes

- Excavator	
- Contractor	
- Landowner	
Complete the following mandatory CGA-DIRT Program questions if any Excavation Damage sub-cause is selected.	
4. Do you want PHMSA to upload the following information to CGA-DIRT (www.cga-dirt.com)?	No
5. Right-of-Way where event occurred (select all that apply):	
- Public	
- If Public, Specify:	
- Private	Yes
- If Private, Specify:	Private Landowner
- Pipeline Property/Easement	
- Power/Transmission Line	
- Railroad	
- Dedicated Public Utility Easement	
- Federal Land	
- Data not collected	
- Unknown/Other	
6. Type of excavator :	Contractor
7. Type of excavation equipment :	Backhoe/Trackhoe
8. Type of work performed :	Water
9. Was the One-Call Center notified?	Yes
9a. If Yes, specify ticket number:	720601462
9b. If this is a State where more than a single One-Call Center exists, list the name of the One-Call Center notified:	Ohio Utilities Protection Service
10. Type of Locator:	Contract Locator
11. Were facility locate marks visible in the area of excavation?	No
12. Were facilities marked correctly?	No
13. Did the damage cause an interruption in service?	Yes
13a. If Yes, specify duration of the interruption:	307
14. Description of the CGA-DIRT Root Cause (select only the one predominant first level CGA-DIRT Root Cause and then, where available as a choice, the one predominant second level CGA-DIRT Root Cause as well):	
- Root Cause Description:	Locating Practices Not Sufficient
- If One-Call Notification Practices Not Sufficient, specify:	
- If Locating Practices Not Sufficient, specify:	Incorrect facility records/maps
- If Excavation Practices Not Sufficient, specify:	
- If Other/None of the Above, explain:	
G4 - Other Outside Force Damage - only one sub-cause can be selected from the shaded left-hand column	
Other Outside Force Damage – Sub-Cause:	
- If Damage by Car, Truck, or Other Motorized Vehicle/Equipment NOT Engaged in Excavation:	
1. Vehicle/Equipment operated by:	
- If Damage by Boats, Barges, Drilling Rigs, or Other Maritime Equipment or Vessels Set Adrift or Which Have Otherwise Lost Their Mooring:	
2. Select one or more of the following IF an extreme weather event was a factor:	
- Hurricane	
- Tropical Storm	
- Tornado	
- Heavy Rains/Flood	
- Other	
- If Other, Specify:	
- If Previous Mechanical Damage NOT Related to Excavation: Complete the following ONLY IF the "Part of system involved in Incident" (from Part C, Question 2) is Main, Service, or Service Riser.	
3. Date of the most recent Leak Survey conducted:	
4. Has one or more pressure test been conducted since original construction at the point of the Incident?	
- If Yes:	
Most recent year tested:	
Test pressure (psig):	
- If Intentional Damage:	
5. Specify:	
- If Other, Specify:	
- If Other Outside Force Damage:	
6. Describe:	

G5 - Pipe, Weld, or Joint Failure - only one sub-cause can be selected from the shaded left-hand column

Pipe, Weld or Joint Failure – Sub-Cause:	
- If Body of Pipe:	
1. Specify:	
	- If Other, Describe:
- If Butt Weld:	
2. Specify:	
	- If Other, Describe:
- If Fillet Weld:	
3. Specify:	
	- If Other, Describe:
- If Pipe Seam:	
4. Specify:	
	- If Other, Describe:
- If Mechanical Fitting:	
5. Specify the mechanical fitting involved:	
	- If Other, Describe:
6. Specify the type of mechanical fitting:	
	- If Other, Describe:
7. Manufacturer:	
8. Year manufactured:	
9. Year installed:	
10. Other attributes:	
11. Specify the two materials being joined:	
11a. First material being joined:	
	- If Other, Specify:
11b. If Plastic, specify:	
	- If Other Plastic, specify:
11c. Second material being joined:	
	- If Other, Specify:
11d. If Plastic, specify:	
	- If Other Plastic, Specify:
12. If used on plastic pipe, did the fitting – as designed by the manufacturer – include restraint?	
12a. If Yes, specify:	
- If Compression Fitting:	
13. Fitting type:	
14. Manufacturer:	
15. Year manufactured:	
16. Year installed:	
17. Other attributes:	
18. Specify the two materials being joined:	
18a. First material being joined:	
	- If Other, specify:
18b. If Plastic, specify:	
	- If Other Plastic, specify:
18c. Second material being joined:	
	If Other, specify:
18d. If Plastic, specify:	
	- Other Plastic, specify:
- If Fusion Joint:	
19. Specify:	
	- If Other, Specify:
20. Year installed:	
21. Other attributes:	
22. Specify the two materials being joined:	
22a. First material being joined:	
	- If Other, Specify:
22b. Second material being joined:	
	- If Other, Specify:
- If Other Pipe, Weld, or Joint Failure:	
23. Describe:	

Complete the following if any Pipe, Weld, or Joint Failure sub-cause is selected.	
24. Additional Factors (select all that apply):	
- Dent	
- Gouge	
- Pipe Bend	
- Arc Burn	
- Crack	
- Lack of Fusion	
- Lamination	
- Buckle	
- Wrinkle	
- Misalignment	
- Burnt Steel	
- Other	
	- If Other, Specify:
25. Was the Incident a result of:	
- Construction defect	
	Specify:
- Material defect	
	Specify:
	- If Other, Specify:
- Design defect	
- Previous damage	
26. Has one or more pressure test been conducted since original construction at the point of the incident?	
- If Yes:	
	Most recent year tested:
	Test pressure:
G6 - Equipment Failure - only one sub-cause can be selected from the shaded left-hand column	
Equipment Failure – Sub-Cause:	
- If Malfunction of Control/Relief Equipment:	
1. Specify:	
- Control Valve	
- Instrumentation	
- SCADA	
- Communications	
- Block Valve	
- Check Valve	
- Relief Valve	
- Power Failure	
- Stopple/Control Fitting	
- Pressure Regulator	
- Other	
	- If Other, Specify:
- If Threaded Connection Failure:	
2. Specify:	
	- If Other, Specify:
- If Non-threaded Connection Failure:	
3. Specify:	
	- If Other, Specify:
- If Valve:	
4. Specify:	
	- If Other, Specify:
4a. Valve type:	
4b. Manufactured by:	
4c. Year manufactured:	
- If Other Equipment Failure:	
5. Describe:	
G7 - Incorrect Operation - only one sub-cause can be selected from the shaded left-hand column	
Incorrect Operation Sub-Cause:	
- If Other Incorrect Operation:	
1. Describe:	

Complete the following if any Incorrect Operation sub-cause is selected.	
2. Was this Incident related to: (select all that apply)	
- Inadequate procedure	
- No procedure established	
- Failure to follow procedure	
- Other	
- If Other, Describe:	
3. What category type was the activity that caused the Incident:	
4. Was the task(s) that led to the Incident identified as a covered task in your Operator Qualification Program?	
4a. If Yes, were the individuals performing the task(s) qualified for the task(s)?	
G8 - Other Incident Cause - only one sub-cause can be selected from the shaded left-hand column	
Other Incident Cause – Sub-Cause:	
- If Miscellaneous:	
1. Describe:	
- If Unknown:	
2. Specify:	
PART H - NARRATIVE DESCRIPTION OF THE INCIDENT	
<p>On August 2, 2017, a third-party contractor, who was installing a water line on behalf of the property owner, damaged a 2-inch gas service line that was not marked by Columbia's second-party locator due to a lack of records accurately identifying the 2-inch idle customer-owned service line. The second-party locator identified and marked the active gas service line at the property. Columbia has completed a safety inspection at the property that included the use of an in-pipe camera to ensure safety of the Columbia facilities. At this point in the investigation, Columbia has enough information to finalize this incident report, and has determined that insufficient records led to the facility damage and subsequent property damage as a result of the fire that ensued. Please consider this file closed and final.</p>	
PART I - PREPARER AND AUTHORIZED SIGNATURE	
Preparer's Name	Rob R. Smith
Preparer's Title	Operations Compliance Manager
Preparer's Telephone Number	614-818-2110
Preparer's E-mail Address	rrsmith@nisource.com
Preparer's Facsimile Number	614-818-2151
Authorize Signature's Name	Rob R. Smith
Authorized Signature's Title	Operations Compliance Manager
Authorized Signature's Email Address	rrsmith@nisource.com

Exhibit 4

Avon Fire Department Report 17-00001800

A		MM DD YYYY		Delete		NFIRS -1	
FDID 47003 *		State OH *		Incident Date 08 02 2017 *		Station 1 Incident Number 17-0001800 Exposure 000 *	
				Change		No Activity	
B Location* <input type="checkbox"/> Check this box to indicate that the address for this incident is provided on the Wildland Fire Census Tract <input type="checkbox"/> - <input type="checkbox"/>							
<input checked="" type="checkbox"/> Street address <input type="checkbox"/> Intersection <input type="checkbox"/> In front of <input type="checkbox"/> Rear of <input type="checkbox"/> Adjacent to <input type="checkbox"/> Directions							
Number/Milepost 4149 Prefix CASE Street or Highway RD Street Type AVON City OH State 44011 Zip Code							
Cross street or directions, as applicable							
C Incident Type *		E1 Date & Times			E2 Shift & Alarms		
111 Building fire		Check boxes if dates are the same as Alarm <input type="checkbox"/> ALARM always required <input type="checkbox"/>			Local Option B 02 3SW		
D Aid Given or Received*		Date 08 02 2017 10:24:00			Shift or Alarms District Platoon		
1 <input type="checkbox"/> Mutual aid received 47005 2 <input checked="" type="checkbox"/> Automatic aid recvd. Their FDID Their State 3 <input type="checkbox"/> Mutual aid given 4 <input type="checkbox"/> Automatic aid given 5 <input type="checkbox"/> Other aid given N <input type="checkbox"/> None Their Incident Number		ARRIVAL required, unless canceled or did not arrive <input type="checkbox"/> Arrival * 08 02 2017 10:30:00 CONTROLLED Optional, Except for wildland fires <input checked="" type="checkbox"/> Controlled 08 02 2017 13:03:00 LAST UNIT CLEARED, required except for wildland fires <input checked="" type="checkbox"/> Last Unit 08 02 2017 13:37:00 <input checked="" type="checkbox"/> Cleared			E3 Special Studies Local Option Special Study ID# Special Study Value		
F Actions Taken *		G1 Resources *		G2 Estimated Dollar Losses & Values			
11 Extinguishment by fire Primary Action Taken (1) 55 Establish safe area Additional Action Taken (2) 82 Notify other agencies. Additional Action Taken (3)		<input checked="" type="checkbox"/> Check this box and skip this section if an Apparatus or Personnel form is used. Apparatus 0003 Personnel 0008 Suppression 0003 0008 EMS Other <input type="checkbox"/> Check box if resource counts include aid received resources.		LOSSES: Required for all fires if known. Optional for non fires. None Property \$ 054,000 Contents \$ 010,000 PRE-INCIDENT VALUE: Optional Property \$ 250,000 Contents \$ 000,000			
Completed Modules		H1*Casualties		H3 Hazardous Materials Release		I Mixed Use Property	
<input checked="" type="checkbox"/> Fire-2 <input checked="" type="checkbox"/> Structure-3 <input type="checkbox"/> Civil Fire Cas.-4 <input checked="" type="checkbox"/> Fire Serv. Cas.-5 <input type="checkbox"/> EMS-6 <input type="checkbox"/> HazMat-7 <input type="checkbox"/> Wildland Fire-8 <input checked="" type="checkbox"/> Apparatus-9 <input checked="" type="checkbox"/> Personnel-10 <input type="checkbox"/> Arson-11		Deaths Injuries Fire Service 001 Civilian H2 Detector Required for Confined Fires. 1 <input checked="" type="checkbox"/> Detector alerted occupants 2 <input type="checkbox"/> Detector did not alert them U <input type="checkbox"/> Unknown		N <input type="checkbox"/> None 1 <input type="checkbox"/> Natural Gas: slow leak, no evacuation or HazMat actions 2 <input type="checkbox"/> Propane gas: <21 lb. tank (as in home BBQ grill) 3 <input type="checkbox"/> Gasoline: vehicle fuel tank or portable container 4 <input type="checkbox"/> Kerosene: fuel burning equipment or portable storage 5 <input type="checkbox"/> Diesel fuel/fuel oil: vehicle fuel tank or portable 6 <input type="checkbox"/> Household solvents: home/office spill, cleanup only 7 <input type="checkbox"/> Motor oil: from engine or portable container 8 <input type="checkbox"/> Paint: from paint cans totaling < 55 gallons 0 <input type="checkbox"/> Other: Special HazMat actions required or spill > 55gal., Please complete the HazMat form		NN <input type="checkbox"/> Not Mixed 10 <input type="checkbox"/> Assembly use 20 <input type="checkbox"/> Education use 33 <input type="checkbox"/> Medical use 40 <input type="checkbox"/> Residential use 51 <input type="checkbox"/> Row of stores 53 <input type="checkbox"/> Enclosed mall 58 <input type="checkbox"/> Bus. & Residential 59 <input type="checkbox"/> Office use 60 <input type="checkbox"/> Industrial use 63 <input type="checkbox"/> Military use 65 <input type="checkbox"/> Farm use 00 <input type="checkbox"/> Other mixed use	
J Property Use* Structures		341 Clinic, clinic type infirmary		539 Household goods, sales, repairs			
131 <input type="checkbox"/> Church, place of worship 161 <input type="checkbox"/> Restaurant or cafeteria 162 <input type="checkbox"/> Bar/Tavern or nightclub 213 <input type="checkbox"/> Elementary school or kindergarten 215 <input type="checkbox"/> High school or junior high 241 <input type="checkbox"/> College, adult education 311 <input type="checkbox"/> Care facility for the aged 331 <input type="checkbox"/> Hospital		342 <input type="checkbox"/> Doctor/dentist office 361 <input type="checkbox"/> Prison or jail, not juvenile 419 <input checked="" type="checkbox"/> 1-or 2-family dwelling 429 <input type="checkbox"/> Multi-family dwelling 439 <input type="checkbox"/> Rooming/boarding house 449 <input type="checkbox"/> Commercial hotel or motel 459 <input type="checkbox"/> Residential, board and care 464 <input type="checkbox"/> Dormitory/barracks 519 <input type="checkbox"/> Food and beverage sales		579 <input type="checkbox"/> Motor vehicle/boat sales/repair 571 <input type="checkbox"/> Gas or service station 599 <input type="checkbox"/> Business office 615 <input type="checkbox"/> Electric generating plant 629 <input type="checkbox"/> Laboratory/science lab 700 <input type="checkbox"/> Manufacturing plant 819 <input type="checkbox"/> Livestock/poultry storage (barn) 882 <input type="checkbox"/> Non-residential parking garage 891 <input type="checkbox"/> Warehouse			
Outside 124 <input type="checkbox"/> Playground or park 655 <input type="checkbox"/> Crops or orchard 669 <input type="checkbox"/> Forest (timberland) 807 <input type="checkbox"/> Outdoor storage area 919 <input type="checkbox"/> Dump or sanitary landfill 931 <input type="checkbox"/> Open land or field		936 <input type="checkbox"/> Vacant lot 938 <input type="checkbox"/> Graded/care for plot of land 946 <input type="checkbox"/> Lake, river, stream 951 <input type="checkbox"/> Railroad right of way 960 <input type="checkbox"/> Other street 961 <input type="checkbox"/> Highway/divided highway 962 <input type="checkbox"/> Residential street/driveway		981 <input type="checkbox"/> Construction site 984 <input type="checkbox"/> Industrial plant yard Lookup and enter a Property Use code only if you have NOT checked a Property Use box: Property Use 419 1 or 2 family dwelling			

NFIRS-1 Revision 03/11/99

K1 Person/Entity Involved

Local Option

Business name (if applicable)

Area Code

Phone Number

☐ Check This Box if same address as incident location. Then skip the three duplicate address lines.

Mr., Ms., Mrs. First Name MI Last Name Suffix
Number Prefix Street or Highway Street Type Suffix
Post Office Box Apt./Suite/Room City
State Zip Code

☐ More people involved? Check this box and attach Supplemental Forms (NFIRS-18) as necessary

K2 Owner

☐ Same as person involved? Then check this box and skip The rest of this section.

Local Option

Business name (if Applicable)

Area Code

Phone Number

☒ Check this box if same address as incident location. Then skip the three duplicate address lines.

Mr., Ms., Mrs. First Name MI Last Name Suffix
Number Prefix Street or Highway Street Type Suffix
Post Office Box Apt./Suite/Room City
State Zip Code

L Remarks

Local Option

Responded to a reported gas line hit by a contractor and was actively leaking. In route, owner of the home called and stated the gas line ignited and started the exterior wall on fire. On scene, found active gas fed fire on the Bravo side and impinging on the house with heavy fire damage already in progress. Pulled 1 1-3/4 line and began to attack the Bravo side fire, arriving crews directed to pull a second line and enter the interior for fire spread and control. Mutual aid crews directed establish a water supply for and to pull and additional 1-3/4 line off of Avon Lake Engine 5 to assist with bravo side fire control. Additional Mutual aid companies directed to the interior for gas monitoring and checking for extension. Called for First Energy to isolate the incoming power supply as well as Columbia Gas to isolate the gas supply line. Both utilities took a substantial amount of time getting to the scene. Second alarm requested due to the extensive amount of work and rotating out personnel for rehab. Westlake squad set up as designated rehab center. Multiple attempts to isolate the gas line were unsuccessful. Additional resources were requested and Columbia gas found the correct line and isolated same. Overhaul of the room began and all areas checked for extension as well as gas levels throughout the structure. Columbia Gas was notified to follow up with us. All mutual aid companies released, owner demographics obtained and all resources released back to service.

L Authorization

248

Officer in charge ID

Emling, Michael J

Signature

ACP

Position or rank

Assignment

08

Month

02

Day

2017

Year

Check box if same as Officer in charge.

248

Member making report ID

Emling, Michael J

Signature

ACP

Position or rank

Assignment

08

Month

02

Day

2017

Year

Exhibit 5

**Columbia Gas of Ohio O&M Procedure Standard Number 1740.010;
(Effective April 1, 2010)**

Effective Date: 04/01/2010	Abandonment of Facilities	Standard Number: GS 1740.010
Supersedes: N/A		Page 1 of 5

Companies Affected:

<input checked="" type="checkbox"/> NIPSCO	<input type="checkbox"/> CGV	<input checked="" type="checkbox"/> COH	<input type="checkbox"/> BSG
<input checked="" type="checkbox"/> NIFL	<input checked="" type="checkbox"/> CKY	<input type="checkbox"/> CPA	
<input checked="" type="checkbox"/> Kokomo Gas	<input checked="" type="checkbox"/> CMD		

REFERENCE OMP 1740

1. GENERAL

This standard shall apply to the abandonment or deactivation of pipeline facilities.

2. DISTRIBUTION MAINS AND TRANSMISSION LINES

When it has been determined that a distribution main or transmission line (pipeline) has no reasonable prospect for future use, it shall be scheduled for retirement.

Each pipeline abandoned in place must be disconnected from all sources of gas supply, purged of all gas, and the ends sealed.

2.1 Written Plan

Field Engineering shall prepare a written plan to accomplish the work, ensuring proper supply is maintained to the parts of the system to remain in service, and gas to the pipeline to be abandoned is properly stopped by disconnecting all sources.

The written plan shall identify the method for stopping the gas flow from the sources. Typical methods include the use of valves, squeezing, stoppers, or bag(s). Alternate methods for each source should be identified in case the planned method cannot accomplish stopping the gas, such as inoperable valves or conflicts with other underground facilities.

The following actions should be considered when developing the written plan.

- Installing gauge(s) to monitor upstream pressure before stopping the gas.
- Installing fittings for pressure verification and gas venting.
- Stopping gas from all sources.
- Venting to allow pressure to decrease in pipe being abandoned.
- Checking that the flow from the vent continues to decrease – all sources addressed.
- Physically separating the section to abandon.

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Supersedes: N/A		Page 2 of 5

- g. Capping live stubs by appropriate methods. Preferred methods are welding for steel, fusion for PE plastic, and mechanical connection for other materials. All mechanically connected caps shall have pull-out protection (integral to the fitting, or by strapping / blocking), and be properly pressure rated.

2.2 Disconnect Gas Sources

Identify all likely sources of supply to the pipeline to be abandoned. A check of operating records (e.g., maps, work completion) should first be done. Any other suspected sources can be identified by field excavation.

Upon stopping of gas flow at each point of disconnection, physically separate the piping or components.

2.3 Purging Pipelines

Refer to GS 1690.010, "Purging – New Construction & Abandonment" for guidance on purging pipelines out of service.

2.4 Seal Pipeline Ends

Seal all ends of the abandoned piping with an approved end cap, a closed valve, or other approved methods to prevent a path of gas migration, such as the following.

1. Expanding foam (e.g., NIE FOA-0010)
 - a. Clean out any loose particles or debris from the end of the main to be abandoned.
 - b. Insert cardboard, newspaper, or rags into the main to serve as a backstop for the foam.
 - c. Allow room for approximately 1 1/2" of foam for each 1" of main diameter. For example, on a 4" main use 4" - 6" of foam; on a 6" main, use 6" - 9" of foam, etc.
 - d. Cut out a piece of cardboard slightly larger than the diameter of the main to be abandoned. This piece should be held against the end of the main to contain the foam as it expands in the pipe.
 - e. The foam should be sprayed directly into the main or sprayed through a hole cut in the cardboard. Field conditions should dictate the best method of application.
2. Expansion plug (e.g., NIE PLU-0010)
 - a. Clean out any loose particles or debris from the end of the main to be abandoned.

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Supersedes: N/A		Page 3 of 5

- b. Squarely fit plug into end of main and hand press in firmly.
- c. Check by pulling outward on plug.
- 3. Plastic cap (e.g., NIE CAP-0020)
- 4. Concrete

2.5 Above Ground Facilities

All above ground pipeline facilities retired from service will be removed.

EXCEPTION: Piping above ground on private property that is not covered by a removal clause in the right-of-way agreement may be allowed to remain unless requested to be removed by the right-of-way grantor.

The steps in Section 2 must be followed through purging before the removal of any facilities. Removal will create additional points to be capped as per Section 2. This must be allowed for in the written plan.

3. SERVICES

3.1 Conditions Requiring Abandonment

3.1.1 Meters

Service lines that have gas service discontinued, i.e. where the gas has been turned off, may have the meter remain in place for up to 24 months, at which time an order to remove the meter should be issued. The meter may continue to remain in place if circumstances indicate it is appropriate.

NOTE: When the last meter is removed from a service line, any curb valve in the line shall be closed if it can be located and it is operable.

3.1.2 Service Lines

Service lines that have gas discontinued should be evaluated for the prospect of future use by the end of the 24th month from the day the gas service was discontinued. If no prospect for future can be determined, then the service line shall be abandoned.

Service lines that have not had a meter installed (e.g., NSL classification for CDC) should be evaluated for the prospect of future use by the end of the 24th month from the date the service line was placed in service. The service line shall be abandoned if it is determined that the service line has no prospect for

Effective Date: 04/01/2010	Abandonment of Facilities	Standard Number: GS 1740.010
Supersedes: N/A		Page 4 of 5

future use or before the Company's state regulatory required maximum length of time to abandon it, whichever occurs first.

Service lines shall be abandoned not later than the end of the 60th month from either the date that the gas service was discontinued, or when the service line was placed in service for a service line that has not had a meter installed.

3.2 Abandoning Service Lines

When abandoning service lines, the piping must be disconnected from the gas supply and customers' house lines, and the abandoned pipe end(s) sealed. This should be accomplished similar to the procedure in Section 2, with the following exceptions.

- a. A written plan is not needed.
- b. Verification and venting can be accomplished by aboveground piping at a meter setting.
- c. Natural venting is normally sufficient to purge a service line that is being abandoned. However, a service line being abandoned shall be purged with a purging medium if natural venting is not effective.
- d. The service line should be disconnected as close as practical to the supplying pipeline.
- e. Aboveground piping and fittings, such as a measurement setting, should be removed unless attached to a structure.

Where positive-stop tapping tees exist, it is preferred to stop the gas flow with the positive-stop tapping tees and cap the outlet of the tees. If the "punch" or "cutter" of positive-stop tapping tees is used to affect the disconnection at the main, the "punch" or "cutter" shall be retracted until even with the top of the tees before replacing the tee caps.

Where the tapping tees do not have a positive stop, the outlet piping of plastic tees can be squeezed and some steel tees can have the gas stopped in the tee body, such as by pinning with a metal rod or wooden dowel. The connected piping can then be cut and the outlet of the tee capped.

Other methods to abandon service lines, such as plugging saddles or installing clamps on the main, can be used.

If service lines are abandoned in conjunction with the abandonment of the supply pipeline, the service lines do not need to be disconnected from the pipeline and no venting of the service line is required if the volume of gas in the line is not considered potentially hazardous.

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Supersedes: N/A		Page 5 of 5

When service lines are abandoned, curb boxes (if they exist) shall be removed and the hole filled with a suitable compacting material. If the curb boxes cannot be removed due to their location in concrete or pavement, the curb box lids shall be removed and the curb boxes filled with concrete or similar material.

4. VAULTS

Each abandoned vault must be filled with a suitable compacting-type material. While filling the vault, ensure that the material flows into all areas so that no voids remain. If necessary, the material can be tamped while filling to achieve some initial compaction.

As an alternate to abandoning a vault, it could be removed and the space previously occupied filled as a typical excavation. All proper safety precautions must be followed considering the depth and all other factors of the work.

5. RECORDS

Abandoned facilities shall be included on the applicable work completion report for the retirement.

Exhibit 6

**Columbia Gas of Ohio O&M Procedure Standard Number 1100.010;
(Effective June 30, 2017)**

Effective Date: 06/30/2017	Locating Gas Facilities	Standard Number: GS 1100.010(OH)
Supersedes: 01/01/2016		Page 1 of 9

Companies Affected:

<input type="checkbox"/> NIPSCO	<input type="checkbox"/> CGV	<input type="checkbox"/> CMD
	<input type="checkbox"/> CKY	<input checked="" type="checkbox"/> COH
	<input type="checkbox"/> CMA	<input type="checkbox"/> CPA

REFERENCE 49 CFR Part 192.614; Ohio Revised Code, Section 3781

1. GENERAL

This standard provides guidance for performing field locating and marking of gas facilities. However, it cannot address every field condition that may be encountered in the course of performing a field locate request. Therefore, locate personnel should contact local leadership for additional guidance, as needed.

Locate personnel shall have current/valid qualification(s) for the work being performed as set forth in the Company's or contractor's OQ Plan(s).

All marking of gas facilities shall be completed in accordance with the Ohio Universal Marking Standards that are on file with the Ohio Utilities Protection Service (OUPS) at the following location: <http://www.oups.org/Home/OhioMarkingStandards>.

Locate personnel shall use appropriate safety equipment and avoid unnecessary risks. Request assistance if needed to perform the work safely.

2. PROCEDURE

Within forty-eight (48) hours of receiving notice from OUPS, the Company shall review the status of its facilities within the excavation site, locate and mark its underground utility facilities at the excavation site in such a manner as to indicate their course, and report the appropriate information to the protection service for its positive response system (Section 2.3.5).

In the case of a large project that will progress over a period of time, if the excavator has provided a project timeline to the Company and a mutually agreed upon marking schedule is determined, the original marking (i.e., within 48 hours) and notification timeline requirements no longer apply.

2.1 Prior to Locating Facilities

2.1.1 Review the One-Call Ticket

Read One-call ticket thoroughly to verify location, type, and scope of work, etc. Verify the correct location in which to conduct the locate. Ensure that the

This document is considered CONTROLLED only when viewed electronically on the Company's intranet. Printed or other electronic copies may not be current, and the intranet version should be used to verify.

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Supersedes: 01/01/2016		Page 2 of 9

scope of work area is clearly defined.

If the instructions on the One-call ticket are unclear, call the contact person/excavator for clarification. Refer to the guidance in Section 2.1.4 for more information.

2.1.2 Perform a Site Assessment

Identify any white pre-markings that show the approximate location of the planned excavation. Any required pre-marking that is not present shall be documented within the ticket management system.

Pre-marking is not required in the following situations.

- a. The precise location, direction, size, and length of the proposed excavation site can be determined by referring to the notification provided by the state one-call center.
- b. The Company has had an on-site, preconstruction meeting with the excavator for the purpose of pre-marking the excavation site.
- c. The excavation involves replacing a pole that is within five feet of the location of an existing pole.
- d. Pre-marking by the excavator would clearly interfere with pedestrian or vehicular traffic control.

Never assume that existing locate markings are correct. Do not refresh marks without confirming accuracy by physical locating means.

Identify conditions that could negatively impact locate accuracy, such as a high voltage line in vicinity, other utilities, terrain, vehicles parked over the pipeline, structures, high traffic area, etc. If conditions cannot be resolved, inform leadership and document within the ticket management system.

If premature excavation is observed, report this information to the local Damage Prevention Coordinator and/or local leadership immediately.

2.1.3 Review Company Records

Review all necessary maps, records, work orders, service line data, etc. Perform a visual inspection to identify incorrectly documented or missing facilities. Identify new utility construction or repair patches. Contact the appropriate office for assistance if additional records are necessary.

2.1.4 Clear – No Conflict

When a one-call ticket is determined to be "Clear – No Conflict," the

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Company's second party locate contractor shall create, complete and retain the following additional documentation.

- a. E-Sketch providing a digital aerial image of the excavation site.
- b. Photographs of the area onsite.

2.1.5 Guidance for Contacting the Contact Person/Excavator

If any part of the One-call ticket is unclear or the site assessment generates questions, the contact person/excavators shall be contacted to verify the nature and limits of proposed excavation, as well as to verify the excavator's understanding and recognition of marks to be placed on the site.

Meetings/conversations with the contact person/excavator shall be documented within the ticket management system and shall include identification of the individuals involved and any agreements made in regards to construction at the site.

Communicate the status of the One-call ticket through the One-call positive response system.

2.2 Locating Facilities

Select the proper instrument and locating technique for the type of facility to be located.

Locate personnel shall operate equipment in accordance with the manufacturer's instructions.

Physical direct conductive (direct contact) locating is to be used where practical. In areas where meters are inside and no direct contact access is available outside, attempt to gain access to make direct contact. If necessary, leave a card explaining the need to locate the facilities and contact the excavator to advise of the delay.

Inductive locating should only be used when conductive locating is not practical. Be aware of other utility structures close by, either overhead or below ground. Always sweep the area to identify multiple signal paths. Look for evidence of other facilities or structures (both buried and above ground) and be aware of potential bleeding of signal.

Identify if the area being located has electronic markers installed. If so, use the proper locate equipment to find and identify electronic markers at service tees and along Company facilities as necessary.

Always locate Company and customer service lines up to the meter. If not able to locate a customer-owned service line, the contact person/excavator should be notified

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or an appropriate notice must be left at the site.

Inspect permanent line markers within the scope of the ticket to validate accurate Company information and assure good condition of the line marker. Company line markers with incorrect information shall be corrected. Line markers that are suspected to be missing, damaged or in poor condition should be reported to local leadership for replacement or repair.

2.3 Unlocatable Facilities

Follow the local process when facilities cannot be located.

2.4 Marking Facilities

The sections below offer guidance for marking facilities. Follow the applicable state marking standards.

2.4.1 Operating Conditions









Facilities must be adequately marked for the conditions and expected activity. Conditions such as snow, rain, vegetation, high traffic, and construction should be considered when selecting the marking method.

2.4.2 Uniform Color Code

Underground utilities may be marked with paint, flags, stakes, or any combination of these utilizing the American Public Works Association (APWA) color codes. Yellow is the standard color for marking underground gas facilities. Chart 1 shows each color and corresponding use as set by APWA.

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Chart 1. APWA Color Codes

	YELLOW – Gas, Oil, Steam, Petroleum or Gaseous Materials		PURPLE – Reclaimed Water, Irrigation and Slurry Lines
	RED – Electric Power Lines, Cables, Conduit and Lighting Cables		GREEN – Sewer and Drain Lines
	BLUE – Potable Water		PINK – Temporary Survey Markings
	ORANGE – Communications, Alarm or Signal Lines, Cables or Conduits		WHITE – Proposed Excavation

2.4.3 Marking Materials

Markings may include one or any combination of the following – paint, flags, chalk, stakes, brushes / whiskers. Offset marks should be used where marks are likely to be destroyed or in areas where it is not possible to mark the centerline of a facility, and such offset marks shall be documented within the ticket management system.

2.4.4 Marking

All marking of gas facilities shall be completed in accordance with the Ohio Universal Marking Standards that are on file with the Ohio Utilities Protection Service (OUPS) at the following location:
<http://www.oups.org/Home/OhioMarkingStandards>.

Mark all facilities and paint valve box covers within the scope of the locate request. Extend marks at least 25 feet beyond established work zone (50 feet preferred). At a minimum, service branches should be marked at the main, on curbs, and at some offset point outside the work (on private property if necessary) to preserve the marks.

Every effort should be made to mark the centerline of the facility. Painted marks should be approximately 2 inches wide and 18 inches long and visible from adjacent marks.

Facility flags should supplement paint marks, where practicable. On pavement, a "CG" (Columbia Gas) should be painted approximately every 2 marks. Facility stake chasers (brushes or whiskers) may be used for road construction or high traffic jobs in dirt in conjunction with paint. In areas where other gas

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utilities have facilities in proximity to ours, it is especially important to use "CG" (Columbia Gas) or appropriate designation to identify the markings.

Identify size (width) of facilities two inches and over.

Perpendicular lines should be used to indicate dead ends.

Arrows should be used at the ends of the marking site to indicate that the facility continues.

Identify the type of material that an excavator could expose for all mains and for services over 2 inches with the following abbreviations.

- a. CI = Cast Iron Pipe.
- b. PL = Plastic Pipe, or plastic inserted into non-rigid (plastic, PVC) conduits.
- c. ST = Steel Pipe.
- d. ST/INS = Steel with plastic insert (use only for plastic inserted into rigid/metallic conduits).
- e. PI = Plastic Insert.

2.5 Prior to Leaving the Site

Before leaving the site, locate personnel shall review the locate request and verify that any markings are adequate and match the records. Locate personnel shall relay any concerns to local leadership. Locate personnel shall notify the contact person/excavator according to Section 2.1.4 above if difficulties will delay the marking beyond the ticket due date and document such notifications on the request.

In addition, the following tasks shall be completed after the locate request has been performed prior to leaving the site.

2.5.1 Positive Response

Contact the OUPS Positive Response System to communicate the presence or absence of any conflict between the proposed excavation and the existing Company facilities.

If the Company does not mark its underground utility facilities or contact the excavator within forty-eight (48) hours of receiving notice from OUPS, the Company is deemed to have given notice that it does not have any facilities at the excavation site. If the facilities cannot accurately be marked, the Company shall mark them to the best of its ability, notify the excavator using the positive response system that the markings may not be accurate, and provide additional guidance to the excavator in locating the facilities as needed during

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the excavation.

Reports to the OUPS Positive Response System can be accomplished by one of the following methods.

- a. Phone response to 800-445-3894.
- b. Internet response at the following address:
<http://newtina.oups.org/newtinweb/ResponseDisplay.nas>.
- c. TCP protocol response through Irthnet (at this time, Damage Prevention Center access for cleared facilities only).

Once posted, responses may be tracked through the phone number shown in bullet "a" above or internet address shown in bullet "b" above.

A list of positive response codes for Ohio can be found at
<http://newtina.oups.org/newtinweb/ResponseDisplay.nas>.

2.5.2 Record Revisions

Determine if Company record (e.g., map or GIS, service line record) revisions are needed based on the locate work performed. See Section 3.2 below for guidance regarding record revisions.

2.5.3 Identification of Suspected Encroachments

Based on the locate work performed, identify suspected encroachments, such as buildings intended for human occupancy or other structures (e.g., shed, fence, pool) that may have been installed over a Company facility or a customer owned service line. Report suspected encroachments to the Integration Center to create a job order for further investigation.

Refer to GS 2650.010 "Guidelines for Avoidance of Encroachment on Company's Rights-of-Way" for additional guidance if the suspected encroachment impacts the Company's right-of-way.

2.5.4 Identification of Suspected Cross Bores

Be aware of potential Cross Bore related conflicts.

For the purposes of this gas standard, a Cross Bore is defined as "a natural gas pipeline that has inadvertently transected another underground utility (including, but not limited to, a sewer line, septic system, electrical conduit, or other similar facility) resulting in a potentially unsafe situation."

Report suspected Cross Bore related conflicts to the Compliance Project Specialist for further investigation.

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3. RECORDS

3.1 Data

Document in accordance with the specific ticket management system in use. Locate personnel shall verify and document the marking of underground facilities. Documentation may include, but is not limited to, the following.

- a. Ticket number.
- b. Address or location where markings were placed.
- c. Scope of the locate (e.g., north side of property).
- d. Notes regarding existing (or non-existing where required) white pre-markings.
- e. Meetings/conversations with excavator (e.g., date, time, discussion notes).
- f. Date and time locate was completed.
- g. A sketch of markings with measurements to permanent reference points.
- h. Facility type marked.
- i. Marking medium used (flags, paint, stakes, etc.).
- j. Facility size and material.
- k. Photographs if applicable.
- l. Date and time OUPS Positive Response System was notified.
- m. Locator's name and signature.

Records shall be retained for a minimum of seven (7) years, plus the current year.

3.2 Discovery of Inaccurate Records

Upon the discovery of an inaccurate map/GIS record, locate personnel shall submit a map revision according to GS 2610.040 "Map Revisions" to the email address: MapRevisions@nisource.com.

For service line record revisions, locate personnel shall fill out a new Form GS 3020.012-1 "Service Line Record" as indicated in GS 3020.012 "Installation of Service Line - Records." Whenever errors are found and corrected information is submitted on Form GS 3020.012-1, the information shall be corrected and/or filed in accordance with GS 3020.012 "Installation of Service Lines - Records."

IN THE EVENT THAT A COMPANY CONTRACTOR DISCOVERS A NEED TO UPDATE COMPANY RECORDS, A REQUEST SHALL BE SUBMITTED TO FACILITIES RECORDS & ENHANCEMENT – PIPELINE SAFETY & COMPLIANCE (EMAIL:

Effective Date: 06/30/2017	Locating Gas Facilities	Standard Number: GS 1100.010(OH)
Supersedes: 01/01/2016		Page 9 of 9

**MAPREVISIONS@NISOURCE.COM) OR TO THE OPERATIONS CENTER FOR THE
COMPANY TO VERIFY AND SUBMIT ANY UPDATES.**

Exhibit 7

**Columbia Gas of Ohio O&M Procedure Standard Number 1742.010;
(Effective August 1, 2010)**

Effective Date: 08/01/2010	Discontinuing Gas Service	Standard Number: GS 1742.010
Supersedes: N/A		Page 1 of 2

Companies Affected:

<input type="checkbox"/> NIPSCO	<input checked="" type="checkbox"/> CGV	<input checked="" type="checkbox"/> COH	<input checked="" type="checkbox"/> BSG
<input type="checkbox"/> NIFL	<input checked="" type="checkbox"/> CKY	<input checked="" type="checkbox"/> CPA	
<input type="checkbox"/> Kokomo Gas	<input checked="" type="checkbox"/> CMD		

1. GENERAL

Service to a customer may be discontinued at the customer's request (e.g., moving) or at the Company's discretion (e.g., non-payment).

Discontinuing gas service is an action that the Company takes which results in stopping the flow of gas to the customer. However, discontinuing gas service does not include temporary actions that the Company may take to stop the flow of gas to the customer, such as service line or house line leakage or an outage situation.

Before taking the necessary step(s) to discontinue gas service, the order shall be reviewed to verify:

1. the customer's name and address, and
2. the meter serial number (or meter number tag in BSG, also referred to as the meter badge) and current meter reading, if possible.

2. DISCONTINUING GAS SERVICE

The following are acceptable methods to discontinue gas service.

2.1 Turn Gas Off At Meter Valve Only

The inlet meter valve (e.g., riser valve) must be locked in the closed position, and wherever the piping configuration allows, a metal disc (i.e., meter seal) or solid swivel shall be installed.

2.2 Turn Gas Off At Curb and Meter Valves

Be sure the correct curb box is identified before shutting off the valve. If there is doubt that the correct curb valve has been turned off, it may be necessary to bleed gas off at the meter or burn gas off at an appliance.

The inlet meter valve (e.g., riser valve) must be locked in the closed position, and wherever the piping configuration allows, a metal disc (i.e., meter seal) or solid swivel shall be installed.

Effective Date: 08/01/2010	Discontinuing Gas Service	Standard Number: GS 1742.010
Supersedes: N/A		Page 2 of 2

2.3 Turn Gas Off At Curb Valve Only

When access cannot be gained to the meter and the steps in Sections 2.1 or 2.2 can not be performed, the curb valve shall be shut off and locked to prevent the opening of the valve by unauthorized persons. The following are acceptable locking methods:

- a. installing a curb valve locking device,
- b. installing a curb box locking, blocking, or plugging device, or
- c. locking an existing curb box with a locking lid.

2.4 Remove Meter

When the meter is removed the following shall be done.

- a. The gas shall be turned off at the inlet meter valve and the meter valve locked.
- b. Once the meter is removed, each open end of the meter set assembly shall be plugged or capped to seal the outlet piping from the meter valve and the inlet to the customer piping.
- c. If a curb valve exists, it shall be turned off if the last meter has been removed. Be sure the correct curb box is identified before shutting off the valve. If there is doubt that the correct curb valve has been turned off, it may be necessary to bleed gas off at the meter or burn gas off at an appliance.

2.5 Physical Disconnection of Service Line

When the meter valve is inaccessible and/or if a curb valve is nonexistent or inaccessible, the service line shall be physically disconnected at the main or at the property line. At the point of disconnection, the service line shall be capped, as appropriate, in both directions. The installation of a curb valve should be considered for future use, in lieu of a physical disconnection.

3. RECORDS

The date that gas service was discontinued shall be recorded on the order.

Exhibit 8

Columbia Gas of Ohio Service Line Order for 4149 Case Road

34260 COLUMBIA GAS DISTRIBUTION COMPANIES 5A
☒ SURVEY ☐ REPAIR **SERVICE LINE ORDER** ☐ NEW ☐ ABANDON
☐ REPLACE ☐ ABANDON - NOT REMOVED

SERVICE ADDRESS (1) **4149 CASE RD** BEE CITY (2) **AVO** 18-07-53760 29

CDC PID NUMBER (3) **200521598** CDC CURB BOX LOCATION OR TCO INVENTORY STATION NO. (4) **54 FFB** LENGTH BSR (5) **18 LLB** SERVICE TYPE (6) **10P**

DATE INSTALLED (7) **4-31-79** MT (8) ***** REPAIR YR **3984 m** KIND (9) **HOST** MAIN CODE OR LINE NUMBER (11) **15EEP** OPER PRES (12) **MP** SP (13)

TAXING DIST. NO. (14) **0470100** MM (17) CUSTOMER VALVE LOCATION (18) REASON FOR WORK

TAX DISTRICT NAME _____ DATE OF REQUEST _____ DATE ISSUED _____

GEOGRAPHIC INFORMATION BETWEEN _____ AND _____

CUSTOMER OR APPLICANT **EDWARD BERTHOLD**

SUBDIVISION _____ LOT NUMBER _____ SERVICE DEPTH _____ PROPOSED LOCATION _____

INSTALLED BY _____ COMPANY REP. _____

TEST DATA PRESSURE TIME TYPE DATE SIGNATURE

COMPANY SERVICE / /

CUSTOMER SERVICE / /

HOUSE LINES / /

*USE REVERSE SIDE FOR REMARKS **746 6426796**

SKETCH:
 T.L. 15' 8 LLB
 BK
 L R
 8
 50' F

34260 COLUMBIA GAS DISTRIBUTION COMPANIES 5A
☒ SURVEY ☐ REPAIR **SERVICE LINE ORDER** ☐ NEW ☐ ABANDON
☐ REPLACE ☐ ABANDON - NOT REMOVED

SERVICE ADDRESS (1) **4149 CASE RD** BEE CITY (2) **AVO** 18-07-53780 29

CDC PID NUMBER (3) **200521599** CDC CURB BOX LOCATION OR TCO INVENTORY STATION NO. (4) **SEE** LENGTH BSR (5) **SKETCH** SERVICE TYPE (6)

DATE INSTALLED (7) **+** MT (8) REPAIR YR **3984 m** KIND (9) **HOST** MAIN CODE OR LINE NUMBER (11) **15EEP** OPER PRES (12) **MP** SP (13)

TAXING DIST. NO. (14) **0470100** MM (17) CUSTOMER VALVE LOCATION (18) REASON FOR WORK

TAX DISTRICT NAME _____ DATE OF REQUEST _____ DATE ISSUED _____

GEOGRAPHIC INFORMATION BETWEEN _____ AND _____

CUSTOMER OR APPLICANT **EDWARD BERTHOLD**

SUBDIVISION _____ LOT NUMBER _____ SERVICE DEPTH _____ PROPOSED LOCATION _____

INSTALLED BY _____ COMPANY REP. _____

TEST DATA PRESSURE TIME TYPE DATE SIGNATURE

COMPANY SERVICE / /

CUSTOMER SERVICE / /

HOUSE LINES / /

*USE REVERSE SIDE FOR REMARKS **755-7006555**

SKETCH:
 REFER TO MASTERED
 TAP CHRD BK
 L R
 F

COLUMBIA GAS DISTRIBUTION COMPANIES
 SERVICE LINE ORDER

ORDER NO. **4149 Case Rd.** SERVICE CITY **Avon**

ESTIMATE NO. **56 F.F.B. 18 L.L.B.** LENGTH SECTION **5** ROWS TYPE LINE **10 P**

DATE ORDERED **4/31/79** DATE RECEIVED **3784-M** DATE OF LINE WORK **40 S.T. 15 E.E.P.** DATE RECEIVED BY **MP** DATE **N**

ESTIMATE NO. **ESD0470100** DATE **34 Y**

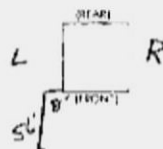
NAME **Avon** REASON **Replace Serv. Leak** SECTION **T.L. is 8' L.L.B.**

DESCRIPTION **Between Detroit Rd + End of Main**

CUSTOMER OR WORKER **J. Lynch** DEPTH **36"**

TEST DATA: PRESSURE **2.0** TIME **5** TYPE **WATER** DATE **4/21/79** SIGNATURE **J. Lynch**

COMPANY SERVICE **2** CUSTOMER SERVICE **1**



MATERIAL

DESCRIPTION	SIZE	QUANTITY	STOCK SYMBOL NO.	DESCRIPTION	SIZE	QUANTITY	STOCK SYMBOL NO.
PIPE	PLASTIC	1	5	ELBOW BOX	35	1	
	P. INSERT			C.B. SUPPORT			
				WRODE			
COUPLER	COMP.	1	1	SEW. BOX			
COUPLER	COMP.			STIFFENER	1	2	
ELL	CDAY	1	1	STIFFENERS PLASTIC			
	PLASTIC			Adapter Normac	1		
WELD	comp	1	1				
	FLUSH	1	1	used over			
TEE	PLASTIC						

ARRANGEMENT: NO. DATE: CO. NO. GEN. LED. R/L. SUBS. OTHER. CE. STOPS OVER. TRANSFER NO.

CHECK: TRADE SIZE: JOE: 107 565 264 21

J. Thurston

Exhibit 9

Photo of unmarked service line made of Celanese Two-Inch Gas Pipe.

175 CLEANSE 2" GAS PIPE SDR 11 PE2306 ASTM D2513



Exhibit 10

**PUCO Natural Gas Pipeline Failure Investigation Report #1186041 for incident dated
08/02/17 at 4149 Case Road in Avon, Ohio**



Natural Gas Pipeline Failure Investigation Report

Operator Information	
Operator: Columbia Gas of Ohio, Inc.	Operator ID: 2596
Operator Address: 290 W. Nationwide Blvd., Columbus, OH 43215	
Company Official Point of Contact: Daniel Creekmur, President	
Phone No: 614-460-4680	E-Mail: dcreekmur@nisource.com

Incident Criteria	
Deaths: None	Names and Ages N/A
Injuries requiring hospitalization: N/A	Names and Ages N/A
Est. Property Damage: >\$100,000	Type: Structure and contents to homeowner.
Estimated Gas Lost (MCF) 150.30 MCF	Comments: 2" service line.

Failure Location and Response			
Address / Location: 4149 Case Rd.			
City: Avon		County: Lorain	
Coordinates of Failure Location:		Latitude: 41.428425	Longitude: -82.059551
Date of Failure: 08/02/2017	Time of Failure: 1020	Time Detected: 1020	Time Located: 1020
How Located: Reported by damaging party.			
NRC Report #: 1186041	Time Reported: 1411	Reported By: Rob Smith	
Type of Pipeline:			
<u>Gas Distribution</u>	<u>Gas Transmission</u>	<u>Gas Gathering / Other</u>	
<input checked="" type="checkbox"/> Private distribution	<input type="checkbox"/> Interstate	<input type="checkbox"/> Part 192 Gathering	
<input type="checkbox"/> Municipalities	<input type="checkbox"/> Intrastate	<input type="checkbox"/> Ohio R.C. Gas Gathering	
<input type="checkbox"/> Other Distribution (Co-op)		<input type="checkbox"/> Other (description):	
<input type="checkbox"/> Master Meter			
System Description: The system is a 4" steel coated, cathodically protected MP natural gas distribution system with an established Maximum Allowable Operating Pressure (MAOP) of 50 psig, and an operating pressure of 42 psig at the time of the incident.			



Company Reported Apparent Cause	Company Reported Sub-Cause (from PHMSA Form 7100-1 / 7100-2)
<input type="checkbox"/> Corrosion	
<input type="checkbox"/> Natural Force Damage	
<input checked="" type="checkbox"/> Excavation Damage	Locating practices not sufficient. Incorrect facility records and maps.
<input type="checkbox"/> Other Outside Force Damage	
<input type="checkbox"/> Material Failure (Pipe, Joint, Weld)	
<input type="checkbox"/> Equipment Failure	
<input type="checkbox"/> Incorrect Operation	
<input type="checkbox"/> Other	

Narrative Summary (include a summary of findings and suggestions to prevent future recurrences if any):

On Wednesday, August 2, 2017 at 1020 hours, a natural gas release and subsequent fire occurred at 4149 Case Rd. in Avon, Ohio. The fire was caused by a release of natural gas from an unmarked 2" plastic natural gas service line that was struck by a third party contractor. Kyle's Excavating was installing a new water service line for the homeowners and had contacted the Ohio Utility Protection Service (OUPS) prior to any excavation activities. The service line was not properly located by COH, or by Utiliquest, COH's line locating contractor. According to the maps provided to Utiliquest by COH, the line was omitted in the maps and records provided to the contract locator. The operating pressure at the time of the incident was 42 psig. The damage to the natural gas facility caused a gas release and subsequent fire to the single family dwelling. Please see the event log with this report and following timeline for additional information.

-Tuesday, July 25, 2017 at 1029 hours, Kyle Urig from Kyle's Excavating contacted the Ohio Utilities Protection Service (OUPS) for a one call ticket (one call ticket notifies all utilities, there will be construction/excavation activities at the location of the ticket. This State law requires 48 hours notice prior to excavation activities, excluding weekends and holidays) for 4149 Case Rd., Avon, Ohio. The OUPS ticket number was A720601462-00A (see Appendix L). Kyle's Excavating was installing a new water line with a mini excavator.

On Thursday, July 27, 2017 at 1020 hours, Utiliquest (the line locating contractor for COH) called Utiliquest sent a positive response (defined as an automated system facilitated by a protection service allowing a utility to communicate to an excavator the presence or absence of any conflict between the existing underground utility facilities and the proposed excavation site) for the OUPS ticket, stating "marked up to privately owned facilities" (see Appendix L). Utiliquest marked the 4" steel gas main and 1" PE service line with yellow flags and paint according to the universal marking standards. The main and service line markings were confirmed for accuracy with maps provided to the contractor by COH. The unmarked 2" service line was not included in the maps or records provided to Utiliquest.

-Wednesday, August 2, 2017 at 1020 hours, Kyle's Excavating was digging a trench with a mini-excavator and struck the unmarked 2" PE natural gas service line. The 2" plastic pipe was damaged at the upper portion of the service line from the tooth on the excavator bucket. The top of the main was torn open creating a 2" opening in the service line. Kyle Urig contacted 911 at 1021 hours and the 911 operator advised the caller to evacuate the area. The area was evacuated and the leaking gas ignited at approximately 1022 hours, prior to the fire departments arrival. The homeowner called 911 at 1024 hours to report the house is now on fire. There were no hospitalizations or deaths from this incident. The Avon Fire Department received the first alarm at 1024 hours, and arrived at 1030 hours. COH was requested by Avon Fire Department at 1034 hours and arrived on the scene at 1121 hours. COH used a squeeze-jack (device used to stop the flow of



gas in plastic pipe) at 1300 hours which eliminated the flow of gas and extinguished the fire. The Avon Fire Department and all other mutual aid fire departments cleared the scene at 1331 hours.

CONCLUSION:

After investigating the events leading to the fire at 4919 Case Rd., Avon, Staff concludes that the incident was caused by the following events:

- 1.) Columbia Gas of Ohio failed to follow their Operation and Maintenance procedure GS1740.010 – Installation and Abandonment of Service Lines. Columbia Gas of Ohio did not properly abandon an old idle 2" plastic service line at the end of the 24th calendar month for address 4149 Case Road in Avon, Ohio. This address had 2 service lines, one going to a residential structure, and the other going to a greenhouse behind the incident structure. The greenhouse meter was removed on June 2010, and the curb stop was not properly abandoned in accordance with this procedure.
- 2.) Columbia Gas of Ohio failed to provide accurate pipeline facility maps and tap card information to Utilquest (see Appendix Q). COH distributes updated maps and tap cards on a monthly basis, yet the data provided was inaccurate and failed to identify the active 2" service line at 4149 Case rd., Avon.

Staff further concludes that the following violations of the Pipeline Safety Regulations (49 C.F.R. 192) caused or contributed to this incident:

192.13(c) - Each operator shall maintain, modify as appropriate, and follow the plans, procedures, and programs that it is required to establish under this part.

Columbia Gas of Ohio did not follow its Operation and Maintenance procedure GS1740.010 - Installation and Abandonment of Service Lines.

192.613 (a) - Continuing Surveillance.

Columbia Gas of Ohio did not have knowledge of its pipeline facility through continuous surveillance at 4149 Case Road in Avon, Ohio. The original service line (old idle service line) was installed in the 1970's and through the life span of this service line the operator lost track of the service line in its electronic databases. In the calendar year of 2010 the meter was removed and a locking device was installed at the meter stop.

192.727 - Abandonment or deactivation of facilities.

Columbia Gas of Ohio did not properly abandon the service line at 4149 Case Road in Avon, Ohio.

Please see attached Notice of Probable Noncompliance for additional information.

Drug/Alcohol Testing					<input checked="" type="checkbox"/> N/A
Operator Drug Program Contact & Phone #:					
Operator Alcohol Program Contact & Phone #:					
Were all employees that could have contributed to the incident, post-accident tested within the 2 hour time frame for alcohol or the 32 hour time frame for all other drugs? <input type="checkbox"/> Yes <input type="checkbox"/> No					
Job Function	Test Date & Time	Location	Results		Type of Drug
			Pos	Neg	
			<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	



Operating Pressure		<input type="checkbox"/> N/A
Max. Allowable Operating Pressure: 50 psig.	Determination of MAOP: Five year operating window. 192.619(c). See Appendix S for additional information.	
Actual Operating Pressure: 42 psig.		
Method of Over Pressure Protection: District Regulator Stations. Control/Monitor Configuration.		
Relief Valve Set Point: 50 psig.	Capacity Adequate?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Pressure @ Time of Failure @ Failure Site					<input type="checkbox"/> N/A
Pressure @ Failure Site: 42 psig			Elevation @ Failure Site: 684'		
Pressure Readings @ Various Locations:				Direction from Failure Site	
Location/M.P./Station #	Pressure (psig)	Elevation (ft msl)	Upstream	Downstream	
5469 Gulf Rd. / #403280	42 psig	670'	X		
E. River Rd. / #410659	42 psig	627'	X		

Pipe Data		<input type="checkbox"/> N/A
Material: PE 2306	Wall Thickness/SDR: 11	
Diameter (O.D.): 2"	Installation Date: Unknown	
SMYS: N/A	Manufacturer: Celanese	
Longitudinal Seam: N/A	Type of Coating: N/A	
Pipe Specifications (API 5L, ASTM A53, etc.): ASTM D2513		

Component Failure Description		<input checked="" type="checkbox"/> N/A
Component Failed:		
Manufacturer:	Model:	
Pressure Rating:	Size:	
Comments:		

Excavation Damage		<input type="checkbox"/> N/A
Responsible Party: Kyle's Excavating, LLC. Owner-Kyle Urig.	Telephone No.: 440-396-4948	
Address: 4305 Stoney Ridge Rd., Avon		
Work Being Performed: Installing a new water line.		
Equipment Involved: Mini-excavator.	Called One Call System? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Contacted on 07/25/17.	



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Service Monitoring and Enforcement Department
180 East Broad Street, 7th Floor
Columbus, OH 43215

Excavation Damage		<input type="checkbox"/> N/A
One Call Name: Ohio Utilities Protection Service (OUPS)	One Call Report #: A720601462-00A	
Notice Date: 07/25/17	Time: 1029 hours	
Response Date: 07/27/17	Time: 1020 hours	
Details of Response: The main and 1" service line were marked up to the privately owned facilities according to the positive response system. The excavator struck an unmarked 2" line feeding an abandoned greenhouse behind the incident structure..		
Was Location Marked According to Procedures? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Pipeline Marking Type: Marking paint and flags to the universal marking standards.	Location: Entire Property	
State Law Damage Prevention Program Followed? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No State Law		
Notice Required: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Response Required: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Was Operator Member of State One Call? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Was Operator on Site? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Did a deficiency in the Public Awareness Program contribute to the accident? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		

Failure Isolation		<input type="checkbox"/> N/A
Squeeze Off/Stopple Location and Method: The 2" service line was squeezed off to stop the flow of gas. The 2" service line was squeezed off east of the curb stop.		
Valve Closed - Upstream: N/A Time: N/A	I.D.: N/A Milepost: N/A	
Valve Closed - Downstream: N/A Time: N/A	I.D.: N/A Milepost: N/A	
Pipeline Shutdown Method: <input checked="" type="checkbox"/> Manual <input type="checkbox"/> Automatic <input type="checkbox"/> SCADA <input type="checkbox"/> Controller <input type="checkbox"/> ESD		
Failed Section Bypassed or Isolated: Isolated.		
Performed By: Edwin Roman	Valve Spacing: N/A	

Class Location/High Consequence Area	
Class Location: 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input checked="" type="checkbox"/> 4 <input type="checkbox"/> Determination: Population Density.	HCA Area? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A Determination: N/A
Odorization Required? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	



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Odorization		<input type="checkbox"/> N/A
Gas Odorized: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Concentration of Odorant – Sniff Test (Post Incident at Failure Site): .6% GIA	
Type of Odorizer(Wick, By-pass, Pulse): N/A	Heath/Bacharach Unit Used: Heath S/N 3160-5 Cal. Due 9/10/17. Additional Address: N/A Reading: N/A	
Odorizer Manufacturer: N/A	Additional Address: N/A Reading: N/A Additional Address: N/A Reading: N/A	
Odorant Manufacturer: N/A	OQ Individual Performing Sniff Test: Gail Payne	
Type of Odorant: Mercaptan	Sniff Test(s) Monitoring Interval (Monthly): Monthly.	
Odorization History (Low Odorant Levels, Monitoring Locations, Distances from Failure Site): No low odorant reads according to the operator. See attachment AA for odorant level read history.		

Weather Conditions		<input type="checkbox"/> N/A
Temperature: 82 degrees F	Wind (Direction & Speed): SSW 6 mph	
Climate (Snow, Rain): Partly Cloudy	Humidity: 53%	
Was Incident preceded by a rapid weather change? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Weather Conditions Prior to Incident (Cloud Cover, Ceiling Heights, Snow, Rain, Fog): Partly cloudy. See Appendix M for additional information.		

Gas Migration Survey		<input type="checkbox"/> N/A
Bar Hole Test of Area: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Equipment Used: Sensit Gold	
Method of Survey (Foundations, Curbs, Manholes, Driveways, Mains, Services) Bar hole and above ground survey of the main, service lines, and around foundations of the incident structure and surrounding structures.		



Pressure Test History <input checked="" type="checkbox"/> N/A (Expand List as Necessary)					
	Test Date	Test Medium	Pressure (psig)	Duration (hrs)	% SMYS
Installation					
Next					
Next					
Most Recent					
Describe any problems experienced during the pressure tests:					

Maps & Records <input type="checkbox"/> N/A	
Are Maps and Records Current? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Comments: The maps of the area were not accurate at the time of the incident and some uncertainty remains on the accuracy of the current maps.	

Leak Survey History <input type="checkbox"/> N/A
Leak Survey History (Trend Analysis, Leak Plots): No reported leaks during the last leak survey. WMS order #15-3050699-00. Leak survey started 06/01/15, completed 06/24/15. 15,209 feet of main were leak detected, along with 120 service lines. See Appendix CC for further details.

Additional Actions Taken by the Operator <input type="checkbox"/> N/A
Make notes regarding the emergency and Failure Investigation Procedures (Pressure reduction, Reinforced Squeeze Off, Clean Up, Use of Evacuators, Line Purging, closing Additional Valves, Double Block and Bleed, Continue Operating downstream Pumps): The operator completed a video inspection of the main lines near the incident site to determine if there were any additional taps that were undocumented. All taps that were discovered during the video had existing tap cards on file with COH. An additional leak survey of the incident area was conducted on 08/18/17 with no findings.



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Checklist for Additional Information:

<input checked="" type="checkbox"/> Witness names	<input type="checkbox"/> Name of Injuries	<input checked="" type="checkbox"/> Leak Survey
<input checked="" type="checkbox"/> Fire Dept. Responding	<input checked="" type="checkbox"/> Time operator notified	<input checked="" type="checkbox"/> Drug & Alcohol Testing
<input checked="" type="checkbox"/> Fire Dept Investigator	<input checked="" type="checkbox"/> Time operator arrived	<input checked="" type="checkbox"/> Corrosion Reads
<input checked="" type="checkbox"/> Cause of Leak	<input checked="" type="checkbox"/> What failed	<input type="checkbox"/> Possible Flow Rate Study
<input checked="" type="checkbox"/> Odorization test at site	<input checked="" type="checkbox"/> Odorization History	<input checked="" type="checkbox"/> Pressure Charts
<input type="checkbox"/> Source of Ignition	<input checked="" type="checkbox"/> CGI Bare Hole Survey	<input checked="" type="checkbox"/> Map of Area
<input checked="" type="checkbox"/> Sniff Testing To Verify Odorant	<input checked="" type="checkbox"/> FI Study	<input checked="" type="checkbox"/> Map of Facilities
<input checked="" type="checkbox"/> How operator made safe	<input checked="" type="checkbox"/> Time operator made site safe	<input checked="" type="checkbox"/> Prior Service History
<input checked="" type="checkbox"/> Site Pressure test records	<input type="checkbox"/> Possible smoke test	<input checked="" type="checkbox"/> Past Pressure Test Records
<input type="checkbox"/> Control Room Log	<input checked="" type="checkbox"/> Meter Readings	<input checked="" type="checkbox"/> Prior Leak surveys
<input checked="" type="checkbox"/> Was One Call Notified	<input checked="" type="checkbox"/> Photo Documentation (yours, operator, news, neighbors, etc.)	<input checked="" type="checkbox"/> Recent odor complaints
<input checked="" type="checkbox"/> Construction activity in the incident area		
Notes:		



Contact Information Log

Contact information for persons relevant to the investigation

Name	Title	Phone Number
Rob Smith	Columbia Gas/Compliance Manager	614-818-2110
Jerry Taggart	Columbia Gas/Compliance Manager	614-481-1105
John Simoneau	Homeowner	440-897-2156
Kyle Urig	Kyle's Excavating/Owner	440-396-4948
Michael Emling	Avon Fire Department/Assistant Chief	440-934-1222
Justin Conrad	Utilquest/Lead Technician	440-754-2400
Erick Johnson	Utilquest/Operations Manager	614-591-4361
Joseph Gerling	Lane Alton/Attorney at Law	614-233-4754
Kevin Keaton	SEA Limited/Investigator	614-572-4743

Event Log

Sequence of events prior, during, and after the incident by time. (Consider the events of all parties involved in the incident, Fire Department and Police reports, Operator Logs and other government agencies.)

Time / Date	Event
1029-07/25/17	Kyle Urig contacted OUPS for markings at 4149 Case Rd., Avon for a water line install.
1020-07/27/2017	Utilquest locates COH main and service line for 4919 Case Rd., Avon. The 2" service line does not show up on any maps or records for that address. The only service line marked is a 1" PE service line for the main house.
0800-08/02/17	Kyle Uring of Kyle's Excavating starts excavation for a new water line. The excavator started digging at the water vault at the street, digging east towards the structure.
1020 - 08/02/17	While the excavator was digging at the north side of the house, he hit an unmarked service line. The gas line was approximately 5' north of the structure. The gas was blowing directly at the north side of the home.
1021 - 08/02/17	Kyle Urig contacted 911 and advised the gas line is on fire. The homeowners are evacuated from the home.
1024 - 08/02/17	The gas escaping from the ruptured line ignites the house on fire on the "B" side of 4149 Case Rd. The homeowner now contacts 911 to advise the house is now on fire.
1024 - 08/02/17	Avon Fire Department is dispatched to 4149 Case Rd. for a structure fire.
1025 - 08/02/17	Kyle Urig attempts to shut off gas to the blowing line by turning off the curb stop to the structure. Gas flow does not stop to the struck line.
1031 - 08/02/17	Avon Fire Department arrives on scene and begins fire suppression activities.
1034 - 08/02/17	Avon Fire Department requests Columbia Gas of Ohio (COH) to respond to scene.
1100 - 08/02/17	COH creates PR order and dispatches service technician. PSID #200521599.
1121 -08/02/17	COH service technician Atkinson arrives on scene. Truck#07546.
1128 - 08/02/17	COH conducts leak survey of entire incident area and surrounding structures. No findings of natural gas were present outside of the area where the line was struck. See Appendix BB.



<i>Event Log</i>	
Sequence of events prior, during, and after the incident by time. (Consider the events of all parties involved in the incident, Fire Department and Police reports, Operator Logs and other government agencies.)	
1128 - 08/02/17	COH service technician Atkinson requests a plant crew for assistance and squeeze tools. Technician believes it is a well line and not their line.
1157 - 08/02/17	COH plant crew is on site.
1217 - 08/02/17	Second COH plant crew is on site.
1248 - 08/02/17	COH Integration Center discovers manifold with a meter abandonment in old records @ 12:46 per phone conversation with FOL (Field Operation Leader) Jim Lukehart and IC. - Meter abandon 4149 Case Rd. PSID 200521598.
1250 - 08/02/17	COH begins digging to find unmarked service line to determine where gas is feeding from.
1300 - 08/02/17	COH plant crew installs squeeze tool and squeezes line off, stopping flow of gas.
1303 - 08/02/17	Avon Fire Department rules the fire "Under Control".
1331 - 08/02/17	All fire department crews are placed in service. Fire command is terminated.
1348 - 08/02/17	COH cuts and caps service line and gas leak was made safe.
1403 - 08/02/17	Rob Smith from COH notifies Ohio Department of Natural Resources of incident.
1411 - 08/02/17	Rob Smith from COH notifies National Response Center of incident.
1430 - 08/02/17	PUCO dispatches Keith Topovski to scene to aid in investigation.
1630 - 08/02/17	Keith Topovski, PUCO investigator arrives at 4149 Case Rd., Avon. COH contact is Jerry Taggart.
2017 - 08/02/17	Gail Payne, COH performs odor level test at incident site.
2030 - 08/02/17	Keith Topovski leaves incident site.
0830 - 08/10/17	On site meeting at 4919 Case Rd., Avon to camera damaged 2" unmarked service. No additional taps were found off of the 2" main. Found an additional riser at garage behind 4919 Case Rd. Service line to be dug at a later date to verify it is properly abandoned. On site were Chris Domonkos, Keith Topovski, PUCO; Jerry Taggart, COH; Team Fishel employees to run camera.
0930 - 08/11/17	Meet at COH offices at 3550 Johnny Appleseed Dr., Columbus to requested documents and procedures from COH. Present at the meeting were Chris Domonkos, Mike Purcell, and Keith Topovski, PUCO; Rob Smith, COH.
0900 - 08/17/17	On site meeting at 4919 Case Rd., Avon to verify abandonment of additional service line south of incident structure. Install provisions to install a camera to inspect the main from incident structure north and south to verify there are no additional taps that are unknown to the operator in the area. Met with Kyle Urig to obtain a written statement. Present on site were Keith Topovski, PUCO, Rob Smith, COH.
0900 - 08/18/17	On site meeting to camera mains. No undocumented taps were noted in the survey area. The mains were inspected approximately 500' north and south of incident site. See Appendix QQ for video. Present on site were Keith Topovski, PUCO, Rob Smith, COH.
0930 - 09/01/17	On site meeting with Utiliqest at 4919 Case Rd., Avon. Present at the meeting were Chris Domonkos, Keith Topovski, PUCO; Justin Conrad, Erick Johnson, Utiliqest; Joseph Gerling, Lane Alton (Attorney for Utiliqest).
0930 - 10/02/17	Meet at COH offices at 3550 Johnny Appleseed Dr., Columbus to review requested documents. Present at the meeting were Chris Domonkos, Mike Purcell, and Keith Topovski, PUCO; Rob Smith, COH.
0830 - 11/02/17	Meet at COH offices at 3550 Johnny Appleseed Dr., Columbus to finalize data requests, review findings, and complete reports. Present at the meeting were Chris Domonkos, Mike Purcell, and Keith Topovski, PUCO; Rob Smith, COH.



The Public Utilities
Commission of Ohio

Public Utilities Commission of Ohio
Service Monitoring and Enforcement Department
180 East Broad Street, 7th Floor
Columbus, OH 43215

<i>Photo Documentation Log</i>			
#	Description	#	Description
1	Appendix O - Photos of line locate prior to incident	16	
2	Appendix MM - Photos provided by Avon Fire Department	17	
3	Appendix NN - Photos provided by John Simoneau	18	
4	Appendix OO - Photos provided by Keith Topovski	19	
5	Appendix PP - Photos provided by Chris Domonkos	20	
6		21	
7		22	
8		23	
9		24	
10		25	
11		26	
12		27	
13		28	
14		29	
15		30	
Camera Type: Various			



Failure Investigation Documentation Log				
Operator: Columbia Gas of Ohio		Unit #: 1222	CPF #:	Date: 08/02/17
Appendix Number	Documentation Description	Date Received	FOIA Yes No	
A	NRC Report	08/02/17	X	
B	DOT Original Report	09/01/17	X	
C	Avon Fire Department Fire Report	08/04/17	X	
D	Avon Fire Department Call Log	08/09/17	X	
E	911 Dispatch Center Radio Log	08/16/17	X	
F	Audio - 911 Calls	08/18/17	X	
G	Audio - Fire Department Radio Traffic	08/18/17	X	
H	Aerial view of site prior to incident	08/11/17	X	
I	Street view of site prior to incident	08/11/17	X	
J	Sketch of 4149 Case Rd.-from Auditors website	08/04/17	X	
K	Sketch of Greenhouse 4149 Case Rd.-from Auditors website	08/04/17	X	
L	OUPS Tickets	08/21/17	X	
M	Weather report day of incident	11/13/17	X	
N	Timeline of events provided by COH	10/02/17	X	
O	Photos of Line Locate	10/02/17	X	
P	OQ Qualifications for Gary Rogers, Locator	10/02/17	X	
Q	Information/Documents provided by Utilquest	09/01/17	X	
R	Map of gas system	10/02/17	X	
S	Main line information and MAOP Documentation	10/02/17	X	
T	Tap card for 4149 Case Rd., Avon	10/02/17	X	
U	Tap card for 4169 Case Rd., Avon	10/02/17	X	
V	Service Call History for 4149-4169 Case Rd.	10/02/17	X	
W	Service Call Detail for 4149-4169 Case Rd., Avon	10/02/17	X	
X	Service Call Work Order Key	10/02/17	X	
Y	Odorant level information from day of incident	10/02/17	X	
Z	Heath Odorator calibration certificate	11/02/17	X	
AA	Odorant level history for area	10/02/17	X	
BB	Leak Survey area with bar holes	10/02/17	X	
CC	Leak Survey 6-2015	10/02/17	X	
DD	Post Incident Leak Survey 8-2017	10/02/17	X	
EE	Calibration Information-Leak Detection Equipment	10/02/17	X	
FF	COH OQ Qualifications for all employees involved with incident	08/15/17	X	



Failure Investigation Documentation Log				
Operator: Columbia Gas of Ohio		Unit #: 1222	CPF #:	Date: 08/02/17
Appendix Number	Documentation Description	Date Received	FOIA Yes No	
GG	Gulf Rd. M & R Station pressure chart	10/02/17	X	
HH	M& R Station elevations and locations	10/02/17	X	
II	Meter Consumption History for 4149-4169 Case Rd., Avon	10/02/17	X	
JJ	Site drawing including service lines and dimensions	08/17/17	X	
KK	Statement-John Simoneau, Homewoner	08/20/17	X	
LL	Statement-Kyle Urig, Kyle's Excavating	08/17/17	X	
MM	Photos provided by Avon Fire Department	08/14/17	X	
NN	Photos provided by John Simoneau	08/24/17	X	
OO	Photos provided by Keith Topovski	08/24/17	X	
PP	Photos provided by Chris Domonkos	10/1/17	X	
QQ	COH Video of mainline	09/12/17	X	
RR	COH Gas Statndard 1740.010 - Abandonment of Facilities 2010	11/2/17		X
SS	COH Gas Standard 1742.010 - Discontinuing Gas Service 2010	10/2/17		X
TT	COH GS 1100.010-OH Locating Gas Facilities 2017	10/2/17		X

Based on the results of the investigation, did violations of the Pipeline Safety Regulations or Ohio Administrative Code cause or contribute to the incident? ☒ Yes ☐ No

Code Section	Violation
192.13(c)	What general requirements apply to pipelines regulated under this part?
192.613(a)	Continuing Surveillance.
192.727(d)	Abandonment or deactivation of facilities.

Investigator: Chris Domonkos / Mike Purcell / Keith Topovski

Date: 11/17/17

Exhibit 11

Columbia Gas Service History for 4149 Case Road

OPER ACTION ==>

MULTIPLE ADDRESS LIST

SERVICE ADDRESS: 4169 CASE

	ADDRESS DESCRIPTION	CITY	ST	NAME	PCID	SEQ	STAT	ACCT
1	RD	AVON	OH	WILLIAM BERTHOLD	12548890	002	COF	
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								

PF1-HELP

PF2-WORK FUNCTION MENU

PF3-QUIT

PF7-PAGE BACKWARD

PF8-PAGE FORWARD

OPER ACTION ==> EXECUTE ORDER LIST 34 1222 200521600 07/35

CUST NAME WILLIAM BERTHOLD PCID 12548890 CUST 002 7
SERV ADDR 4169 CASE RD CHECKFREE-ZIPCHECK
CITY AVON ST OH ZIP 440112107 NON PARTICIPANT

	ORDER SEQ NBR	ORDER TYPE	ORDER STATUS	ORDER CODE	DATE SERVICE DESIRED	DATE ORDER EXECUTED
1.	24	SL	W	A	11-16-2012	11-14-2012
2.	23	SO	E	OW	11-14-2012	11-14-2012

F1=HELP F2=WRK-FUN F3=QUIT F4=ORD-TAK F5=INQ F6=ORD-EX F7=BWD
F8=FWD F9=INQ-CTL F10=EX-CTL F11=TAK-CTL F12=INFO F14=CONTACT F24=CASH

OPER ACTION ==> EXECUTE ORDER DETAIL 34 1222 200521600 07/35

CUST NAME WILLIAM BERTHOLD PCID 12548890 CUST 002 7
SERV ADDR 4169 CASE RD CHECKFREE-ZIPCHECK
CITY AVON ST OH ZIP 440112107 NON PARTICIPANT

ORDER	ORDER	ORDER	ORDER	TRANS DATE	11-08-2012
SEQ 24	TYPE SL	STATUS W	CODE A	DATE TAKEN	11-08-2012
				TIME TAKEN	0000
LOCATION 1222	REQUESTED BY				
SADC CODE AL	PRINT TERMNO	DAY COUNT 0	DATE EXEC	11-14-2012	
METER READING 0		FGA	TIME EXEC	1705	
		ORDER ENTRY	DATE COMP	11-14-2012	
SERVICE PERSON		TERMNO WM87	TIME COMP	0000	
		OPERID MLENGYE	ORIG TAKE		
	DATE SCHED 11-16-2012	ARRIVAL DATE	00-00-0000		
SERVICE REMARKS	CALL CUST	ARRIVAL TIME	0000		
ABANDON TAP					

F1=HELP F2=WRK-FUN F3=QUIT F4=ORD-TAK F5=INQ F6=ORD-EX F8=FWD
F9=INQ-CTL F10=EX-CTL F11=TAK-CTL F12=INFO F14=CONTACT F24=CASH

OPER ACTION ==> EXECUTE ORDER DETAIL 34 1222 200521600 07/35

CUST NAME WILLIAM BERTHOLD PCID 12548890 CUST 002 7
SERV ADDR 4169 CASE RD CHECKFREE-ZIPCHECK
CITY AVON ST OH ZIP 440112107 NON PARTICIPANT

ORDER	ORDER	ORDER	ORDER	TRANS DATE
SEQ	23	TYPE	SO	STATUS E
				DATE TAKEN 11-14-2012
				TIME TAKEN 1040

LOCATION	1222	REQUESTED BY		
SADC CODE	AL	PRINT TERMNO	DAY COUNT	0
METER READING		0	FGA	DATE EXEC 11-14-2012
			ORDER ENTRY	TIME EXEC 1056
			TERMNO MDT	DATE COMP 11-14-2012
			OPERID ECOATS	TIME COMP 1056

SERVICE PERSON		DATE SCHED	11-14-2012	ARRIVAL DATE	11-14-2012
EDDIE	H COATS III	CALL CUST	N	ARRIVAL TIME	1055

SERVICE REMARKS
DOCUMENT MTR READING AND REMOVE IA METER PER LOWERY. NPOTTER-IC
MTR ALREADY REMOVED IN THE COMPUTER SO 566 COULD BE WORKED - PLS USE THIS
ORDER TO DOCUMENT ACTUAL TAKING OF METER.... MIGHT/IC

F1=HELP F2=WRK-FUN F3=QUIT F4=ORD-TAK F5=INQ F6=ORD-EX F8=FWD
F9=INQ-CTL F10=EX-CTL F11=TAK-CTL F12=INFO F14=CONTACT F24=CASH

OPER-ACTION SERVICE LINE INQUIRY PG 1 34 1222 200521600 07/35
 CUST NAME WILLIAM BERTHOLD PCID 12548890 CUST 002 7
 SERV ADDR 4169 CASE RD CHECKFREE-ZIPCHECK
 CITY AVON ST OH ZIP 440112107 NON PARTICIPANT
 LOCKDOWN: UNSAFE:
 NO BURIED REGULATORS 0 SERVICE REG CD F1M98
 OUTSIDE INSPECT 05 2007 SCHED CD 3 CSL ROUTE/SEQ 2175 0015.00
 INSIDE INSPECT PREMISE STATUS SND ABN
 LEA NO METER K&S 619
 METER NO ROUTE SEQ 0000 MEAS STATION NO 000000-0
 TAX DISTRICT 0470100 MAIN NO 34364008
 MASTER MTR CD TCO LOC NO
 OPER PRSURE MP CSL PRSURE MP MAP NO 3984M
 MAIN CODE: SIZE 040 MATL ST LOC REFERENCE 19ECU
 SERVICE PIPE: SIZE 012 MATL P LENGTH OF SERV 00003 00000
 SERVICE PIPE2: SIZE MATL SPECIAL COND
 OWNER CUSTOMER OWNED EFV N SADC AL AOC
 INS/ABN DATE 11 14 2012 00 00 0000 SHUT-OFF INFO METER VALVE OFF
 REPAIR DATE 09 17 1998 10 14 2008 REPAIR KIND VALVE RISER
 MASTER TAP CODE RISER CODE EC12 MASTER TAP LOC/PSID
 CURB BOX LOC/PSID 106FFB 21LRB CUST VALVE LOC/PSID METER VALVE
 F1=HELP F2=WRK-FUN F3=QUIT F4=ORD-TAK F5=INQ F6=ORD-EX F8=FWD
 F9=INQ-CTL F10=EX-CTL F11=TAK-CTL F14=CONTACT F24=CASH

Exhibit 12

Notice of Probable Non-compliance issued February 20, 2015



**Public Utilities
Commission**

John R. Kasich, Governor
Thomas W. Johnson, Chairman

Commissioners

Steven D. Lesser
Asim Z. Haque
Lynn Slaby
M. Beth Trombold

February 20, 2015

Mr. Daniel Creekmur
President
Columbia Gas of Ohio
290 W. Nationwide Blvd.
Columbus, OH 43215

Dear Mr. Creekmur:

On January 5 - February 10, 2015, a representative of the Public Utilities Commission of Ohio conducted a pipeline safety inspection of your pipeline facilities and records at the Lake Erie Operations Center, pursuant to Section 4905.91(B) of the Ohio Revised Code.

As a result of the inspection, the Staff has issued the following Notice of Probable Noncompliance to Columbia Gas of Ohio in accordance with Section 4901:1-16-09 of the Ohio Administrative Code, for review and written response within 30 days. The response is your opportunity to provide additional information for consideration by the Staff and/or to provide a proposed corrective action plan.

If you need more information, please call me at (614) 644-8983.

Sincerely,

Peter A. Chace, Program Manager
Gas Pipeline Safety Section
Facility and Operations Field Division

PC:ts
Enclosure

**THE PUBLIC UTILITIES COMMISSION OF OHIO
GAS PIPELINE SAFETY SECTION**

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

NOTICE OF PROBABLE NONCOMPLIANCE

Sent to	<u>Daniel Creekmur</u>	Title	<u>President</u>
Operator	<u>Columbia Gas of Ohio</u>		
Address	<u>290 W. Natiowide Blvd.</u>		
City	<u>Columbus</u>	State	<u>OH</u> Zip Code <u>43215</u>
Date of Inspection	<u>January 5 - February 10, 2015</u>	Place of Inspection	<u>Lake Erie Operations Center</u>
GPS Inspector	<u>Mary McKelvey</u>		

DESCRIPTION

ALL PROBABLE NONCOMPLIANCES LISTED BELOW SHOULD BE CORRECTED OR ACTION TAKEN TO CORRECT WITHIN 30 DAYS OF RECEIPT OF CERTIFIED LETTER.

- (1) Section 192.3(49 C.F.R.); Title: Definitions.
(2) Section 192.739(a)(49 C.F.R.); Title: Pressure limiting and regulating stations: Inspection and testing.

Describe Probable Noncompliance

192.3 Main means a distribution line that serves as a common source of supply for more than one service line.

Distribution mains at 81 Townsend Ave., Norwalk (Lot 1) and 81 Townsend Ave., Norwalk (Lot 9) were incorrectly classified by Columbia Gas of Ohio as non-jurisdictional customer owned piping. Staff identified a similar violation on 4/9/2014 where a distribution main at 504 Cleveland Rd. W, Huron was incorrectly classified as non-jurisdictional customer owned piping. Regulator stations supplying gas to these systems have service regulators not designed to prevent a single failure from over-pressurizing the system.

192.739(a) Each pressure limiting station, relief device (excluding rupture discs), and pressure regulating station and its equipment must be subjected at intervals not exceeding 15 months, but at least once each calendar year, to inspections and tests to determine that it is 1) In good mechanical condition; 2) Adequate from the standpoint of capacity and reliability of operation for the service in which it is employed; 3) Except as provided in paragraph (b) of this section, set to control or relieve at the correct pressure consistent with the pressure limits of 192.201 (a); and 4) Properly installed and protected from dirt, liquids, or other conditions that might prevent proper operation.

Columbia Gas of Ohio could not produce records showing that regulator stations at 81 Townsend Ave., Norwalk (Lot 1) and 81 Townsend Ave., Norwalk (Lot 9) supplying gas from an IP to a LP main have been subject to inspections and tests. Staff identified a similar violation on 4/9/2014 where a regulator station supplying gas from an MP to a LP system at 504 Cleveland Rd. W, Huron was found with no records of inspections or tests.

Exhibit 13

Notice of Probable Non-compliance issued June 30, 2015



Public Utilities Commission

John R. Kasich, Governor
Andre T. Porter, Chairman

Commissioners

Asim Z. Haque
Lynn Slaby
M. Beth Trombold
Thomas W. Johnson

June 30, 2015

Daniel Creekmur
President
Columbia Gas of Ohio
290 W. Nationwide Blvd.
Columbus, OH 43215

Dear Mr. Creekmur:

On May 19-21, 2015, a representative of the Public Utilities Commission of Ohio conducted a pipeline safety inspection of your pipeline facilities and records at Sunbury, pursuant to Section 4905.91(B) of the Ohio Revised Code.

As a result of the inspection, the Staff has issued the following Notice of Probable Noncompliance to Columbia Gas of Ohio in accordance with Section 4901:1-16-09 of the Ohio Administrative Code, for review and written response within 30 days. The response is your opportunity to provide additional information for consideration by the Staff and/or to provide a proposed corrective action plan.

If you need more information, please call me at (614) 644-8983.

Sincerely,

Peter A. Chace, Program Manager
Gas Pipeline Safety Section
Facility and Operations Field Division

PC:ts
Enclosure

**THE PUBLIC UTILITIES COMMISSION OF OHIO
GAS PIPELINE SAFETY SECTION**

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

NOTICE OF PROBABLE NONCOMPLIANCE

Sent to Daniel Creekmur Title President
Operator Columbia Gas of Ohio
Address 290 W. Nationwide Blvd.
City Columbus State OH Zip Code 43215
Date of Inspection May 19-21, 2015 Place of Inspection Sunbury
GPS Inspector Mary McKelvey

DESCRIPTION

ALL PROBABLE NONCOMPLIANCES LISTED BELOW SHOULD BE CORRECTED OR ACTION TAKEN TO CORRECT WITHIN 30 DAYS OF RECEIPT OF CERTIFIED LETTER.

- (1) Section 192.13(c) (49 C.F.R.); Title: What general requirements apply to pipelines regulated under this part?
(2) Section 192.805 (49 C.F.R.); Title: Qualification program.

Describe Probable Noncompliance

192.13(c) *Each operator shall maintain, modify as appropriate, and follow the plans, procedures, and programs that it is required to establish under this part.*

Columbia Gas of Ohio's Gas Standards 1100.010(OH) 2.1.C states "existing locate markings should not be assumed to be correct (do not refresh marks without confirming accuracy by physical locating means)".

On May 14, 2015 Columbia Gas of Ohio responded to a request to locate a 5" high pressure main crossing State Route 37 between Burrer Drive and Sunset Avenue in Sunbury OH. The locate ticket for this locate request is identified as ticket # A513300076. The locator was unable to locate the main by physical locating means, and completed the locate ticket by refreshing marks from a previous line locate.

192.805 *Each operator shall have and follow a written qualification program. The program shall include provisions to (b) Ensure through evaluation that individuals performing covered tasks are qualified.*

Columbia Gas of Ohio originally located the damaged high pressure main on April 9, 2015 (work order number 15-3011009-00). Site investigation showed the markings for the damaged main were 53" away from its actual location. Site investigation also showed that the original locate was made through a conductive hookup at a corrosion test box (facility number 148922) connected to a nearby 4" main feeding a service line for 57 W. Cherry, Sunbury OH. The service line to 57 W. Cherry appeared to have been marked instead of the damaged 5" main. The tap card for the service line shows it extended for 90 feet and terminated at a service regulator while the inventory map for the piping in the area showed the portion of the damaged 5" main crossing the road as having a length of 55 feet. It is the opinion of Staff that inconsistencies between field indications and the available information of lines in the area should have been recognized as an abnormal operating condition.

Exhibit 14

Notice of Probable Non-compliance issued June 13, 2016



**Public Utilities
Commission**

Asim Z. Haque, Chairman

Commissioners

Lynn Slaby
M. Beth Trombold
Thomas W. Johnson
Vacant

June 13, 2016

Mr. Daniel Creekmur
President
Columbia Gas of Ohio
290 W. Nationwide Blvd.
Columbus, OH 43215

Dear Mr. Creekmur:

On 5/4/2016 – 5/5/2016, a representative of the Public Utilities Commission of Ohio conducted a pipeline safety inspection of your pipeline facilities and records at Oberlin, pursuant to Section 4905.91(B) of the Ohio Revised Code.

As a result of the inspection, the Staff has issued the following Notice of Probable Noncompliance to Columbia Gas of Ohio in accordance with Section 4901:1-16-09 of the Ohio Administrative Code, for review and written response within 30 days. The response is your opportunity to provide additional information for consideration by the Staff and/or to provide a proposed corrective action plan.

If you need more information, please call me at (614) 644-8983.

Sincerely,

Peter A. Chace, Program Manager
Gas Pipeline Safety Section
Facility and Operations Field Division

PC:ts
Enclosure

180 East Broad Street
Columbus, Ohio 43215-3793

(614) 466-3016
www.PUCO.ohio.gov

An equal opportunity employer and service provider

**THE PUBLIC UTILITIES COMMISSION OF OHIO
GAS PIPELINE SAFETY SECTION**

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

NOTICE OF PROBABLE NONCOMPLIANCE

Sent to	<u>Mr. Daniel Creekmur</u>	Title	<u>President</u>
Operator	<u>Columbia Gas of Ohio</u>		
Address	<u>290 W. Nationwide Blvd.</u>		
City	<u>Columbus</u>	State	<u>OH</u> Zip Code <u>43215</u>
Date of Inspection	<u>5/4/2016 – 5/5/2016</u>	Place of Inspection	<u>E. College St., Oberlin, OH</u>
GPS Inspector	<u>Chris Domonkos</u>		

DESCRIPTION

ALL PROBABLE NONCOMPLIANCES LISTED BELOW SHOULD BE CORRECTED OR ACTION TAKEN TO CORRECT WITHIN 30 DAYS OF RECEIPT OF CERTIFIED LETTER.

- | | |
|------------------------------------|---|
| (1) Section 192.605(a)(49 C.F.R.); | Title: Procedural manual for operations, maintenance, and emergencies |
| (2) OAC 4901:1-16-04 | Title: Records, maps, inspections, and leak classifications. |

Describe Probable Noncompliance

192.605 *(a) General. Each operator shall prepare and follow for each pipeline, a manual of written procedures for conducting operations and maintenance activities and for emergency response. For transmission lines, the manual must also include procedures for handling abnormal operations. This manual must be reviewed and updated by the operator at intervals not exceeding 15 months, but at least one each calendar year. This manual must be prepared before operations of a pipeline system commence. Appropriate parts of the manual must be kept at locations where operations and maintenance activities are conducted.*

Columbia Gas of Ohio (COH) contractor, S & N Communications, did not follow the COH Gas Standard 1100.01 (OH) Section 2.2 "Locating Facilities". The section states "Always locate company and customer service lines up to the meter. If not able to locate a customer-owned service line, the locate requestor should be notified or an appropriate notice must be left at the site." Staff witnessed only the company owned service lines being located along the entire scope of the project (main to the curb valve) on May 4, 2016 at E. College Street in Oberlin. The service lines were not marked up to the meter as required in the gas standard.

4901:1-16-04 *(E) Except for an operator of a master meter system, each operator shall establish and maintain maps of the operator's service area which identify the operator's intrastate gas pipeline facilities, excluding service lines as defined in 49 C.F.R. 192.3 as effective on the date referenced in paragraph (D) of rule 4901:1-16-02 of the Administrative Code.*

The maps provided to COH's contractor, S & N Communications were not up to date and were inaccurate in identifying their facilities. The maps did not contain the proper piping materials or locations which caused confusion in locating for a public improvement project for the City of Oberlin. The maps provided by COH to the engineering group for design also contained inaccurate locations causing cost overruns to the project.

Exhibit 15

Notice of Probable Non-compliance issued February 15, 2017



**Public Utilities
Commission**

Asim Z. Haque, Chairman

Commissioners

Lynn Slaby
M. Beth Trombold
Thomas W. Johnson
Vacant

February 15, 2017

Daniel Creekmur, President
Columbia Gas of Ohio, Inc.
290 W. Nationwide Blvd.
Columbus, OH 43215

Mr. Creekmur:

On December 21, 2016, representatives of the Public Utilities Commission of Ohio conducted a pipeline safety inspection of your pipeline facilities and records at 2845 West Broad Street in Columbus, Ohio, pursuant to Section 4905.91(B) of the Ohio Revised Code.

As a result of the inspection, the Staff has issued the following Notice of Probable Noncompliance to Columbia Gas of Ohio in accordance with Section 4901:1-16-09 of the Ohio Administrative Code, for review and written response within 30 days. The response is your opportunity to provide additional information for consideration by the Staff and/or to provide a proposed corrective action plan.

If you need more information, please call me at (614) 644-8983.

Sincerely,

Peter A. Chace, Program Manager
Gas Pipeline Safety Section
Facility and Operations Field Division

PC:ts
Enclosure

**THE PUBLIC UTILITIES COMMISSION OF OHIO
GAS PIPELINE SAFETY SECTION**

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

NOTICE OF PROBABLE NONCOMPLIANCE

Sent to Daniel Creekmur Title President
Operator Columbia Gas of Ohio, Inc.
Address 290 W. Nationwide Blvd.
City Columbus State OH Zip Code 43215
Date of Inspection December 21, 2016 Place of Inspection 2845 W. Broad St., Columbus
GPS Inspectors Michael F. Purcell II and Paul W. Hollinger

DESCRIPTION

ALL PROBABLE NONCOMPLIANCES LISTED BELOW SHOULD BE CORRECTED OR ACTION TAKEN TO CORRECT
WITHIN 30 DAYS OF RECEIPT OF CERTIFIED LETTER.

Section 192.614(c) (49 C.F.R.); Title: Damage Prevention Program

Describe Probable Noncompliance

192.614 *Damage Prevention Program*
(c) The damage prevention program required by paragraph (a) of this section must, at a minimum: (5) Provide for temporary marking of buried pipelines in the area of excavation activity before, as far as practical, the activity begins.

Columbia Gas of Ohio did not properly locate its natural gas pipeline facilities at 2845 West Broad Street in Columbus Ohio. A one call locate request ticket (A634200344-95562689) was made on December 7, 2016 which accurately described the proposed area of excavation. Columbia Gas of Ohio responded to this ticket request with a status of "Not in Conflict" on December 8, 2016, when pipelines operated by Columbia Gas of Ohio did in fact exist in the area of excavation. On December 21, 2016 at 2:17 PM the excavator damaged an unmarked 6" plastic distribution main operating at 43 psig while performing horizontal directional boring, resulting in a gas release and subsequent explosion and fire.

Exhibit 16

Complaint Investigation Report for 6553 Angola Road, dated November 11, 2017



The Public Utilities
Commission of Ohio

Public Utilities Commission of Ohio
Service Monitoring and Enforcement Department
180 East Broad Street, 7th Floor
Columbus, OH 43215

COMPLAINT INVESTIGATION REPORT

Complaint Information					
Date Complaint Received	11/16/2017	Date Contact Initiated	11/27/2017	Date(s) Complaint Investigated	11/27/2017 start
Investigator(s)	David Price				
Complaint Generated (Phone, PIC, Legislative, Other)	Phone				
Company Name	Columbia Gas of Ohio				
Name of Customer/Complainant	Ms. Lori Brock				
Address	6553 Angola Rd.				
City, State, Zip	Holland, Ohio. 43528				
Phone	419-469-2011				

Complaint Investigation	
Description	Ms. Lori Brock filed a complaint with the Public Utilities Commission of Ohio against Columbia Gas of Ohio stating that due to COH mismarking service gas facilities at her place of business, she is now without gas. Please see attached documents for actual complaint. Please see attached photographs for more information.
Who did you speak to?	Rob Smith with Columbia Gas of Ohio
Resolution	Columbia Gas of Ohio has accepted fault in the failure to adequately locate and mark service piping at 6553 Angola Rd. Holland, Ohio. 43528. This failure is a direct result of inadequate mapping for this service location. Columbia Gas of Ohio is currently working on a solution to mapping issues.
Followup Necessary?	Yes

Exhibit 17

***In the Matter of the Investigation of Columbia Gas of Ohio Relative to Compliance
with the Natural Gas Pipeline Safety Standards and Related Matters, Case No. 15-
1351-GA-GPS, Finding and Order (Jan. 20, 2016)***

BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Investigation of)
Columbia Gas of Ohio, Inc. Relative to)
Its Compliance with the Natural Gas) Case No. 15-1351-GA-GPS
Pipeline Safety Standards and Related)
Matters.)

FINDING AND ORDER

The Commission finds:

- (1) Columbia Gas of Ohio, Inc. (Columbia) is a public utility and a natural gas company within the meaning of R.C. 4905.02, 4905.03, and 4905.90, and is, therefore, a public utility and an operator subject to the ongoing jurisdiction and supervision of the Commission, pursuant to R.C. 4905.02, 4905.04, 4905.05, 4905.06, and 4905.90 through 4905.96. Accordingly, Columbia is required to comply with the minimum gas service standards found in Ohio Adm.Code Chapter 4901:1-13, as well as the gas pipeline safety (GPS) rules contained in Ohio Adm.Code Chapter 4901:1-16, which set forth the safety standards and requirements for intrastate gas pipeline facilities subject to the Commission's jurisdiction. Pursuant to Ohio Adm.Code 4901:1-16-03(A), the GPS rules incorporate the United States Department of Transportation's GPS regulations, as contained in 49 C.F.R. 40, 191, 192, and 199.
- (2) On July 24, 2015, and August 28, 2015, Staff filed its Natural Gas Pipeline Failure Investigation Report (Investigation Report) and its Staff Report of Investigation (Staff Report) (jointly, Reports), respectively, detailing the results of its investigation into Columbia's compliance with the GPS rules following an incident that occurred on March 21, 2015, when a house located in Upper Arlington, Ohio, exploded. According to the Investigation Report, the house located at 3418 Sunningdale Way (the house) was destroyed, seven additional homes were damaged and rendered uninhabitable, and over twenty additional homes sustained structural damage, culminating in estimated property

damage of over \$9,000,000, and, thus, meeting the definition of an incident, pursuant to Ohio Adm.Code 4901:1-16-01(K) and 49 C.F.R. 191.3. (Investigation Report at 1.)

- (3) In the Staff Report, Staff states that its investigation revealed that a series of events caused the explosion. Initially, the original service line at the house was shut off and a new plastic service line was installed sometime between 1985 and 1997. The original service line was not properly abandoned, as it remained connected to the main, the end of the line was not plugged or sealed, and the curb valve remained accessible and operable. In 1990, the city of Columbus Water Department (Water Department)¹ created a second water tap card for the house for an unknown reason that mistakenly identified as the water curb valve the location of the improperly abandoned gas line curb valve. On March 20, 2015, the improperly abandoned gas line curb valve was operated by a Water Department employee who was attempting to disconnect water service to the house and misidentified the improperly abandoned gas line curb valve as the water curb valve. Thereafter, natural gas began to flow from the Columbia main into the improperly abandoned gas line and build up against the foundation of the house to an explosive concentration, causing the explosion at 2:47 p.m. on March 21, 2015. (Staff Report at 6-7.) Following its investigation, Staff concluded that Columbia violated 49 C.F.R. 192.13(c) and 192.727(d) by failing to follow its own operation and maintenance procedures, and failing to discontinue properly its service to the house (Staff Report at 5-6).
- (4) After consideration of the information in the Reports, Staff offered the following recommendations in its Staff Report:
 - (a) Columbia must develop a process to proactively identify inaccurate curb box locations in its pipeline system through a review of service line data whenever conducting maintenance or design reviews at a

¹ The Water Department is outside of the Commission's jurisdiction; consequently, neither the Reports nor this Finding and Order addresses the actions or policies of the Water Department, other than as necessary in discussing the facts of this case.

location. This process must be developed in coordination with the GPS Staff and incorporated into appropriate Columbia procedures.

- (b) Columbia must review its public awareness program under 49 C.F.R. 192.616 that requires programs to educate appropriate government organizations on possible hazards associated with unintended release from a gas pipeline facility. These provisions must include education of local water departments in Columbia's service territory on the possibility that gas valves may be misidentified as water main valves, particularly in situations where more than one water service valve is identified at a given property.
- (c) Columbia must review the portion of its operator qualifications (OQ) program required under 49 C.F.R. 192, Subpart N, that covers the abandonment of service lines, incorporate lessons learned from this incident investigation into its OQ training program, and provide this training to all Columbia employees whose job duties include the abandonment of service lines.
- (d) Finally, given the severity of the violations, a forfeiture of \$400,000 should be assessed pursuant to R.C. 4905.95(B)(1)(b) against Columbia for failure to comply with the GPS requirements for the abandonment of service lines.

(Staff Report at 7.)

- (5) On December 18, 2015, Columbia and Staff filed a Stipulation and Recommendation (Stipulation), which would resolve all of the issues in this case. The Stipulation provides, among other things, that, after discussions between Columbia and Staff regarding the recommendations in the Staff Report, Columbia agrees to

complete the following actions summarized below, which Staff agrees will satisfy its recommendations. The Commission notes that this summary is not inclusive of the entire stipulation and is not intended to replace or supplement the text of the stipulation.

- (a) Columbia must enhance its records management. More specifically, Columbia must undertake actions to enhance and improve its records, including:
 - (i) Columbia must obtain and record global positioning system locations of curb boxes by incorporating curb box locations into its current process of internally recording facility locations, in order to provide a common repository for Columbia's facility locations. Columbia must commit to substantially complete the collection of global positioning system coordinates on all operating main lines, service lines, and curb valves by 2023.
 - (ii) Columbia must enhance records for its curb box and service line locations through the infrastructure replacement program (IRP) by confirming service line and curb box locations and creating or correcting records for any facilities not recorded or incorrectly recorded. Additionally, the IRP process shall provide for the retirement of older main line pipelines and installation of all service lines to a new pipeline in order to ensure service lines are abandoned appropriately.
 - (iii) Columbia must enhance records through its service line records review by forming an internal task force to research and review its distribution information system service line records. The review is intended to analyze available records to

isolate areas that may require further action or investigation, on which Columbia will diligently follow up to explain. Columbia must complete this review and update the Commission's Staff by December 31, 2016.

- (b) Columbia must increase public awareness on unintended release of gas safety and gas infrastructure safety. Specifically, Columbia must update its public awareness program to educate the public, emergency responders, excavators, and public officials on gas infrastructure safety, including how to respond to a gas odor, calling before excavating, and how to respond to unintended gas release and inadvertent operation of gas valves. Columbia must complete this update by December 31, 2016.
- (c) Columbia must enhance public official outreach regarding gas safety. In further detail, Columbia must engage public officials and other utility operators in educational outreach regarding the possibility of misidentification of gas valves as water main valves. This shall include Columbia contacting at least three large operators of water utility infrastructure located in its operating centers to request an opportunity to meet face-to-face to share information and identify potentially incorrectly marked facilities, and to submit at least one document to each water company in operation in its service territory. Columbia must submit a list of the applicable operators to Staff within 30 days of approval of the Stipulation and must complete the outreach by December 31, 2016.
- (d) Columbia must educate its employees, first responders, and municipalities on gas infrastructure safety. More specifically, Columbia shall provide opportunities for first

responders and public officials to utilize its training facility when it is completed, as well as its training programs, in order to provide education on service line, curb valve, and gas safety. Where organizations are unable to travel to the training facility, Columbia shall provide training opportunities within local service areas.

- (e) Columbia must revise and update its training curriculum. In order to carry out this requirement, Columbia shall incorporate into its training curriculum revisions any lessons learned from the incident investigation in order to ensure that all pertinent employees receive enhanced training curriculum. Additionally, Columbia shall require its employees to verify its gas infrastructure on all qualifying work orders upon the rollout of global positioning system technology, including the precise location of the main line, service line, curb valve, and gas meter. Further, Columbia employees shall be trained to review the work location and identify abnormalities associated with facilities upon arrival at the work location. Columbia must revise and implement the training curriculum by December 31, 2016.
- (f) Columbia must pay a civil forfeiture of \$200,000, and must hold, in abeyance, \$200,000, which may be assessed if Columbia fails to fulfill its obligations under the Stipulation. The civil forfeiture of \$200,000 shall be paid within 10 business days of the Commission's order adopting the Stipulation, payable by certified check to the "Treasurer State of Ohio" and delivered to Staff. Columbia may not recover the forfeiture in any pending or future proceeding before the Commission, as set forth by Ohio Adm.Code 4901:1-16-14(C). The \$200,000 in abeyance shall be held until the

Commission issues an order stating that Columbia has fulfilled its obligations under the Stipulation, and shall be discharged upon Columbia's compliance with this Stipulation as determined by Commission order. The \$200,000 held in abeyance shall become payable if the Commission finds that Columbia has failed to comply with the Stipulation, and may not be recovered in any pending or future proceeding before the Commission as set forth by Ohio Adm.Code 4901:1-16-14(C).

(Stipulation at 4-7.)

- (6) Ohio Adm.Code 4901:1-16-11 permits Columbia and Staff to enter into a stipulation in order to resolve any alleged violations of the GPS requirements. Although Columbia and Staff refer to Ohio Adm.Code 4901-1-30 as their underlying authority for the Stipulation, the Commission will consider the Stipulation pursuant to our enforcement powers under R.C. 4905.91 and Ohio Adm.Code Chapter 4901:1-16.
- (7) The immediate issue to be decided by the Commission is whether the Stipulation, which embodies considerable time and effort by the signatory parties, is reasonable and should be adopted. However, as gas pipelines are concerned, the Commission's ultimate goal is to safeguard consumer safety by ensuring that sufficient plans and procedures are in place to prevent future incidents.

Further, R.C. 4905.95 authorizes assessment upon an operator of forfeitures not to exceed \$100,000 for each day of each violation or noncompliance found by the Commission, provided that the aggregate of such forfeitures does not exceed \$1,000,000 for any series of violations or noncompliances. Here, the Commission finds that, given the severity of the violations reported by Staff, \$200,000 is a considerable amount that can be expected to deter Columbia from future violations. Further, holding an additional \$200,000 in abeyance that will become payable if the Commission finds that Columbia does not fulfill the terms of the Stipulation can further be expected to encourage Columbia's compliance with the terms of the Stipulation,

which will, in turn, prevent future incidents. We emphasize that the Commission will not hesitate to impose total forfeitures of a much greater magnitude in future cases involving any operator, if the circumstances of the case justify such action.

In this case, we find that the Stipulation, including the recommended forfeiture of \$200,000, with an additional \$200,000 held in abeyance, is reasonable, given that Columbia will also be required to carry out a number of actions in response to Staff's recommendations. As discussed above in the summary of the Stipulation, those actions include enhancing records management by obtaining and recording global positioning system locations of curb boxes, enhancing records for curb box and service line locations through the IRP, and enhancing records through service line records review; increasing public awareness on unintended release of gas safety and gas infrastructure review; enhancing public official outreach regarding gas safety; educating Columbia employees, first responders, and municipalities on gas infrastructure safety; and revising and updating of training curriculum. Accordingly, we conclude that the Stipulation should be approved and adopted in its entirety.

We further note that the Stipulation specifically provides that nothing in the Stipulation may be interpreted to preclude the Commission from opening a GPS case or any other case assessing other forfeitures and ordering remedies against Columbia for any other violation of the GPS rules uncovered during Staff audits for any other period.

- (8) In closing, the Commission emphasizes our commitment to ensuring consumer safety and requiring operators of gas pipelines to take all reasonable steps to provide necessary safeguards. As such, the Commission expects that, in addition to undertaking the actions required by the Stipulation, Columbia will review its management and training practices related to GPS requirements and immediately correct any issues of concern. Further, the Commission expects Columbia to notify Staff of any issues that are identified and regularly report to Staff until the issues are resolved. In addition, the Commission directs

Staff to continue its diligent efforts to work with Columbia and other gas companies on compliance with the GPS requirements. If Staff identifies any issues of concern that are not immediately resolved by the company at issue, the Commission will undertake any action necessary to investigate the situation and reach an appropriate resolution, including the initiation of a formal docket to audit the GPS practices and procedures of any such company.

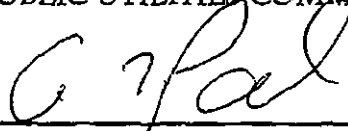
It is, therefore,

ORDERED, That the Stipulation and Recommendation filed in this proceeding be approved and adopted in its entirety. It is, further,

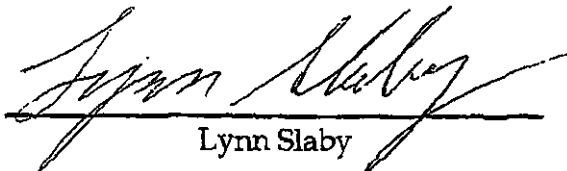
ORDERED, That nothing in this Finding and Order shall be binding upon this Commission in any future proceeding or investigation involving the justness or reasonableness of any rate, charge, rule, or regulation. It is, further,

ORDERED, That a copy of this Finding and Order be served upon all parties of record.

THE PUBLIC UTILITIES COMMISSION OF OHIO



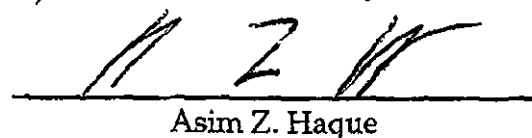
Andre T. Porter, Chairman



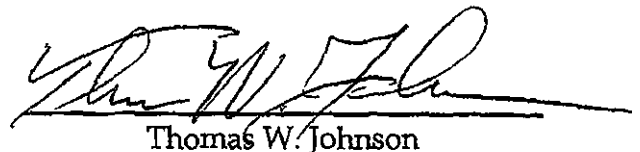
Lynn Slaby



M. Beth Trombold



Asim Z. Haque



Thomas W. Johnson

MWC/sc

Entered in the Journal **JAN 20 2016**



Barcy F. McNeal
Secretary

Appendix II – Statistical Methodology

Columbia Gas of Ohio reported a total of 1,656 excavation damages in 2016. The company has three categories for the causes of these damages: 1) One-Call Notification Practices Not Sufficient; 2) Location Practices Not Sufficient and; 3) Excavation Practices Not Sufficient. The damages reported by all Ohio operators can be modeled by a binomial distribution with parameters n and p , where n is the number of reported damages and p is the probability that any given damage will be attributed to insufficient locating practices. The cause of damages can be referred to as a binomial categorical variable, which is a variable that has two possible outcomes. Therefore Staff separates these damage reports into two groups: (1) damages caused by insufficient locating practices and (2) all other damages.

A statistical hypothesis is an assumption about a population parameter. A hypothesis test is a mathematical test used to accept or reject this hypothesis. In this case, an assumption is made that the probability of a damage due to insufficient locating practices is the same for Columbia and for the rest of the operators in Ohio.

A statistical test known as a “Z-test” may be used to assign a probability to the hypothesis that two binomial distributions (in this case, outcome of damage prevention reporting as “Locating Practices Not Sufficient” or “Other”) is the same for two sampled populations. A mathematical derivation of the “Z-test” is beyond the scope of this appendix but may be found in textbooks on statistics.

Columbia reported 685 of 1,656 total damages during calendar year 2016 were due to “Locating Practices Not Sufficient” for an estimated probability of any given damage being due to “Locating Practices Not Sufficient” of $685/1656=0.41$. For all other operators in the state, 2,156 total damages were reported, with 711 due to “Locating Practices Not Sufficient” for an estimated probability of $711/2156=0.33$. Applying the statistical Z-test shows that if the probability of a damage due to “Locating Practices Not Sufficient” was the same for Columbia and other Ohio operators, the probability of seeing the difference between the fraction of Columbia damages due to “Locating Practices Not Sufficient” and the fraction of other Ohio operators due to “Locating Practices Not Sufficient” is 1.86×10^{-13} .

This probability is very small, therefore the conclusion is the chance of Columbia damages being due to “Locating Practices Not Sufficient” is in fact not the same as the chance of other Ohio operators reporting damages due to “Locating Practices Not Sufficient.” The damages reported in the U.S. DOT 7100.1 “Annual Report for Gas Distribution Systems” is evidence that Columbia is more likely to report excavation damages due to “Locating Practices Not Sufficient” than other operators.