



COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA PUBLIC UTILITY COMMISSION
COMMONWEALTH KEYSTONE BUILDING
400 NORTH STREET, HARRISBURG, PA 17120

BUREAU OF
INVESTIGATION
&
ENFORCEMENT

January 13, 2026

Via Electronic Filing

Matthew L. Homsher, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

Re: Pennsylvania Public Utility Commission,
Bureau of Investigation and Enforcement v.
Philadelphia Gas Works
Docket No. C-2024-3052277
I&E Main Brief

Dear Secretary Homsher:

Enclosed please find the Main Brief of the Bureau of Investigation and Enforcement in the above-referenced proceeding.

Copies have been served on the parties of record in accordance with the Certificate of Service. If you have any questions, please contact the undersigned.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Colby B. Widdowson', is written over a light blue circular stamp.

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Per Certificate of Service

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission,	:	
Bureau of Investigation and Enforcement	:	
	:	
v.	:	Docket No. C-2024-3052277
	:	
Philadelphia Gas Works	:	

**MAIN BRIEF
OF
THE BUREAU OF INVESTIGATION AND ENFORCEMENT**

Colby B. Widdowson
Prosecutor
PA Attorney ID No. 326185

Pennsylvania Public Utility Commission
Bureau of Investigation and Enforcement
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Harrisburg, PA 17120

Dated: January 13, 2026

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I. INTRODUCTION

On November 25, 2024, the Pennsylvania Public Utility Commission's ("Commission") Bureau of Investigation and Enforcement ("I&E") filed a Formal Complaint ("Complaint") against Philadelphia Gas Works ("PGW") alleging violations of the Public Utility Code, Commission regulations, and the Code of Federal Regulations in connection with a natural gas explosion that occurred on November 30, 2021 at 815 Jackson Street, Philadelphia, PA. The natural gas explosion resulted in damage to 815 Jackson Street, evacuation of six residences, and the precautionary medical evaluation of three individuals. I&E's Formal Complaint alleged nine¹ violations related to PGW's inaction preceding the November 30, 2021 natural gas explosion.

On October 16, 2025, an evidentiary hearing was held before presiding ALJ Christopher Pell in Philadelphia, PA. I&E presented, as a witness, Terri Cooper Smith, a Supervisor and Fixed Utility Valuation Engineer in the Pipeline Safety Section. Ms. Cooper Smith's pre-served direct testimony ("I&E St. No. 1") and pre-served surrebuttal testimony ("I&E St. No. 1-SR") along with all attached exhibits, were admitted into evidence, without objection, at the evidentiary hearing. PGW presented, as witnesses, Joseph Hawkinson and Joseph Leva. Mr. Hawkinson's and Mr. Leva's pre-served rebuttal testimony ("PGW St. 1-R" and "PGW St. 2-R" respectively) along with all attached exhibits, were admitted into evidence, without objection, at the evidentiary hearing.

Based upon PGW's failure to follow its procedures and failure to protect its vulnerable cast iron pipeline, resulting in a natural gas explosion, I&E respectfully requests

¹ One violation, Count Eight, was withdrawn at the evidentiary hearing, reducing the number of alleged violations from ten to nine.

that this Honorable Commission find PGW to be in violation of the Public Utility Code, Commission regulations, and the Code of Federal Regulations, as alleged, and assess a Three Hundred Thousand Dollar (\$300,000.00) civil penalty.

II. PROCEDURAL HISTORY AND STATEMENT OF THE CASE

A. PROCEDURAL HISTORY

On November 25, 2024, I&E filed its Complaint against PGW alleging violations of the Public Utility Code, Commission regulations, and the Code of Federal Regulations. On December 10, 2024, Respondent requested an extension of time to file an answer to the Complaint. On December 11, 2024, by Secretarial Letter, Respondent was granted an extension to file an answer to January 15, 2025. Respondent filed a second request for a 14-day extension of time to file an answer on January 10, 2025, which was granted on January 14, 2025.

On January 29, 2025, Respondent filed its answer (“Answer”) to the Complaint, in which Respondent denied any violations of the Public Utility Code, Commission regulations, or the Code of Federal Regulations.

A prehearing conference was held on February 20, 2025, at which a litigation schedule was established.

On February 20, 2025, Respondent served I&E with Interrogatories – Set I. I&E served its Answer to Interrogatories – Set I on March 12, 2025.

On June 2, 2025, I&E served Respondent with the Direct Testimony of the Bureau of Investigation and Enforcement’s witness Terri Cooper Smith (“I&E St. No. 1”) with thirteen (13) exhibits, I&E Exhibits 1-13.

On June 12, 2025, Respondent served I&E with Interrogatories – Set II. I&E served its Answer to Interrogatories – Set II on July 9, 2025, and a Supplemental Answer to Interrogatories – Set II on July 16, 2025.

On July 16, 2025, Respondent filed a Motion for a Protective Order, which was granted by Prehearing Order #2 on July 18, 2025.

On August 15, 2025, Respondent served I&E with the Rebuttal Testimony of its witnesses Joseph R. Hawkinson (“PGW St. No. 1-R”) and Joseph C. Leva (“PGW St. No. 2-R”).

On September 15, 2025, I&E served Respondent with the Surrebuttal Testimony of the Bureau of Investigation and Enforcement’s witness Terri Cooper Smith (“I&E St. No. 1-SR”).

On October 16, 2025, an evidentiary hearing was held before presiding ALJ Christopher Pell in Philadelphia, PA. The pre-served testimony I&E St. No. 1, I&E St. No. 1-SR, PGW St. No. 1-R, and PGW St. No. 2-R, along with all attached exhibits, were admitted into evidence, without objection, at the evidentiary hearing. As a preliminary matter at the evidentiary hearing, I&E withdrew, without objection, Count Eight of the Complaint.²

I&E submits this Main Brief in accordance with the briefing schedule that was established at the conclusion of the evidentiary hearing.³ Proposed Findings of Fact, Proposed Conclusions of Law, and Proposed Ordering Paragraphs are attached as Appendix A, B, and C, respectively.

² Notes of Testimony (“N.T.”) at 17. Count Eight of the Complaint alleged a violation of 49 CFR § 192.805(h).

³ N.T. at 150.

B. COMMISSION AUTHORITY

PGW is a municipally owned natural gas distribution company and functions as a city natural gas distribution operation, as defined at Section 102 of the Public Utility Code (“Code”).⁴ Section 2212(b) of the Code, 66 Pa.C.S. § 2212(b), subjects city natural gas distribution operations furnishing or rendering public utility service within municipal limits to regulation and control by the Commission with the same force as if the service were rendered by a public utility. PGW is a natural gas distribution company (“NGDC”) as that term is defined in Section 2202 of the Code, 66 Pa.C.S. § 2202. Per 66 Pa.C.S. § 102, PGW is a “public utility” as it is engaged in providing public utility service as a NGDC to the public for compensation.⁵ PGW provides natural gas service to more than 500,000 customers in the City and County of Philadelphia.⁶

As a public utility, PGW is subject to the power and authority of this Commission pursuant to Section 501(c) of the Code, 66 Pa.C.S. § 501(c), which requires a public utility to comply with Commission regulations and orders, including Federal pipeline safety laws and regulations. Pursuant to Section 59.33(b) of the Commission’s regulations, 52 Pa. Code § 59.33(b), I&E’s Pipeline Safety Division has the authority to enforce Federal pipeline safety laws and regulations set forth in 49 U.S.C. §§ 60101-60503 and as implemented at 49 CFR Parts 191-193, 195 and 199. The Federal pipeline safety laws and regulations prescribe the minimum safety standards for all natural gas and hazardous liquid public utilities in the Commonwealth. As a city natural gas distribution operation, PGW is obligated to comply with the Federal pipeline safety laws and regulations pursuant to 66 Pa.C.S. § 2212(b).

⁴ 66 Pa.C.S. § 102; PGW’s Answer to Complaint (“Answer”) at par. 4 and 5.

⁵ Answer at par. 12.

⁶ I&E St.1 at 2; PGW St. 1-R at 8.

Section 701 of the Code, 66 Pa.C.S. § 701, authorizes the Commission, *inter alia*, to hear and determine complaints against public utilities for violations of any law or regulation that the Commission has jurisdiction to administer or enforce. Section 3301(c) of the Code, 66 Pa.C.S. § 3301(c), which is specific to gas pipeline safety violations, authorizes the Commission to impose civil penalties on any person or corporation, defined as a public utility, who violates any provisions of the Code or any regulation or order issued thereunder governing the safety of pipeline or conduit facilities in the transportation of natural gas, flammable gas, or gas which is toxic or corrosive. Section 3301(c) further provides that a civil penalty of up to Two Hundred Thousand Dollars (\$200,000) per violation for each day that the violation persists may be imposed, except that for any related series of violations, the maximum civil penalty shall not exceed Two Million Dollars (\$2,000,000) or the penalty amount provided under Federal pipeline safety laws, whichever is greater.

Civil penalties for violations of Federal pipeline safety laws and regulations are adjusted annually to account for changes in inflation pursuant to the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015, Pub. L. 114-74, § 701, 129 Stat. 599, 28 U.S.C. § 2461 note (Nov. 2, 2015) (amending the Federal Civil Penalties Inflation Adjustment Act of 1990). The applicable adjustment made by the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration ("PHMSA") occurred on December 30, 2024 and revised the maximum civil penalty to Two Hundred Seventy-Two Thousand, Nine Hundred Twenty-Six Dollars (\$272,926.00) for each violation and for each day the violation continues, with a maximum penalty not to exceed Two Million, Seven Hundred Twenty-Nine Thousand, Two Hundred Forty-Five Dollars (\$2,729,245.00) for a related series of violations. 89 F.R. 106294 (Dec. 30, 2024).

C. THE DISTRIBUTION SYSTEM ON JACKSON STREET

Between 2022 and 2024, PGW experienced an average of 243 cast iron main breaks annually and, in the first quarter of 2025, PGW had already experienced 257 cast iron main breaks.⁷ Countrywide, only 2 percent (2%) of distribution mains are cast iron, yet gas distribution incident reports for 2005 through 2020 show that 9 percent (9%) of the incidents occurring on gas distribution mains involved cast iron mains.⁸ In 2021, PGW had more cast iron mains remaining on its distribution system than all other Pennsylvania operators combined and, as of 2024, PGW had 1,142.61 miles of cast iron mains and 7.12 miles of reconditioned⁹ cast iron mains.¹⁰ PGW projects that full replacement of all of its cast iron mains could take an additional 35 years.¹¹

The incident underlying the Complaint occurred on the 800-block of Jackson Street, Philadelphia, Pennsylvania, at 815 Jackson Street. The 800-block of Jackson Street, Philadelphia, Pennsylvania, including 815 Jackson Street, is within PGW's natural gas service territory.¹² The area around 815 Jackson Street is a dense urban residential area, in which the residences are typical city row homes sharing a common wall with adjacent units.¹³

The residences on the 800-block of Jackson Street were served natural gas by PGW via two (2) parallel 4-inch cast iron mains, a north side main and south side main.¹⁴ The main

⁷ I&E St.1 at 3.

⁸ I&E St.1 at 5.

⁹ Reconditioned cast iron is defined as cast iron gas distribution pipe that has been lined internally by use of suitable materials that ensure safe operation at a maximum allowable operating pressure ("MAOP") not to exceed the previously established MAOP when the segment of pipe is not lined. I&E St.1 at 5-6.

¹⁰ I&E St.1 at 5.

¹¹ PGW St. 1-R at 9.

¹² Answer at par. 15.

¹³ Answer at par. 18; I&E St.1 at 7.

¹⁴ Answer at par. 20, 24, and 25.

at issue was a 4-inch low-pressure cast-iron main that was part of the north side main.¹⁵ The 4-inch north side and south side cast iron mains were installed pre-1899 and operated as part of the same low pressure system, operating at 8-inches water column at the time of the incident.¹⁶ The north side main was on the same side of the street as 815 Jackson Street, running approximately 7-feet from the front foundation wall of 815 Jackson Street, underneath the sidewalk, and was at an approximate depth of 34-inches.¹⁷

In the twelve (12) years preceding the natural gas explosion at 815 Jackson Street, the 800-block of Jackson Street experienced five (5) cast iron main breaks.¹⁸ The north side 4-inch cast iron main, on the 800-block of Jackson Street, experienced breaks on January 2, 2009, January 4, 2010, and January 25, 2016.¹⁹ The south side 4-inch cast iron main, on the 800-block of Jackson Street, experienced breaks on February 21, 2015 and April 12, 2018.²⁰ Five cast iron main breaks in a 12-year period on a single city block is a concerning amount of cast iron failures.²¹

PGW's record do not contain any reports of underground street troubles on the 800-block of Jackson Street in the 10-years preceding the explosion.²²

D. EVENTS PRIOR TO THE NATURAL GAS EXPLOSION AT 815 JACKSON STREET

In the months leading up to the November 30, 2021 natural gas explosion at 815 Jackson Street, PGW received three (3) separate notices from the Pennsylvania One Call

¹⁵ Answer at par. 21.

¹⁶ Answer at par. 22, 24, and 25.

¹⁷ Answer at par. 20 and 23.

¹⁸ Answer at par. 27 and 28; I&E St. 1-SR at 13.

¹⁹ Answer at par. 27.

²⁰ Answer at par. 28.

²¹ I&E St. 1-SR at 2-3.

²² Answer at par. 26.

System, Inc. (“One Call”).²³ These One Call notices informed PGW that excavations to repair sewer lateral failures at 815 and 813 Jackson Street would be occurring.²⁴ As immediate neighbors in row homes, 815 and 813 Jackson Street share a common wall.²⁵

The first One Call notice, ticket number 20212072616, was received by PGW on July 26, 2021, from Clements Brothers and Sister, Inc. (“Clements”), a plumbing company.²⁶ One Call ticket number 20212072616 informed PGW that Clements would be engaged in excavation at 815 Jackson Street to replace a sewer lateral curb trap and that the excavation at the street would be 8-feet deep and 3-feet by 6-feet wide and at the sidewalk the excavation would be 8-feet deep and 4-feet by 4-feet wide.²⁷ On July 29, 2021, PGW responded to this One Call notice and field marked their cast iron facilities at 815 Jackson Street.²⁸

The second One Call notice came from Clements on September 1, 2021 at One Call ticket number 20212440918.²⁹ This ticket was an update to Clements prior ticket because the work had not yet been initiated.³⁰ Again, this ticket informed PGW that Clements would be engaged in excavation at 815 Jackson Street to replace a sewer lateral curb trap and that the excavation at the street would be 8-feet deep and 3-feet by 6-feet wide and at the sidewalk the excavation would be 8-feet deep and 4-feet by 4-feet wide.³¹ On September 3, 2021,

²³ Answer at par. 29.

²⁴ Answer at par. 29.

²⁵ Answer at par. 29; I&E Exhibit 5.

²⁶ Answer at par. 30; I&E St.1 at 11-12; I&E Exhibit 6.

²⁷ Answer at par. 30; I&E St.1 at 11-12; I&E Exhibit 6.

²⁸ Answer at par. 31; I&E St.1 at 11-12; I&E Exhibit 6.

²⁹ Answer at par. 32; I&E St.1 at 11-12; I&E Exhibit 7.

³⁰ Answer at par. 32; I&E St.1 at 11-12; I&E Exhibit 7.

³¹ Answer at par. 32; I&E St.1 at 11-12; I&E Exhibit 7.

PGW responded to this ticket and field marked their cast iron facilities at 815 Jackson Street.³²

On the same day that PGW marked its facilities at 815 Jackson Street, September 3, 2021, PGW received its third notice of excavations and sewer failures at or near 815 Jackson Street.³³ Lepore Plumbing (“Lepore”) submitted an emergency One Call ticket, number 20212460409, informing PGW that Lepore had a crew on site to repair a sewer lateral curb trap at 813 Jackson Street and that the excavation would entail two digs that measured 3-feet by 6-feet.³⁴ On September 3, 2021, PGW responded to this emergency One Call ticket and field marked their cast iron facilities at 813 Jackson Street.³⁵

After PGW field marked its cast iron facilities at 815 Jackson Street, on September 3, 2021, Clements excavated and replaced the sidewalk, curb, asphalt street surface, and sewer lateral curb trap.³⁶ As indicated in Clement’s One Call tickets, the excavation to repair the sewer failure necessitated an excavation of approximately 8-feet deep, which was significantly deeper than PGW’s cast iron main at 34-inches. This excavation occurred at the same sidewalk, under which, PGW’s cast iron main was located. The sewer lateral that was repaired at 815 Jackson Street was located at a depth below PGW’s cast-iron main.³⁷ The One Call tickets indicated the need for sewer repairs and failures of the sewer system, which can result in leakage of water and sewage, which in turn can undermine support for nearby facilities.³⁸

³² Answer at par. 33; I&E St.1 at 11-12; I&E Exhibit 7.

³³ Answer at par. 36; I&E St.1 at 11-12; I&E Exhibit 8.

³⁴ Answer at par. 36; I&E St.1 at 11-12; I&E Exhibit 8.

³⁵ Answer at par. 37; I&E St.1 at 11-12; I&E Exhibit 8.

³⁶ PGW St. 1-R at 26; I&E Exhibit 10.

³⁷ I&E St. 1 at 13.

³⁸ I&E St. 1 at 13.

PGW knew and understood the risks that Clement's excavation posed to their cast-iron main, but failed to take any action, investigation, or inspection, during or after the excavation, to ensure the safety of its cast iron facility.³⁹ In particular, PGW knew that:

1. The main in front of 815 Jackson Street was a cast iron main;⁴⁰
2. The cast iron main was in excess of 120 years old at the time of the excavation;⁴¹
3. Sewer failures occurred at 815 and 813 Jackson Street;⁴²
4. The sewer lateral was made of either cast iron or terracotta, both potentially being brittle and fragile;⁴³
5. Sewer curb trap and sewer system failures can result in the leakage of liquids from the system;⁴⁴
6. Water and sewer leaks and failures cause soil instability due to water saturation and erosion and can remove support for other facilities;⁴⁵
7. Sewer and water system failures represent a risk to its system;⁴⁶
8. The extensive size of the excavation, that the excavation would occur at or immediately adjacent to its cast iron facility, and that the excavation would be significantly deeper than its facility;⁴⁷
9. The sewer system failures and excavations were in close proximity, in that they were immediately next door to each other;⁴⁸
10. Excavations around and beneath gas facilities cause soil instability by removing compacted soil;⁴⁹

³⁹ I&E St. 1 at 22-23.

⁴⁰ Answer at par. 21; N.T. at 149.

⁴¹ Answer at par. 22 and 24.

⁴² Answer at par. 30 and 32; I&E Exhibits.

⁴³ N.T. at 139.

⁴⁴ N.T. at 136, 141.

⁴⁵ I&E St. 1-SR at 13; PGW St. 1-R at 22; N.T. at 109-110.

⁴⁶ N.T. at 110.

⁴⁷ I&E St. 1-SR at 13.

⁴⁸ I&E St. 1-SR at 13.

⁴⁹ Answer at par. 41; PGW St. 1-R at 22; N.T. at 109.

11. Cast iron becomes brittle and is susceptible to breaking with little notice;⁵⁰
12. PGW ranks cast iron as the riskiest or second riskiest asset in its system and recognizes that small diameter is riskier than large diameter cast iron;⁵¹
13. There is a nationally recognized risk with cast iron mains;⁵²
14. Cast iron should be treated with significant care and respect,⁵³ and
15. The 800-block of Jackson Street had a history of 5 cast iron main breaks in the preceding 12 years.⁵⁴

Despite this abundance of knowledge, PGW did not create reports of USTs or conduct any investigation or inspection of the sewer system failures or excavations at 813 and 815 Jackson Street, before, during, or after the excavations, to ensure the safety of its cast iron main.⁵⁵ Consequently, PGW did not take any steps to protect its vulnerable cast iron as necessary or provide permanent protection.

E. PGW'S PROCEDURES

Federal gas safety regulations require that natural gas distribution operators “prepare and follow for each pipeline, a manual of written procedures for conducting operations and maintenance activities and for emergency response.”⁵⁶ To that end, PGW had gas safety procedures Bulletin #312, Bulletin #313, and Bulletin #54, in place at the time of the One Call notices, the related mark outs, excavations to repair and replace the sewer failures, and the natural gas explosion at 815 Jackson Street.⁵⁷

The purpose of Bulletin #312 is to provide procedures and directions to PGW

⁵⁰ PGW St. 1-R at 10, 29; N.T. at 107.

⁵¹ N.T. at 102.

⁵² N.T. at 106.

⁵³ N.T. at 113.

⁵⁴ I&E St. 1-SR at 13.

⁵⁵ I&E St. 1 at 20.

⁵⁶ 49 CFR § 192.605(a).

⁵⁷ Answer at par. 68, 73, and 76; I&E St.1 at 16; I&E Exhibits 11-13.

employees “[t]o observe contractor activities when necessary and to offer assistance to safeguard PGW facilities during construction.”⁵⁸ Section III(A) of Bulletin #312 provides that “*wherever pipeline facilities are or may be endangered*, the appropriate supervisor shall be promptly informed” (emphasis added) and “[t]he supervisor shall, after consulting with his/her superiors, institute necessary actions such as patrolling, supporting, replacing, relocating or removing from service the affected gas facilities.”⁵⁹ Specifically, section III(B) of Bulletin #312 directs that:

*Upon receipt of notice of water or sewer system failures, or surface conditions, such as cavities or cave-ins which may be caused by such failures, the location of gas pipeline facilities shall be determined. Where pipeline facilities may be affected, appropriate personnel shall be dispatched promptly to determine the effect of the failure on pipeline facilities. Inspection and necessary follow-up action shall be in accordance with the [Bulletin #54] "Protection of PGW Facilities from Underground Street Troubles" procedure.*⁶⁰ (emphasis added).

Bulletin #312 does not require PGW to have definitive or explicit knowledge that PGW facilities will definitely be affected, but only requires a possibility that PGW’s facilities may be affected or endangered.⁶¹

The purpose of Bulletin #313 is to provide instruction to and identify the duties of PGW’s distribution department damage prevention inspectors (“Damage Prevention Inspectors”).⁶² Sections III(A)&(D) of Bulletin #313 identifies specific tasks and responsibilities assigned to PGW Damage Prevention Inspectors, which include: (1) “To inspect third party construction activities for the main purpose of protecting PGW

⁵⁸ Answer at par. 69; I&E St.1 at 17-18; I&E Exhibit 11.

⁵⁹ I&E St.1 at 17-18; I&E St. 1-SR at 7-8; I&E Exhibit 11(emphasis added).

⁶⁰ I&E St.1 at 17-18; I&E St. 1-SR at 6; I&E Exhibit 11 (emphasis added).

⁶¹ N.T. at 115-116.

⁶² I&E St.1 at 18; I&E Exhibit 12.

underground structures and facilities;” (2) “To perform patrols along the routes of all transmission mains and other critical pipelines in the distribution system;” (3) “Re-visits to on-going jobs without watchman, particularly any jobs in which PGW facilities will be undermined, in order to report and/or recommend replacement or protection to the supervisor;” (4) “Visit any underground street trouble encountered and report the same to Distribution Dispatching and supervisor;” and (5) Immediately report undermined gas mains.⁶³

Section III(D) of Bulletin #313 recognizes that excavations next to and immediately adjacent to PGW facilities pose risks to those facilities and requires that PGW Damage Prevention Inspectors “be acquainted with the correct and various methods of shoring and sheathing used by the contractors and whether the shoring is suitable for the protection of PGW underground structures” and should be “aware of insufficient shoring which could potentially cause damage to PGW.”⁶⁴

Per Section III(E) of Bulletin #313, PGW Damage Prevention Inspectors are trained to be alert for and report and act upon “any activity or changes in the environment *that could affect the safety of the pipeline*,” (emphasis added) which include:

- a. “Any excavations (including backfilled openings that are not familiar to the inspectors), grading, demolition, or other construction activity *which could result in damage to a pipeline*, loss of support due to settlement or shifting of soil around a pipeline, undermining or damage to a pipeline support, or loss of cover or excess fill” (emphasis added);
- b. “Land subsidence, earth slippage, soil erosion, extensive tree root growth, flooding, climatic conditions, soil accumulation and other natural causes that can create additional external loading;” and

⁶³ I&E St.1 at 18; I&E Exhibit 12.

⁶⁴ I&E St.1 at 18; I&E Exhibit 12.

- c. “Any other abnormal or unusual conditions.”⁶⁵

PGW Damage Prevention Inspectors are trained to look for circumstances, while working on a job, that indicate the possible presence of underground street troubles (“USTs”) and to look for the potential or possibility of damage to a pipeline, not just actual damage to a pipeline.⁶⁶ Per PGW’s job description for a Damage Prevention Inspector, they must follow all PGW damage prevention procedures, visit construction sites ensure that all PGW structures are protected and undisturbed by such work, be familiar with safe construction methods and practices to recognize unsafe practices that may affect PGW facilities, contacting other facility owners when failures of their systems affect PGW facilities, and immediately report any unusual conditions encountered.⁶⁷

Bulletin #54 provides procedures for and defines responsibilities for addressing USTs and “[d]ispatching and investigating failures of underground structures such as water and sewer mains *that could reduce or eliminate support of PGW pipelines*” (emphasis added).⁶⁸ USTs are “[a] problem with another utility infrastructure (other than PGW), such as water leaks, bridge abutment washouts and cavities, which could or does affect the support of PGW infrastructure.”⁶⁹ Section III of Bulletin #54 recognizes that “[USTs] are usually *brought to PGW’s attention* due to a condition observed on the street surface; or as a result of a pre-existing condition encountered in the performance of PGW work but not caused by PGW activity” (emphasis added) and identifies the following examples of USTs:

- a. Water leaks;

⁶⁵ I&E St.1 at 18; PGW St. 1-R at 41-42; I&E Exhibit 12 (emphasis added).

⁶⁶ PGW St. 1-R at 18; N.T. at 123.

⁶⁷ I&E St. 1-SR at 12; PGW St. 2-R at 4; PGW Exhibit JCL-1.

⁶⁸ I&E St.1 at 18-19; I&E Exhibit 13 (emphasis added).

⁶⁹ Answer at par. 77; I&E St.1 at 18-19; I&E Exhibit 13.

- b. Washouts;
- c. “***Sewer System Failure*** – Signs of a sewer system failure are as follows: cavity, cave-in, or paving faults such as a surface crack, settlement, or depression in the street or curb area” (emphasis added); and
- d. “Paving depressions – These may be caused by settlement in “area” fill or settlement caused by poor backfill.”⁷⁰

Section IV(A) of Bulletin #54 directs that “[a] record of all such troubles whether the result of a telephone message or an observation on the street will be generated in AIMS⁷¹ by the Dispatcher as a Trouble Order for the Underground Street Trouble (UST).”⁷² Further, Section IV(A) of Bulletin #54 cautions that “[i]t is important to emphasize that every complaint of underground street troubles must immediately be brought to the attention of the Dispatcher in the same manner as gas leaks.”⁷³

Section IV(A) also identifies that PGW can receive notice of USTs from the Pennsylvania One Call System (“POCS”), Damage Prevention Inspectors, and PGW employee observations during the course of their work.⁷⁴ Section IV(A)(1) provides the following directions when a notice of a UST is received via POCS:

*POCS Notice – These notices can be handled by an Inspector during normal working hours. The Dispatcher will generate an Underground Street Trouble order in AIMS. The Inspector will also notify the Dispatcher if the situation warrants an immediate visit of a Distribution crew and/or supervisor. If the Inspector can determine at the time that PGW is not involved due to the distance of our structures from the UST and the containment of the UST problem, the job may be finalized at this point.*⁷⁵

⁷⁰ I&E St.1 at 18-19; I&E Exhibit 13 (emphasis added).

⁷¹ Advanced Intelligent Mobile Solution: An automated LAN (Local Area Network) to mobile field application designed to generate, dispatch, and document work orders.

⁷² I&E St.1 at 18-19; I&E Exhibit 13.

⁷³ I&E St.1 at 18-19; I&E Exhibit 13.

⁷⁴ I&E St.1 at 18-19; I&E Exhibit 13.

⁷⁵ I&E St.1 at 18-19; I&E Exhibit 13.

Additionally, Section IV(A)(1) of Bulletin #54 provides the following directions when a notice of a UST is received via a Damage Prevention Inspector:

Normal Working Hours - When an inspector is conducting a routine mark out on a designated location (address) and a UST is detected the inspector will generate a UST request order through AIMS and back that request up with a phone call to the Pa One Call clerk. The clerk will document the UST and forward it to the Dispatcher, and also call the proper city agency regarding the UST. The Dispatcher will issue an UST order in AIMS.

Out of Hours – The inspector will request a UST order through AIMS and back that request up with a phone call to the Dispatcher. The Dispatcher will generate an UST order in AIMS and call the proper city agency regarding the UST.⁷⁶

Finally, Section IV(A)(2) of Bulletin #54 recognizes that, in the investigation of USTs, “[t]he magnitude and proximity (to PGW structures) of the underground trouble is important to observe and report” and the investigation should look for key indicators, such as: (1) PGW involvement; (2) Distance of the problem to PGW structures; (3) Undermining; (4) Status of the UST repair; and (5) Leak associated with the problem.⁷⁷

F. THE NATURAL GAS EXPLOSION AT 815 JACKSON STREET

On November 30, 2021, at approximately 6:35 PM, Respondent dispatched crews to 815 Jackson Street after receiving an Inside Emergency call from the Philadelphia Fire Department.⁷⁸ At some time prior to PGW’s arrival on scene, a natural gas explosion occurred in the residence of 815 Jackson Street.⁷⁹ The natural gas explosion occurred after natural gas released and migrated from a circumferential crack on PGW’s low pressure 4-

⁷⁶ I&E St.1 at 18-19; I&E Exhibit 13.

⁷⁷ I&E Exhibit 13.

⁷⁸ Answer at par. 45.

⁷⁹ Answer at par. 47.

inch cast iron main located directly in front of 815 Jackson Street.⁸⁰ The natural gas explosion resulted in damage to 815 Jackson Street, evacuation of nearby residences, evacuation of ten (10) residents, and the precautionary medical evaluations of three (3) individuals.⁸¹ The total property damage as a result of the explosion is estimated to be \$104,269.92.⁸² PGW notified I&E Pipeline Safety of the natural gas explosion and I&E Pipeline Safety conducted an investigation of the explosion.⁸³

At approximately 7:01 PM, a PGW technician found a reading of 100% gas at the front foundation wall of 813 Jackson Street and 30% gas at the front foundation wall of 815 Jackson Street.⁸⁴ At approximately 8:00 PM, PGW began excavation work in front of 815 Jackson Street to gain access to the 4-inch cast iron main.⁸⁵

At the time of PGW's excavation, newer sections of sidewalk were visible in front of 815 Jackson Street and immediately adjacent to PGW's cast iron main.⁸⁶ The newer section of sidewalk immediately adjacent to PGW's cast iron main was sunken downward, as evidenced by the collection of water and debris at the lowest point.⁸⁷ When PGW's excavation began, the sidewalk buckled downwards, indicating that the sidewalk lacked support.⁸⁸

PGW's excavation, at the 4-inch cast iron main, uncovered a void underneath the sidewalk that measured approximately 50-inches wide by 16-inches deep.⁸⁹ The excavation

⁸⁰ Answer at par. 19.

⁸¹ Answer at par. 16; I&E St.1 at 7-8.

⁸² I&E St.1 at 8; PGW St. 1-R at 22.

⁸³ Answer at par. 51.

⁸⁴ Answer at par. 46.

⁸⁵ Answer at par. 52; I&E Exhibits 1, 2, and 5.

⁸⁶ Answer at par. 55; I&E St.1 at 10; I&E Exhibits 1, 2, and 5.

⁸⁷ I&E St.1 at 10; I&E Exhibit 1.

⁸⁸ I&E St.1 at 10; I&E Exhibits 2 and 3.

⁸⁹ Answer at par. 58; I&E Exhibit 4.

found that the 4-inch cast iron main had a circumferential crack at the six o'clock position that radiated to the four and eight o'clock positions on the pipe.⁹⁰

At approximately 9:32 PM, the flow of gas from the broken 4-inch cast iron main was stopped via use of a grease stick and wax tape.⁹¹ After gas was stopped, PGW conducted a leak survey of the surrounding area, and no additional leaks were found.⁹² PGW removed the cracked section of cast iron main and transported it to Affiliated Engineers Laboratory for analysis.⁹³

In December of 2021, PGW installed a new plastic main near 815 Jackson Street, which was tied in during January 2022, and abandoned the 4-inch cast iron main in place.⁹⁴

G. INVESTIGATION OF THE NATURAL GAS EXPLOSION AT 815 JACKSON STREET

One of the biggest threats to cast iron pipelines is earth movement, which can be caused by digging, seasonal frost heave, or changes in ground water levels.⁹⁵ Undermining is the shifting or removal of compacted soil that directly support the integrity or stability of a structure.⁹⁶ Undermining can occur on all axes and does not need to occur directly underneath a structure to adversely impact its integrity and stability.⁹⁷ The existence of soil beneath a main does not mean the main is fully supported, as soil conditions can affect the support it provides to a main.⁹⁸ Timely remedial measures, such as supporting or reinforcing the cast iron pipe, bridging, bracing or suitable backfill, can prevent cast iron breaks caused

⁹⁰ Answer at par. 53; I&E Exhibits.

⁹¹ Answer at par. 48.

⁹² Answer at par. 49; I&E St.1 at 16.

⁹³ Answer at par. 54 and 59.

⁹⁴ Answer at par. 50.

⁹⁵ I&E St.1 at 6.

⁹⁶ I&E St.1 at 6.

⁹⁷ I&E St.1 at 6.

⁹⁸ N.T. at 77.

by undermining.⁹⁹

The 4-inch cast iron main at 815 Jackson Street cracked and failed due to a lack of soil support, caused by the sewer system failure and excavation, and downward bending forces acting on the cast iron pipe.¹⁰⁰ A pipe experiencing downward bending forces is indicative of a pipe that is not properly supported.¹⁰¹

At the direction of PGW, Affiliated Engineers Laboratory (“AEL”) undertook a metallurgical evaluation of the cracked cast iron main and provided a report of its findings to PGW.¹⁰² AEL determined that the effective wall thickness of the pipe was reduced 13-15 percent by graphitization.¹⁰³ Cast iron is a combination of iron and graphite and graphitization occurs when iron is selectively leached from the cast iron, leaving graphite behind, resulting in a weakened and brittle pipe.¹⁰⁴

AEL did not observe evidence of a pre-existing breach or leak at the fracture location.¹⁰⁵ AEL’s metallurgical evaluation found that “[e]xternal stresses applied to a graphitized gas main induced a circumferential crack,” “the fracture occurred as a one-time overload condition,” and the pipe “experienced an external bending force acting upon it where a through wall crack initiated and propagated near its bottom.”¹⁰⁶

AEL concluded that external stresses applied to a graphitized gas main induced a circumferential crack whereby gas could escape.¹⁰⁷ AEL explained that:

⁹⁹ I&E St.1 at 6-7.

¹⁰⁰ I&E St.1 at 22-23, 25; I&E Exhibits 9 & 10.

¹⁰¹ N.T. at 79.

¹⁰² Answer at par. 59; I&E St.1 at 14; I&E Exhibit 9.

¹⁰³ Answer at par. 60; I&E Exhibit 9.

¹⁰⁴ Answer at par. 60; I&E St.1 at 6.

¹⁰⁵ I&E St.1 at 14; I&E Exhibit 9.

¹⁰⁶ I&E St. 1-SR at 3; I&E Exhibit 9 at 4, 28-29.

¹⁰⁷ I&E St.1 at 14; I&E Exhibit 9.

*Circumferential cracking is a common mode of failure for cast iron piping, when subjected to bending forces. Due to the inherent brittle nature of gray cast iron, the pipe will not plastically deform under bending loads but rather fracture. A crack initiates at the highest stressed region, whether it be at a thinned wall due to corrosion, large-sized casting flaw, or some other stress riser, and propagates rapidly along the pipe's circumference to alleviate the stresses induced by the bending forces. **Such bending forces can occur as a result of frost upheaval during freeze/thaw cycles, poor bedding, loss of soil support or external force from soil disturbances near the buried pipe or undermining.***¹⁰⁸

AEL identified three causes for the bending forces: (1) frost upheaval during freeze/thaw cycles; (2) poor bedding; and (3) loss of soil support or external force from soil disturbances near the buried pipe or undermining.¹⁰⁹ AEL obtained and analyzed weather data from the National Oceanic & Atmospheric Administration (“NOAA”) concluding that it is “unlikely that the ground froze during the month of November 2021,” ruling out frost upheaval as a cause of the external bending forces.¹¹⁰

Compromised pipeline bedding and loss of soil support are related to each other.¹¹¹ Pipeline bedding is found below and around a pipeline, providing support and protection for a pipeline. Like soil support, pipeline bedding can be negatively impacted by sewer failures and excavations and the compromise of pipeline bedding leads to the loss of support for a pipeline.¹¹² Based on AEL’s investigation, AEL ruled out frost upheaval as a cause of the cast iron failure, leaving the loss of support as the only identified cause of the failure.

Additionally, PGW retained Forensic Consultants of North America, LLC (“FCNA”)

¹⁰⁸ I&E St. 1-SR at 4; I&E Exhibit 9 at 29 (emphasis added).

¹⁰⁹ I&E St. 1-SR at 4; I&E Exhibit 9.

¹¹⁰ I&E St. 1-SR at 4; I&E Exhibit 9.

¹¹¹ N.T. at 79.

¹¹² I&E St. 1-SR at 4.

to investigate the root cause of the explosion at 815 Jackson Street.¹¹³ FCNA found that the “street surface where the excavation occurred directly in front of 815 Jackson Street was sunken downward several inches.”¹¹⁴ Further, FCNA found “that the unearthing of soil caused an underground cavity that can affect and compromise underground utilities such as the underground natural gas piping, water piping and sewer piping located adjacent to the curbside excavation work.”¹¹⁵ FCNA explained that “natural gas explosions can be directly related to gas pipes being undermined by water main breaks or excavation that displace pipes from their original position . . . [and d]isplaced excavated soil/earth that initially served to brace and secure pipes must be replaced in a similar fashion to maintain support and integrity of the existing gas pipes.”¹¹⁶ FCNA specifically concluded that:

*Excavation, backfilling, replacement of soil and asphalt surfaces by Clemens [sic] Brothers Plumbing, while completing a lateral curb trap, most likely contributed to the damage/cracking of the underground natural gas pipe and subsequent escape and migration of gas vapors that entered the subject residence of 815 Jackson Street.*¹¹⁷

FCNA did not conclude or identify any other possible cause of the cast iron main failure.¹¹⁸

H. PGW’S FAILURE TO PROTECT ITS CAST IRON MAIN

The primary cause of the explosion was the release of natural gas from a circumferential crack on the cast iron main in front of 815 Jackson Street.¹¹⁹ The cast iron main cracked due to downward bending forces applied to the cast iron main and loss of support because of soil instability and undermining below and around the cast iron main

¹¹³ Answer at par. 62; I&E St.1 at 15; I&E Exhibit 10.

¹¹⁴ Answer at par. 63; I&E St.1 at 15; I&E Exhibit 10.

¹¹⁵ Answer at par. 64; I&E St.1 at 15; I&E Exhibit 10.

¹¹⁶ Answer at par. 65; I&E St.1 at 15; I&E Exhibit 10.

¹¹⁷ Answer at par. 66; I&E St.1 at 15; I&E Exhibit 10.

¹¹⁸ I&E St. No 1-SR at 80-81; I&E Exhibit 10.

¹¹⁹ I&E St.1 at 25; I&E Exhibit 10.

caused by sewer system failures, and the resulting excavations to repair the sewer system failures, immediately adjacent to the cast iron main.¹²⁰

PGW received three separate notices of sewer system failures, in the form of the PA One Call notices, that indicated excavation would be conducted to repair and replace curb trap laterals.¹²¹ PGW knew the excavation at 815 Jackson Street would be 8 feet deep by 4 feet wide by 4 feet long, in the sidewalk, and that PGW's cast iron main was in the sidewalk 7.5 feet from the front foundation wall, which means the excavation would be occurring directly at or immediately adjacent to the cast iron main.¹²² Additionally, PGW knew of the prior history of five (5) cast iron main breaks on the 800-block of Jackson Street in the preceding 12 years.

PGW had sufficient information and knowledge to understand the threat that undermining, caused by the sewer system failures and excavations, would pose to its cast iron facility at 815 Jackson Street.¹²³ PGW failed to act on the known One Call notices on the 800-block and the ensuing construction activity, which resulted in the integrity of the cast iron main being compromised by the weakening of the soil and undermining of the pipeline.¹²⁴ PGW's failures include: (1) Failure to generate a UST order in AIMS after receipt of the three (3) POCS notices indicating sewer failures at 815 and 813 Jackson Street;¹²⁵ (2) Failure to inspect, investigate, or observe the sewer repair excavations at 815 and 813 Jackson Street for the purpose of assessing the possible impacts on PGW

¹²⁰ I&E St.1 at 25; I&E Exhibits 9 & 10.

¹²¹ I&E St. 1-SR at 6-7; I&E Exhibits 6-8.

¹²² I&E St. 1-SR at 7; I&E Exhibits 6, 7.

¹²³ I&E St.1 at 21.

¹²⁴ I&E St.1 at 22.

¹²⁵ Answer at par. 26; I&E St.1 at 19.

facilities;¹²⁶ and (3) Failure to take any measures to safeguard its facilities or perform necessary follow-up actions after receiving three (3) notices of sewer failures and extensive excavations at and around its cast iron facilities.¹²⁷

As it relates to Bulletin #312, PGW, upon receipt of notices of sewer system failures, did not determine the location of the cast iron facility and, when that facility may be affected by the sewer system failure and resulting excavations, did not dispatch appropriate personnel to promptly determine the effect of the sewer system failure on the cast iron facility, as required by Section III(B).¹²⁸ A PGW supervisor was not promptly informed when PGW knew the cast iron pipeline was or may be endangered and the supervisor did not institute necessary actions, such as patrolling, supporting, replacing, relocating or removing from service the affected gas facilities, to protect PGW facilities as required by Section III(A) of Bulletin #312.¹²⁹

As it relates to Bulletin #313, PGW Damage Prevention Inspectors did not report to a supervisor an activity or change in environment that could affect the safety of a cast iron facility when the Damage Prevention Inspectors knew of the USTs, the sewer system failures, and the extent and location of the excavations at or immediately adjacent to the cast iron facility, as required by Section III(E).¹³⁰ Additionally, PGW Damage Prevention Inspectors did not act or report upon an excavation or construction activity which could result in damage to a pipeline, loss of support due to settlement or shifting of soil around a pipeline, or undermining or damage to a pipeline support, as required by Section III(E) of

¹²⁶ I&E St.1 at 19-20.

¹²⁷ I&E St.1 at 20-21.

¹²⁸ I&E St.1 at 21-22; I&E St. 1-SR at 7.

¹²⁹ I&E St.1 at 21-22; I&E St. 1-SR at 7-8.

¹³⁰ I&E St. 1-SR at 11.

Bulletin #313.¹³¹ Further, PGW employees did not inspect third-party construction activities for the main purpose of protecting PGW underground structures and facilities, visit the underground street trouble and report the same to Distribution Dispatching and supervisor, re-visit the on-going job without a watchman, in which PGW facilities will be undermined, in order to report and/or recommend replacement or protection, or report an undermined gas main as required by Bulletin #313 “Damage Prevention Inspectors.”¹³²

As it relates to Bulletin #54, PGW dispatchers did not generate a UST order in AIMS upon receipt of a PA One Call System notice that a third party contractor would be performing excavations to repair sewer system failures, PGW employees did not visit the location before, during, or after construction activities to perform inspection, investigation, or necessary follow-up actions, and PGW Damage Prevention Inspectors did not generate a UST order in AIMS, as required.¹³³ Further, because PGW employees did not perform the required steps above, they did not report an undermined gas main immediately to the PGW supervisor.¹³⁴

Ultimately, PGW had knowledge of numerous events and circumstances that PGW knew would lead to the support for the cast iron main at 815 Jackson Street being disturbed and failed to protect the cast iron main as necessary and failed to take permanent steps to protect the cast iron main.¹³⁵ Federal pipeline safety regulations require natural gas distribution operators to protect buried cast iron pipelines. Specific to cast iron pipelines, 49 CFR § 192.755 directs that when an operator has knowledge that the support for a segment

¹³¹ I&E St. 1-SR at 11-12.

¹³² I&E St.1 at 22.

¹³³ I&E St.1 at 22.

¹³⁴ I&E St.1 at 22.

¹³⁵ I&E St.1 at 22-23.

of a buried cast-iron pipeline is disturbed that segment of the pipeline must be protected, as necessary, against damage during the disturbance and, as soon as feasible, an Operator must take steps to provide permanent protection for the disturbed segment from damage that might result from external loads.¹³⁶ PGW had more than enough information in its possession to know the threat that undermining would pose to its cast iron facility at 815 Jackson Street.

I. PUC v. PGW, DOCKET NO. C-2022-3033834, (“8th Street Settlement”)

The Commission approved a settlement at *PUC v. PGW*, Docket No. C-2022-3033834, (“8th Street Settlement”) on January 8, 2025.¹³⁷ The 8th Street Settlement involved a December 19, 2019, natural gas explosion at 1435 South 8th Street, Philadelphia, PA, resulting in two fatalities and extensive property damage. As the factual circumstances between the 8th Street Settlement and this incident are similar, the corrective actions in the 8th Street Settlement are relevant to address the issues in this matter.¹³⁸

In the 8th Street Settlement, eight (8) locate requests related to water and/or sewer repair work were submitted to the Pennsylvania One Call System, Inc. (“Pennsylvania One Call”) between March 28, 2018 and October 23, 2019.¹³⁹ Six (6) of these locate requests occurred between September 13, 2019 and October 23, 2019.¹⁴⁰ PGW responded to each of these requests and properly marked its facilities.¹⁴¹ Between October 7, 2019 and October 23, 2019, private contractors completed various sewer repairs at 1428 South 8th Street, 1430 South 8th Street, 1431 South 8th Street, and 1433 South 8th Street.¹⁴² Two of the private

¹³⁶ 49 CFR § 192.755; I&E St.1 at 23.

¹³⁷ I&E St. 1-SR at 14; PUC v. PGW, Docket No. C-2022-3033834.

¹³⁸ I&E St. 1-SR at 14; PGW St. 1-R at 47; PUC v. PGW, Docket No. C-2022-3033834.

¹³⁹ I&E St. 1-SR at 14-15; PUC v. PGW, Docket No. C-2022-3033834.

¹⁴⁰ I&E St. 1-SR at 14-15; PUC v. PGW, Docket No. C-2022-3033834.

¹⁴¹ I&E St. 1-SR at 14-15; PUC v. PGW, Docket No. C-2022-3033834.

¹⁴² I&E St. 1-SR at 14-15; PUC v. PGW, Docket No. C-2022-3033834.

contractors observed underground voids near the sewer lines of the Philadelphia Water Department.¹⁴³ After the explosion, PGW excavated over the broken cast iron main.¹⁴⁴ When the roadway was opened to start the excavation, there were signs of potential under- street disturbance in proximity to the excavation.¹⁴⁵ Once the main was excavated and exposed, a circumferential crack on the cast iron pipe became visible.¹⁴⁶ A metallurgical evaluation of the cracked cast iron pipe concluded that external stresses applied to a graphitized gas main induced a circumferential crack whereby gas could escape.¹⁴⁷

In the two years between the 8th Street explosion (December 19, 2019) and the explosion at 815 Jackson Street (November 30, 2021), PGW did not take the necessary action or make necessary changes to their policy and procedures to reduce risk and prevent reoccurrence of events related to excavations to repair water and sewer system failures at or near their cast iron mains.¹⁴⁸ Under federal pipeline safety regulations, a natural gas distributor is required to have a Distribution Integrity Management Plan (“DIMP”) which requires operators to know their systems, take preventative actions, and learn from prior incidents on their system with the goal of reducing risk in its system.¹⁴⁹ In that two year time period after the 8th Street explosion, PGW did not make any material changes to Bulletins #312, 313, or 54.¹⁵⁰

¹⁴³ I&E St. 1-SR at 14-15; PUC v. PGW, Docket No. C-2022-3033834.

¹⁴⁴ I&E St. 1-SR at 14-15; PUC v. PGW, Docket No. C-2022-3033834.

¹⁴⁵ I&E St. 1-SR at 14-15; PUC v. PGW, Docket No. C-2022-3033834.

¹⁴⁶ I&E St. 1-SR at 14-15; PUC v. PGW, Docket No. C-2022-3033834.

¹⁴⁷ I&E St. 1-SR at 14-15; PUC v. PGW, Docket No. C-2022-3033834.

¹⁴⁸ I&E St. 1-SR at 15; PUC v. PGW, Docket No. C-2022-3033834.

¹⁴⁹ N.T. at 84, 99. 49 CFR § 192.1007.

¹⁵⁰ N.T. at 112.

III. SUMMARY OF ARGUMENT

In short, PGW failed to follow its own natural gas safety and damage prevention procedures and has fallen short of the minimum safety standards for natural gas operators in the Commonwealth, as prescribed by the Code of Federal Regulations, the Public Utility Code, and the Commission's regulations, by its failure to act on the information in its possession to protect its cast iron facility and prevent a cast iron main failure and natural gas explosion.

PGW received three separate notices of sewer system failures, in the form of the PA One Call notices, that indicated excavation would be conducted to repair and replace curb trap laterals.¹⁵¹ On top of that, PGW had sufficient information to know that undermining, caused by the sewer system failures and subsequent excavations, would pose a threat to its cast iron facility at 815 Jackson Street.¹⁵² Specifically, PGW knew the following facts and circumstances:

1. The main in front of 815 Jackson Street was a cast iron main;¹⁵³
2. The cast iron main was in excess of 120 years old at the time of the excavation;¹⁵⁴
3. Sewer failures occurred at 815 and 813 Jackson Street;¹⁵⁵
4. The sewer lateral was made of either cast iron or terracotta, both potentially being brittle and fragile;¹⁵⁶
5. Sewer curb trap and sewer system failures can result in the leakage of liquids from the system;¹⁵⁷

¹⁵¹ I&E St. 1-SR at 6-7; I&E Exhibits 6-8.

¹⁵² I&E St.1 at 21.

¹⁵³ Answer at par. 21; N.T. at 149.

¹⁵⁴ Answer at par. 22 and 24.

¹⁵⁵ Answer at par. 30 and 32; I&E Exhibits.

¹⁵⁶ N.T. at 139.

¹⁵⁷ N.T. at 136, 141.

6. Water and sewer leaks and failures cause soil instability due to water saturation and erosion and can remove support for other facilities;¹⁵⁸
7. Sewer and water system failures represent a risk to its system;¹⁵⁹
8. The extensive size of the excavation, that the excavation would occur at or immediately adjacent to its cast iron facility, and that the excavation would be significantly deeper than its facility;¹⁶⁰
9. The sewer system failures and excavations were in close proximity, in that they were immediately next door to each other;¹⁶¹
10. Excavations around and beneath gas facilities cause soil instability by removing compacted soil;¹⁶²
11. Cast iron becomes brittle and is susceptible to breaking with little notice;¹⁶³
12. PGW ranks cast iron as the riskiest or second riskiest asset in its system and recognizes that small diameter is riskier than large diameter cast iron;¹⁶⁴
13. There is a nationally recognized risk with cast iron mains;¹⁶⁵
14. Cast iron should be treated with significant care and respect;¹⁶⁶ and
15. The 800-block of Jackson Street had a history of 5 cast iron main breaks in the preceding 12 years.¹⁶⁷

Despite this knowledge, PGW failed to act on the known One Call notices on the 800-block and the ensuing construction activity, which resulted in the integrity of the cast iron main being compromised by the weakening of the soil and undermining of the pipeline.¹⁶⁸

¹⁵⁸ I&E St. 1-SR at 13; PGW St. 1-R at 22; N.T. at 109-110.

¹⁵⁹ N.T. at 110.

¹⁶⁰ I&E St. 1-SR at 13.

¹⁶¹ I&E St. 1-SR at 13.

¹⁶² Answer at par. 41; PGW St. 1-R at 22; N.T. at 109.

¹⁶³ PGW St. 1-R at 10, 29; N.T. at 107.

¹⁶⁴ N.T. at 102.

¹⁶⁵ N.T. at 106.

¹⁶⁶ N.T. at 113.

¹⁶⁷ I&E St. 1-SR at 13.

¹⁶⁸ I&E St.1 at 22.

As it relates to Bulletin #312, PGW, upon receipt of notices of sewer system failures, did not determine the location of the cast iron facility and, when that facility may be affected by the sewer system failure and resulting excavations, did not dispatch appropriate personnel to promptly determine the effect of the sewer system failure on the cast iron facility, as required by Section III(B).¹⁶⁹ A PGW supervisor was not promptly informed when PGW knew the cast iron pipeline was or may be endangered and the supervisor did not institute necessary actions, such as patrolling, supporting, replacing, relocating or removing from service the affected gas facilities, to protect PGW facilities as required by Section III(A) of Bulletin #312.¹⁷⁰

As it relates to Bulletin #313, PGW Damage Prevention Inspectors did not report to a supervisor an activity or change in environment that could affect the safety of a cast iron facility when the Damage Prevention Inspectors knew of the USTs, the sewer system failures, and the extent and location of the excavations at or immediately adjacent to the cast iron facility, as required by Section III(E).¹⁷¹ Additionally, PGW Damage Prevention Inspectors did not act or report upon an excavation or construction activity which could result in damage to a pipeline, loss of support due to settlement or shifting of soil around a pipeline, or undermining or damage to a pipeline support, as required by Section III(E) of Bulletin #313.¹⁷² Further, PGW employees did not inspect third-party construction activities for the main purpose of protecting PGW's underground structures and facilities, visit the underground street trouble and report the same to Distribution Dispatching and supervisor,

¹⁶⁹ I&E St.1 at 21-22; I&E St. 1-SR at 7.

¹⁷⁰ I&E St.1 at 21-22; I&E St. 1-SR at 7-8.

¹⁷¹ I&E St. 1-SR at 11.

¹⁷² I&E St. 1-SR at 11-12.

re-visit the on-going job without a watchman, in which PGW facilities will be undermined, in order to report and/or recommend replacement or protection, or report an undermined gas main as required by Bulletin #313 “Damage Prevention Inspectors.”¹⁷³

As it relates to Bulletin #54, PGW dispatchers did not generate a UST order in AIMS upon receipt of a PA One Call System notice that a third party contractor would be performing excavations to repair sewer system failures, PGW employees did not visit the location before, during, or after construction activities to perform inspection, investigation, or necessary follow-up actions, and PGW Damage Prevention Inspectors did not generate a UST order in AIMS, as required.¹⁷⁴ Further, because PGW employees did not perform the required steps above, they did not report an undermined gas main immediately to a PGW supervisor.¹⁷⁵

Federal pipeline safety regulations have specific requirements for natural gas distribution operators to protect buried cast iron pipelines. Specific to cast iron pipelines, 49 CFR § 192.755 directs that when an operator has knowledge that the support for a segment of a buried cast-iron pipeline is disturbed that segment of the pipeline must be protected, as necessary, against damage during the disturbance and, as soon as feasible, an Operator must take steps to provide permanent protection for the disturbed segment from damage that might result from external loads.¹⁷⁶ Ultimately, PGW had knowledge of numerous events and circumstances that PGW knew would lead to the support for the cast iron main at 815 Jackson Street being disturbed and failed to protect the cast iron main as necessary and failed

¹⁷³ I&E St.1 at 22.

¹⁷⁴ I&E St.1 at 22.

¹⁷⁵ I&E St.1 at 22.

¹⁷⁶ 49 CFR § 192.755; I&E St.1 at 23.

to take permanent steps to protect the cast iron main.¹⁷⁷

IV. BURDEN OF PROOF AND LEGAL STANDARDS

I&E, as the Complainant, bears the burden of proof to establish that PGW violated Public Utility Code, Commission regulations, and the Code of Federal Regulations.¹⁷⁸

“Burden of proof” is established by a preponderance of the evidence which is substantial and legally credible.¹⁷⁹ That is, I&E’s evidence must be more convincing, by even the smallest amount, than that presented by the Respondent.¹⁸⁰ Additionally, the Commission’s decision must be supported by substantial evidence in the record. More is required than a mere trace of evidence or a suspicion of the existence of a fact sought to be established.¹⁸¹ As evident in the record of this case and as supported in I&E’s Main Brief, I&E has demonstrated beyond a preponderance of credible evidence that PGW violated the Public Utility Code, Commission regulations, and the Code of Federal Regulations and is subject to disciplinary action.

I&E charged PGW with violations of Federal pipeline safety regulation 49 CFR § 192.755(a)&(b). This section requires that:

When an operator has knowledge that the support for a segment of a buried cast-iron pipeline is disturbed:

(a) That segment of the pipeline must be protected, as necessary, against damage during the disturbance by:

- (1) Vibrations from heavy construction equipment, trains, trucks, buses, or blasting;*
 - (2) Impact forces by vehicles;*
 - (3) Earth movement;*
 - (4) Apparent future excavations near the pipeline;*
- or*

¹⁷⁷ I&E St.1 at 22-23.

¹⁷⁸ 66 Pa.C.S. § 332(a).

¹⁷⁹ *Samuel J. Lansberry, Inc. v. Pa. PUC*, 578 A.2d 600 (Pa. Cmwlth. 1990), alloc. denied, 529 Pa. 654, 602 A.2d 863 (1992).

¹⁸⁰ *Se-Ling Hosiery, Inc. v. Margulies*, 364 Pa. 45, 70 A.2d 854 (1950).

¹⁸¹ *Norfolk & Western Ry. Co. v. Pa. PUC*, 489 Pa. 109, 413 A.2d 1037 (1980).

(5) *Other foreseeable outside forces which may subject that segment of the pipeline to bending stress.*

(b) *As soon as feasible, appropriate steps must be taken to provide permanent protection for the disturbed segment from damage that might result from external loads, including compliance with applicable requirements of §§ 192.317(a), 192.319, and 192.361(b)-(d).*

The federal regulations do not define “knowledge” and whether “knowledge” should be interpreted as “actual knowledge” or “constructive knowledge.” Without a clearly provided definition for “knowledge” we must look to other sources to understand the knowledge requirement.

Black’s Law Dictionary defines “actual knowledge” as “direct and clear knowledge” or “knowledge of information that would lead a reasonable person to inquire further.”¹⁸²

Black’s Law Dictionary also defines “constructive knowledge” as “knowledge that one using reasonable care or diligence should have, and therefore that is attributed by law to a given person.”¹⁸³

This Commission has previously interpreted “notice” when it was not defined in Section 1303¹⁸⁴ of the Utility Code. “Notice”¹⁸⁵ is similar in definition to “knowledge” and is somewhat informative. In *KA at Fairless Hills, LP v. PECO Energy Company*, Docket No.

¹⁸² Knowledge, Black's Law Dictionary (12th ed. 2024).

¹⁸³ Knowledge, Black's Law Dictionary (12th ed. 2024).

¹⁸⁴ 66 Pa.C.S. § 1303 states that “No public utility shall, directly or indirectly, by any device whatsoever, or in anywise, demand or receive from any person, corporation, or municipal corporation a greater or less rate for any service rendered or to be rendered by such public utility than that specified in the tariffs of such public utility applicable thereto. The rates specified in such tariffs shall be the lawful rates of such public utility until changed, as provided in this part. Any public utility, having more than one rate applicable to service rendered to a patron, shall, after notice of service conditions, compute bills under the rate most advantageous to the patron.”

¹⁸⁵ A person has notice of a fact or condition if that person (1) has actual knowledge of it; (2) has received information about it; (3) has reason to know about it; (4) knows about a related fact; or (5) is considered as having been able to ascertain it by checking an official filing or recording. Notice, Black's Law Dictionary (12th ed. 2024).

C-2017-2592335 (Ordered entered December 17, 2018), this Commission concluded that the term “notice” in Section 1303 means “actual notice” which “include[s] such notice as is affirmatively proved to have been given to a party directly, and also such notice as a party is presumed to have received personally because facts within its knowledge were sufficient to place upon the party the duty to inquire about the fact or condition in question.”¹⁸⁶

It is also instructive to look towards other terms in Parts 191 and 192 of Title 49 that are similar to “knowledge.” Specifically, the Commission should look towards how the Federal regulations define “discovery of condition” and “confirmed discovery.” Discovery of a condition occurs “when an operator has adequate information about a condition to determine that the condition presents a potential threat to the integrity of the pipeline.”¹⁸⁷ Whereas, confirmed discovery means “when it can be reasonably determined, based on information available to the operator at the time a reportable event has occurred, even if only based on a preliminary evaluation.”¹⁸⁸ The definitions for “discovery of condition” and “confirmed discovery” more closely resemble that of “constructive knowledge,” in that “direct and clear knowledge” is not required but only adequate information to determine a condition presents a potential threat and a reasonable determination based on available information.

I&E believes that to maintain consistency with Parts 191 and 192, “knowledge” should be interpreted as “constructive knowledge.” However, even if the definition of “actual knowledge” and “actual notice” are applied, I&E has met those burdens with the evidence presented. As defined above “actual knowledge” is “knowledge of information that would

¹⁸⁶ *KA at Fairless Hills, LP v. PECO Energy Company*, Docket No. C-2017-2592335, at 22.

¹⁸⁷ 49 C.F.R. §§ 192.710 & 192.933.

¹⁸⁸ 49 C.F.R. § 191.3.

lead a reasonable person to inquire further” and “actual notice” is “notice as a party is presumed to have received personally because facts within its knowledge were sufficient to place upon the party the duty to inquire about the fact or condition in question.” In keeping with the regulatory framework for natural gas operators to use reasonable effort and exercise reasonable care to protect the public, I&E believes that the facts and circumstances in PGW’s possession would lead a reasonable utility to inquire further to ascertain the steps necessary to protect its cast iron pipeline against damage.

V. ARGUMENT

As is evident in the record of this case and as discussed below, I&E has demonstrated beyond a preponderance of credible evidence that PGW violated the Public Utility Code, Commission regulations, and the Code of Federal Regulations and is subject to disciplinary action.

A. COUNT ONE

Count One of I&E’s Formal Complaint alleges a violation of Federal pipeline safety regulation 49 CFR § 192.605(a), in that PGW failed to follow its own manual of written procedures, specifically Bulletin #312. Natural gas public utilities, such as PGW, are required to meet the minimum safety standards found in 49 U.S.C. §§ 60101-60503 and as implemented at 49 CFR Parts 191-193 and 199.¹⁸⁹ Section 192.605(a) requires that each natural gas distribution operator prepare and follow for each pipeline, a manual of written procedures for conducting operations and maintenance activities and for emergency response.

¹⁸⁹ 52 Pa. Code § 59.33(b).

PGW received three separate notices of sewer system failures, in the form of the PA One Call notices, that indicated excavation would be conducted to repair and replace sewer curb trap laterals. PGW's Bulletins clearly identify sewer system failures as an underground street trouble and require PGW take affirmative action to address the threats posed by underground street troubles.

In addition to the notices of USTs, PGW's knowledge of the previously identified 15 facts and circumstances surrounding the sewer system failures and excavations at 815 and 813 Jackson Street and therefore understood the risks to its cast iron main facility at that location. In particular, PGW knew that:

1. The main in front of 815 Jackson Street was a cast iron main;¹⁹⁰
2. The cast iron main was in excess of 120 years old at the time of the excavation;¹⁹¹
3. Sewer failures occurred at 815 and 813 Jackson Street;¹⁹²
4. The sewer lateral was made of either cast iron or terracotta, both potentially being brittle and fragile;¹⁹³
5. Sewer curb trap and sewer system failures can result in the leakage of liquids from the system;¹⁹⁴
6. Water and sewer leaks and failures cause soil instability due to water saturation and erosion and can remove support for other facilities;¹⁹⁵
7. Sewer and water system failures represent a risk to its system;¹⁹⁶

¹⁹⁰ Answer at par. 21; N.T. at 149.

¹⁹¹ Answer at par. 22 and 24.

¹⁹² Answer at par. 30 and 32; I&E Exhibits.

¹⁹³ N.T. at 139.

¹⁹⁴ N.T. at 136, 141.

¹⁹⁵ I&E St. 1-SR at 13; PGW St. 1-R at 22; N.T. at 109-110.

¹⁹⁶ N.T. at 110.

8. The extensive size of the excavation, that the excavation would occur at or immediately adjacent to its cast iron facility, and that the excavation would be significantly deeper than its facility;¹⁹⁷
9. The sewer system failures and excavations were in close proximity, in that they were immediately next door to each other;¹⁹⁸
10. Excavations around and beneath gas facilities cause soil instability by removing compacted soil;¹⁹⁹
11. Cast iron becomes brittle and is susceptible to breaking with little notice;²⁰⁰
12. PGW ranks cast iron as the riskiest or second riskiest asset in its system and recognizes that small diameter is riskier than large diameter cast iron;²⁰¹
13. There is a nationally recognized risk with cast iron mains;²⁰²
14. Cast iron should be treated with significant care and respect;²⁰³ and
15. The 800-block of Jackson Street had a history of 5 cast iron main breaks in the preceding 12 years.²⁰⁴

Despite this abundance of knowledge and notice of the USTs, PGW failed to take any action to prevent damage to its cast iron facility, its employees failed to alert supervisors of an endangered facility, and it failed to institute necessary actions to protect its facilities.

PGW failed to uphold the purpose of Bulletin #312 in that it failed to “observe contractor activities when necessary and to offer assistance to safeguard PGW facilities during construction.” Further, PGW employees failed to promptly inform a supervisor when “pipeline facilities *are or may be endangered*,” consequently PGW failed to “institute necessary actions such as patrolling, supporting, replacing, relocating or removing from

¹⁹⁷ I&E St. 1-SR at 13.

¹⁹⁸ I&E St. 1-SR at 13.

¹⁹⁹ Answer at par. 41; PGW St. 1-R at 22; N.T. at 109.

²⁰⁰ PGW St. 1-R at 10, 29; N.T. at 107.

²⁰¹ N.T. at 102.

²⁰² N.T. at 106.

²⁰³ N.T. at 113.

²⁰⁴ I&E St. 1-SR at 13.

service the affected gas facilities,” as required by Section III(A) of Bulletin #312. Finally, PGW received three separate notices of sewer system failures at 815 and 813 Jackson Street, via the One Call notices, but when that pipeline facility “*may be affected*,” PGW failed to promptly dispatch appropriate personnel to determine the effect of the sewer system failures on the cast iron facility, as required by Section III(B) of Bulletin #312.

I&E has proven beyond a preponderance of evidence that PGW failed to follow Bulletin #312, in violation of 49 CFR § 192.605(a).

B. COUNT TWO

Count Two of I&E’s Formal Complaint alleges a violation of Federal pipeline safety regulation 49 CFR § 192.605(a), in that PGW failed to follow its own manual of written procedures, specifically Bulletin #313. As discussed more fully in Count One and the Statement of the Case, PGW had the requisite knowledge to understand the risks to its cast iron facility. Despite this knowledge, PGW failed to inspect the construction activities, visit the UST, re-visit an ongoing job where a cast iron facility was undermined, failed to report or act upon excavation or construction activity that could result in damage or loss of support, and failed to report activity or environment changes that could affect the safety of the pipeline.

PGW’s Damage Prevention Inspectors are trained to look for circumstances that indicate the presence of USTs and for the potential of damage to pipelines and knew, among other things, of the sewer system failure, knew the extent of the excavation, and the existence and location of the cast iron facility, but failed, as required by Sections III(A)&(D) of Bulletin #313, to: (1) inspect third party construction activities for the purpose of protecting PGW facilities; (2) re-visit an ongoing job without watchman, in which a PGW facility was

undermined, in order to report or recommend protection; (3) identify underground street trouble encountered and report it to a supervisor; and (4) immediately report an undermined gas main.

PGW Damage Prevention Inspectors did not fulfill their responsibilities under Section III(E) of Bulletin #313, in that they failed to identify, report, and act upon “any activity or changes in the environment that *could* affect the safety of the pipeline,” including any excavation or construction activity “*which could result in* damage to a pipeline, loss of support due to settlement or shifting of soil around a pipeline, undermining or damage to a pipeline support,” land subsidence, soil erosion, and other natural causes that can create additional external loading, and any other abnormal or unusual operating conditions.

I&E has proven beyond a preponderance of evidence that PGW failed to follow Bulletin #313, in violation of 49 CFR § 192.605(a).

C. COUNT THREE

Count Three of I&E’s Formal Complaint alleges a violation of Federal pipeline safety regulation 49 CFR § 192.605(a), in that PGW failed to follow its own manual of written procedures, specifically Bulletin #54. As discussed more fully in Count One and the Statement of the Case, PGW had the requisite knowledge to understand the risks to its cast iron facility. Despite this knowledge, PGW failed to bring reports of the sewer system failures, a UST, to the attention of the Dispatcher, failed generate a UST Order in AIMS, and failed to investigate the UST to determine PGW facility involvement and the impact it may have on PGW facilities.

Bulletin #54 specifically identifies sewer system failures as a UST and that notice of USTs can be received via the PA One Call System and from Damage Prevention Inspectors.

PGW received three notices of sewer system failures and repairs at 815 and 813 Jackson Street, via the PA One Call tickets, but never generated a UST Order in AIMS or brought to the attention of a dispatcher, as required in Section IV of Bulletin #54. Additionally, a PGW Damage Prevention Inspector was on site at 815 and 813 Jackson Street, reviewed copies of the PA One Call tickets, and knew that sewer system failures occurred, but failed to generate a UST Order in AIMS, as required by Section IV of Bulletin #54. Ultimately, the failure to generate a UST Order led to PGW's failure, as required by Bulletin #54, to investigate the USTs and determine: (1) PGW involvement; (2) Distance of the problem to PGW structures; (3) Undermining; (4) Status of the UST repair; and (5) Leak associated with the problem.

I&E has proven beyond a preponderance of evidence that PGW failed to follow Bulletin #54, in violation of 49 CFR § 192.605(a).

D. COUNT FOUR

Count Four of I&E's Formal Complaint alleges a violation of Federal pipeline safety regulation 49 CFR § 192.703(a), in that PGW operated a segment of its pipeline after failing to maintain its pipeline in accordance with Subpart M, 49 CFR §§ 192.701-192.756, by failing to protect as necessary or take immediate steps to protect a segment of its buried cast iron pipeline when it had knowledge that support for that segment of pipeline would be disturbed.

As discussed extensively above, PGW had knowledge of 15 facts and circumstances that PGW knew would lead to the support for the cast iron main at 815 Jackson Street being disturbed and failed to protect the cast iron main as necessary and failed to take permanent steps to protect the cast iron main. Section 192.755 directs that when an operator has knowledge that the support for a segment of a buried cast-iron pipeline is disturbed that

segment of the pipeline must be protected, as necessary, against damage during the disturbance by: (1) Vibrations from heavy construction equipment, trains, trucks, buses, or blasting; (2) Impact forces by vehicles; (3) Earth movement; (4) Apparent future excavations near the pipeline; or (5) Other foreseeable outside forces which may subject that segment of the pipeline to bending stress. As soon as feasible, an Operator must take steps to provide permanent protection for the disturbed segment from damage that might result from external loads.

Additionally, PGW's Bulletin #54 identifies 49 CFR § 192.755 as relevant code for that procedure, indicating that this bulletin goes towards PGW's obligation to have a written procedure in place addressing the requirements of Section 192.755. As discussed in Count Three, PGW failed to follow Bulletin #54. PGW's failure to follow Bulletin #54 is further indicative of its failure to maintain its pipeline in accordance with Subpart M.

As discussed throughout, PGW had extensive knowledge that the sewer system failures and excavations represented a serious risk of undermining support for the cast iron pipeline at 815 Jackson Street and took no action to protect and support its cast iron pipeline. After the failure to maintain its pipeline in accordance with Subpart M, specifically Section 192.755 and Bulletin #54, PGW continued to operate the 120-year old cast iron pipeline until it failed on November 30, 2021.

I&E has proven beyond a preponderance of evidence that PGW operated a segment of pipeline after failing to maintain its pipeline in accordance with Subpart M, in violation of 49 CFR § 192.703(a).

E. COUNT FIVE

Count Five of I&E's Formal Complaint alleges a violation of Federal pipeline safety regulation 49 CFR § 192.703(b), in that PGW failed to replace, repair, or remove from service a segment of pipeline that had become unsafe.

As discussed thoroughly above, PGW had knowledge of 15 facts and circumstances surrounding the sewer system failures and excavations at 815 and 813 Jackson Street to understand that its cast iron main facility at that location would be at risk from undermining. Despite this knowledge, PGW did not inspect, investigate, evaluate, or take any tangible action in response to the sewer system failures and repairs and the resulting excavations, for the purpose of protecting its cast iron facility. As concluded by both the AEL metallurgical evaluation and FCNA root cause report, the sewer system failure and excavations removed soil support from below and around the cast iron pipe. This loss of soil support is further evidenced by the void that was discovered upon excavation of the main, as well as the pavement and sidewalk depressions found at the scene of the explosion. The loss of soil support created an unsafe condition for the cast iron pipeline, by which an external bending force was able to act upon the cast iron pipe causing a failure. PGW failed to repair, replace, or remove from service this unsafe portion of cast iron and continued to operate it until the November 30, 2021, failure.

I&E has proven beyond a preponderance of evidence that PGW failed to repair, replace, or remove from service the unsafe portion of cast iron pipeline, in violation of 49 CFR § 192.703(a).

F. COUNTS SIX AND SEVEN

Counts Six and Seven of I&E's Formal Complaint alleges violations of Federal pipeline safety regulation 49 CFR § 192.755(a)&(b), in that PGW had knowledge that the support for the segment of the buried 4-inch cast iron pipeline at and near 815 Jackson Street was disturbed by sewer failures and excavation activity near the pipeline and PGW failed to protect, as necessary, the cast iron main against damage and failed to take appropriate steps to provide permanent protection from any damage that might result from external loads. Section 192.755(a) requires that when an operator has knowledge that the support for a segment of a buried cast-iron pipeline is disturbed that segment of the pipeline must be protected, as necessary, against damage from: (1) Vibrations from heavy construction equipment, trains, trucks, buses, or blasting; (2) Impact forces by vehicles; (3) Earth movement; (4) Apparent future excavations near the pipeline; or (5) Other foreseeable outside forces which may subject that segment of the pipeline to bending stress. Section 192.755(b) requires that when an operator has knowledge that the support for a segment of a buried cast-iron pipeline is disturbed, the operator should, as soon as possible, take appropriate steps to provide permanent protection to the cast iron pipeline.

As discussed extensively above, PGW had knowledge of 15 facts and circumstances that PGW knew would lead to the support for the cast iron main at 815 Jackson Street being disturbed, placing the cast iron main at risk of failure, and failed to protect the cast iron main as necessary or to take permanent steps to protect the cast iron main.

As more thoroughly addressed in the Burden of Proof and Legal Standards section, I&E believes that to maintain consistency with Parts 191 and 192, the "knowledge" element of Section 192.755 should be interpreted as "constructive knowledge." Constructive

knowledge is knowledge that one using reasonable care or diligence should have, and therefore that is attributed by law to a given person. Applying the constructive knowledge standard here, PGW was in possession of an overwhelming amount of knowledge regarding the risk to its cast iron pipeline due to undermining and if PGW had used reasonable care or diligence PGW would have known that the support for its cast iron main at 815 Jackson Street had been and would be disturbed.

However, even if the Commission were to apply the definition of “actual knowledge” or “actual notice,” I&E has met those burdens with the evidence presented. As previously defined, “actual knowledge” is “knowledge of information that would lead a reasonable person to inquire further” and “actual notice” is “notice as a party is presumed to have received personally because facts within its knowledge were sufficient to place upon the party the duty to inquire about the fact or condition in question.” In keeping with the regulatory framework for natural gas operators to use reasonable effort and exercise reasonable care to protect the public, I&E believes that the facts and circumstances in PGW’s possession would lead a reasonable utility to inquire further to ascertain to what extent its cast iron facility’s support has been disturbed by sewer system failures and excavations and what forms of protection would be necessary.

Despite the overwhelming knowledge in its possession, PGW did not take any action to protect that segment of cast iron from vibrations, impact forces, earth movement, future excavations, or other foreseeable outside forces. Nor did PGW take appropriate steps to provide permanent protection to the cast iron pipeline.

I&E has proven beyond a preponderance of evidence that PGW had knowledge that its cast iron pipeline’s support would be disturbed and failed to protect the pipeline as

necessary or take appropriate steps to provide permanent protection, in violation of 49 CFR § 192.755(a)&(b).

G. COUNT NINE

Count Nine of I&E's Formal Complaint alleges a violation of Commission regulation 52 Pa. Code § 59.33, in that PGW failed to use every reasonable effort to properly warn and protect the public from danger, or exercise reasonable care to reduce the hazards to which employees, customers and others may be subjected to by reason of its equipment and facilities.

As thoroughly discussed throughout, PGW had knowledge of numerous facts and circumstances surrounding the sewer system failures and excavations at 815 and 813 Jackson Street to understand that its cast iron main facility at that location would have its support compromised and would be at risk of failure. PGW failed to act on this knowledge to protect its cast iron pipeline, failed to follow its gas safety procedures, and violated minimum Federal gas safety standards. All of which combine to demonstrate that PGW failed to use every reasonable effort to properly warn and protect the public from danger, or exercise reasonable care to reduce the hazards to which employees, customers and others may be subjected to by reason of its equipment and facilities.

I&E has proven beyond a preponderance of evidence that PGW violated 52 Pa. Code § 59.33.

H. COUNT TEN

Count Ten of I&E's Formal Complaint alleges a violation of the Public Utility Code, 66 Pa.C.S. § 1501, in that PGW failed to furnish and maintain adequate, efficient, safe and reasonable service and facilities and make such repairs, changes, alterations, substitutions,

extensions and improvements in or to its service and facilities necessary or proper for the accommodation and safety of its customers, employees and the public, thereby placing the safety of its customers, employees and the public in danger.

Similar to Count Nine, PGW failed to act on the knowledge in its possession to protect its cast iron pipeline, failed to follow its gas safety procedures, and violated minimum Federal gas safety standards, all of which combine to demonstrate that PGW failed to furnish and maintain adequate, efficient, safe and reasonable service and facilities and make such repairs, changes, alterations, substitutions, extensions and improvements in or to its service and facilities necessary or proper for the accommodation and safety of its customers, employees and the public, thereby placing the safety of its customers, employees and the public in danger.

I&E has proven beyond a preponderance of evidence that PGW violated 66 Pa.C.S. § 1501.

I. REQUESTED RELIEF

I&E's Formal Complaint requested a Three Hundred Thousand Dollar (\$300,000.00) civil penalty and a number of corrective measures. Those corrective measures include:

- a. PGW will investigate and implement an email distribution of PGW's Cast Iron Damage Prevention Brochure to "Project Owners" (if known) as that term is defined in Act 50 or the excavator submitting the one call ticket. Once implemented, the email distribution of PGW's cast iron damage prevention brochure shall continue until PGW's at-risk cast iron inventory is fully removed.
- b. PGW's Damage Prevention Team will publicize and offer two (2) training sessions per year for three (3) years and a minimum of one (1) training session per year thereafter on One Call requirements and protection of underground utility infrastructure for PWD personnel, other City officials, other "Facility Owners" and "Excavators." The meetings will be offered and available to contractors, plumbers, other

utilities' contractors, and others who perform excavations in or around PGW's infrastructure. PGW will provide a sign-in sheet and record attendance totals at these training sessions and shall retain attendance information for five (5) years for review by I&E upon request.

- c. PGW has received grants through PHMSA's Natural Gas Distribution Infrastructure Safety and Modernization Grant Program and that funding is earmarked for identified projects. Outside of those identified projects, PGW will continue to further accelerate the rate of infrastructure repair, distribution system improvement, or replacement of cast iron.
- d. PGW will have trigger points for requiring Underground Street Troubles ("UST") investigations near cast iron structures, when any of the following are observed by trained PGW field personnel:
 - (1) An underground cavity, suggested by settlement or depressions;
 - (2) Unsafe excavation or backfill/compaction techniques, such as excavating with equipment within the tolerance zone, backfilling active water/sewer failures without adequate repairs being made, or lack of compaction;
 - (3) Unsuitable backfill material; and/or
 - (4) Washouts, floods, unstable soil, or landslides.

When trained PGW field personnel (i.e., Supervisor, Inspector, and Foreman) observe any of foregoing, they will be required to initiate the UST investigation process by notifying Distribution Dispatch. Distribution Dispatch will then create an UST investigation order and assign it.

- e. Pursuant to 49 CFR § 192.459, when PGW has direct knowledge through notice or observation that any portion of a buried pipeline is exposed, PGW shall examine the exposed pipeline facilities and determine if remedial action exists in the vicinity of the exposed portion. This examination and determination will include a record of but is not limited to documenting the following items:
 - (1) The material of the exposed facilities;
 - (2) The location of the exposed facilities;

- (3) The condition of the exposed facilities, including an examination for evidence of external corrosion; and
 - (4) Determination of whether remedial action is necessary.
- f. PGW shall, through consultations with GTI Energy, implement a 9-month pilot program for commercial, or smart, remote methane detectors (“SRMD”) that can identify potential leaks, detect the presence of methane gas, and directly notify the gas operator and/or emergency official(s) through smart technology and communication networks. This pilot program will include approximately 2,000 customers in the vicinity of Jackson Street and serviced by cast iron. The selection of the devices and technology for this pilot should be selected in consultation with GTI Energy and will depend on available technology either compatible with or separate from PGW’s current technology. PGW will be responsible for the installation of the SRMDs and the supporting communication network. PGW will use the results and resources in the roll-out of the SRMD pilot to prioritize implementation to PGW’s areas where cast iron remains in service. PGW will consider a rollout that provides increasing safety measures for those underserved areas within the city. PGW will use the results of this program, and consult with GTI, to begin a rollout of SRMD technology throughout the City of Philadelphia. Full implementation of the SRMD technology shall be implemented within 6 months after the pilot is complete. The goal of the rollout to be that each service in PGW’s service territory have the opportunity to be equipped with a SRMD within 5 years.

After the filing of the underlying Formal Complaint, the Commission issued an Opinion and Order in *PUC v. PGW*, Docket No. C-2022-3033834, (“8th Street Settlement”) on January 8, 2025. That Opinion and Order approved the 8th Street Settlement and ordered the implementation of corrective actions that were substantially similar to terms a-e above. Those terms were Ordered in the 8th Street Settlement entirely independent of this instant matter and this matter was not considered in that settlement.

The final proposed corrective action, regarding the smart remote methane detectors, was partially addressed in a rate case. On August 7, 2025, after the filing of this Formal Complaint, PGW and other parties filed a Joint Petition for Settlement at *PUC v. PGW*,

Docket No. R-2025-3053112 (Order entered October 9, 2025), to resolve PGW's proposed rate increase. In that matter, as part of the settlement of the rate case, PGW agreed to research the utilization of Smart Remote Methane Detectors ("SRMDs") and present a comprehensive report within one year of the Commission's approval of the Settlement. The Commission approved the Settlement on October 9, 2025. That settlement was reached independently of this matter and this matter was not considered in that settlement.

I&E's request for relief will focus solely on the civil penalty because the corrective actions sought by I&E have been largely addressed in other matters. PGW has argued that civil penalties are not appropriate because PGW does not have shareholders and is regulated on a "cash flow" basis.²⁰⁵ However, PGW's position is unsupported by Commission precedent. In *PUC v. PGW*, Docket No. C-2022-3033834 (January 8, 2025) the Commission reasoned that the pecuniary concessions agreed to by PGW, including an \$800,000 Residential Methane Detector Pilot Program, were a more useful expenditure to advance public safety than a civil penalty and were sufficient to deter future violations. *PUC v. PGW*, Docket No. C-2022-3033834, at 56. Additionally, in an earlier case in which the Commission assessed a \$400,000 civil penalty against PGW, the Commission stated that "PGW's status as a municipally-owned utility does not negate the Commission's authority to impose a penalty on PGW when appropriate." *PUC v. PGW*, Docket No. C-2011-2278312 at 27 (Order entered July 26, 2013).

Additionally, it would run counter to 66 Pa.C.S. § 3301(c) and the Commission's Gas and Hazardous Liquids Certification under 49 U.S.C. § 60105 to forgo a civil penalty against

²⁰⁵ PGW St. 1-R at 51.

PGW based on its corporate or business structure as being without shareholders and on a “cash flow” basis. Section 3301(c) of the Public Utility Code directs that a public utility that is in violation of pipeline safety standards “shall be subject to a civil penalty.” Section 60105(b)(7) of title 49 provides that the laws of the State Agency must provide for the enforcement of the safety standards by injunctive relief and civil penalties the same as those provided by Section 60122 (Civil penalties). Section 60122(a) directs that a person who has violated the Federal pipeline safety regulations shall be liable for a civil penalty. Section 60122(b) further directs what facts should be considered in assessing a civil penalty, none of which are the corporate or business structure of a natural gas operator.

Finally, to forgo a civil penalty for violations of the Public Utility Code, Commission regulations, and the Code of Federal Regulations would send the wrong message to PGW. Civil penalties are meant to act as a deterrent to future wrongdoing and to remove that deterrent leaves PGW without any incentive to abide by the minimum safety standards going forward.

As PGW has not engaged in any expenditures to advance public safety in this matter, I&E submits that a civil penalty is necessary for deterrence and the \$300,000 civil penalty sought by I&E is consistent with the Commission’s Policy Statement regarding *Factors and Standards for Evaluating Litigated and Settled Proceedings Involving Violations of the Public Utility Code and Commission Regulations* (“Policy Statement”), 52 Pa. Code § 69.1201; *see also Joseph A. Rosi v. Bell-Atlantic-Pennsylvania, Inc.*, Docket No. C-00992409 (Order entered March 16, 2000). The Commission’s Policy Statement sets forth ten (10) factors that the Commission may consider in evaluating whether a civil penalty for violating a Commission order, regulation, or statute is reasonable and in the public interest.

52 Pa. Code § 69.1201. The Commission will apply the factors more strictly in litigated cases, as compared to settled cases. 52 Pa. Code § 69.1201(b).

The first factor considers whether the conduct at issue was of a serious nature, such as willful fraud or misrepresentation, or if the conduct was less egregious, such as an administrative or technical error. Conduct of a more serious nature may warrant a higher civil penalty while conduct that is less egregious warrants a lower amount. 52 Pa. Code § 69.1201(c)(1). While this case does not involve willful fraud or misrepresentation, I&E believes this conduct was of a serious nature. As discussed above with the 8th Street Settlement, this was a second occurrence of substantially similar conduct in a two year time period that resulted in a natural gas explosion in a residence. Anytime conduct results in a natural gas explosion, that conduct should be treated as serious. The harm to persons and property could have been much more severe than they were and that potential harm should not be discounted. I&E believes this factor weighs in favor of a higher civil penalty.

The second factor considers whether the resulting consequences of PGW's conduct were of a serious nature. When consequences of a serious nature are involved, such as personal injury or property damage, the consequences may warrant a higher penalty. 52 Pa. Code § 69.1201(c)(2). The gas explosion on November 30, 2021, resulted in \$104,269.92 in damages, evacuation of six buildings and ten residents, and three individuals being taken for precautionary medical evaluation. As discussed above, natural gas explosions always have the potential for serious consequences for people and property. The potential for harm caused by natural gas explosions should not be discounted. I&E believes this factor weighs in favor of a higher civil penalty.

The third factor to be considered under the Policy Statement is whether the alleged

conduct was intentional or negligent. 52 Pa. Code § 69.1201(c)(3). While there is no evidence that PGW's conduct was intentional, the fact that this conduct is substantially similar to conduct that occurred two years prior and still occurred, raises concerns that this conduct was more than negligent. I&E believes this factor weighs in favor of a higher civil penalty.

The fourth factor to be considered is whether PGW has made efforts to change its practices and procedures to prevent similar conduct in the future. 52 Pa. Code § 69.1201(c)(4). After the 8th Street explosion in 2019, PGW did not make any material changes to its safety procedures²⁰⁶ and only made significant changes in response to I&E's Formal Complaint at Docket No. C-2022-3033834 and the resulting settlement. PGW has not demonstrated that it has made efforts to change its practices and procedures, in response to the explosion at 815 Jackson Street, to prevent a third recurrence of similar conduct. I&E believes this factor weighs in favor of a higher civil penalty.

The fifth factor to be considered relates to the number of customers affected by the PGW's actions and the duration of the violations. 52 Pa. Code § 69.1201(c)(5). As stated above, the gas explosion on November 30, 2021, resulted in \$104,269.92 in damages, evacuation of six buildings and ten residents, and three individuals being taken for precautionary medical evaluation. The area in which the explosion occurred is a dense residential area, in which the residences are row homes that share a common wall. There was high potential for serious consequences to a large number of customers. I&E believes this factor weighs in favor of a higher civil penalty.

²⁰⁶ N.T. at 112.

The sixth factor to be considered relates to the compliance history of PGW. 52 Pa. Code § 69.1201(c)(6). An isolated incident from an otherwise compliant company may result in a lower penalty, whereas frequent, recurrent violations by a company may result in a higher penalty. *Id.* As discussed above, PGW has prior history with two major cases. In *PUC v. PGW*, Docket No. C-2022-3033834 (“8th Street Settlement”) PGW instituted an \$800,000 Residential Methane Detector Pilot Program, to resolve a Formal Complaint alleging substantially similar conduct to this instant case.

In *PUC v. PGW*, Docket No. C-2011-2278312 (Order entered July 26, 2013) a complaint alleged numerous violations related to natural gas explosion at a two-story row home located at 6932 Torresdale Avenue, Philadelphia, Pennsylvania. The allegations in that case related to failure to record details of inspections, failure to minimize danger of accidental ignition of gas, failure to establish or follow emergency procedures/plans, and failure to train. The Commission approved a settlement which imposed a civil penalty of \$400,000, a monetary contribution to an existing smoke alarm program of \$100,000, and various remedial measures, but modified to include the exploration of a pilot program designed to test enhanced leak detection measures.

I&E believes that the sixth factor weighs in favor of a higher civil penalty because the instant matter relates to substantially similar conduct as *PUC v. PGW*, Docket No. C-2022-3033834 (“8th Street Settlement”).

The seventh factor to be considered relates to whether the Company cooperated with the Commission’s investigation. 52 Pa. Code § 69.1201(c)(7). I&E submits that PGW was responsive to I&E’s requests for information, a minimum requirement of the Public Utility

Code and Commission regulations. I&E believe this factor does not weigh favor of either a higher or lower civil penalty.

The eighth factor to be considered is the appropriate settlement amount necessary to deter future violations. 52 Pa. Code § 69.1201(c)(8). I&E submits that the full requested civil penalty of \$300,000 is necessary to deter future violations. As discussed above, this is a second occurrence of this conduct and there is a lack of evidence that PGW has taken meaningful steps on its own initiative after the 8th Street explosion and this explosion to prevent the recurrence of similar conduct. I&E believes that a significant civil penalty is needed to create the needed deterrence.

The ninth factor to be considered relates to past Commission decisions in similar situations. 52 Pa. Code § 69.1201(c)(9). This case presents unique circumstances and to I&E's knowledge the only similar case to the instant matter is the 8th Street Settlement that has been discussed extensively. I&E believes that this factor weighs in favor of a higher civil penalty.

The tenth factor considers "other relevant factors." 52 Pa. Code § 69.1201(c)(10). I&E is not aware of additional relevant factors that would have bearing on the civil penalty.

After careful consideration of the ten *Rossi* factors, I&E believes that the factors support the imposition of the \$300,00 civil penalty that was requested in I&E's Formal Complaint.

VI. CONCLUSION

As is evident in the record of this case and as discussed throughout this Brief, I&E has demonstrated beyond a preponderance of credible evidence that PGW violated the Public

Utility Code, Commission regulations, and the Code of Federal Regulations and is subject to disciplinary action.

This is a case where PGW ignored and failed to act on the knowledge clearly in its possession and understanding. PGW had, in its possession, the knowledge of an overwhelming number of facts and circumstances that PGW's 120 year old cast iron facility would be endangered by the sewer system failures and resulting excavations at 815 and 813 Jackson Street. Despite this knowledge, PGW did not follow its procedures at Bulletins #312, 313, and 54. If PGW, as required by its Bulletins, had created a UST order, reported and acted upon the UST and the excavations that could have and did result in damage to its facility, and inspected and investigated the USTs and excavations, the cast iron main failure and natural gas explosion could have been avoided.

As demonstrated by all of the facts in PGW's possession, PGW knew that the support for its buried cast iron pipeline would be disturbed by the sewer system failures and excavations. Federal pipeline safety regulations required that PGW take action as necessary to repair, replace, or remove the cast iron pipeline and to take steps to provide permanent protection to the cast iron pipeline. Again, had PGW met these minimum requirements, the failure of the cast iron main and the natural gas explosion could have been avoided.

A natural gas distribution operator has a responsibility to protect the public from danger and exercise reasonable care to reduce the hazards presented by its facilities. An operator falls short of these minimum requirements when it buries its head in the sand and willfully ignores facts and circumstances that clearly indicate a vulnerable cast iron main is at risk of failure. It is the responsibility of an operator to act upon the facts and circumstances in its possession to ensure the safety of its vulnerable facilities and ultimately the public. An

operator cannot be permitted to push off its responsibilities on to a third party, who does not own or operate those facilities.

A civil penalty is necessary to deter PGW from future conduct similar to this case and the 8th Street Settlement. As analyzed using the *Rossi* factors, a \$300,000 civil penalty is reasonable and in the public interest. Based upon PGW's failure to follow its procedures and failure to protect its vulnerable cast iron pipeline, resulting in a natural gas explosion, I&E respectfully requests that this Honorable Commission find PGW to be in violation of the Public Utility Code, Commission regulations, and the Code of Federal Regulations, as alleged, and assess a Three Hundred Thousand Dollar (\$300,000.00) civil penalty.

Respectfully submitted,



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Pennsylvania Public Utility Commission
Bureau of Investigation and Enforcement
Commonwealth Keystone Building
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Harrisburg, PA 17120

Dated: January 13, 2026

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission, :
Bureau of Investigation and Enforcement :
 :
v. : Docket No. C-2024-3052277
 :
Philadelphia Gas Works :

**THE BUREAU OF INVESTIGATION AND ENFORCEMENT’S
PROPOSED FINDINGS OF FACT**

The Natural Gas Distribution System on Jackson Street, Philadelphia, Pennsylvania

1. PGW is a municipality owned natural gas distribution company.¹
2. Philadelphia Gas Works (“PGW”) functions as a “city natural gas distribution operation,” as that term is defined in Section 102 of the Code, 66 Pa.C.S. § 102.²
3. PGW is a natural gas distribution company (“NGDC”) as that term is defined in Section 2202 of the Code, 66 Pa.C.S. § 2202.³
4. PGW is a “public utility” as that term is defined at 66 Pa.C.S. § 102, as it is engaged in providing public utility service as a NGDC to the public for compensation.⁴
5. PGW provides natural gas service to more than 500,000 customers in the City and County of Philadelphia.⁵

¹ PGW’s Answer to Complaint (“Answer”) at par. 4.

² Answer at par. 5.

³ Answer at par. 6.

⁴ Answer at par. 12.

⁵ I&E St.1 at 2; PGW St. 1-R at 8.

6. Between 2022 and 2024, PGW experienced an average of 243 cast iron main breaks annually and, in the first quarter of 2025, PGW experienced 257 cast iron main breaks.⁶

7. Countrywide, only 2 percent (2%) of distribution mains are cast iron, but yet gas distribution incident reports for 2005 through 2020 show that 9 percent (9%) of the incidents occurring on gas distribution mains involved cast iron mains.⁷

8. In 2021, PGW had more cast iron mains remaining on its distribution system than all other Pennsylvania operators combined and, as of 2024, PGW had 1,142.61 miles of cast iron mains and 7.12 miles of reconditioned⁸ cast iron mains.⁹

9. PGW projects that full replacement of all of its cast iron mains will take another approximately 35 years.¹⁰

10. The 800-block of Jackson Street, Philadelphia, Pennsylvania, including 815 Jackson Street, is within PGW's natural gas service territory.¹¹

11. The area around 815 Jackson Street is a dense urban residential area, in which the residences are typical city row homes sharing a common wall with adjacent units.¹²

12. The residences on the 800-block of Jackson Street were served natural gas via two (2) parallel 4-inch cast iron mains, a north side main and south side main.¹³

⁶ I&E St.1 at 3.

⁷ I&E St.1 at 5.

⁸ Reconditioned cast iron is defined as cast iron gas distribution pipe that has been lined internally by use of suitable materials that ensure safe operation at a maximum allowable operating pressure ("MAOP") not to exceed the previously established MAOP when the segment of pipe is not lined. I&E St.1 at 5-6.

⁹ I&E St.1 at 5.

¹⁰ PGW St. 1-R at 9.

¹¹ Answer at par. 15.

¹² Answer at par. 18; I&E St.1 at 7.

¹³ Answer at par. 20, 24, and 25.

13. The north and south side cast iron mains operated as part of the same low-pressure system operating at 8-inches water column at the time of the incident.¹⁴

14. The main at issue was a 4-inch low-pressure cast iron main that was part of the north side main.¹⁵

15. The 4-inch north side and south side cast iron mains were installed pre-1899.¹⁶

16. The north side main ran approximately 7 feet from the front foundation wall of 815 Jackson Street, underneath the sidewalk, and was at an approximate depth of 34 inches.¹⁷

17. Prior to the incident at issue, the north side 4-inch cast iron main, on the 800-block of Jackson Street, experienced breaks on January 2, 2009, January 4, 2010, and January 25, 2016.¹⁸

18. Prior to the incident at issue, the south side 4-inch cast iron main, on the 800 block of Jackson Street, experienced breaks on February 21, 2015, and April 12, 2018.¹⁹

19. In total, the 800-block of Jackson Street suffered five (5) cast iron main breaks in the preceding 12 years.²⁰

20. Five cast iron main breaks in a 12-year period on a single city block is a concerning amount of cast iron failures.²¹

21. PGW's records do not contain any reports of underground street troubles on the 800-block of Jackson Street in the 10-years preceding the incident.²²

¹⁴ Answer at par. 25.

¹⁵ Answer at par. 21.

¹⁶ Answer at par. 22 and 24.

¹⁷ Answer at par. 20 and 23.

¹⁸ Answer at par. 27.

¹⁹ Answer at par. 28; I&E St.1 at 8.

²⁰ Answer at par. 27 and 28.

²¹ I&E St. 1-SR at 2-3.

²² Answer at par. 26.

Events Prior to the Natural Gas Explosion at 815 Jackson Street

22. In the months prior to the explosion, PGW received three (3) notices from the Pennsylvania One Call System, Inc. (“One Call”) that excavations to repair sewer lateral failures at 815 Jackson Street and its immediate neighbor, 813 Jackson Street, would be occurring.²³

23. 815 and 813 Jackson Street are row home neighbors and share a common wall.²⁴

24. On July 26, 2021, Clements Brothers and Sister, Inc. (“Clements”), a plumbing company, submitted One Call ticket number 20212072616 informed PGW that Clements would be engaged in excavation at 815 Jackson Street to replace a sewer lateral curb trap and that the excavation at the street would be 8-feet deep and 3-feet by 6-feet wide and at the sidewalk the excavation would be 8-feet deep and 4-feet by 4-feet wide.²⁵

25. On July 29, 2021, PGW responded to One Call ticket number 20212072616 and field marked their cast iron facilities at 815 Jackson Street.²⁶

26. On September 1, 2021, Clements submitted One Call ticket number 20212440918, an update to the prior ticket because the work had not been initiated, again informing PGW that Clements would be engaged in excavation at 815 Jackson Street to replace a sewer lateral curb trap and that the excavation at the street would be 8-feet deep and 3-feet by 6-feet wide and at the sidewalk the excavation would be 8-feet deep and 4-feet by 4-feet wide.²⁷

²³ Answer at par. 29.

²⁴ I&E St.1 at 13; I&E Exhibit 5.

²⁵ Answer at par. 30; I&E St.1 at 11-12; I&E Exhibit 6.

²⁶ Answer at par. 31; I&E St.1 at 11-12; I&E Exhibit 6.

²⁷ Answer at par. 32; I&E St.1 at 11-12; I&E Exhibit 7.

27. On September 3, 2021, PGW responded to One Call ticket number 20212440918 and field marked their cast iron facilities at 815 Jackson Street.²⁸

28. The same day, September 3, 2021, Lepore Plumbing (“Lepore”) submitted an emergency One Call ticket, number 20212460409, informing PGW that Lepore had a crew on site to repair a sewer lateral curb trap at 813 Jackson Street and that the excavation would entail two digs that measured 3-feet by 6-feet.²⁹

29. On September 3, 2021, PGW responded to One Call ticket number 20212460409 and field marked their cast iron facilities at 813 Jackson Street.³⁰

30. After PGW field marked its cast iron facilities at 815 Jackson Street, on September 3, 2021, Clements excavated and replaced the sidewalk, curb, asphalt street surface, and sewer lateral curb trap.³¹

31. The sewer lateral at 815 Jackson Street is located at a depth below PGW’s cast-iron main.³²

32. The One Call tickets indicated the need for sewer repairs and failures of the sewer system, which can result in leakage of water and sewage, which in turn can undermine support for nearby facilities.³³

33. PGW’s Damage Prevention Inspectors who marked out the One Call notices had a copy of the One Call notices and knew the reason for the excavations were sewer system failures, how large the excavation would be, and where the excavation would be.³⁴

²⁸ Answer at par. 33; I&E St.1 at 11-12; I&E Exhibit 7.

²⁹ Answer at par. 36; I&E St.1 at 11-12; I&E Exhibit 8.

³⁰ Answer at par. 37; I&E St.1 at 11-12; I&E Exhibit 8.

³¹ PGW St. 1-R at 26; I&E Exhibit 10.

³² I&E St.1 at 13.

³³ I&E St. 1-SR at 13; PGW St. 1-R at 22; N.T. at 109-110, 136, 141.

³⁴ I&E St. 1-SR at 11; N.T. at 145.

34. PGW knew that the main in front of 815 Jackson Street was a cast iron main.³⁵
35. PGW knew that the cast iron main was in excess of 120 years old at the time of the excavation³⁶
36. PGW knew that sewer system failures had occurred at 815 and 813 Jackson Street.³⁷
37. PGW knew that the sewer lateral was made of either cast iron or terracotta, both potentially being brittle and fragile.³⁸
38. PGW knew that sewer curb trap and sewer system failures can result in the leakage of liquids from the system.³⁹
39. PGW knew that water and sewer leaks and failures cause soil instability due to water saturation and erosion and can remove support for other facilities.⁴⁰
40. PGW knew that sewer and water system failures represent a risk to its system.⁴¹
41. PGW knew the size of the excavation, that the excavation would occur at or immediately adjacent to its cast iron facility, and the excavation would be significantly deeper than its facility.⁴²
42. PGW knew that the sewer system failures and excavations were in close proximity and were immediately next door to each other.⁴³

³⁵ Answer at par. 21; N.T. at 149.

³⁶ Answer at par. 22 and 24.

³⁷ I&E St. 1-SR at 13; I&E Exhibits 6-8.

³⁸ N.T. at 139.

³⁹ N.T. at 136, 141.

⁴⁰ I&E St. 1-SR at 13; PGW St. 1-R at 22; N.T. at 109-110.

⁴¹ N.T. at 110.

⁴² I&E St. 1-SR at 13; I&E Exhibits 6-8.

⁴³ I&E St. 1-SR at 13; I&E Exhibits 6-8.

43. PGW knew that excavations around and beneath gas facilities cause soil instability by removing compacted soil.⁴⁴

44. PGW knew that cast iron becomes brittle and is susceptible to breaking with little notice.⁴⁵

45. PGW ranks cast iron as the riskiest or second riskiest asset in its system and recognizes that small diameter is riskier than large diameter cast iron.⁴⁶

46. PGW knew that there is a nationally recognized risk with cast iron mains.⁴⁷

47. PGW knew that cast iron should be treated with significant care and respect.⁴⁸

48. PGW knew the 800-block of Jackson Street had a history of 5 cast iron main breaks in the preceding 12 years.⁴⁹

49. PGW did not conduct any investigation or inspection of the excavations at 813 and 815 Jackson Street, during or after the excavations, to ensure the safety of its cast iron main.⁵⁰

The Natural Gas Explosion at 815 Jackson Street

50. On November 30, 2021, at approximately 6:35 PM, Respondent dispatched crews to 815 Jackson Street after receiving an Inside Emergency call from the Philadelphia Fire Department.⁵¹

⁴⁴ Answer at par. 41; PGW St. 1-R at 22; N.T. at 109.

⁴⁵ PGW St. 1-R at 10, 29; N.T. at 107.

⁴⁶ N.T. at 102.

⁴⁷ N.T. at 106.

⁴⁸ N.T. at 113.

⁴⁹ Answer at par. 27 and 28; I&E St. 1-SR at 13.

⁵⁰ I&E St. 1 at 20.

⁵¹ Answer at par. 45.

51. Prior to PGW's arrival on scene, an explosion occurred in the residence of 815 Jackson Street.⁵²

52. The natural gas explosion occurred after natural gas released and migrated from a circumferential crack on PGW's low pressure 4-inch cast iron main located directly in front of 815 Jackson Street.⁵³

53. The natural gas explosion resulted in damage to 815 Jackson Street, evacuation of six (6) buildings, evacuation of ten (10) residents, and the precautionary medical evaluations of three (3) individuals.⁵⁴

54. The total property damage as a result of the explosion is estimated to be \$104,269.92.⁵⁵

55. At approximately 7:01 PM, a PGW technician found a reading of 100% gas at the front foundation wall of 813 Jackson Street and 30% gas at the front foundation wall of 815 Jackson Street.⁵⁶

56. PGW notified I&E Pipeline Safety of the natural gas explosion and I&E Pipeline Safety responded and conducted an investigation of the explosion.⁵⁷

57. At approximately 8:00 PM, PGW began excavation work in front of 815 Jackson Street at the 4-inch cast iron main.⁵⁸

⁵² Answer at par. 47.

⁵³ Answer at par. 19.

⁵⁴ Answer at par. 16; I&E St.1 at 7-8.

⁵⁵ I&E St.1 at 8; PGW St. 1-R at 22.

⁵⁶ Answer at par. 46.

⁵⁷ Answer at par. 51; I&E St.1 at 7-8.

⁵⁸ Answer at par. 52; I&E Exhibits 1, 2, and 5.

58. At the time of the excavation, newer sections of sidewalk were visible in front of 815 Jackson Street and immediately adjacent to PGW's cast iron main.⁵⁹

59. The newer section of sidewalk immediately adjacent to PGW's cast iron main was sunken downward, as evidenced by the collection of water and debris at the lowest point.⁶⁰

60. When PGW's excavation at the 4-inch cast iron main, in front of 815 Jackson Street, began, the sidewalk buckled downwards, indicating that the sidewalk lacked support.⁶¹

61. PGW's excavation, at the 4-inch cast iron main, uncovered a void underneath the sidewalk that measured approximately 50-inches wide by 16-inches deep.⁶²

62. The excavation found that the 4-inch cast iron main had a circumferential crack at the six o'clock position that radiated to the four and eight o'clock positions on the pipe.⁶³

63. At approximately 9:32 PM, the flow of gas from the broken 4-inch cast iron main was stopped via use of a grease stick and wax tape.⁶⁴

64. After gas was stopped, PGW conducted a leak survey of the surrounding area, and no additional leaks were found.⁶⁵

⁵⁹ Answer at par. 55; I&E St.1 at 10; I&E Exhibits 1, 2, and 5.

⁶⁰ I&E St.1 at 10; I&E Exhibit 1.

⁶¹ I&E St.1 at 10; I&E Exhibits 2 and 3.

⁶² Answer at par. 58; I&E St.1 at 10; I&E Exhibit 3.

⁶³ Answer at par. 53; I&E Exhibit 4.

⁶⁴ Answer at par. 48.

⁶⁵ Answer at par. 49; I&E St.1 at 16.

65. PGW removed the cracked section of cast iron main and transported it to Affiliated Engineers Laboratory for analysis.⁶⁶

66. In December of 2021, PGW installed a new plastic main near 815 Jackson Street, which was tied in during January 2022, and abandoned the 4-inch cast iron in place.⁶⁷

Investigation of the Natural Gas Explosion at 815 Jackson Street

67. One of the biggest threats to cast iron pipelines is earth movement, which can be caused by digging, seasonal frost heave, or changes in ground water levels.⁶⁸

68. Undermining is the shifting or removal of soil that directly supports the integrity or stability of a structure.⁶⁹

69. Undermining can occur on all axes and does not need to occur directly underneath a structure to adversely impact its integrity and stability.⁷⁰

70. The existence of soil beneath a main does not mean the main is fully supported, as soil conditions can affect the support it provides to a main.⁷¹

71. Timely remedial measures, such as supporting or reinforcing the cast iron pipe, bridging, bracing or suitable backfill, can prevent cast iron breaks caused by undermining.⁷²

⁶⁶ Answer at par. 54 and 59.

⁶⁷ Answer at par. 50.

⁶⁸ I&E St.1 at 6.

⁶⁹ I&E St.1 at 6.

⁷⁰ I&E St.1 at 6.

⁷¹ N.T. at 77.

⁷² I&E St.1 at 6-7.

72. The 4-inch cast iron main cracked and failed due to a lack of soil support, caused by the sewer system failure and excavation, and downward bending forces acting on the cast iron pipe.⁷³

73. A pipe experiencing downward bending forces is indicative of a pipe that is not properly supported.⁷⁴

74. Affiliated Engineers Laboratory (“AEL”) undertook a metallurgical evaluation of the cracked cast iron main and provided a report of its findings to PGW.⁷⁵

75. AEL determined that the effective wall thickness of the pipe was reduced 13-15 percent by graphitization.⁷⁶

76. Cast iron is a combination of iron and graphite and graphitization occurs when iron is selectively leached from the cast iron, leaving graphite behind, resulting in a weakened and brittle pipe.⁷⁷

77. AEL did not observe evidence of a pre-existing breach or leak at the fracture location.⁷⁸

78. AEL’s metallurgical evaluation found that “[e]xternal stresses applied to a graphitized gas main induced a circumferential crack,” “the fracture occurred as a one-time overload condition,” and the pipe “experienced an external bending force acting upon it where a through wall- crack initiated and propagated near its bottom.”⁷⁹

⁷³ I&E St.1 at 22-23, 25; I&E Exhibits 9 & 10.

⁷⁴ N.T. at 79.

⁷⁵ Answer at par. 59; I&E St.1 at 14; I&E Exhibit 9.

⁷⁶ Answer at par. 60; I&E Exhibit 9.

⁷⁷ Answer at par. 60; I&E St.1 at 6.

⁷⁸ I&E St.1 at 14; I&E Exhibit 9.

⁷⁹ I&E St. 1-SR at 3; I&E Exhibit 9 at 4, 28-29.

79. AEL concluded that external stresses applied to a graphitized gas main induced a circumferential crack whereby gas could escape.⁸⁰

80. AEL explained that:

*Circumferential cracking is a common mode of failure for cast iron piping, when subjected to bending forces. Due to the inherent brittle nature of gray cast iron, the pipe will not plastically deform under bending loads but rather fracture. A crack initiates at the highest stressed region, whether it be at a thinned wall due to corrosion, large-sized casting flaw, or some other stress riser, and propagates rapidly along the pipe's circumference to alleviate the stresses induced by the bending forces. Such bending forces can occur as a result of frost upheaval during freeze/thaw cycles, poor bedding, loss of soil support or external force from soil disturbances near the buried pipe or undermining.*⁸¹

81. AEL identified three causes for the bending forces: (1) frost upheaval during freeze/thaw cycles; (2) poor bedding; and (3) loss of soil support or external force from soil disturbances near the buried pipe or undermining.⁸²

82. AEL obtained and analyzed weather data from the National Oceanic & Atmospheric Administration (“NOAA”) concluding that it is “unlikely that the ground froze during the month of November 2021,” ruling out frost upheaval as a cause of the external bending forces.⁸³

83. Compromised pipeline bedding and loss of soil support are related to each other.⁸⁴

⁸⁰ I&E St.1 at 14; I&E Exhibit 9.

⁸¹ I&E St. 1-SR at 4; I&E Exhibit 9 at 29.

⁸² I&E St. 1-SR at 4; I&E Exhibit 9.

⁸³ I&E St. 1-SR at 4; I&E Exhibit 9.

⁸⁴ N.T. at 79.

84. Pipeline bedding can be negatively impacted by sewer failures and excavations and the compromise of pipeline bedding leads to the loss of support for a pipeline.⁸⁵

85. PGW retained Forensic Consultants of North America, LLC (“FCNA”) to investigate the root cause of the explosion at 815 Jackson Street.⁸⁶

86. FCNA found that the “street surface where the excavation occurred directly in front of 815 Jackson Street was sunken downward several inches.”⁸⁷

87. Additionally, FCNA found “that the unearthing of soil caused an underground cavity that can affect and compromise underground utilities such as the underground natural gas piping, water piping and sewer piping located adjacent to the curbside excavation work.”⁸⁸

88. FCNA explained that “natural gas explosions can be directly related to gas pipes being undermined by water main breaks or excavation that displace pipes from their original position . . . [and d]isplaced excavated soil/earth that initially served to brace and secure pipes must be replaced in a similar fashion to maintain support and integrity of the existing gas pipes.”⁸⁹

89. FCNA specifically concluded that:

*Excavation, backfilling, replacement of soil and asphalt surfaces by Clemens [sic] Brothers Plumbing, while completing a lateral curb trap, most likely contributed to the damage/cracking of the underground natural gas pipe and subsequent escape and migration of gas vapors that entered the subject residence of 815 Jackson Street.*⁹⁰

⁸⁵ I&E St. 1-SR at 4.

⁸⁶ Answer at par. 62; I&E St.1 at 15; I&E Exhibit 10.

⁸⁷ Answer at par. 63; I&E St.1 at 15; I&E Exhibit 10.

⁸⁸ Answer at par. 64; I&E St.1 at 15; I&E Exhibit 10.

⁸⁹ Answer at par. 65; I&E St.1 at 15; I&E Exhibit 10.

⁹⁰ Answer at par. 66; I&E St.1 at 15; I&E Exhibit 10.

90. FCNA did not conclude or identify any other possible cause of the cast iron main failure.⁹¹

PGW's Procedures

91. Federal pipeline safety regulations require that each natural gas distribution operator prepare and follow for each pipeline, a manual of written procedures for conducting operations and maintenance activities and for emergency response.⁹²

92. At the time of the One Call notices, the related mark outs, excavations to repair the sewer failures, and the natural gas explosion at 815 Jackson Street, PGW used gas safety procedures Bulletin #312, Bulletin #313, and Bulletin #54.⁹³

93. The purpose of Bulletin #312 is to provide procedures and directions to PGW employees “[t]o observe contractor activities when necessary and to offer assistance to safeguard PGW facilities during construction.”⁹⁴

94. Section III(A) of Bulletin #312 provides that “wherever pipeline facilities are or may be endangered, the appropriate supervisor shall be promptly informed” and “[t]he supervisor shall, after consulting with his/her superiors, institute necessary actions such as patrolling, supporting, replacing, relocating or removing from service the affected gas facilities.”⁹⁵

95. Section III(B) of Bulletin #312 directs that:

Upon receipt of notice of water or sewer system failures, or surface conditions, such as cavities or cave-ins which may be caused by such failures, the location of gas pipeline facilities shall be determined. Where pipeline facilities may be affected,

⁹¹ I&E St. No 1-SR at 80-81; I&E Exhibit 10.

⁹² 49 CFR § 192.605; I&E St.1 at 23.

⁹³ Answer at par. 68, 73, and 76; I&E St.1 at 16; I&E Exhibits 11-13.

⁹⁴ Answer at par. 69; I&E St.1 at 17-18; I&E Exhibit 11.

⁹⁵ I&E St.1 at 17-18; I&E St. 1-SR at 7-8; I&E Exhibit 11.

*appropriate personnel shall be dispatched promptly to determine the effect of the failure on pipeline facilities. Inspection and necessary follow-up action shall be in accordance with the [Bulletin #54] "Protection of PGW Facilities from Underground Street Troubles" procedure.*⁹⁶

96. Bulletin #312 only requires a possibility that PGW's facilities may be affected and does not require PGW to have definitive or explicit knowledge that PGW facilities will definitely be affected.⁹⁷

97. The purpose of Bulletin #313 is to provide instruction to and identify the duties of PGW's distribution department damage prevention inspectors ("Damage Prevention Inspectors").⁹⁸

98. Sections III(A)&(D) of Bulletin #313 identifies specific tasks and responsibilities assigned to PGW Damage Prevention Inspectors, which include:

- a. "To inspect third party construction activities for the main purpose of protecting PGW underground structures and facilities;"
- b. "To perform patrols along the routes of all transmission mains and other critical pipelines in the distribution system;"
- c. "Re-visits to on-going jobs without watchman, particularly any jobs in which PGW facilities will be undermined, in order to report and/or recommend replacement or protection to the supervisor;"
- d. "Visit any underground street trouble encountered and report the same to Distribution Dispatching and supervisor;" and
- e. Immediately report undermined gas mains.⁹⁹

99. Section III(D) of Bulletin #313 recognizes that excavations next to and immediately adjacent to PGW facilities pose risks to those facilities and requires that PGW

⁹⁶ I&E St.1 at 17-18; I&E St. 1-SR at 6; I&E Exhibit 11.

⁹⁷ N.T. at 115-116.

⁹⁸ I&E St.1 at 18; I&E Exhibit 12.

⁹⁹ I&E St.1 at 18; I&E Exhibit 12.

Damage Prevention Inspectors “be acquainted with the correct and various methods of shoring and sheathing used by the contractors and whether the shoring is suitable for the protection of PGW underground structures” and should be “aware of insufficient shoring which could potentially cause damage to PGW.”¹⁰⁰

100. Per Section III(E) of Bulletin #313, PGW Damage Prevention Inspectors are trained to be alert for and report and act upon “any activity or changes in the environment that could affect the safety of the pipeline,” which include:

- a. “Any excavations (including backfilled openings that are not familiar to the inspectors), grading, demolition, or other construction activity which could result in damage to a pipeline, loss of support due to settlement or shifting of soil around a pipeline, undermining or damage to a pipeline support, or loss of cover or excess fill;”
- b. “Land subsidence, earth slippage, soil erosion, extensive tree root growth, flooding, climatic conditions, soil accumulation and other natural causes that can create additional external loading;” and
- c. “Any other abnormal or unusual conditions.”¹⁰¹

101. PGW Damage Prevention Inspectors are trained to look for circumstances, while working on a job, that indicate the possible presence of USTs.¹⁰²

102. PGW Damage Prevention Inspectors are trained to look for the potential or possibility of damage, not just actual damage to a pipeline.¹⁰³

103. Per PGW’s job description for a Damage Prevention Inspector, they must follow all PGW damage prevention procedures, visit construction sites ensure that all PGW structures are protected and undisturbed by such work, be familiar with safe construction

¹⁰⁰ I&E St.1 at 18; I&E Exhibit 12.

¹⁰¹ I&E St.1 at 18; PGW St. 1-R at 41-42; I&E Exhibit 12.

¹⁰² PGW St. 1-R at 18.

¹⁰³ N.T. at 123.

methods and practices to recognize unsafe practices that may affect PGW facilities, contacting other facility owners when failures of their systems affect PGW facilities, and immediately report any unusual conditions encountered.¹⁰⁴

104. Bulletin #54 provides procedures for and defines responsibilities for addressing underground street troubles (“USTs”) and “[d]ispatching and investigating failures of underground structures such as water and sewer mains that could reduce or eliminate support of PGW pipelines.”¹⁰⁵

105. USTs are “[a] problem with another utility infrastructure (other than PGW), such as water leaks, bridge abutment washouts and cavities, which could or does affect the support of PGW infrastructure.”¹⁰⁶

106. Section III of Bulletin #54 recognizes that “[USTs] are usually brought to PGW’s attention due to a condition observed on the street surface; or as a result of a pre-existing condition encountered in the performance of PGW work but not caused by PGW activity.”¹⁰⁷

107. Section III of Bulletin #54 identifies the following examples of USTs:

- a. Water leaks;
- b. Washouts;
- c. “Sewer System Failure – Signs of a sewer system failure are as follows: cavity, cave-in, or paving faults such as a surface crack, settlement, or depression in the street or curb area;” and

¹⁰⁴ I&E St. 1-SR at 12; PGW St. 2-R at 4; PGW Exhibit JCL-1.

¹⁰⁵ I&E St.1 at 18-19; I&E Exhibit 13.

¹⁰⁶ Answer at par. 77; I&E St.1 at 18-19; I&E Exhibit 13.

¹⁰⁷ I&E St.1 at 18-19; I&E Exhibit 13.

- d. “Paving depressions – These may be caused by settlement in “area” fill or settlement caused by poor backfill.”¹⁰⁸

108. Section IV(A) of Bulletin #54 directs that “[a] record of all such troubles whether the result of a telephone message or an observation on the street will be generated in AIMS¹⁰⁹ by the Dispatcher as a Trouble Order for the Underground Street Trouble (UST).”¹¹⁰

109. Section IV(A) of Bulletin #54 cautions that “[i]t is important to emphasize that every complaint of underground street troubles must immediately be brought to the attention of the Dispatcher in the same manner as gas leaks.”¹¹¹

110. Section IV(A) of Bulletin #54 identifies that PGW can receive notice of USTs from the Pennsylvania One Call System (“POCS”), Damage Prevention Inspectors, and PGW employee observations during the course of their work.¹¹²

111. Section IV(A)(1) of Bulletin #54 provides the following directions when a notice of a UST is received via POCS:

*POCS Notice – These notices can be handled by an Inspector during normal working hours. The Dispatcher will generate an Underground Street Trouble order in AIMS. The Inspector will also notify the Dispatcher if the situation warrants an immediate visit of a Distribution crew and/or supervisor. If the Inspector can determine at the time that PGW is not involved due to the distance of our structures from the UST and the containment of the UST problem, the job may be finalized at this point.*¹¹³

¹⁰⁸ I&E St.1 at 18-19; I&E Exhibit 13.

¹⁰⁹ Advanced Intelligent Mobile Solution: An automated LAN (Local Area Network) to mobile field application designed to generate, dispatch, and document work orders.

¹¹⁰ I&E St.1 at 18-19; I&E Exhibit 13.

¹¹¹ I&E St.1 at 18-19; I&E Exhibit 13.

¹¹² I&E St.1 at 18-19; I&E Exhibit 13.

¹¹³ I&E St.1 at 18-19; I&E Exhibit 13.

112. Section IV(A)(1) of Bulletin #54 provides the following directions when a notice of a UST is received via a Damage Prevention Inspector:

Normal Working Hours - When an inspector is conducting a routine mark out on a designated location (address) and a UST is detected the inspector will generate a UST request order through AIMS and back that request up with a phone call to the Pa One Call clerk. The clerk will document the UST and forward it to the Dispatcher, and also call the proper city agency regarding the UST. The Dispatcher will issue an UST order in AIMS.

Out of Hours – The inspector will request a UST order through AIMS and back that request up with a phone call to the Dispatcher. The Dispatcher will generate an UST order in AIMS and call the proper city agency regarding the UST.¹¹⁴

113. Section IV(A)(2) of Bulletin #54 recognizes that in the investigation of USTs “[t]he magnitude and proximity (to PGW structures) of the underground trouble is important to observe and report” and the investigation should look for key indicators, such as: (1) PGW involvement; (2) Distance of the problem to PGW structures; (3) Undermining; (4) Status of the UST repair; and (5) Leak associated with the problem.¹¹⁵

114. Bulletin #54 cites to 49 CFR §§ 192.614 & 192.755 as relevant code.¹¹⁶

PGW’s Failure to Protect its Cast Iron Main

115. The primary cause of the explosion was the release of natural gas from a circumferential crack on the cast iron main in front of 815 Jackson Street.¹¹⁷

116. The cast iron main cracked due to downward bending forces applied to the cast iron main and loss of support because of soil instability and undermining below and

¹¹⁴ I&E St.1 at 18-19; I&E Exhibit 13.

¹¹⁵ I&E Exhibit 13.

¹¹⁶ I&E Exhibit 13.

¹¹⁷ I&E St.1 at 25; I&E Exhibit 10.

around the cast iron main caused by sewer system failures, and the resulting excavations to repair the sewer system failures, immediately adjacent to the cast iron main.¹¹⁸

117. PGW received three separate notices of sewer system failures in the form of the PA One Call notices that indicated excavation would be conducted to replace curb trap laterals.¹¹⁹

118. PGW knew the excavation at 815 Jackson Street would be 8 feet deep by 4 feet wide by 4 feet long, in the sidewalk, and that PGW's cast iron main was in the sidewalk 7.5 feet from the front foundation wall, which means the excavation would be occurring directly at or immediately adjacent to the cast iron main.¹²⁰

119. PGW knew of the prior history of five (5) cast iron main breaks on the 800-block of Jackson Street in the preceding 12 years.¹²¹

120. PGW failed to act on the notices it received of the sewer system failures and USTs on the 800-block and the ensuing construction activity, which resulted in the integrity of the cast iron main being compromised by the weakening of the soil and/or undermining of the pipeline.¹²²

121. PGW did not generate a UST order in AIMS after receipt of the three (3) POCS notices indicating sewer failures at 815 and 813 Jackson Street.¹²³

¹¹⁸ I&E St.1 at 25; I&E Exhibits 9 & 10.

¹¹⁹ I&E St. 1-SR at 6-7; I&E Exhibits 6-8.

¹²⁰ I&E St. 1-SR at 7; I&E Exhibits 6, 7.

¹²¹ Answer at par. 27 and 28; I&E St. 1-SR at 13.

¹²² I&E St.1 at 22.

¹²³ Answer at par. 26; I&E St.1 at 19.

122. PGW did not inspect, investigate, or observe the sewer repair excavations at 815 and 813 Jackson Street for the purpose of assessing the possible impacts on PGW facilities.¹²⁴

123. PGW did not take any measures to safeguard its facilities or perform necessary follow-up actions after receiving three (3) notices of sewer failures and extensive excavations at and around its cast iron facilities.¹²⁵

124. PGW had sufficient information and knowledge to anticipate the threat that undermining would pose to its cast iron facility at 815 Jackson Street, caused by sewer system failures and subsequent excavations.¹²⁶

125. PGW, upon receipt of notices of sewer system failures, did not determine the location of the cast iron facility and, when that facility may be affected by the sewer system failure and resulting excavations, did not dispatch appropriate personnel to promptly determine the effect of the sewer system failure on the cast iron facility, as required by Section III(B) of Bulletin #312.¹²⁷

126. A PGW supervisor was not promptly informed when PGW knew the cast iron pipeline was or may be endangered and the supervisor did not institute necessary actions, such as patrolling, supporting, replacing, relocating or removing from service the affected gas facilities, to protect PGW facilities as required by Section III(A) of Bulletin #312.¹²⁸

127. PGW Damage Prevention Inspectors did not report to a supervisor an activity or change in environment that could affect the safety of a cast iron facility when the Damage

¹²⁴ I&E St.1 at 19-20.

¹²⁵ I&E St.1 at 20-21.

¹²⁶ I&E St.1 at 21.

¹²⁷ I&E St.1 at 21-22; I&E St. 1-SR at 7.

¹²⁸ I&E St.1 at 21-22; I&E St. 1-SR at 7-8.

Prevention Inspectors knew of the USTs, the sewer system failures, and the extent and location of the excavations at or immediately adjacent to the cast iron facility, as required by Section III(E) of Bulletin #313.¹²⁹

128. PGW Damage Prevention Inspectors did not act or report upon an excavation or construction activity which could result in damage to a pipeline, loss of support due to settlement or shifting of soil around a pipeline, or undermining or damage to a pipeline support, as required by Section III(E) of Bulletin #313.¹³⁰

129. PGW employees did not inspect third-party construction activities for the main purpose of protecting PGW underground structures and facilities, visit the underground street trouble and report the same to Distribution Dispatching and supervisor, re-visit the on-going job without a watchman, in which PGW facilities will be undermined, in order to report and/or recommend replacement or protection, or report an undermined gas main as required by Bulletin #313 “Damage Prevention Inspectors.”¹³¹

130. PGW dispatchers did not generate a UST order in AIMS upon receipt of a PA One Call System notice that a third party contractor would be performing excavations to repair a sewer system failure, PGW employees did not visit the location before, during, or after construction activities to perform inspection, investigation, or necessary follow-up actions, and PGW Damage Prevention Inspectors did not generate a UST order in AIMS, as required in “Protection of PGW Facilities from Underground Street Troubles,” Bulletin #54.

¹²⁹ I&E St. 1-SR at 11.

¹³⁰ I&E St. 1-SR at 11-12.

¹³¹ I&E St.1 at 22.

Further, because PGW employees did not perform the required steps above, they did not report an undermined gas main immediately to the PGW supervisor.¹³²

131. Federal pipeline safety regulations require natural gas distribution operators to protect buried cast iron pipelines. Specific to cast iron pipelines, 49 CFR § 192.755 directs that when an operator has knowledge that the support for a segment of a buried cast-iron pipeline is disturbed that segment of the pipeline must be protected, as necessary, against damage during the disturbance by: (1) Vibrations from heavy construction equipment, trains, trucks, buses, or blasting; (2) Impact forces by vehicles; (3) Earth movement; (4) Apparent future excavations near the pipeline; or (5) Other foreseeable outside forces which may subject that segment of the pipeline to bending stress. As soon as feasible, appropriate steps must be taken to provide permanent protection for the disturbed segment from damage that might result from external loads.¹³³

132. PGW had knowledge of numerous events and circumstances that PGW knew the support for the cast iron main at 815 Jackson Street would be disturbed, placing the cast iron main at risk, and failed to protect the cast iron main as necessary or to take permanent steps to protect the cast iron main.¹³⁴

PUC v. PGW, Docket No. C-2022-3033834, (“8th Street Settlement”)

133. The Commission approved a settlement at PUC v. PGW, Docket No. C-2022-3033834, (“8th Street Settlement”) on January 8, 2025.¹³⁵

¹³² I&E St.1 at 22.

¹³³ 49 CFR § 192.755; I&E St.1 at 23.

¹³⁴ I&E St.1 at 22-23.

¹³⁵ I&E St. 1-SR at 14; PUC v. PGW, Docket No. C-2022-3033834.

134. The 8th Street Settlement involved a December 19, 2019, natural gas explosion at 1435 South 8th Street, Philadelphia, PA, resulting in two fatalities and extensive property damage.¹³⁶

135. The factual circumstances between the 8th Street Settlement and this incident are similar and the corrective actions in the 8th Street Settlement go towards addressing the issues in this matter.¹³⁷

136. In the two years between the 8th Street explosion (December 19, 2019) and the explosion at 815 Jackson Street (November 30, 2021), PGW did not take the necessary action or make necessary changes to their policy and procedures to reduce risk and prevent reoccurrence of events related to excavations to repair water and sewer system failures at or near their cast iron mains.¹³⁸

137. Under federal pipeline safety regulations, a natural gas distributor is required to have a Distribution Integrity Management Plan (“DIMP”) which requires operators to know their systems, take preventative actions, and learn from prior incidents on their system with the goal of reducing risk in its system.¹³⁹

138. PGW did not make any material changes to Bulletins #312, 313, or 54 after the 8th Street explosion.¹⁴⁰

¹³⁶ I&E St. 1-SR at 14-15; PUC v. PGW, Docket No. C-2022-3033834.

¹³⁷ I&E St. 1-SR at 14; PGW St. 1-R at 47; PUC v. PGW, Docket No. C-2022-3033834.

¹³⁸ I&E St. 1-SR at 15; PUC v. PGW, Docket No. C-2022-3033834.

¹³⁹ N.T. at 84, 99. 49 CFR § 192.1007.

¹⁴⁰ N.T. at 112.

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission, :
Bureau of Investigation and Enforcement :
 :
v. : Docket No. C-2024-3052277
 :
Philadelphia Gas Works :

**THE BUREAU OF INVESTIGATION AND ENFORCEMENT’S
PROPOSED CONCLUSIONS OF LAW**

1. Philadelphia Gas Works (“PGW”) functions as a “city natural gas distribution operation,” as that term is defined in Section 102 of the Code, 66 Pa.C.S. § 102.
2. Section 2212(b) of the Code, 66 Pa.C.S. § 2212(b), subjects city natural gas distribution operations furnishing or rendering public utility service within municipal limits to regulation and control by the Commission with the same force as if the service were rendered by a public utility.
3. PGW is a natural gas distribution company (“NGDC”) as that term is defined in Section 2202 of the Code, 66 Pa.C.S. § 2202.
4. PGW, as a provider of public utility service for compensation as a city natural gas distribution operation, is subject to the power and authority of the Commission pursuant to Section 2212(c) of the Code, 66 Pa.C.S. § 2212(c).
5. PGW is a “public utility” as that term is defined at 66 Pa.C.S. § 102, as it is engaged in providing public utility service as a NGDC to the public for compensation.

6. As a public utility, PGW is subject to the power and authority of this Commission pursuant to Section 501(c) of the Code, 66 Pa.C.S. § 501(c), which requires a public utility to comply with Commission regulations and orders, including Federal pipeline safety laws and regulations.

7. Pursuant to Section 59.33(b) of the Commission's regulations, 52 Pa. Code § 59.33(b), the Bureau of Investigation and Enforcement's ("I&E") Pipeline Safety Division has the authority to enforce Federal pipeline safety laws and regulations set forth in 49 U.S.C.A. §§ 60101-60503 and as implemented at 49 CFR Parts 191-193, 195 and 199. The Federal pipeline safety laws and regulations prescribe the minimum safety standards for all natural gas and hazardous liquid public utilities in the Commonwealth.

8. As a city natural gas distribution operation, PGW is obligated to comply with the Federal pipeline safety laws and regulations pursuant to 66 Pa.C.S. § 2212(b).

9. Section 701 of the Code, 66 Pa.C.S. § 701, authorizes the Commission, *inter alia*, to hear and determine complaints against public utilities for violations of any law or regulation that the Commission has jurisdiction to administer or enforce.

10. Section 3301(c) of the Code, 66 Pa.C.S. § 3301(c), which is specific to gas pipeline safety violations, authorizes the Commission to impose civil penalties on any person or corporation, defined as a public utility, who violates any provisions of the Code or any regulation or order issued thereunder governing the safety of pipeline or conduit facilities in the transportation of natural gas, flammable gas, or gas which is toxic or corrosive. Section 3301(c) further provides that a civil penalty of up to Two Hundred Thousand Dollars (\$200,000) per violation for each day that the violation persists may be imposed, except that for any related series of violations, the maximum civil penalty shall not exceed Two Million

Dollars (\$2,000,000) or the penalty amount provided under Federal pipeline safety laws, whichever is greater.

11. Civil penalties for violations of Federal pipeline safety laws and regulations are adjusted annually to account for changes in inflation pursuant to the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015, Pub. L. 114-74, § 701, 129 Stat. 599, 28 U.S.C. § 2461 note (Nov. 2, 2015) (amending the Federal Civil Penalties Inflation Adjustment Act of 1990). The applicable adjustment made by the U.S. Department of Transportation’s Pipeline and Hazardous Materials Safety Administration (“PHMSA”) occurred on December 30, 2024 and revised the maximum civil penalty to Two Hundred Seventy-Two Thousand, Nine Hundred Twenty-Six Dollars (\$272,926.00) for each violation and for each day the violation continues, with a maximum penalty not to exceed Two Million, Seven Hundred Twenty-Nine Thousand, Two Hundred Forty-Five Dollars (\$2,729,245.00) for a related series of violations. 89 F.R. 106294 (Dec. 30, 2024).

12. I&E, as the Complainant, bears the burden of proof to establish that PGW violated Public Utility Code, Commission regulations, and the Code of Federal Regulations. 66 Pa.C.S. § 332(a).

13. “Burden of proof” is established by a preponderance of the evidence which is substantial and legally credible. *Samuel J. Lansberry, Inc. v. Pa. PUC*, 578 A.2d 600 (Pa. Cmwlth. 1990), alloc. denied, 529 Pa. 654, 602 A.2d 863 (1992).

14. I&E’s evidence must be more convincing, by even the smallest amount, than that presented by the Respondent. *Se-Ling Hosiery, Inc. v. Margulies*, 364 Pa. 45, 70 A.2d 854 (1950).

15. The Commission's decision must be supported by substantial evidence in the record. More is required than a mere trace of evidence or a suspicion of the existence of a fact sought to be established. *Norfolk & Western Ry. Co. v. Pa. PUC*, 489 Pa. 109, 413 A.2d 1037 (1980).

16. I&E has demonstrated beyond a preponderance of credible evidence that PGW violated the Public Utility Code, Commission regulations, and the Code of Federal Regulations and is subject to disciplinary action. 66 Pa.C.S. § 332(a); *Samuel J. Lansberry, Inc. v. Pa. PUC*, 578 A.2d 600 (Pa. Cmwlth. 1990), alloc. denied, 529 Pa. 654, 602 A.2d 863 (1992).

17. Federal pipeline safety regulations require that each natural gas distribution operator prepare and follow for each pipeline, a manual of written procedures for conducting operations and maintenance activities and for emergency response. 49 CFR § 192.605.

18. PGW violated Federal pipeline safety regulations, in that PGW failed to follow its own manual of written procedures, specifically Bulletin #312. 49 CFR § 192.605(a).

19. PGW violated Federal pipeline safety regulations, in that PGW failed to follow its own manual of written procedures, specifically Bulletin #313. 49 CFR § 192.605(a).

20. PGW violated Federal pipeline safety regulations, in that PGW failed to follow its own manual of written procedures, specifically Bulletin #54. 49 CFR § 192.605(a).

21. PGW violated Federal pipeline safety regulations, in that PGW operated a segment of its pipeline after failing to maintain its pipeline in accordance with Subpart M, 49 CFR §§ 192.701-192.756. 49 CFR § 192.703(a).

22. PGW violated Federal pipeline safety regulations, in that PGW failed to replace, repair, or remove from service a segment of pipeline that had become unsafe. 49 CFR § 192.703(b).

23. 49 CFR § 192.755 requires an element of “knowledge,” but does not define “knowledge.” 49 CFR § 192.755.

24. “Knowledge” can either be “actual knowledge” or “constructive knowledge.” Black’s Law Dictionary defines “actual knowledge” as “direct and clear knowledge” or “knowledge of information that would lead a reasonable person to inquire further.” Black’s Law Dictionary also defines “constructive knowledge” as “knowledge that one using reasonable care or diligence should have, and therefore that is attributed by law to a given person.” Knowledge, Black's Law Dictionary (12th ed. 2024).

25. To better understand how “knowledge” should be interpreted, the Commission will look to how similar terms are defined in Parts 191 and 192 of Title 49. The Commission will look towards how the Federal regulations define “discovery of condition” and “confirmed discovery.” Discovery of a condition occurs “when an operator has adequate information about a condition to determine that the condition presents a potential threat to the integrity of the pipeline.” 49 C.F.R. §§ 192.710 & 192.933. Whereas, confirmed discovery means “when it can be reasonably determined, based on information available to the operator at the time a reportable event has occurred, even if only based on a preliminary evaluation.” 49 C.F.R. § 191.3.

26. The definitions for “discovery of condition” and “confirmed discovery” more closely resemble that of “constructive knowledge,” in that direct and clear knowledge is not required but only adequate information to determine a condition presents a potential threat

and a reasonable determination based on available information. Knowledge, Black's Law Dictionary (12th ed. 2024); 49 C.F.R. §§ 192.710 & 192.933; 49 C.F.R. §§ 191.3.

27. PGW violated Federal pipeline safety regulations, in that PGW had knowledge that the support for the segment of the buried 4-inch cast iron pipeline at and near 815 Jackson Street was disturbed by sewer failures and excavation activity near the pipeline and PGW failed to protect, as necessary, the cast iron main against damage. 49 CFR § 192.755(a).

28. PGW violated Federal pipeline safety regulations, in that PGW had knowledge that the support for the segment of the buried 4-inch cast iron pipeline at and near 815 Jackson Street was disturbed by sewer failures and excavation activity near the pipeline and PGW failed to take appropriate steps to provide permanent protection from any damage that might result from external loads. 49 CFR § 192.755(b).

29. PGW violated Commission regulations, in that PGW failed to use every reasonable effort to properly warn and protect the public from danger, or exercise reasonable care to reduce the hazards to which employees, customers and others may be subjected to by reason of its equipment and facilities. 52 Pa. Code § 59.33.

30. PGW violated the Public Utility Code, in that PGW failed to furnish and maintain adequate, efficient, safe and reasonable service and facilities and make such repairs, changes, alterations, substitutions, extensions and improvements in or to its service and facilities necessary or proper for the accommodation and safety of its customers, employees and the public, thereby placing the safety of its customers, employees and the public in danger. 66 Pa.C.S. § 1501.

31. Having violated the Code of Federal Regulations, Public Utility Code, and Commission regulations, PGW is subject to the imposition of a civil penalty. 66 Pa.C.S. § 3301(c); 49 U.S.C. §§ 60105 & 60122(a); *PUC v. PGW*, Docket No. C-2022-3033834 (January 8, 2025); *PUC v. PGW*, Docket No. C-2011-2278312 at 27 (July 16, 2013).

32. The Commission is authorized to impose civil monetary penalties for violations of the Public Utility Code, Commission Regulations, and Code of Federal Regulations after evaluation of specific factors. *Factors and Standards for Evaluating Litigated and Settled Proceedings Involving Violations of the Public Utility Code and Commission Regulations* (“Policy Statement”), 52 Pa. Code § 69.1201; *see also Joseph A. Rosi v. Bell-Atlantic-Pennsylvania, Inc.*, Docket No. C-00992409 (Order entered March 16, 2000).

33. A civil penalty of \$300,000 is reasonable under the applicable standards. 52 Pa. Code § 69.1201.

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission, :
Bureau of Investigation and Enforcement :
 :
v. : Docket No. C-2024-3052277
 :
Philadelphia Gas Works :

**THE BUREAU OF INVESTIGATION AND ENFORCEMENT’S
PROPOSED ORDERING PARAGRAPHS**

1. That the Formal Complaint of the Pennsylvania Public Utility Commission, Bureau of Investigation and Enforcement v. Philadelphia Gas Works at Docket No. C-2024-3052277 is sustained.
2. Philadelphia Gas Works is hereby assessed a civil penalty of \$300,000.00 for violations of the Code of Federal Regulations, Public Utility Code, and Commission regulations.
3. That, within thirty (30) days of the entry date of this Opinion and Order, Philadelphia Gas Works shall remit \$300,000.00, payable by certified check or money order, to “Commonwealth of Pennsylvania” and sent to:

Matthew Homsher, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

4. That Philadelphia Gas Works shall cease-and-desist from further violations of the violations of the Code of Federal Regulations, Public Utility Code, and Commission regulations.

5. That, if Philadelphia Gas Works fails to make the payment required by Ordering Paragraph No. 3, above, within thirty (30) days of the entry date of the Commission's Order, the Commission shall refer this matter to the Pennsylvania Office of Attorney General for collection of the total set forth above and appropriate action.

6. That, after Philadelphia Gas Works remits the \$300,000.00 as required by Ordering Paragraph No. 3, the Secretary's Bureau shall mark Docket No. C-2024-3052277 as closed.

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission,	:	
Bureau of Investigation and Enforcement	:	
	:	
v.	:	Docket No. C-2024-3052277
	:	
Philadelphia Gas Works	:	

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a true copy of the foregoing **Main Brief** dated January 13, 2026, upon the parties listed below, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a party).

Service by Electronic Mail Only

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