

PHILADELPHIA GAS WORKS

SPECIFICATION FOR INSTALLING

PRIVATELY OWNED

UNDERGROUND NATURAL GAS HOUSE PIPING

FOR

**HOUSING PROJECTS, CONDOMINIUMS,
APARTMENTS, INDUSTRIAL SITES OR SIMILAR
COMPLEXES**

June 2023



Specifications for Installing Private Underground Gas Piping for Housing
Projects, Condominums, Apartments, or Other Similar Complexes

Section 01.	PA One Call - Act 287 AS AMMENDED BY ACT 50.....	4
Section 02.	Authority to Install Underground Gas Piping.....	4
Section 03.	Codes & Compliance.....	5
Section 04.	Approval Process.....	5
Section 05.	PGW Contact and Source of Information.....	4
Section 06.	PGW Drawing Requirements.....	5
Section 07.	Materials – General.....	6
Section 08.	Plastic Pipe – (Preferred Material).....	7
Section 09.	Steel Pipe.....	8
Section 10.	Steel Pipe Assembly Procedures.....	9
Section 11.	Corrosion Control Requirements.....	9
Section 12.	Trenching & Installation.....	10
Section 13.	Termination of Piping.....	10
Section 14.	Damage Prevention Standards.....	11
Section 15.	Inspection & Leak Tests.....	11
Section 16.	Backfilling.....	13
Section 17.	Turn-on of Gas.....	13
	APPENDIX A – Notification Form.....	14
	APPENDIX B - Joint Trenching Detail.....	0
	APPENDIX C - List of Suggested Suppliers.....	1
	APPENDIX D - UNDERGROUND HOUSE PIPING FORM.....	1
	APPENDIX E – APPROVED PLASTIC MATERIAL D.S. 80.....	3

Specifications for Installing Private Underground Gas Piping for Housing Projects, Condominiums, Apartments, or Similar Complexes

NOTE: These specifications are subject to change without notice. Consult with the Field Operations Department of Philadelphia Gas Works (PGW) before starting any installation. All references to statutes, rules or regulations are current as of the date of publication, but remain the responsibility of the Owner/Contractor, with respect to modification or other changes in laws or regulations. PGW makes no warranties or certification expressed or implied with respect to the methods or procedures contained herein.

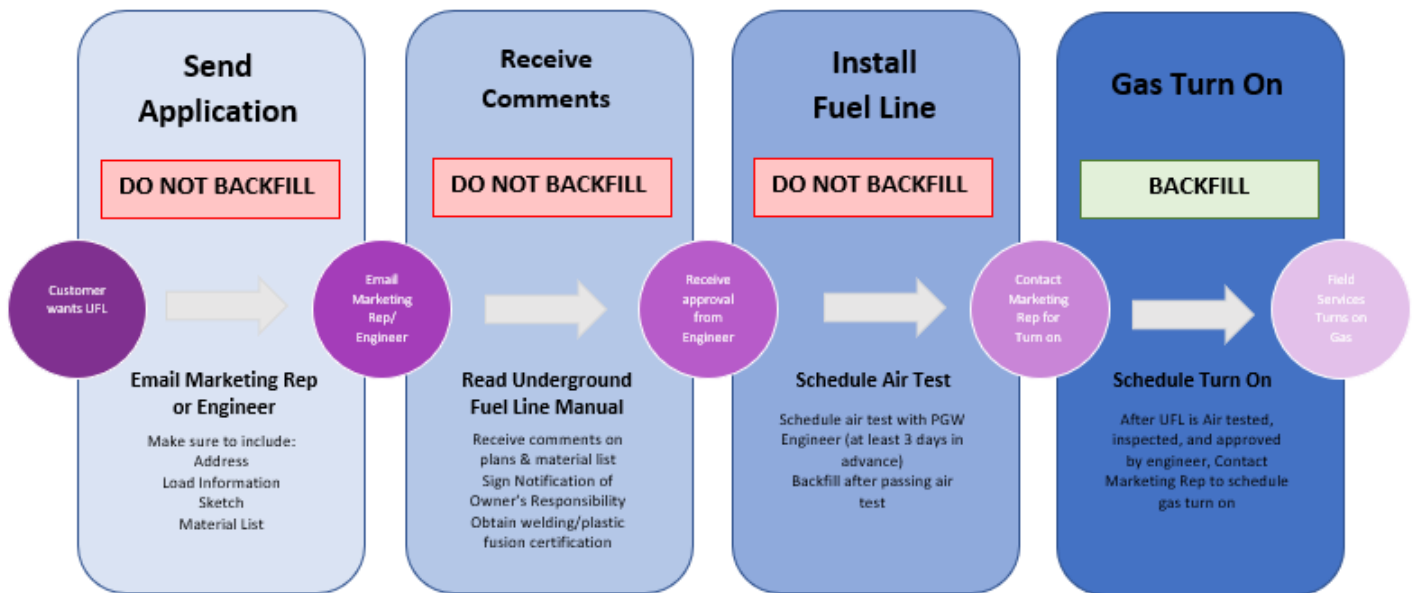


Image 1. This visual shows the formal approval process for all Underground Fuel Lines not installed by PGW or its contractor.

Section 01. PGW Contact and Source of Information

1. All matters related to underground gas piping shall be referred to the Planning Section of the Field Operations Department of PGW. Initial communication should be made through the Marketing Department to gather information on the total gas load downstream of the customer meter.
 - a) Email the **Marketing Department** at:
MarketingService@pgworks.com, or call the hotline at: 215.684.6730
2. Proper application for increased gas consumption.
 - a) E-mail the **Residential & Commercial Sales Staff** at: res.com@pgworks.com, or call the hotline at: 215.684.6730
3. Initial contact should address of property where fuel line will be located and load the fuel line will hold

Section 02. PA One Call - Act 287

1. Owners/Contractors must comply with PA One Call - Act 287 AS AMMENDED BY ACT 50.
2. To place a dig or design notification in Pennsylvania
 - a) call 8-1-1 or 1-800-242-1776 (outside PA)

Section 03. Authority to Install Underground Gas Piping

1. PGW does not maintain the customer's piping downstream of PGW's meter. For the customer responsibilities, see "APPENDIX A – Notification Form".
2. PGW does not have permitting authority over roadway or footway openings. Accordingly, any review of piping by PGW does not act as any authorization to install underground gas piping in City Streets, dedicated or undedicated, or property dedicated to public use.
3. Owners/Contractors must consult with PGW prior to the design and installation of underground fuel lines to confirm and determine the availability and/or the ability of the Philadelphia Gas Distribution System to supply the requested delivery pressure and gas demand at the customer meter.

Section 04. Codes & Compliance

1. Federal Regulations consider the Owner/Contractor as an Operator of a gas piping system. The Operator must be in accordance with the Code of Federal Regulations (*PHMSA “Part 192”*). All other applicable Federal, State, and local building, piping and fire codes as relevant to natural gas piping apply.
 - a) PGW requires that the Owner of the underground gas piping system to fill out the Notification Form, see “APPENDIX A – Notification Form”, and return a signed copy for PGW records.
2. Specifications for piping within a building must be in accordance with latest addition of the *International Fuel Gas Code*, “NFPA 54/ANSI Z223.1” and the PGW “*Piping Specifications for Fuel Lines and Equipment Installation*”
3. These specifications apply to privately-owned and installed underground gas piping systems supplied through and downstream of a PGW meter.
4. PGW will not connect or approve for connection, any underground gas piping system to PGW’s Distribution system unless all the specifications and procedures set forth in the manual are followed and all inspection and testing deemed necessary by PGW is completed satisfactorily.
5. The Operator must immediately notify PGW of any changes before or during installation of Gas facilities

NOTE: All construction engineering review, inspection services, testing services, corrosion control validation and documentation services is subject to be billed to the Owner at PGW’s current hourly rate until completion of the job.

Section 05. Approval Process

1. The following sections describe the underground fuel line approval process followed by PGW.
2. To receive approval, customer must meet all requirements described in this document.

Section 06. PGW Drawing Requirements

1. Owner/Contractor shall not install underground piping without first submitting a set of Pipe Drawings to the Operations Department Planning Section. PGW requires two (2) weeks to review the project scope and specifications.
2. Each Pipe Installation drawing should include details showing:
 - a) Dimensioning for all features in proper scale
 - b) Diameter of the pipe
 - c) Material
 - d) Cover
 - e) North Arrow

- f) Street Names
 - g) Building footprints
 - h) Valve and valve box locations
 - i) Property Lines
 - j) Walls (retaining, landscape, etc.)
3. For Apartments, Condominiums, Universities, College campuses, Industrial campuses, complexes, or similarly zoned buildings, in addition to what is listed above, the following must be included in the drawing:
 - a) Location of branches, offsets, valves and other significant fittings.
 - b) Curbs & gutters, Public sidewalks and contours
 - c) Substructures - water, sewer, storm drains, footers, foundations, and any other utilities available (abandoned, existing, and proposed)
 - d) Any other important points where there is a change of size, material, direction and depth should be shown on the drawings.
 - e) Public Utility Easements (if applicable)
 4. All systems requesting to carry natural gas at a pressure greater than 5 PSIG will be reviewed by PGW on an individual basis and may take longer than a typical review.
 5. Owner/Contractor should not install underground piping without having received approval for installation from PGW's Operations Department. A signed copy of the Owner/Contractor's drawings or an e-mail from the Operations Planning Department with PGW's approval will be returned to the Owner/Contractor
 6. If the drawings are not approved, PGW will inform the Owner/Contractor the requirements and revisions needed to gain PGW's approval. Owner/ Contractor must make requested changes and resubmit until PGW approval is received.
 7. A copy of the approved drawings should be kept on the jobsite and made available to PGW inspectors or engineers during the installation of the project.

Section 07. Materials – General

1. Owner/Contractor shall not install underground piping without first submitting a list of materials to be used.
2. The Contractor must receive PGW's written approval of all materials prior to installation. The Contractor shall not assume prior approval of materials used will guarantee future approval to use the same materials.
3. Owner/Contractors must follow the manufacturer's procedures for installation and joining their products and joining other materials to their products. PGW reserves the right to approve vendors not currently on this list. The Owner/Contractor must submit their material list to the PGW Engineer to receive approval prior to installation.

4. References to specific products shall not be construed as an endorsement for that material or derogatory to other competitive products.
5. For a suggested list of PGW pre-approved suppliers, see “APPENDIX C – List of Suppliers”
6. Owner/contractor MUST NOT install any threaded fittings underground. All connections underground must be made with stab fittings, mechanical couplings, or proper welding procedures.
7. Following International Fuel Gas Code:
 - a) Piping installed underground beneath buildings is prohibited, except when:
 - (i) Piping is encased in a conduit of wrought iron, plastic pipe, steel pipe, or other approved conduit material designed to withstand the superimposed loads.
 - (ii) Design must be approved by PGW Engineer.
 - b) Plastic pipe shall be installed outdoors underground only. All transitions above ground must be installed by approved risers or transition fittings.
 - (i) Steel risers connected to plastic piping shall be cathodically protected by means of a welded anode, except where such risers are anodeless risers or anodeless transition fittings.
8. PGW requires that a solenoid valve is installed at termination of piping for residential fire pits.
 - a) The solenoid valve will be installed as a method of quickly shutting off gas going to the fire pit to control flames and maintain safety.
 - b) If Owner/Contractor suggests that a valve is not needed, all supporting documentation must be brought to the attention of the PGW Engineer.

Section 08. Plastic Pipe – (Preferred Material)

1. Plastic pipe must be ASTM D2513 Polyethylene (PE).
 - a) Underground PVC pipe is not allowed.
2. PGW reserves the right to approve and reject any plastic pipe manufacturer that PGW feels does not meet the requirements set forth above. It is the Owner/Contractors responsibility to gain PGW’s approval prior to ordering pipe and or any fittings.
3. See Appendix E for PGW pre-approved sizes and SDR of pipe.
4. Fusing Qualification Requirements
 - a) Plastic Pipe Butt-Fusion and Electrofusion
 - (i) Underground fuel line Operators must be plastic fusion qualified through the Philadelphia Gas Works Training Department. Operators must pass a written evaluation and destructive testing of sample pieces. The

qualification is valid for one year for PGW ONLY and is not transferrable as an NGA qualification.

- (ii) To schedule a plastic fusion course with PGW, contact:

MarketingService@pgworks.com, or call the hotline at: 215.684.6730

Operators must wear PPE and bring the fusion machine(s) that will be utilized in the underground fuel line installation, as well as plastic pipe/fittings.

5. Plastic Pipe Fusion Procedures

- a) Plastic PE pipe must be joined by either Butt Fusion, Electrofusion, stab fitting, or by a mechanical coupling and must be in accordance with *PHMSA* “Part 192, Subpart F – Joining of Materials Other Than Welding - 192.281(Plastic Pipe), 192.283(Qualifying Joining Procedures),
- b) Fusion Personnel must be in accordance with *PHMSA* “Part 192, Subpart F – Joining of Materials Other Than Welding -192.285(Qualifying Persons to Make Joints).” Documentation must be kept for Qualifying Fusion Personnel for each machine used as well as for each pipe fused.
- c) All documentation must be submitted to PGW. PGW reserves the right to approve/reject qualification documentation. If rejected, the contractor is required to come to PGW to make qualified fusion per PGW fusion procedures. Fusion training cost will be billed to the contractor.

Section 09. Steel Pipe

1. Underground fuel lines using steel pipe are subject a PGW corrosion review before drawing approval. This may add time to the length of the approval process.
2. All pipes shall be new steel, API-5L, Grade B or ASTM A-53 seamless, or electric resistance welded.

Nominal Size (In.)	Wall Thickness (In.)	Schedule No. ANSI B36.10
1-¼"	.140	40
2"	.154	40
3"	.216	40
4"	.237	40
6"	.280	40
8"	.322	40

3. Steel pipe shall be procured with ends beveled for welding. Individual single random lengths, as received on the job, shall not be less than 18’ long. Not more than one “cut length” shall be used between any two fittings. For this purpose, a valve shall be considered as a fitting.
4. No steel pipe smaller than 1-¼” shall be installed underground.
5. All steel pipe must be have Pritec external coating.

- a) For pipes larger than 4", internal coating is also recommended.
- b) If Pritec coated pipe is not installed, bare steel pipe may be wrapped using wax tape per Section 11 of this manual.
- c) Must receive PGW Engineer approval prior to backfilling.

Section 10. Steel Pipe Assembly Procedures

1. Welding Procedures must be in accordance with *PHMSA* "Part 192, Subpart E – Welding of Steel in Pipelines" and *PGW D-Contracts* "D-1016 - Distribution Standards - "20.1(Welding Procedures)" and *API* "Code 1104" or *PHMSA* "Part 192, Subpart F – Joining of Material Other than by Welding."
2. Welder Qualification must be in accordance with *PHMSA* "Part 192, Subpart E – Welding of Steel in Pipelines -192.227(Qualification of Welders) and in accordance with PGW Welder Qualifications.
3. All welding shall be shielded metal arc welding.
 - a) The Owner/Contractor must repair all rejected welds.
 - b) PGW reserves the right to require a repair for all welds which fail a visual inspection.
4. Owner/Contractor shall supply all documentation concerning welding procedures qualifications and welding qualifications for all welders to PGW for approval prior to construction. PGW reserves the right to accept or reject the procedures and qualifications.
5. Mechanical Compression Coupling Assembly for Steel and Plastic Pipe shall be installed per the manufacturer's specifications and installation instructions.
6. It is the Owner/Contractors responsibility to ensure all welded and mechanical coupling installations are performed by qualified personnel who have been properly trained in the joining procedures.

Section 11. Corrosion Control Requirements

1. All steel pipe installations must have corrosion control in accordance with *PHMSA* "Part 192 – Subpart I – Requirements for Corrosion Control" and *PGW D-Contracts* "D-1015 - General Specifications – Appendix A(Corrosion Control)"
2. Corrosion Control Devices must be installed as per manufactures instructions. If necessary, reach out to the PGW Engineer to ensure Corrosion Control Devices (anodes, insulating flanges, etc.) are included in the design plans.
3. Pipe Coating must be in accordance with *PHMSA* "Part 192, Subpart I – Requirements for Corrosion Control – 192.461(Coating)"
4. Cathodic Protection must be in accordance with *PHMSA* "Part 192, Subpart I – Requirements for Corrosion Control – 192.463(Cathodic Protection)"

Section 12. Trenching & Installation

1. The location of the pipe, in respect to building, curbs, sidewalks, and other underground structures, should be carefully chosen so that future maintenance work will be expedited. All pipe locations should be clearly shown on the drawings required.
2. The depth of installations shall be between 2' - 3'6" to the top of the pipe wherever possible. In no case shall the depth be less than 1'6".
 - a) Please consult a PGW engineer when 1'6" cover cannot be maintained.
3. When a gas pipe parallels other underground structures, a clear horizontal distance of at least 12" between the two structures shall be maintained, unless otherwise approved by PGW.
4. When gas piping crosses over or under other underground structures, a clear vertical distance of at least 12" shall be maintained. If 12" cannot be maintained, a fiberglass spacer shall be placed between the two structures.
5. If a common trench will be used, all trenching and installation must be in accordance with *PGW Manuals* "Common Trenching Manual - General Design Requirements." See Appendix B for a detailed image. To obtain full Common Trenching Manual Contact Marketing Rep or assigned PGW Engineer
6. All trenches must be level and free of debris at the time gas lines are to be installed.
7. The trench bottom in suitable earth shall be excavated and graded so that the pipe will be supported for its entire length on undisturbed ditch bottom. Blocking shall not be used as a permanent method of supporting the pipe. A 6" sand base must be installed in the trench prior to installation.
8. All pipes shall be internally cleaned and blown clear prior to installation. Pipe shall be inspected for deformations. Damaged pipe shall be cut out and replaced.
9. Pipe shall not be dragged.
10. Installed pipe and equipment shall be made watertight at the end of each day, and at all times when the Owner/Contractor is not actively working on that pipe.
11. All steel pipe installation must have Corrosion Control and in accordance with "Section 11 - Corrosion Control Requirements."
12. After installation a leak test must be scheduled with the PGW Engineer. Customer should reach out at least 5 business days prior to day requested.

DO NOT BACKFILL TRENCH UNTIL INSPECTION AND LEAK TEST ARE COMPLETED AND APPROVED BY PGW

Section 13. Termination of Piping

1. In accordance with *PGW D-Contracts* "D-1016 - Distribution Standards," specifically Head of Service standards.
2. No gas piping (meter, riser, etc.) can be placed within a 36" horizontal measurement from:

- a) An electric meter or electrical equipment (air cond, compressor unit, etc.)
 - b) Combustion air or fresh air intakes.
 - c) Any ignition source.
 - d) Fire Department standpipes.
3. PGW will not approve any underground fuel line which does not comply with the latest version of the International Fuel Gas Code and PGW's "Piping Specifications for Fuel Lines and Equipment Installation" book.

Section 14. Damage Prevention Standards

1. Damage Prevention must be in accordance with *PGW D-Contracts* "D-1016 - Distribution Standards - 53.0(Damage Prevention Instruction), 53.1(Caution Tape Installation), 53.2(Tracer Wire Installation)
2. Outside Risers or Meter Sets
 - a) Meters and piping must be protected from damage by vehicles by 4" diameter bollards per *PGW D-Contracts* "D-1016 - Distribution Standards – 53.0(Damage Prevention Instruction)"

Section 15. Inspection & Leak Tests

1. All underground fuel lines (Plastic and Steel) shall be tested with air 90 PSIG on the piping system. The Contractor shall, **in the presence of PGW**, test with soapsuds every joint, fitting, weld, fusion, and valve, as well as any other part which PGW may designate. Fuel line must pass air test to complete approval process.
2. After fuel line is installed, a leak test must be scheduled with the assigned PGW Engineer. Customer should reach out at least 5 business days prior to day requested. PGW can make either a continuous or intermittent inspection during the installation.
3. PGW does not guarantee or certify the present or future soundness of the piping system or proper piping design or sizing.
4. As stated in the International Fuel Gas Code:
 - a) The Owner/Contractor is responsible for scheduling piping inspection
 - b) **The Inspection shall be made after trenches are excavated and bedded, piping is installed, and before backfill is put in place.**
 - c) **If backfill is installed prior, PGW requires customer to excavate their fuel line for proper inspection.**
5. Problems discovered by PGW's inspection shall be corrected to the satisfaction of PGW. PGW will not energize a system unless all problems are corrected.
6. Leak Procedures must be in accordance with *PHMSA* "Part 192, Subpart M – Maintenance – 192.723 (Leakage Surveys and Procedures)" and "APPENDIX D – Underground House Piping Form"

- a) PGW must be notified by the Contractor three (3) days **before** a Pressure Test so that PGW can schedule a PGW inspector to witness the test.
 - b) The time-pressure test shall be performed after the entire underground system is complete in every detail.
7. The Owner/Contractor shall properly retain or block exposed pipe ends.
 8. All valves shall be in the open position for the duration of each of these tests.
 9. Any defective material discovered by these tests shall be removed and good material substituted by the Owner/Contractor.
 10. Time Pressure Test
 - a) With an approved recording gauge attached to the system, air pressure shall be raised to 90 PSIG for all steel and plastic mains and services. In the event that services are physically connected to a main at the time of testing, the entire installation may be tested at 90 PSIG.

Pipe Length (feet)	Pipe Size								
	2" & Smaller	3" & 4"	6" & 8"	12"	16"	20"	24"	30"	36"
50	10 min.	15 min.	30 min.	1.5 hrs.	2 hrs.	3 hrs.	4 hrs.	7 hrs.	10 hrs.
100	10 min.	15 min.	1 hr.	2.5 hrs.	4 hrs.	6 hrs.	8 hrs.	13 hrs.	19 hrs.
200	15 min.	30 min.	2 hrs.	4.5 hrs.	7 hrs.	11 hrs.	16 hrs.	24 hrs.	24 hrs.
500	30 min.	1.5 hrs.	5 hrs.	11 hrs.	18 hrs.	24 hrs.	24 hrs.	24 hrs.	24 hrs.
1,000	45 min.	2.5 hrs.	9.5 hrs.	22 hrs.	24 hrs.	24 hrs.	24 hrs.	24 hrs.	24 hrs.

When testing pipe of varying size, the total test duration may be calculated by adding the test durations given in the table above. Test durations beyond 24 hours are not required.

Minimum Test Duration for Plastic and Steel Pipe

- b) For all pressure tests at or exceeding 2 hours, a constant pressure of 90 PSIG must be plotted on a recording gauge chart for a period satisfactory to PGW but not to exceed 24 hours.
 - c) The time pressure test shall be considered as passed when a constant pressure of 90 PSIG has been witnessed by a PGW Area Engineer or a pressure recording chart has been reviewed, whichever is required per the table above.
 - d) If at any time there is a drop in pressure indicating a leak, the test shall be disconnected until the Owner/Contractor locates and corrects the cause of the leak. The time pressure test shall then be repeated until a constant pressure reading is recorded for a time satisfactory to PGW.
 - e) All valves shall be operated after the final time pressure test and then left in the closed position.
11. Inspection of joints must be in accordance with *PHMSA* "Part 192, Subpart F – Joining of Materials Other Than Welding - 192.287(Inspection of Joints)".
 - a) A visual inspection shall be made of every fusion joint. Any joint of questionable appearance shall be cut out and redone. PGW reserves the right of final acceptance.

- b) Owner/Contractor shall only use proper pipe fusion equipment to perform fusion. Contractor shall have all equipment documentation on hand for PGW review including pressures, hold times, and heating times.

DO NOT BACKFILL UNTIL INSPECTION AND LEAK TEST ARE COMPLETED AND APPROVED BY PGW ENGINEER

Section 16. Backfilling

DO NOT BACKFILL UNTIL INSPECTION AND LEAK TEST ARE COMPLETED AND APPROVED BY ENGINEER

1. All joint trenches will be backfilled with sand to be a minimum of 6” of cover over all gas main and service pipe in normal soil and a minimum of 12” in rocky soil.
2. When tamping, the backfill shall be placed in layer according to applicable regulations, but in no case exceeding 12” in depth.
3. A yellow caution gas line tape must be installed about 1’ below the top of trench. This will alert a future excavator of the gas line below.
4. Pipe installation must be in accordance with *PGW D-Contracts* “D-1016 - Distribution Standards” and “Section 8 - Trenching, Installation, and Backfilling”.
5. Section 15 of this manual must also be followed during the backfill process.

Section 17. Turn-on of Gas

1. Underground piping system must fulfill all the requirements listed above and be approved by PGW.
2. Contact Marketing Rep to schedule turn-on
3. PGW reserves the right to be the sole authority to introduce gas into the underground piping system or be present when the Owner/Contractor energizes the underground piping system.

APPENDIX A – Notification Form

Notification of Owner’s Responsibilities for Underground Gas Piping



RE: Underground Piping Notification

Dear Customer:

The outside gas service line which provides your property with natural gas comes under federal regulations. The regulation pertains to a portion of the underground piping downstream of PGW’s meters and therefore, is not owned by PGW. This piping is the property of the land owner at your address.

Most property owners are not aware of their responsibilities in regards to underground natural gas piping; therefore, the federal codes discussed herein require Local Gas Distribution Companies, such as PGW, to notify owners of their obligations to safely maintain such piping. PGW does not maintain piping downstream of our meter. Federal Piping Safety Regulations, Part 192, Section 192.16.

There are four (4) requirements for maintaining your portion of underground piping:

1. Monitor for Corrosion
2. Survey for Leaks
3. Repair any Unsafe Conditions
4. Identify and Locate the Piping Prior to any Excavation

By serving this letter, PGW meets the federal requirements to notify you. You, or the correct owner of this facility, must make arrangements to comply with federal safety standards in maintaining the underground piping on your property.

Please fill out the attached form and return it so that PGW can better assist you in the future.

Thank you for your anticipated cooperation in this matter.

Sincerely,

Project Manager for New Business
Philadelphia Gas Works
800 W. Montgomery Avenue; Philadelphia, PA 19122
Fax Number: (215) 684-6853

Customer Name: _____

Customer Address: _____

Do you own the above mentioned property? Yes [] No []

If no, please return this form even if you are not the property owner.

Customer Signature: _____

Property Owner's Name: _____

Property Owner's Mailing Address: _____

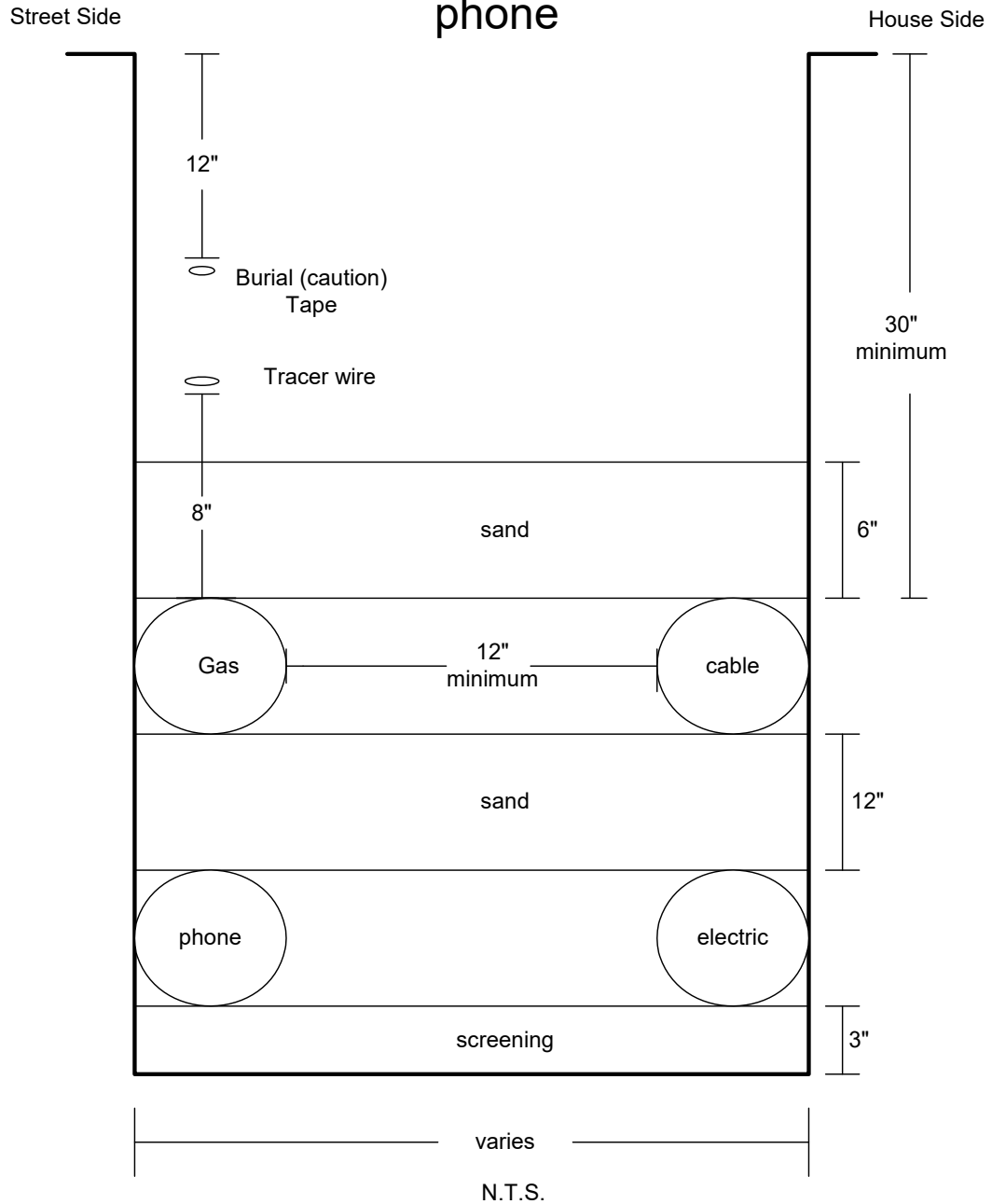
Property Owner's Phone Number: _____

Please return signed copy to

Distribution Planning, UFL files, 800-2
800 W. Montgomery Avenue
Philadelphia, PA 19122

APPENDIX B - Joint Trenching Detail

Joint Trench specifications with gas,cable,electric and phone



Note: Gas main is to be placed on the street side of the trench

PGW
5/1/04

APPENDIX C - List of Suggested Suppliers

Material mentioned in the Specification for Installing Underground Gas Piping may be purchased from the following suppliers. All purchased materials must be in accordance with *PHMSA*, Code of Federal Regulations, Part 192 as well as all other applicable Federal, State, and local building, piping and fire codes as relevant to natural gas piping. Materials must be documented for reference to applicable codes.

PGW reserved the right to approve vendors not currently on this list. The Owner/Contractor must submit their material list to the PGW Engineer to receive approval prior to installation.

1. Couplings, Risers and Fittings

- a. Dresser Piping Specialties
41 Fisher Avenue
Bradford, PA 16701
ph: (814) 362-9200
fax: (814) 362-9333
- b. Deacon Industrial Supply Company, Inc.
www.deaconind.com/
165 Boro Line Road
P.O. Box 62485
King of Prussia, PA 19406
ph: (610) 265-5322
Fax: (215) 256-1716
- c. Mueller Company
www.muellercompany.com
500 West Eldorado Street
Decatur, IL 62522
ph: (800) 798-3131
fax: (217) 425-7524
- d. Perfection Corporation
www.perfectioncorp.com
436 N. Eagle Street
Geneva, OH 44041
ph: (800) 544-6344
fax: (440) 428-7325

2. Primer, Tape Coating, Anodes and Cathodic Protection Services

- a. Corrpro Companies, Inc.
www.Corrpro.com
1380 Enterprise Dr. Suite 100
West Chester, PA 19380
ph: (610) 344-7002
fax: (610) 344-7092
- b. Stuart Steel Protection Corp.
www.StuartSteel.com
P.O. Box 476
S. Boundbrook, NJ 08880
ph: (732) 469-5544
fax: (732) 469-9270

3. Tracer Wire, Damage Prevention

- a. Deacon Industrial Supply Company, Inc.
www.deaconind.com/
165 Boro Line Road
P.O. Box 62485
King of Prussia, PA 19406
ph: (610) 265-5322
fax: (215) 256-1716

4. Valves

- a. Central Plastics Company
www.centralplastics.com
1901 West Independence Street
P. O. Box 3129
Shawnee, OK 74802-3129
ph: (405) 823-1391
fax: (800) 733-5993
- b. Balon Corporation
www.balon.com
3245 South Hattie
Oklahoma City, OK 73129
ph: (405) 677-3321
fax: (405) 677-3917
- c. Deacon Industrial Supply
Company, Inc.
www.deaconind.com/
165 Boro Line Road
P.O. Box 62485
King of Prussia, PA 19406
ph: (610) 265-5322
fax: (215) 256-1716
- d. Perfection Corporation
www.perfectioncorp.com
436 N. Eagle Street
Geneva, OH 44041
ph: (800) 544-6344
fax: (440) 428-7325

5. Plastic Pipe and Fittings

- a. Central Plastics Company
www.centralplastics.com
1901 West Independence Street
P. O. Box 3129
Shawnee, OK 74802-3129
ph: (405) 823-1391
fax: (800) 733-5993
- b. Dresser Piping Specialties
41 Fisher Avenue

Bradford, PA 16701
ph: (814) 362-9200
fax: (814) 362-9333

- c. Perfection Corporation
www.perfectioncorp.com
436 N. Eagle Street
Geneva, OH 44041
ph: (800) 544-6344
fax: (440) 428-7325
- d. Deacon Industrial Supply
Company, Inc.
www.deaconind.com/
165 Boro Line Road
P.O. Box 62485
King of Prussia, PA 19406
ph: (610) 265-5322
fax: (215) 256-1716

6. Plastic Pipe

- a. Performance Pipe, Div.
Chevron Phillips Chemical Co.
www.Performancepipe.com
5085 W. Park Blvd., Suite 500
Plano, TX 75093
ph: (972) 783-2603
fax: (972) 783-2647
- b. R.W. Lyall & Company, Inc.
2665 Research Drive
P. O. Box 2259
Corona, CA 91718-2259
ph: (800) 535-9255
fax: (909) 270-1600
- c. Polypipe
www.PolyPipeinc.com
PO Box 199
1050 Industrial Drive South
Erwin, TN 37650
ph: (423) 743- 9116
fax: (423) 743-8419

APPENDIX D - UNDERGROUND HOUSE PIPING FORM



General

Date _____

Address _____

Name of Inspector _____

Contractor Installing Pipe _____



Pipeline

Length _____

Size	2"	3"	4"	6"	8"
Pressure		LP	IP	HP	

Steel

Grade _____

Brand Name _____

Name of Welder _____

Welder Qualifications _____

Welding Procedure _____

Coating _____

Cathodic Protection _____

Plastic

Nom. Wall Thickness _____

SDR _____

ASTM # _____

Brand Name _____

Name of Fuser _____

Fusion Procedures _____

Company _____



Air Test (90psig)

Start Time _____
Temperature On _____
Finish Time _____
Temperature Off _____
Test Medium (Air/Water) _____ Air _____

Result

Pass**Fail****Finalization**

Customer Signature _____
PGW Employee Signature _____

Note: Contractor will be charged if additional testing required

APPENDIX E – APPROVED PLASTIC MATERIAL D.S. 80

Pipe Size	CTS versus IPS	DR	Resin	Color	Density	Inside diameter (inches)	Outer Diameter (inches)	Minimum Wall Thickness (inches)	Shelf Life	MADP at 75°	Weight (lbs) per 100-ft	Coll. Joint Lengths	RCP at 32°F	Melt Index	Flexural Modulus	Tensile Strength	SCG (Pein)	HDI at 75°F	Approved Manufacturers and Part Numbers	Printline	PSW Part Number
3/4"	CTS	DR 9.7	PE 4710 PE 100	Yellow (Outer) and Black (Inner)	-DPE	0						500'	>667 psi	0.08 g/10min	>120,000 psi	>3,500 psi	>2000 hours	1,600 psi	Performance Pipe# 106882 PGH1254-1010-36	3/4" CTS DRISCOPEX 8100 GAS PE 4710 PE 100 KVXXXX NR 480 ISUN001	10127505
3/4"	CTS	DR 9.7	PE 4710	Black (Yellow Stripe)	-DPE	0.695	0.875	0.09		100 psi	9.7 lbs	500'	>667 psi	0.08 g/10min	>140,000 psi	>3,500 psi	>2000 hours	1,600 psi	Performance Pipe# 1056766, Endot Indus#138F PGH1254-1010-36	3/4" CTS DRISCOPEX 8300 GAS PE 4710 KVXXXX NR 480 ISUN001	10127504
1"	CTS	N/A	PE 2708	Yellow	MDPE	0.927	1.125	0.099		77 psi	14 lbs	500'	>123 psi	0.18 g/10min	>90,000 psi	2,800 psi	>2,000 hours	1,250 psi	Performance Pipe# 1107238	1" CTS DRISCOPEX 6100 GAS PE 2708 KVXXXX NR 480 ISUN001	10128006
1"	CTS	N/A	PE 4710	Black (Yellow Stripe)	-DPE	0.923	1.125	0.111		100 psi	14 lbs	500'	>667 psi	0.08 g/10min	>140,000 psi	>3,500 psi	>2000 hours	1,600 psi	Performance Pipe# 1056820, Endot Indus#138F PGH1254-1010-36	1" CTS DRISCOPEX 8300 GAS PE 4710 KVXXXX NR 480 ISUN001	10128507
1 1/4"	CTS	DR 11.4	PE 4710 PE 100	Yellow (Outer) and Black (Inner)	-DPE	1.133	1.375	0.121		99 psi	21 lbs	500'	>667 psi	0.08 g/10min	>120,000 psi	>3,500 psi	>2000 hours	1,600 psi	Performance Pipe# 1012113	1 1/4" CTS DRISCOPEX 8100 GAS PE 4710 PE 100 KVXXXX NR 480 ISUN001	10127507
1 1/4"	CTS	DR 11.4	PE 4710	Black (Yellow Stripe)	-DPE	1.133	1.375	0.131		99 psi	21 lbs	500'	>667 psi	0.08 g/10min	>140,000 psi	>3,500 psi	>2000 hours	1,600 psi	Performance Pipe# 1067696, Endot Indus#138F PGH1254-1010-36	1 1/4" CTS DRISCOPEX 8300 GAS PE 4710 KVXXXX NR 480 ISUN001	10127508
1 1/4"	IPS	DR 11	PE 4710 PE 100	Yellow (Outer) and Black (Inner)	-DPE	1.168	1.66	0.151		100 psi	31 lbs	500' 20'	>667 psi	0.08 g/10min	>120,000 psi	>3,500 psi	>2000 hours	1,600 psi	Performance Pipe# 1008893, 1008900	1 1/4" IPS DRISCOPEX 8100 GAS PE 4710 PE 100 KVXXXX NR 480 ISUN001	10120707 10120757
1 1/4"	IPS	DR 11	PE 4710	Black (Yellow Stripe)	-DPE	1.158	1.66	0.151		100 psi	31 lbs	500'	>667 psi	0.08 g/10min	>140,000 psi	>3,500 psi	>2000 hours	1,600 psi	Performance Pipe# 1056882, 1101561, Endot Indus#138F PGH1254-1010-36	1 1/4" IPS DRISCOPEX 8300 GAS PE 4710 KVXXXX NR 480 ISUN001	10120708 10120758
2"	IPS	DR 11	PE 2708	Yellow	MDPE	1.943	2.375	0.216		80 psi	63 lbs	500' 40'	>123 psi	0.18 g/10min	>90,000 psi	2,800 psi	>2,000 hours	1,250 psi	Performance Pipe# 1002284, 10120859	2" IPS DRISCOPEX 6100 GAS PE 2708 KVXXXX NR 480 ISUN001	10120909 10120859
2"	IPS	DR 11	PE 4710	Black (Yellow Stripe)	-DPE	1.913	2.375	0.216		100 psi	64 lbs	500'	>667 psi	0.08 g/10min	>140,000 psi	>3,500 psi	>2000 hours	1,600 psi	Performance Pipe# 1056925, 1056928, Endot Indus#138F PGH1254-1010-36	2" IPS DRISCOPEX 8300 GAS PE 4710 KVXXXX NR 480 ISUN001	10120910 10120860
3"	IPS	DR 11	PE 2708	Yellow	MDPE	2.864	3.5	0.318		80 psi	136 lbs	40'	>123 psi	0.18 g/10min	>90,000 psi	2,800 psi	>2,000 hours	1,250 psi	Performance Pipe# 1002323	3" IPS DRISCOPEX 6100 GAS PE 2708 KVXXXX NR 480 ISUN001	10120861
3"	IPS	DR 11	PE 4710	Black (Yellow Stripe)	-DPE	2.864	3.5	0.318		100 psi	140 lbs	40'	>667 psi	0.08 g/10min	>140,000 psi	>3,500 psi	>2000 hours	1,600 psi	Performance Pipe# 1056961, Endot Indus#138F PGH1254-1010-36	3" IPS DRISCOPEX 8300 GAS PE 4710 KVXXXX NR 480 ISUN001	10120862
4"	IPS	DR 13.5	PE 2708	Yellow	MDPE	3.728	4.5	0.391		76 psi	217 lbs	40'	>123 psi	0.18 g/10min	>90,000 psi	2,800 psi	>2,000 hours	1,250 psi	Performance Pipe# 1002349	4" IPS DRISCOPEX 6100 GAS PE 2708 KVXXXX NR 480 ISUN001	10120863
4"	IPS	DR 13.5	PE 4710	Black (Yellow Stripe)	-DPE	0						40'	>667 psi	0.08 g/10min	>140,000 psi	>3,500 psi	>2000 hours	1,600 psi	Performance Pipe# 1122567, Endot Indus#138F PGH1254-1010-36	4" IPS DRISCOPEX 8300 GAS PE 4710 KVXXXX NR 480 ISUN001	10120865
6"	IPS	DR 13.5	PE 2708	Yellow	MDPE	5.473	6.625	0.536		76 psi	470 lbs	40'	>123 psi	0.18 g/10min	>90,000 psi	2,800 psi	>2,000 hours	1,250 psi	Performance Pipe# 1002367	6" IPS DRISCOPEX 6100 GAS PE 2708 KVXXXX NR 480 ISUN001	10120867
6"	IPS	DR 13.5	PE 4710	Black (Yellow Stripe)	-DPE	5.643	6.625	0.441		82 psi	476 lbs	40'	>667 psi	0.08 g/10min	>140,000 psi	>3,500 psi	>2000 hours	1,600 psi	Performance Pipe# 1057067, Endot Indus#138F PGH1254-1010-36	6" IPS DRISCOPEX 8300 GAS PE 4710 KVXXXX NR 480 ISUN001	10120869
8"	IPS	DR 13.5	PE 2708	Yellow	MDPE	7.347	8.625	0.699		64 psi	688 lbs	40'	>123 psi	0.18 g/10min	>90,000 psi	2,800 psi	>2,000 hours	1,250 psi	Performance Pipe# 1071013	8" IPS DRISCOPEX 6100 GAS PE 2708 KVXXXX NR 480 ISUN001	10120870
8"	IPS	DR 13.5	PE 4710	Black (Yellow Stripe)	-DPE	7.347	8.625	0.699		82 psi	791 lbs	40'	>667 psi	0.08 g/10min	>140,000 psi	>3,500 psi	>2000 hours	1,600 psi	Performance Pipe# 1066888, Endot Indus#138F PGH1254-1010-36	8" IPS DRISCOPEX 8300 GAS PE 4710 KVXXXX NR 480 ISUN001	10120872
12"	IPS	DR 13.5	PE 2708	Yellow	MDPE	10.862	11.75	0.944		64 psi	1504 lbs	40'	>123 psi	0.18 g/10min	>90,000 psi	2,800 psi	>2,000 hours	1,250 psi	Performance Pipe# 1096622	12" IPS DRISCOPEX 6100 GAS PE 2708 KVXXXX NR 480 ISUN001	10120873
12"	IPS	DR 13.5	PE 4710	Black (Yellow Stripe)	-DPE	10.862	11.75	0.944		82 lbs	1540 lbs	40'	>667 psi	0.08 g/10min	>140,000 psi	>3,500 psi	>2000 hours	1,600 psi	Performance Pipe# 1099622	12" IPS DRISCOPEX 8300 GAS PE 4710 KVXXXX NR 480 ISUN001	10120874