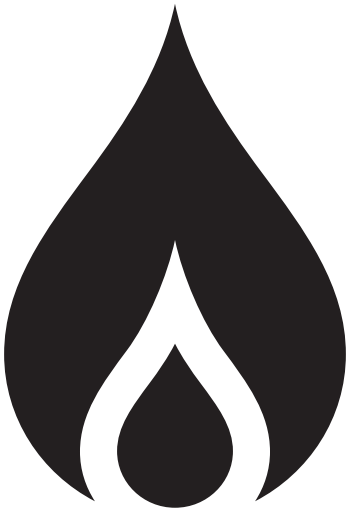
PUGET SOUND ENERGY



# Gas Service Handbook

April 2021

## Commercial/Industrial and Multifamily Developments

## Our commitments to appointments and service

We stand behind our service to you. We constantly track our performance and use your feedback to make improvements. We'll credit your bill if we fail to meet our service guarantees.

Appointment service guarantee

- 24-consecutive-hour non-major storm power outage restoration guarantee
- 120-consecutive-hour power outage restoration guarantee

Conditions apply. For more information, visit **pse.com/guarantees**.

# Table of contents

## Chapter 3
### Requesting natural gas and installation requirements



## Chapter 4
### Meter installation



## Chapter 5
### Pressure gas



## Chapter 6
### Programs offered by Puget Sound Energy

## List of figures

# Preface

## Natural gas—the smart choice

Every year, thousands of consumers call us about switching to natural gas because using natural gas is safe, clean, and efficient. Consider the following benefits:

- **Reliable.** Even during major power outages, gas ranges, water heaters, and some fireplaces are still functional.
- **Safe.** Natural gas is nontoxic, odorless, and colorless in its natural state. **Mercaptan**, a harmless odorant, is added to create a clearly detectable scent.
- **Clean burning, energy efficient, and abundant.** Natural gas is an ideal choice if you care about the environment.

## What this handbook contains

This handbook contains common information on nonresidential service which includes:

- Commercial and industrial buildings
- Apartment complexes
- Multifamily structures
- Glossary of terms used in this handbook

## Construction time frame

The time needed for engineering, scheduling, obtaining permits (including RTU permits) and construction of the work will vary depending upon the complexity of the job and the volume of work requested by PSE customers. Contact PSE as soon as possible to initiate your project and prevent delays.

Installation of gas meters for new construction projects could take two to six months from the date of the service request.

## Codes and jurisdictions

Please remember that when it comes to installing new natural gas equipment and appliances, it is your responsibility to secure all necessary permits and ensure your project complies with all applicable state, county, and local laws and/or ordinances relating to the equipment. Your heating contractor usually obtains permits and facilitates approvals for you, but it is good to confirm this with your contractor.

## How to contact Puget Sound Energy (PSE)

You can obtain further information by contacting us through the following:

- **PSE Energy Advisors at 1-800-562-1482**
  Monday thru Friday, 8 a.m. – 5 p.m.
- **PSE Customer Construction Services (CCS) at 1-888-321-7779**
  Monday thru Friday, 7 a.m. – 5 p.m.
- **PSE.com/CustomerConstruction**

If you have an emergency, service delivery, or general billing question regarding your account, please call:

- **Customer Service at 1-888-225-5773**
  24 hours a day, 7 days a week.

## PSE's service providers

PSE contracts with two partner companies to provide construction and engineering services: Potelco, Inc. and InfraSource Construction LLC. The project manager and the employees who install your service may work for these service providers on PSE's behalf.

# Overview: bringing natural gas to your building site

This checklist notes the steps to bring natural gas to your construction site.

The information in this handbook applies to PSE customers who require new nonresidential natural gas service. If additional information is needed contact:

**Customer Construction Services 1-888-321-7779** or
**pse.com/customerconstruction**

**Commercial/ industrial & multifamily customer responsibilities**

- Call Customer Construction Services (CCS) to determine if a natural gas main is located near your building site.
- Obtain proposals from contractors and decide what kind of natural gas appliances and equipment you will purchase and at what cost. Remember, it is your responsibility to provide the required fuel line from the natural gas meter to your new equipment.
  - » PSE offers different delivery pressure options that depend upon equipment pressure requirements, which may result in special meter set and customer installation requirements (your contractor can help you with this).
- A PSE representative will contact you to confirm project details, such as service length, customer provided conduit, required documentation, etc.
- Complete and return the Gas Service Application(s) and (if applicable) Natural Gas Service Contract.
- Submit required documentation to PSE.
- Provide CCS with an approved complete set of civil site plans (if new construction) and the legal description or tax parcel identification. Include plans for any frontage road improvements.
- Inform CCS whether you will use customer-provided or utility-provided main line trench or conduit for the service lines.
- Ensure that existing underground utilities are located by calling 811 before you dig.
- After your fuel line has been inspected and approved and your new natural gas equipment is installed, please coordinate with your project manager so that PSE may unlock the gas service valve, turn on the meter, and start your appliances. Only authorized PSE personnel can remove the gas service lock and operate the valve.
- PSE may also need to inspect your sewer line to ensure the new gas line was not inadvertently installed through the sewer line.

| | |
|---|---|
| **PSE's responsibilities** | • Determine and inform you of gas availability.<br>• Perform an economic feasibility study and determine costs, if applicable.<br>• Notify you of:<br>» Right-of-way or easement requirements.<br>» Additional permit requirements related to natural gas service/main line construction (fisheries, etc.), if necessary.<br>• Install the natural gas main, service, and meter set assembly.<br>• Turn on natural gas meter(s). |
| **Scheduling** | • Scheduling will be based on a mutually agreed-upon time frame that is consistent with your needs, permit requirements, and design criteria. |

## Revised sections

This 2021 Gas Service Handbook contains the following changes:

- Updated the horizontal separation between gas and any other utility in a joint utility trench to always be a 12-inch minimum of separation.

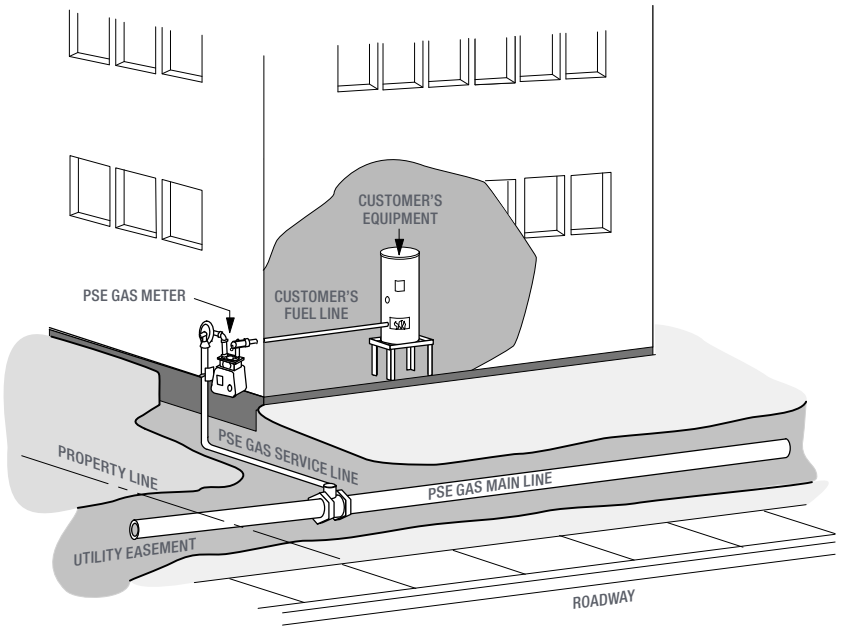
# Chapter 1

## Steps to a smooth installation

### The basics: understanding the installation

Before PSE installs your natural gas facilities, it is important to understand the overall components of an installation. You are responsible for your natural gas fuel line and appliance/equipment purchase and hookup. PSE is responsible for the installation of the natural gas main, service, and meter (see Figure 1).

**Figure 1** Example of typical gas system components




### Getting started with the installation process

**Is there a gas main located near your site?**

To determine if a natural gas main is located near your building site, call Customer Construction Services (CCS) at **1-888-321-7779** or go to **pse.com/customerconstruction** to contact us online.

If there is no gas main located near your building site, PSE will need to review and estimate the feasibility of extending gas facilities to you. If PSE determines that extending a gas main to you is needed, main extension charges may apply

**Temporary service**

Temporary service is available to customers during construction. Discuss your need for this service with the PSE project manager.

**NOTE:** Temporary services shall meet PSE installation standards.

**Requirements for frontage road improvements**

If the permitting authority requires frontage improvements in conjunction with your development, plans and profiles for these improvements shall be included with the application for service. Costs associated with relocation of any PSE facilities, in conjunction with frontage improvements, shall be borne by the developer. Some examples of improvements that could impact PSE facilities are road widening, curb/gutter, storm drainage, water, sewer, guardrail, retaining/sound walls, culverts, driveways, etc.

Please discuss the need for municipally required frontage road improvements with the PSE project manager.

**What natural gas equipment will be installed in your new facility?**

Please inform PSE of your estimated natural gas load and pressure requirements. Evaluate your total natural gas load by adding up the Btu inputs for all equipment being installed (immediate and future use) and tell us the desired pressure delivery at the point of connection to the meter.

Remember, besides space and water heating, natural gas can be used for clothes drying, cooking, pool and spa heating, barbecues, fireplaces, patio heaters, and generators. Some pieces of equipment (such as on-demand (tankless) water heaters, natural-gas-fueled standby generators, boilers, and process equipment) require higher gas delivery pressure or increased gas load. If you are installing this sort of equipment, inform PSE so the proper meter and service piping can be installed.

**Customer fuel line**

The fuel line is the gas piping (owned and maintained by the customer) between the meter(s) and the customer's equipment/appliances.

**NOTE:** It is your responsibility to ensure that a mechanical permit or a gas piping permit is obtained from the appropriate jurisdiction and an inspection of the completed fuel line and equipment installation is performed and the job is approved. For more information go to **pse.com/permitsandinspections**.

**Customer earthquake activated shutoff valves**

Local regulations may require that you install earthquake activated shutoff valves. These valves must be installed downstream from the PSE meter set outlet. No attachments or connections are allowed on PSE facilities.

Once installed, the earthquake activated shutoff valve must not obstruct the operation or serviceability of PSE's piping, gas service shutoff valve, gas meter, or gas pressure regulating equipment.

### Customer responsibilities: underground fuel line piping

Fuel gas piping between your gas meter and your natural gas appliances or equipment belongs to you. If any of this piping runs underground, it needs to be maintained. An underground fuel line might be installed to serve a hot tub, pool, shop, other building, or a natural gas fueled standby generator.

**NOTE:** It is your responsibility to maintain underground fuel line piping.

If your buried piping is not maintained, it may leak or corrode. Be sure to periodically inspect exposed pipes and the area around buried pipes for leaks. Signs of leaks include dead vegetation where you wouldn't expect it, gas bubbling up through a puddle, and the smell of sulfur or rotten eggs. If the piping is metallic, inspect for corrosion. Make sure repairs are done immediately to correct any unsafe condition. A corrosion control company or a plumbing or heating contractor can help inspect it and repair it.

**CAUTION:** When excavating near buried gas piping, call 811 two business days prior to digging.

**WARNING:** If you notice any signs of a natural gas leak, call PSE 24 hours a day at **1-888-225-5773** and we will check it for you at no charge. For emergencies, call 911.

## Know what's below: Call 811 before you dig

811 Know what's **below.** **Call** before you dig.

Before excavating, Washington law requires you to call 811 to locate underground utility lines. Doing so will enable you to avoid potential injury, fines, costly repair of PSE utility facilities, and electric or natural gas service disruptions. Call 811 two full business days prior to digging. When you call, an operator will record information about your dig and notify affected utility companies, including PSE. (For example, call Wednesday to dig on Monday.) PSE locates and marks its own lines for free, but privately owned utility lines must be located by a separate vendor, typically for a fee.

The locate service uses the following color codes to identify underground utilities:

| Color | Utility |
|---|---|
| White | Proposed excavation area |
| Pink | Temporary survey markings |
| Red | Electric power lines, cables, conduit, and lighting cables |
| Yellow | Natural gas, oil, steam, petroleum, or gaseous materials |
| Orange | Communication, alarm or signal lines, cables, or conduit |
| Blue | Potable water |
| Purple | Reclaimed water, irrigation, and slurry lines |
| Green | Sewers and drain lines |

**NOTE:** Use white paint to mark the area within which you want utility locations.

Once all utilities are located:

- Do not dig with machinery within 24 inches of the locate marks.
- Hand dig to expose all utilities to be crossed.

## Factors that can delay installation

No one wants to have their project delayed. We have identified the following circumstances as common impediments to installing service lines:

- Debris in the work area or along the route of the proposed service extension.
- Trenches and conduit are at improper depth.
- Conduit used is incorrect size or type, or is installed improperly.
- Building is not framed at the meter location for the meter set assembly installation.
- Building is not efficiently sealed near the meter location to prevent gas from entering the building through wall openings.
- Requested meter location fails to meet minimum clearances (see Chapter 4, “Selecting a gas meter location”).
- The foundation is not sufficiently backfilled to support the meter or service piping.
- Alterations that must be made to meet local codes are not completed.
- Fuel line installed without an approved permit and/or not pressure tested.
- Concrete pad required for industrial metering either not provided or installed incorrectly.
- Scaffolding is erected in meter location.

PSE will post a notice at the building site explaining why we could not install the service. It will be your responsibility to call us and reschedule the installation.

## Job site safety requirements

PSE asks that customers follow these safety requirements:

- Buildings must be framed at the meter location before we can set a gas meter.
- PSE will not install meter set assemblies against foundations only.
- A meter may be installed, but gas will not be turned on until your fuel line has been pressure tested and an approved permit has been obtained from the local administrative authority.
- Our crew will ask you to extinguish any smoking material or open flame that presents a danger to the operation prior to a line purge.
- Noise from compressor and gas purging operations can exceed 90 dBA. Hearing protection is recommended when these operations are being performed.

**WARNING:** In case of a service line or main break, call PSE 24 hours a day at **1-888-225-5773** and we will check it for you. For emergencies, call 911.

# Chapter 2

## Codes and property issues

### Relevant inspections and local codes

This handbook provides most of the information and requirements needed to bring natural gas to your building site. However, it does not include all possible standards and specifications required by PSE and state, federal, or local codes. If you need additional information, contact your Customer Construction Services (CCS) representative, your local government agency, or state authority.

This handbook shall not be interpreted to conflict with the regulations of the state of Washington or other regulatory bodies having jurisdiction. PSE's requirements may be more stringent. Local codes and requirements related to the planned work should be addressed before any construction begins.

### Easements and public right-of-way issues

As part of the installation process, PSE will:

- Apply for any necessary easements prior to installation, using the customer's information.
- Apply for necessary permits for the portion of the work done in the public right-of-way.
- Request underground utility locations in the public right-of-way.
- Dig a trench on the public right-of-way.
- Backfill and be responsible for that portion of the trench on the public right-of-way.
- If PSE is digging the trench on private property, PSE will provide and install the bedding material to protect the pipe.

# Chapter 3

## Requesting natural gas and installation requirements

### Ordering gas service

To order individual service lines, call our Customer Construction Services (CCS) representative at **1-888-321-7779** to discuss the project details. They will provide the proper application(s) or direct you to **pse.com/customerconstruction**. You'll want to have the following information handy:

- Service address, including suite number.
- Desired meter location.
- Natural gas delivery pressure required at meter connection point.
- Project coordinator and project ownership contact information.

### Bringing the natural gas main to a new commercial, industrial, or multifamily facility

The following three steps describe what PSE requires to extend a new natural gas main to a commercial, industrial, or multifamily facility:

**Step 1: Application process**

Complete and return the appropriate Gas Service Application (provided by a PSE representative or available at **pse.com/customerconstruction**) and provide electronic files of the plans in a format specified by the PSE representative. Include lot lines and driveways, and omit extraneous information. Also include plans for any frontage road improvements with your application as this may delay the project if it is not received with your application.

**Step 2: Design process**

PSE will review your application package and assign a project manager to the job. The project manager will facilitate the design for gas main, gas service, and metering to serve your facility and obtain appropriate easements and permits. This process requires a minimum of 6 to 8 weeks.

**Step 3: Construction scheduling process**

When the design and permitting process is complete, your Project Manager will coordinate your construction schedule needs.

## Customer-provided trenching

**General requirements**

You may excavate the portion of the mainline trench and/or the service line trench on your own property. Customers are not authorized to excavate in the public right-of-way, so PSE will provide any trench that is not located on private property.

If you provide your own trench, you are responsible for meeting the requirements outlined in PSE's Gas and Electric Underground Service Installation Requirements (Form 3061) and Joint Utility Mainline Trench Excavation Requirements (Form 2809).

The applicable form is provided by PSE and also can be found at: **pse.com/customerconstruction.**

**Gas service line trench excavation requirements**

If you are providing the trench for the gas service line, you are responsible for the following requirements. For trench excavation details and additional requirements, see **Gas and Electric Underground Service Installation Requirements** (Form 3061).

- Determine a trench route and meter location and obtain approval for both from PSE.
- Before excavating, call 811 to avoid potential injury, fines, costly repair of PSE utility facilities, and electric or natural gas service disruptions. Call 811 two business days prior to digging for a free service that will mark the location of underground lines. It's free and it's the law.

  **NOTE:** This utility locate is required even if you think you know there are no other utilities where you intend to dig.
- Dig the gas service trench line deep enough to allow for PSE's required minimum depth of cover over the gas service line at final grade. A minimum of 24 inches of cover is required for commercial/industrial service lines that are 1-1/4-inch or larger pipe. In Snow Country, a minimum depth of cover of 24 inches is required for any service line installation.
- Provide sand meeting PSE standards for protection of direct-buried gas service pipe. Sand meeting PSE specification is commonly referred to as "builder's sand" or "building sand" at supplier locations within the PSE service territory. Sand needs to be on-site at the time PSE crews arrive to install the gas line. You must also provide a suitable means of transporting the sand and placing it either beside or in the trench.
- If the trench is to be shared with other utilities, a lateral separation of 12 inches is required between the gas service and power and other utilities.

  **NOTE:** Utilities shall not be stacked in the gas line.
- Backfill the trench to PSE's standards immediately after PSE installs the gas pipe. Make sure the PSE crew or representative is still on-site to inspect the installation, pressure test, and turn on the gas meter.

## Customer-installed gas service conduit

**General requirements**

If you dig your own trench for the gas service line and it is not practical to leave the trench open over several days, you can install gas service conduit and backfill the trench, leaving the work pits open (Figure 2). This allows PSE to insert the gas service pipe into the conduit on the arranged schedule date with minimal disruptions to you.

**Gas service conduit installation requirements**

If you are installing your own natural gas service conduit in a joint trench or a natural gas only trench, you are responsible for the following requirements. For trench details and additional requirements, see **Gas and Electric Underground Service Installation Requirements** (Form 3061). For gas service conduit requirements, see **Gas Meter Clearances and Service Installation Requirements** (Form 3885).

- Determine a trench route and meter location and obtain approval for both from PSE.
- Before excavating, Washington law requires you to call 811 to locate underground utility lines. Doing so will enable you to avoid potential injury, fines, costly repair of PSE utility facilities, and electric or natural gas service disruptions. Call 811 two full business days prior to digging. When you call, an operator will record information about your dig and notify affected utility companies, including PSE. (For example, call Wednesday to dig on Monday.) PSE locates and marks its own lines for free, but privately owned utility lines must be located by a separate vendor, typically for a fee.
- If the trench is to be shared with other utilities, a lateral separation of 12 inches is required between the gas conduit and power, and 12 inches between the gas conduit and phone, cable, and other utilities.

  **NOTE:** Utilities shall not be stacked in the gas line.
- The top of the conduit must be buried deep enough to allow for PSE's required minimum depth of cover over the gas service line at final grade. A minimum of 24 inches of cover is required for commercial/industrial service lines that are 1-1/4-inch or larger pipe. In Snow Country, a minimum depth of cover of 24 inches is required for any service line installation.
- Use yellow or white Schedule 40 PVC for a gas service. You must use conduit that has a smooth wall and is not perforated. The markings on the conduit shall not contain any reference to any other utilities (such as water or sewer). See Table 1 for proper sizing requirements.
- It is preferable that directional changes in the service route be at 90 degrees. It is recommended that the combined degrees of bend do not exceed 180 degrees. See Table 1 for minimum bending radius for conduit turns.

**Table 1** Proper conduit sizing and bending requirements of plastic gas service pipe

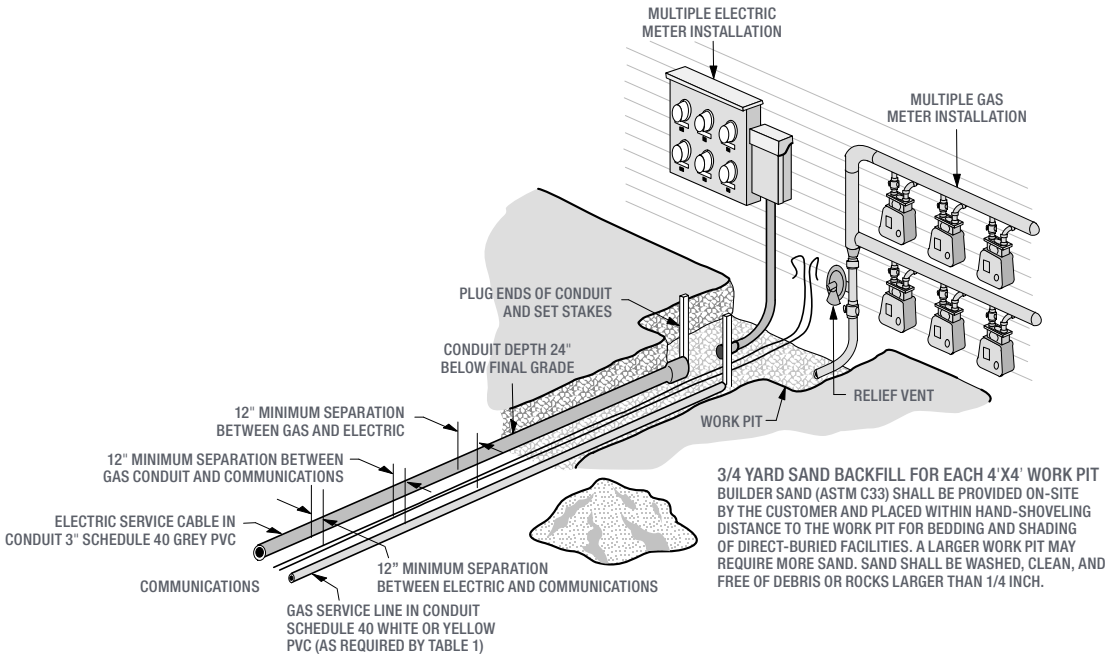
| Gas Service Size (in.) | Min. Bending Radius (in.) | Min. Conduit Diameter (in.) |
|---|---|---|
| 1-1/4 | 48 | 3 |
| 2 | 60 | 4 |
| 4 | 113 | 6 |

**Gas service conduit installation requirements (cont.)**

- If the conduit length is greater than 100 feet, provide a pull rope inside the conduit for installing the gas pipe (minimum 3/8-inch diameter rope).
- Provide adequate “builder’s sand” meeting PSE standards for protection of the direct-buried portion of the gas pipe at the work pits. Sand meeting PSE specification is commonly referred to as “builder’s sand” or “building sand” at supplier locations within the PSE service territory. Builders sand should meet the requirements of ASTM C33. Sand needs to be on-site at the time PSE crews arrive to install the gas line.
- PVC conduit should extend to the work pits, but stop 4 feet shy of the building wall and 4 feet shy of the gas main stub at the front property line.
- Dig to expose 18 to 24 inches of the gas stub or the gas stub sleeve at the front property line.
- The trench should be left open at both ends for PSE to install the service. A 4-foot by 4-foot work pit opening is recommended (Figure 2).
- Conduit ends should be sealed shut and clearly marked using a piece of conduit or 2-inch by 4-inch stake marked “Gas.”
- Use soil backfill that is free from construction debris, sharp rocks, glass, frozen clods, and rocks larger than 10 inches in diameter.

**Figure 2***

Typical commercial/industrial/multifamily joint utility service trench with customer-installed gas service conduit



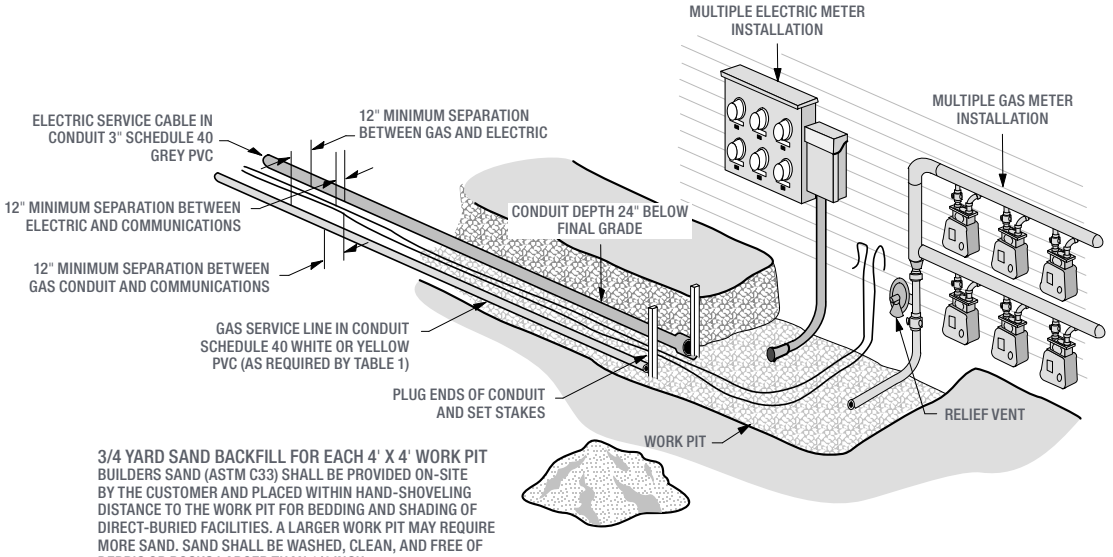




*Figure 2 illustrates suggested meter layouts. Upon project manager approval, the locations of the gas and electric meters may be reversed to prevent underground crossovers of electric and gas lines.

# Chapter 4

## Meter installation

It is critical to establish an acceptable meter location to receive natural gas service. We ask you to mark the gas meter location with the gold Gas Meter Location sticker (Form 1461).

### Selecting a gas meter location

Safe installation and operation of your gas service equipment is PSE's top priority. An approved natural gas meter location is one that is in accordance with regulatory requirements and meets PSE's construction standards. A good meter location is one where the meter is:

- Easy to read and inspect.
- Accessible for turn-on, shutoff, maintenance, change, or removal.
- Protected against electric sparks, excessive temperatures, flames, and mechanical damage.
- Adequately ventilated.

**Required location**

PSE requires that you locate the meter outside, alongside the building receiving gas service, and close to the source of gas supply.

**NOTE:** Inside and remote meter locations are used only with PSE's approval.

**Unacceptable meter locations**

The following meter locations present access problems or could expose the meter to accidental damage. Please avoid the following locations:

- Public passageways or fire escape routes.
- Under a stairway or walkway.
- On building rooftops.
- Unventilated, confined, or inaccessible places.
- Under openable windows (because of regulator relief).
- Directly adjacent to vehicular driveways, delivery doors, or high traffic areas where the meter may be subjected to vehicular damage. (Guard posts may be required if such locations are unavoidable. See Gas Meter Clearances and Service Installation Requirements (Form 3885).)

**NOTE:** Talk to your local PSE project manager for protection that may be required for your meter from flooding, snow, or ice. For service installations in Snow Country, see Gas Meter Protection from Snow and Ice in Snow Country (Form 3736).

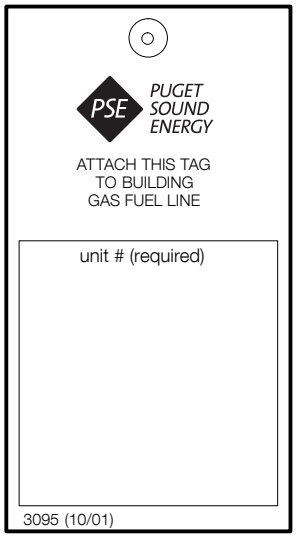
## Minimum meter clearance requirements

Minimum clearances are measured from the relief vent, the relief vent stack, or the gas meter set assembly. The relief vent or vent stack exhausts natural gas safely into the atmosphere in the event that the regulator on the meter fails to work properly. The diagrams and the measurements provided in Gas Meter Clearances and Service Installation Requirements (Form 3885), show the required minimum distances between building features and the relief vent or meter set assembly.

## Marking fuel lines

On multifamily structures, the builder/plumbing contractor must mark the fuel lines with their corresponding unit numbers (use Form 3095, as shown in Figure 3). PSE crews will mark each meter with the corresponding unit number. Call your CCS representative for forms.

**Figure 3** Yellow Unit Number Tag (Form 3095)




## Electrical grounding to meter not permitted

Natural gas risers, up to and including the meter set and service tee, shall not be used as a grounding electrode. An electrical ground connection to a natural gas riser could result in a hazardous condition and can compromise PSE's Corrosion Protection System.

## Meter set assembly selection

To begin the meter set selection process, fill out the Customer Equipment Worksheet, provided by the project manager. The information on the worksheet helps the project manager to determine the maximum and minimum load and delivery pressure of the natural gas service.

Meter set assembly selection is determined by the customer's immediate needs. This optimizes meter accuracy and minimizes installation costs.

However, if a customer plans to add load in the near future and if the meter set assembly sized for the future load will adequately measure the present load, PSE will specify a meter set assembly based on the future load.

The most common meter set assemblies are the diaphragm and rotary (Figures 4 and 5). If your commercial structure has multiple tenants, you may require a manifold meter set (Figure 6). Your individual installation may be different.

**Figure 4** Typical commercial/industrial diaphragm-type gas meter set assemblies

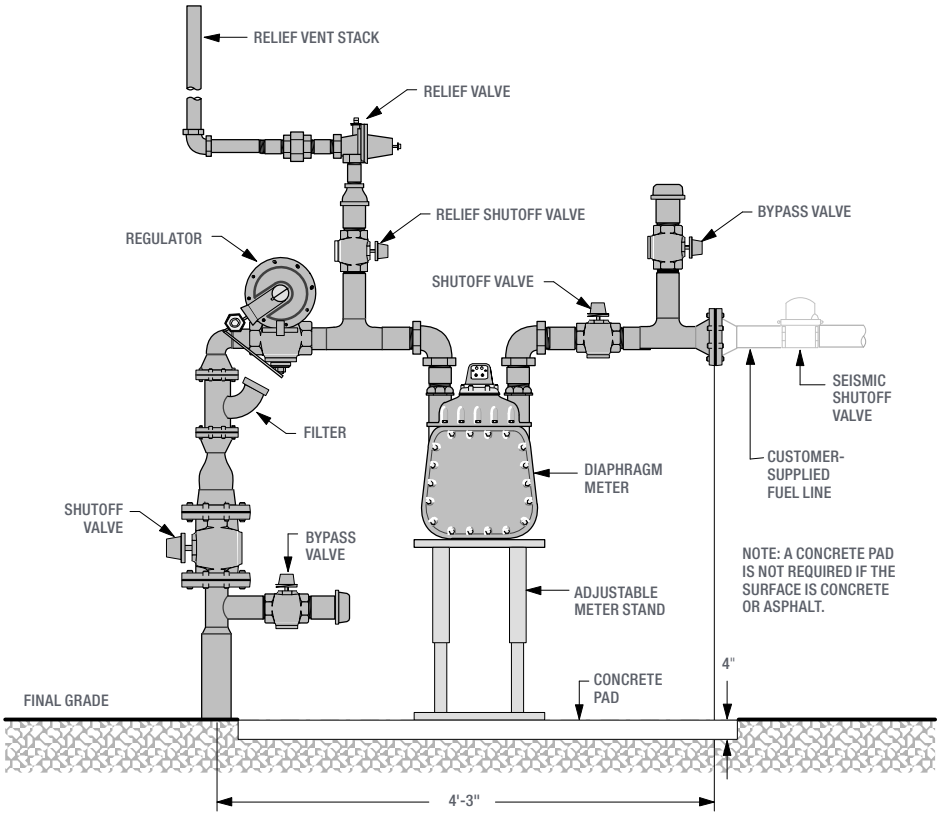


**Figure 5** Typical commercial/industrial rotary-type gas meter set assemblies

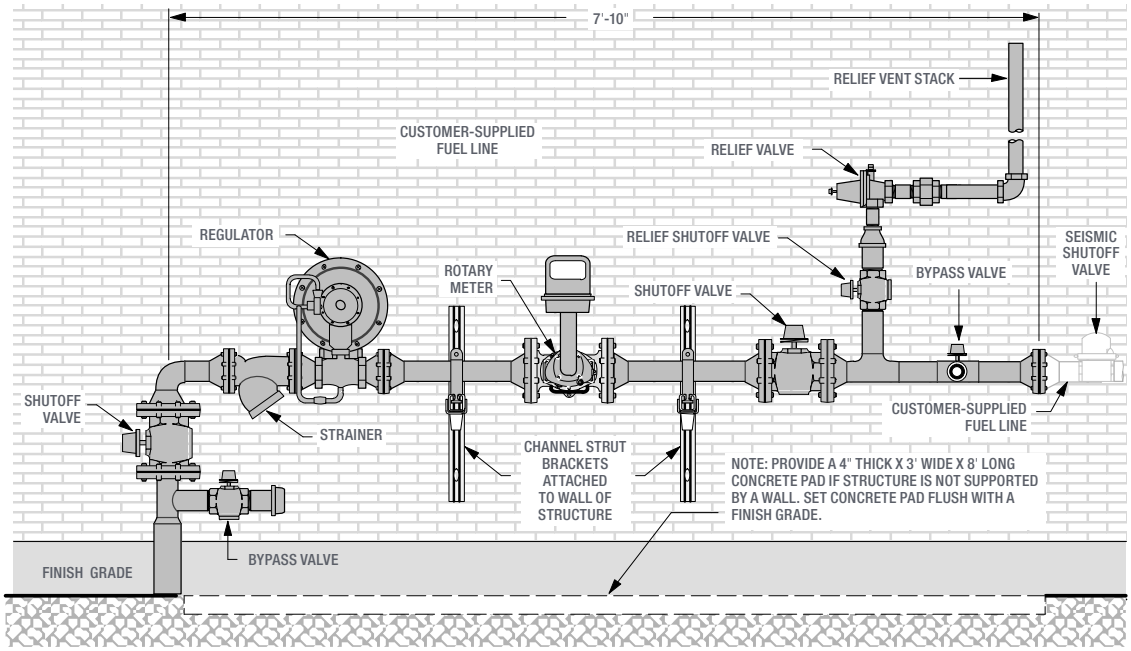
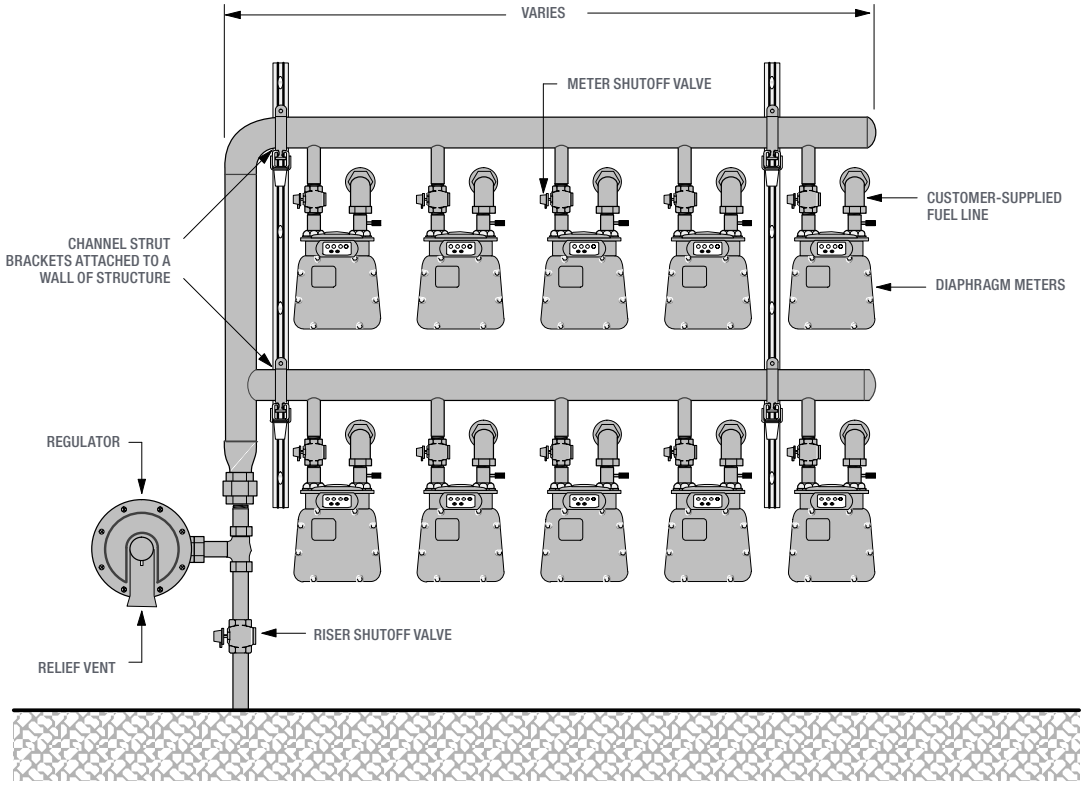



**Figure 6** Components of a typical 250 manifold meter set assembly for a commercial structure with multiple tenants or multifamily



## Meter installation

The service line, riser, and gas meter can be installed once the customer has determined and marked the gas meter location with Form 1461, the gold Gas Meter Location sticker, or has stubbed out the fuel line. See previous section for guidance in selecting the appropriate meter location.

When PSE installs the gas meter, the following components will be installed:

- An orange WARNING tag will be attached above the locked riser shutoff valve (see Figure 7).
- The riser shutoff valve will be locked in the CLOSED (off) position. Removal of this lock or operation of this valve by unauthorized persons may damage this equipment and is prohibited. See Figures 8 and 9.
- The meter outlet valve will be in the CLOSED (off) position (depending on gas load, the meter configuration may change). See Figures 8 and 9.

**Figure 7** Orange WARNING tag


**Figure 8** Typical 250 meter set assembly installation

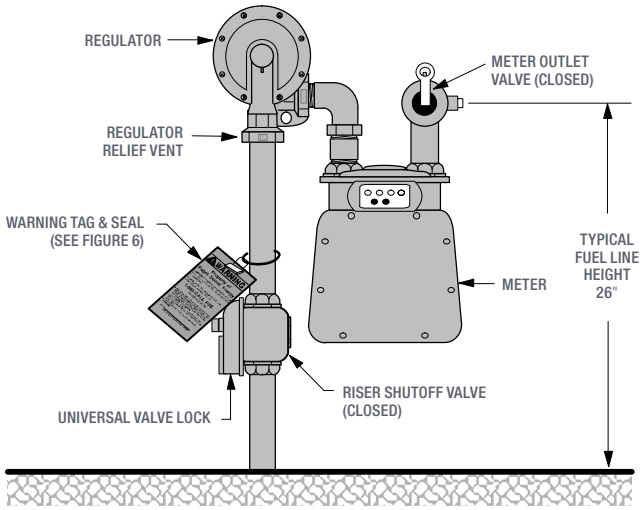
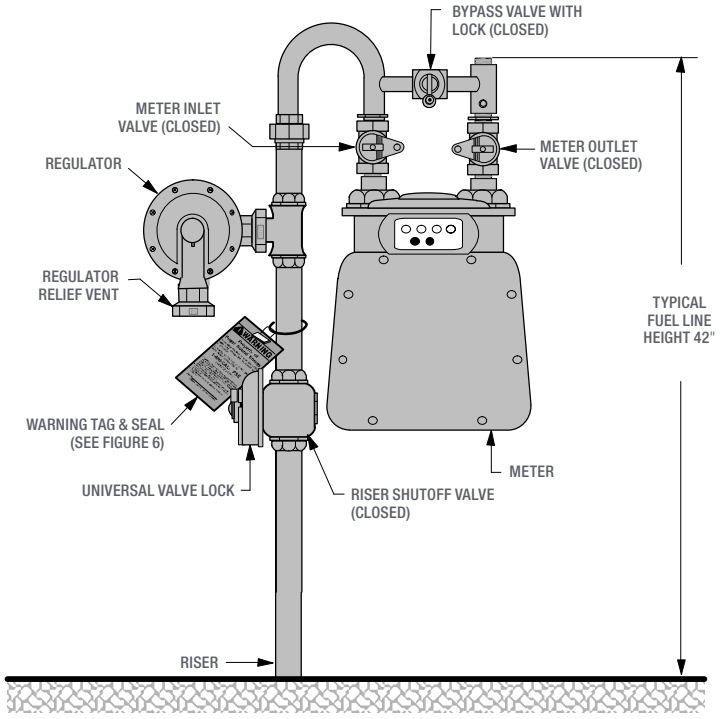


**Figure 9** Typical 425 through 1000 gas meter set assembly




## Meter turn on

Before the gas meter can be turned on, the fuel line shall be inspected and approved (permit signed and approved by the local administrative authority).

To arrange for the gas meter turn-on, please call PSE at **1-888-225-5773**. Call by 3:00 p.m. for same day gas meter turn-on for up to two meters. For facilities with more than two meters, call PSE to schedule meter turn-on.

**NOTE:** This applies on regular business days, subject to delays associated with major storms, earthquakes, supply interruptions, or other adverse events beyond PSE's control.

PSE will turn on the gas meter and verify operation of new gas appliances.

# Chapter 5

## Pressure gas

### What is “pressure gas”?

The standard delivery pressure for PSE is 6 inches of water column (w.c.), which is approximately 1/4 pound per square inch (psi). This is the lowest delivery pressure provided by PSE. Anything higher than 6-inch w.c. is considered “pressure gas” or “pressure delivery.”

In addition to 6-inch w.c., the most common pressures used by multifamily, commercial, and industrial customers are 2 psi and 5 psi. (Higher pressures are also available by special request based on application.)

**NOTE:** Pressures other than those listed above require special review and approval by PSE’s Industrial Meter Operations project manager and Gas System Integrity engineer.

If you desire pressure delivery, discuss the requirements with your Customer Construction Services (CCS) representative.

### Requirements for pressure delivery

For your safety and to maintain system integrity, the following basic requirements must be met before PSE can provide you with pressure delivery:

- PSE must be assured that providing such service is not detrimental to the Company or its other customers.
- Your use of such service is or will be in accordance with PSE’s rates, tariffs, and standards.

See Customer Requirements – Above 6-Inch w.c. Pressure Gas Delivery (Form 3142) to determine the specific requirements for the delivery pressure you are requesting.

### Upgrading facilities to accommodate pressure delivery

Occasionally, existing PSE gas facilities (such as mains, services, or meter set assemblies) are not adequate to meet the new or additional pressure delivery requirements of multifamily, commercial, or industrial customers. Existing customer owned fuel line and other equipment may also be undersized if load is being added.

There are various solutions to this problem. PSE may choose to:

- Increase the size or pressure of the gas mains.
- Increase the size of the service piping.
- Increase the metering capacity of the existing meter set assembly.

Usually, the customer bears the cost for such upgrades. Any necessary changes to your fuel line are your responsibility.

# Chapter 6

## Programs offered by Puget Sound Energy

### Energy efficiency programs

PSE offers an array of energy efficiency programs to help reduce your energy consumption and save you money.

These programs range from rebates and grants to energy use calculators that keep track of your monthly energy usage. The power to conserve and save is in your hands. Ask the Energy Advisors about the programs that are available for your project.

Call an Energy Advisor at **1-800-562-1482**, Monday thru Friday, 8 a.m.–5 p.m., or visit our web site at **pse.com**.

### Contractor Alliance Network

**Puts you in touch with quality equipment and services**

These days, consumers and business owners have many energy-related choices for their homes or businesses. The questions are endless, from choosing heating and cooling systems to insulation, roofing, fireplaces, heat pumps, windows, or water heaters.

PSE created the Contractor Alliance Network to assist you in the decision-making process of choosing energy-efficient equipment and to help you in selecting pre-screened independent contractors.

The Contractor Alliance Network has pre-screened independent certified specialists who share PSE's standard of excellence and superior service to help you make safe, dependable and energy-efficient choices to ensure that your improvement projects are successful. Member contractors are:

- Licensed, bonded and insured;
- Knowledgeable on current codes, high-efficiency equipment, and product applications; and
- Continually trained and educated on the latest technology.

For more information about the Contractor Alliance Network, contact an Energy Advisor at **1-800-562-1482**, Monday thru Friday, 8 a.m.–5 p.m., or to request a referral, visit **pse.com/CAN**.

### Gas heating system inspection for your furnace

Puget Sound Energy recommends regular inspection and maintenance of your natural gas heating equipment. Many manufacturers recommend a thorough service of your natural gas equipment every year.

With routine inspections, your natural gas equipment is more likely to operate safely and efficiently year-round. For more details, contact an Energy Advisor at **1-800-562-1482**.

# Glossary

**A9 valve** – See Meter outlet valve.

**Appliance shutoff valve** – A valve readily accessible and operable by the customer, located on the fuel line at or very near the appliance.

- **Open position** – Valve handle is parallel with the line.
- **Closed position** – Valve is crosswise or at a right angle to the fuel line.

**Approved** – Acceptable to the authority having jurisdiction.

**ASTM C33** – This specification defines PSE requirements for grading and quality of fine and course aggregate used in gas pipeline installations.

**Backfill** – Earth or other material used to refill a trench. Also, the act of refilling a trench.

**British thermal unit (Btu)** – Quantity of heat necessary to raise one pound of water one degree Fahrenheit at sea level pressure. The heating quality of the gas.

**Carbon dioxide ($CO_2$)** – A gas which is a product of combustion, resulting when carbon unites with sufficient oxygen to produce complete combustion. When natural gas burns completely, it produces carbon dioxide and water vapor, as well as heat.

**Carbon monoxide (CO)** – A poisonous combustible gas produced by the incomplete combustion of carbon or reduction of carbon dioxide.

**Combustion** – The process of burning, requiring three components: fuel, air, and ignition temperature.

- **Complete combustion** – Results in carbon dioxide and water vapor; harmless.
- **Incomplete combustion** – Can produce carbon monoxide and aldehydes; potentially hazardous.

**Conduit** – A buried pipe in which the gas service line may be inserted. Conduit helps protect the gas line from damage and allows gas pipe to be replaced without excavating. Conduit is typically installed for road crossings and for service line installations.

**Department of Transportation (DOT)** – The federal regulatory agency that governs gas pipeline safety, transportation of hazardous materials, and administers regulations related to highway rights-of-way.

**Easement** – A document entitling its holder the right to use a specified parcel of property. Easements give PSE the right to install underground natural gas facilities on private property.

**Emergency** – A situation in which there is an immediate threat to life or property. In the case of natural gas, an emergency is an immediate threat and/or the uncontrolled escape of gas.

**Excess flow valve** – An excess flow valve (sometimes called an EFV) is a device that is installed in a natural gas piping system that is used to limit the amount of natural gas that travels through the pipe in the event the pipe is severed downstream of the EFV.

**Flag lot** – A parcel of property that does not connect directly to a public right-of-way (street) except for a narrow strip of land that touches the public street and is used to access the property.

**Fuel line** – Gas piping from the meter to the appliance that is owned and maintained by the customer.

**Ignition temperature of natural gas** – Natural gas ignites at about 1,100 degrees Fahrenheit.

**Ignitor** – Any device used to light gas. A spark ignitor uses an electric spark generated across an air gap for this purpose.

**Joint utility trench** – Two or more utilities occupying a common trench.

**Landlocked lot** – A parcel of property that does not connect directly to a public right-of-way (street) and must have an easement to cross another parcel of land to access the property.

**Load (Gas)** – The connected load is calculated by totaling the Btu rating for all gas appliances connected to the meter.

**Main (Gas)** – The distribution line (or pipe) that serves as a common source of supply for more than one service line. Owned and maintained by PSE.

**Mercaptan** – An organic chemical odorant added to natural gas to give it a distinctive smell to alert customers in the case of leaks. Natural gas is odorless in its natural state. Mercaptan smells like sulphur or rotten eggs.

**Meter** – A device for measuring and recording the volume of gas used.

**Meter outlet valve** – A positive shutoff valve installed on most residential and small commercial meter set assemblies. The valve is located on the outlet of the meter and is connected to the fuel line.

**Methane gas ($CH_4$)** – A hydrocarbon gas that is the main component of natural gas (about 96 percent). It is colorless, odorless, and flammable and the same substance produced in some swamps, sewers, and landfills.

**MSA** – Meter set assembly.

**Natural gas** – A naturally occurring mixture of flammable hydrocarbon and nonhydrocarbon gases found in porous geologic formations beneath the earth's surface; often in association with petroleum. It's supplied as a fuel for millions of applications worldwide. The chemical composition is approximately 96 percent methane, 2 percent ethane, and 2 percent inert gases.

**Propane gas ($C_3H_8$)** – A colorless flammable gas found in petroleum and natural gas. It is odorized to make it easy to detect (smells sort of like garlic), heavier than air (specific gravity of 1.5), and has 2544 Btu per cubic foot. (Natural gas contains about 1060 Btu per cubic foot.)

**Rate** – Method of charging for energy usage (for therms used).

**Regulator (also Pressure regulator)** – A device to lower the gas pressure. District regulators lower the pressure in mains, meter regulators lower pressure at the meter, and appliance regulators lower pressure at the appliance.

**Remote Telemetry Unit (RTU)** – A device that controls processes on the gas system and acquires and transfers data to a master system.

**Right-of-way** – A collection of easements and/or permits allowing the holder to specific limited use of a parcel(s) of property (such as running a gas main through private properties or a dedicated area for use by the public for travel and utilities). This term refers to the land itself, not the right of passage over it (see also: Easement).

**Riser** – The portion of the service that terminates aboveground at the structure to support the meter.

**Riser shutoff valve** – A positive shutoff valve on all metering and/or service regulating facilities. The valve is located immediately upstream (on the service line side) of the meter set assembly.

- **OPEN position** – Valve handle is parallel with the line.
- **CLOSED position** – Valve is crosswise or at a right angle to the fuel line.

**Service** – The pipe which carries gas from the main to the customer's meter.

**Service shutoff valve** – A convenient shutoff located outside of the customer's building. If the meter is located outside of the building, the riser shutoff valve may also serve as the service shutoff valve. In some commercial service applications this valve may be buried and located in the right-of-way at the customer's property line.

**Snow Country** – Geographical locations in Cle Elum and west of Cle Elum in upper Kittitas County.

**Stub** – A unit of property where gas pipe extends from the main in the right-of-way to the property line; or, if the main is in a 10-foot utility easement for joint trench construction or in any easement of defined dimensions, the stub is that portion of the service from the main to the field side edge of the easement; or, if the main is in an easement that covers the entire parcel or has no defined dimensions, the stub is the first 2 feet of the service.

**Temporary service** – A service for the purpose of temporary heat during construction.

**Therm** – A therm of gas containing 100,000 Btu of energy and is roughly equivalent to 100 cubic feet of gas.

**Trench** – An excavated ditch of specific depth and width into which underground utility lines are installed.

**Utility** – Includes all wet and dry public or private utilities, including, but not limited to electric, TV, cable, water/sewer, sprinkler system pipe, and building drains.

**Washington Utilities and Transportation Commission (WUTC**) – The WUTC protects consumers by ensuring that utility and transportation services are fairly priced, available, reliable and safe.

PSE may petition the Commission to add, change, or delete rules and increase or change rates. Customers may request the Commission to resolve a dispute with or a complaint against the Company.

## Notes

## Notes

## Notes

## Notes

PUGET SOUND ENERGY