



Appendix Q - SaskEnergy Service Guide





Your Guide To Natural Gas Service



SaskEnergy . . working with you to meet your needs

NATURAL GAS SERVICE GUIDE

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At SaskEnergy we work closely with you to understand your energy needs and provide you with natural gas solutions. We deliver the benefits of safe, convenient and environmentally friendly natural gas to more than 336,000 residential, farm, commercial and industrial customers throughout Saskatchewan. We purchase natural gas from independent suppliers and transport it through our 66,000 km distribution system to 94% of Saskatchewan communities.

As well as being safe, convenient, reliable and clean burning, natural gas is the lowest cost fuel to serve your home and business energy needs. Your local SaskEnergy Business Representative looks forward to working with you throughout your project -- from planning through delivery. Meeting your needs with the benefits of natural gas is our priority. Please get in touch with us early in your planning process so that we can work together on a successful project. This guide is designed to assist builders, contractors and developers in co-ordinating natural gas service. If you or your customers have any questions about SaskEnergy services, please call us toll-free at 1-800-567-8899.

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SECTION 1- GENERAL

1.1 – Definitions

BTU – abbreviation for British Thermal Unit. An Imperial measurement of energy.

Clearances – minimum distances SaskEnergy facilities must maintain from other utilities, obstructions, vents, intakes, or other structures as prescribed by various codes.

Customer Owned Supply Line – customer owned piping downstream of the Point of Delivery.

Delivery Pressure – the natural gas pressure, in psig or kPag that is supplied to the customer.

kPag – abbreviation for kiloPascals (gauge) – A metric unit for the measurement of pressure.

Load Requirement – The total amount of natural gas required for a customer’s natural gas equipment. May be provided to SaskEnergy in a variety of measures, including British Thermal Units per hour (BTU/hr), cubic meters per hour (m³/hr), standard cubic feet per hour (scfh) or kiloWatt per hour (kWhr) (See Appendix 1)

m³ – abbreviation for cubic meter. A metric unit for the measurement of volume. (See Appendix 1)

Main Line – SaskEnergy pipelines that serve more than one customer and to which individual Service Lines are connected.

Meter Footprint – the physical space required to accommodate SaskEnergy metering facilities.

Meter Set – consists of the meter and regulator and is the point where ownership of the natural gas is transferred from SaskEnergy to the customer.



Multi-Unit Residential Dwelling – any building other than a single detached home that is used primarily for residential applications. Typically served by a single SaskEnergy Service Line and may have single or multiple meters.

Native Backfill – the original soil displaced and replaced during the installation of the SaskEnergy facilities.

Plot Plan – a drawing showing the building location on a lot or subdivision plan that the customer wishes to have served with natural gas.

psig – abbreviation for pounds per square inch (gauge). An Imperial measurement of pressure.

Route – the path that will be followed for the installation of a SaskEnergy Main or Service Line.

Service Connect Charge – charge to activate the Customer’s billing account and meter.

Service Line – the SaskEnergy owned pipe that is installed to bring the natural gas from the Main Line to the Meter Set and typically serves one customer.

Subdivision Plan – a surveyed plan indicating lots contained within a subdivision.

Venting Requirements – the minimum clearances needed for the operation of a customer's equipment and appliances.

Section 1 - General

1.2 – How to Contact SaskEnergy

All customers requiring natural gas service are asked to contact SaskEnergy directly. Please refer to your telephone book for one of the many SaskEnergy offices located throughout the province and choose the office nearest your project or call 1-800-567-8899. You may also wish to access the SaskEnergy website at www.saskenergy.com for additional contacts and a listing of SaskEnergy Business Representatives. Early communication with SaskEnergy will help ensure that you receive the benefits of natural gas service in a timely manner.



If your request is related to an individual residential application or subdivision development, please refer to Section 2 of this document. For all other natural gas service requests, please refer to Section 3 – Commercial.

1.3 – Codes & Safety Considerations

Natural Gas is one of the safest and most reliable fuels available, and at SaskEnergy, the safety of our customers and employees is a priority. SaskEnergy follows a number of national, provincial, and municipal codes, internal standards, and offers line locating and odor response at no charge. Please contact Sask 1st Call at 1-866-828-4888 for a line locate at least two business days before you are going to dig. For your other natural gas safety concerns, please contact SaskEnergy at 1-888-700-0427.

The Canadian Standards Association's code CSA Z662 Oil and Gas Pipeline Systems is the national code that governs the installation and operation of a utility's natural gas facilities.

The Canadian Standards Association's code CSA B149.1 Natural Gas Installation Code is the national code that governs customer owned piping and equipment installation standards.

1.4 - SaskEnergy Standard Business Practices

a) New Facility Requests – Residential and Commercial

With some exceptions, all new facilities to be installed qualify for a SaskEnergy investment. This investment effectively reduces your cost for the natural gas service. The customer is responsible to pay that portion of the cost of the service that exceeds the SaskEnergy investment.

b) Alterations to Existing Facilities

Alterations to existing SaskEnergy facilities may also qualify for a SaskEnergy investment. This investment effectively reduces your cost for the alteration of the natural gas service. The customer is responsible to pay that portion of the cost of the alteration that exceeds the SaskEnergy investment.

SECTION 2 – RESIDENTIAL

2.1 - Requesting Service

Requests for natural gas service should be made as early as possible in order for SaskEnergy to best meet your needs. Check your local telephone listings, call 1-800-567-8899 or visit the SaskEnergy website at www.saskenergy.com to locate and contact your nearest SaskEnergy office. The following outlines some of the information needed to start the process of serving you with natural gas.

SaskEnergy strives to install the natural gas service in a timely manner. Factors such as third party approvals, obstacles, customer delays, or weather conditions can all impact installation schedules. Facilities requested to be installed under frost conditions will result in additional costs to the customer. For customers who are building in the winter, SaskEnergy may be able to supply natural gas service for temporary construction heaters. If this is of interest to you, please mention it when requesting service.

Individual Residential Request Process:

Please provide SaskEnergy with a plot plan, indicating the location of the residence within the property. For urban applications, include the civic address or lot and block. For rural applications, include the land location.

In order to meet your needs, we require the total hourly load and delivery pressure requirement for all natural gas equipment and appliances. Please provide any special considerations that may impact the installation of SaskEnergy facilities, such as obstacles, environmental concerns or special routing.

The following outlines the typical process:

- Customer request received
- SaskEnergy representative and customer meet to agree on route/costs/timelines
- Any required approvals are obtained
- Service is scheduled for installation
- Activation of account and meter



Subdivision and Rural Development Request Process:

Please provide SaskEnergy with a subdivision plan, indicating the legal land description, the total number of lots to be served, and their location. For rural applications, include the land location.

To meet your needs, we require the total hourly load and delivery pressure for all natural gas equipment and appliances. Please indicate any special considerations that may impact the installation of the SaskEnergy facilities, such as obstacles, special routing, backfill needs, or environmentally sensitive areas. For larger subdivisions, if all lots are not to be served in the initial year, SaskEnergy may request a forecast of when all the lots within the subdivision will be developed.

The following outlines the typical process:

- Customer request received
- Initial System Design
- Business Review and Offer provided to Customer, including route/cost/timelines
- Offer accepted by customer, and returned to SaskEnergy
- Final System Design & Approvals
- Construction Scheduled
- Installation of required facilities
- Activation of account and meter

This process is targeted for 90 days.

2.2 - Planning for Natural Gas Facilities

When planning your individual residential lot or an entire subdivision layout, please consider current plans and future growth opportunities.

For safety and access reasons, customers are not permitted to build over any natural gas facilities, and will be responsible for all costs to correct these infractions.

SaskEnergy standards do not allow underground service entrances into buildings.

Meters will be located on the outside of all buildings. When considering your meter location requirements it is important to meet with SaskEnergy to determine your on-site needs such as:

- route selection (*see Appendix 3*)
- meter location
- future development
- venting restrictions
- clearances from other utility facilities
- verification of load and delivery pressure



Additional Metering Requirements:

- The SaskEnergy meter bracket requires a suitable wooden backing material 15" x 24" with a minimum 3/4" thickness. This shall be supplied and installed by the owner at the time of route selection and installed 0.9 – 1.5 meters above the final grade.
- The recommended location for the natural gas meter is on the side of the building opposite to the electrical service entrance.
- The SaskEnergy service regulator and meter must meet clearance requirements from vents, electrical facilities, and openings according to CSA Z662 code. (*see Appendix 2*)

2.3 - Installing the SaskEnergy Natural Gas Facilities:

SaskEnergy will proceed with the installation of the natural gas service line once all designs and approvals have been received. Installation of the facilities is typically by the open-trench method, however in certain circumstances a plough may be used. If boring is requested to install the facility, the additional costs will be the responsibility of the customer. Upon completion of installation in accordance with the routing design, all costs related to SaskEnergy facility alterations will be the customer's responsibility.

- All obstacles such as building material, dirt piles, and vehicles on the route must be removed by the owner prior to installation to allow access for equipment.
- Main lines are typically installed at a depth ranging from 0.9 to 1.5 meters, while service lines are usually installed at a minimum depth of 0.6 meters below final grade. The width of the trench will depend on the type of equipment used. Requests for additional depth should be made at the time of the service request, and if acceptable to SaskEnergy, will be provided at an additional cost to the customer.
- The service line will terminate above ground at the meter set, which will be installed a maximum of 1 meter from the corner of the building closest to the main line. SaskEnergy must have access to these facilities for maintenance, safety, and meter reading purposes.
- The trench will be filled with native backfill unless otherwise requested. Requests for compaction or other types of backfill must be included at the time of the service request, and if acceptable to SaskEnergy, may be provided at an additional cost to the customer.
- While SaskEnergy will strive to restore the property to its original condition, the trench may settle over time depending on soil conditions. To help alleviate this, the trench is typically left with a crown to allow for settlement. Where applicable, landscaping, concrete or pavement restoration will be included in the cost and provided following facility installation.

2.4 - Account and Meter Activation

- An application must be made to SaskEnergy for meter installation and account activation. A SaskEnergy representative will explain administrative charges, including the connection fee and any required security deposit to be applied to the account.
- After the completion of the customer owned supply line installation, the licensed heating contractor must contact SaskEnergy to advise that they are ready for the meter activation. Upon receiving a Gas Inspection Division permit number, SaskEnergy will install and activate the meter.



SECTION 3 – COMMERCIAL

3.1 - Requesting Service

Please request your natural gas service as early as possible in order for SaskEnergy to best meet your needs. Check your local telephone listings or visit the SaskEnergy website at www.saskenergy.com to locate and contact your nearest SaskEnergy office. Please be prepared to discuss your natural gas requirements and provide the following information:

1. Contact names, titles, addresses and telephone numbers of persons or firms involved with the customer's natural gas system and equipment design.
2. A plot plan, indicating the civic address or lot and block for urban applications, or land location for rural applications.
3. Approved mechanical system drawing(s) showing proposed outside meter(s) location, and a designation of the following metering options is required:
 - a) Multiple meters for individual customers
 - b) Single meter for the entire building
4. The total hourly load and delivery supply pressure requirement.
5. Any special considerations that may impact the installation of the SaskEnergy facilities, such as pavement, obstacles, environmental concerns, meter signal requirements, or special routing.



Commercial Request Process

Please provide SaskEnergy with a subdivision plan, indicating the legal land description, the total number of lots to be served, and their location. For rural applications, include the land location.

To meet your needs, we require the total hourly load and delivery pressure for all natural gas equipment and appliances. Please indicate any special considerations that may impact the installation of the SaskEnergy facilities, such as obstacles, special routing, backfill needs, or environmentally sensitive areas. For larger subdivisions, if all lots are not to be served in the initial year, SaskEnergy may request a forecast of when all the lots within the subdivision will be developed.

The following outlines the typical process:

- Customer request received
- Initial System Design
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- Construction Scheduled
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- Activation of account and meter

This process is targeted for 90 days.

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3.2 - Planning for Natural Gas Facilities

When planning your individual residential lot or an entire subdivision layout, please consider current plans and future growth possibilities.

For safety and access reasons, customers are not permitted to build over any natural gas facilities, and will be responsible for all costs to remedy these infractions.

SaskEnergy standards do not allow underground service entrances into buildings.



Meters will be located on the outside of all buildings. When considering your meter location requirements it is important to meet with SaskEnergy to determine your on-site needs such as:

- route selection
- meter location
- future development
- venting restrictions
- clearances from other utility's facilities
- verification of load and delivery pressure

Additional Metering Requirements:

- The SaskEnergy meter bracket requires a suitable wooden backing material 15" x 24" with a minimum 3/4" thickness. This shall be supplied and installed by the owner at the time of route selection and installed 0.9 – 1.5 meters above the final grade.
- Large meter sets require a cement pad (typically 3' x 3' or 3' x 5') to accommodate the meter set. Further information on this can be obtained from your SaskEnergy representative.
- Customers with large gas volume, pressure, or special environmental needs may require special meter locations.
- If a SaskEnergy regulator is installed downstream of the meter, it is to be identified as SaskEnergy equipment.
- The SaskEnergy service regulator and meter must meet the clearance requirements from vents, electrical facilities, and openings according to CSA Z662 code. (*see Appendix 2*)

3.3 - Installing the SaskEnergy Natural Gas Facilities

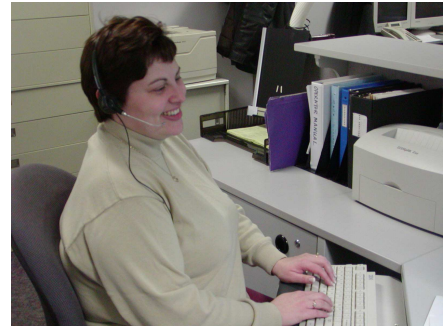
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- All obstacles such as building material, dirt piles, and vehicles on the route must be removed by the owner prior to installation to allow access for equipment.
- Main lines are typically installed at a depth ranging from 0.9 to 1.5 meters, while service lines are usually installed at a minimum depth of 0.6 meters below final grade. The width of the trench will depend on the type of equipment used. We may be able to provide additional depth for an extra cost. Please request this option when you apply for service.
- The service line will terminate above ground at the meter set, which will be installed, a maximum of 1 meter from the corner of the building closest to the main line. SaskEnergy must have access to these facilities for maintenance, safety, and meter reading purposes.
- The trench will be filled with native backfill unless otherwise requested. We may be able to provide compaction or other types of backfill for an extra cost. Please request this option when you apply for service.
- While SaskEnergy will strive to restore the property to its original condition, the trench may settle over time depending on soil conditions. To help alleviate this, the trench is typically left with a crown to allow for settlement. Where applicable, landscaping, concrete or pavement restoration will be included in the cost and provided following facility installation.

3.4 - Account and Meter Activation

An application must be made to SaskEnergy for meter installation and account activation. A SaskEnergy representative will explain the administrative charges including the connection fee and any required security deposit, to be applied to the account.

After the completion of the service line installation, the licensed heating contractor must contact SaskEnergy to advise that they are ready for the meter activation. Upon receiving a Gas Inspection Division permit number, SaskEnergy will install and activate the meter.



Appendix 1

NATURAL GAS CONVERSIONS & EQUIVALENTS

1m ³ natural gas* @ 101.325 kPa & 15°C (dry)	- 35.300962 ft ³ NG @ 14.73 psia & 60°F (dry)
1 ft ³ natural gas* @ 14.73 psia & 60°F (dry)	- 0.02832784 m ³ NG @ 101.325 kPa & 15°C (dry)

* SaskEnergy Natural Gas Specification

1 m ³ natural gas	- 35,375 BTU Average - 37,320 kJ Average - 0.707 kg NG - 1.059 litres gasoline (0.233 imp.gal) - 1.462 litres propane - 0.9826 litres fuel oil
1 therm natural gas	- 100,000 BTU - 105,506 kJ - 2.8269 m ³ NG
1 ft ³ natural gas	- 1,000 BTU Average - 1,055 kJ Average
1 litre fuel oil	- 36,000 BTU
1 litre #1 winter diesel	- 33,228 BTU
1 litre #2 summer diesel	- 34,074 BTU
1 litre LNG	- 20,606 BTU
1 litre propane	- 24,197 BTU - 25,529 kJ - 0.684 m ³ NG - 1.12 lbs propane
1 ft ³ propane	- 2,590 BTU - 2,733 kJ
1 BTU	- 1.05506 kJ
1 kWh	- 3,412 BTU - 3,600 kJ

NATURAL GAS CONVERSIONS & EQUIVALENTS – cont'd

1 hp	- 2544.5 BTU/hr - 0.7457 kW
1 Boiler hp	- 33,475 BTU/hr - 9.81 kW - 33.5 scfh NG
Irrigation Pump 1 hp	- about 10 scfh NG
1 ton refrigeration	- 12,000 BTU/hr - 3.516 kW
1 imperial gallon	- 4.546 litres - 1.20095 U.S. gallons
1 psi	- 27.7 inches W.C. - 16 ounces/in ² - 6.895 kPa

ABBREVIATIONS

Bcf	- billion cubic feet
bhp	- brake horsepower
BTU	- British Thermal Unit
BTU/hr	- British Thermal Unit (s) per hour
ft ³ or cf	- cubic foot (feet)
GJ	- gigajoule – billion joules
hp	- horsepower
J	- Joule
kJ	- kiloJoule – thousand Joules
kPa	- kiloPascal
kVA	- kilovolt ampere
kW	- kiloWatt
kWh	- kiloWatt hour
LNG	- Liquefied Natural Gas
m ³	- cubic metre
MBTU	- thousand British Thermal Units
Mcf	- thousand cubic feet
MJ	- megajoule – million joules
MMBTU	- million British Thermal Units
MMcf	- million cubic feet
MW	- megawatt
NG	- natural gas
psi	- pounds per square inch
psia	- pounds per square inch absolute
psig	- pounds per square inch gauge
scfh	- standard cubic foot (feet) per hour
scfm	- standard cubic foot (feet) per minute
Tcf	- trillion cubic feet
W.C.	- Water Column

Appendix 3

