



# LIVING & WORKING NEAR CO<sub>2</sub> & SNG PIPELINES



**DAKOTA  
GASIFICATION  
COMPANY**  
A BASIN ELECTRIC POWER  
COOPERATIVE SUBSIDIARY



**RESPONSIBLE CARE**<sup>®</sup>  
OUR COMMITMENT TO SUSTAINABILITY

# A message for you about pipeline safety

## What is in Dakota Gasification Company's pipelines?

Dakota Gasification Company operates a 205-mile pipeline to deliver oil field-grade carbon dioxide (CO<sub>2</sub>) to the Goodwater Unit, which is part of an oil field in Canada. Recently, DGC has added a CO<sub>2</sub> pipeline system that delivers CO<sub>2</sub> to six carbon sequestration wells approximately 3 miles north of DGC's facility. The product is mostly CO<sub>2</sub> with small amounts of impurities such as hydrogen sulfide and hydrocarbons. These pipelines were constructed with 14-inch, 12-inch and 6-inch carbon steel pipe that is Fusion Bonded Epoxy coated for its protection. The CO<sub>2</sub> pipeline's normal operating pressure is in the range of 2,200-2,600 pounds per square inch (PSI).

Dakota Gas owns and operates two synthetic natural gas (SNG) pipelines. A 35-mile pipeline delivers SNG from its Great Plains Synfuels Plant near Beulah, ND, to the Northern Border Pipeline at the Hebron, ND, metering station. The pipeline is a 24-inch carbon steel line that operates at a normal operating pressure of 1,300 PSIG. The second pipeline is a four-mile, 10-inch carbon steel pipeline that delivers SNG from the Synfuels Plant to Basin Electric's nearby Antelope Valley Station. Both of these pipelines operate with a maximum allowable operating pressure (MAOP) of 1,440 pounds per square inch (PSI).

## What is carbon dioxide?

CO<sub>2</sub> is a naturally occurring, inert, odorless, nonflammable gas. When injected into oil wells, it mixes with crude oil, reducing its viscosity making extraction or recovery of the crude oil easier.

CO<sub>2</sub> is normally present in the atmosphere. Gaseous carbon dioxide is an asphyxiate. Concentrations of 10 percent or more can produce unconsciousness or death. Lower concentrations may cause headache, sweating, rapid breathing, increased heartbeat, shortness of breath, dizziness, mental depression, visual disturbances, and shaking. The seriousness of these symptoms is dependent on concentrations and length of time the individual is exposed. Skin, eye, or mouth contact with dry ice or compressed CO<sub>2</sub> can cause tissue damage, burns, or frostbite. CO<sub>2</sub> is heavier than air and when released from a storage container or pipeline it tends to stay along the ground and settle into low spots. However, being a gas it is also rapidly diluted and dispersed by wind.

## What is hydrogen sulfide?

Hydrogen sulfide (H<sub>2</sub>S) is a colorless, flammable, and poisonous gas with an offensive odor and irritant properties. Very low concentrations of H<sub>2</sub>S may be detected by the characteristic "rotten egg" odor. However, even low concentrations of H<sub>2</sub>S can rapidly deaden your sense of smell and rising concentrations may not be detected. For this reason, do not depend on your sense of smell to recognize dangerous concentrations. H<sub>2</sub>S is only slightly heavier than air, and for this reason it will be rapidly diluted and dispersed by wind. However, on calm days it may linger in low spots or at ground level. Effects of overexposure to H<sub>2</sub>S include irritation of the eyes and throat at low concentrations, which become painful at higher concentrations. H<sub>2</sub>S will also cause weariness, headaches, and dizziness. Acute exposure may cause death.

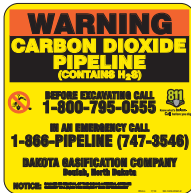
## What is synthetic natural gas?

SNG is a flammable, odorless, colorless, and tasteless gas. It is considered non-toxic. Inhalation of low concentrations can be remedied by going to an uncontaminated area and inhaling fresh air or oxygen. Effects of overexposure may include suffocation, dizziness, headache, and death.

## How can I tell if I live or work near a CO<sub>2</sub> or SNG pipeline?

CO<sub>2</sub> and SNG pipelines are buried underground. Pipeline markers like the ones shown below are used to mark the pipeline's route and are placed at each side of public roads, railroad crossings, fence lines, water crossings, and in sufficient numbers along the buried pipeline. Markers cannot be relied upon to indicate the exact location of the pipeline. Remember to call **811** or **1.800.795.0555** to have the pipeline located.

For the location of pipelines in your area, go to National Pipeline Mapping System (NPMS) website: [www.NPMS.PHMSA.dot.gov](http://www.NPMS.PHMSA.dot.gov).



## How does the CO<sub>2</sub> pipeline help the environment?

Dakota Gas is an international leader in the capture, compression, and sequestration of carbon dioxide. Since 2000, carbon dioxide from the Synfuels Plant that would otherwise be emitted into the atmosphere has been

compressed and delivered through a 205-mile pipeline to oilfields in Canada for use in enhanced oil recovery.

As an environmental benefit, virtually all of the injected carbon dioxide will remain permanently sequestered in the depleted oil fields long after they have been abandoned. With three compressors in operation, Dakota Gas can now deliver for sequestration 48.8 percent of carbon dioxide produced at the Synfuels Plant, which represents 16 percent of carbon dioxide produced from all the coal combusted from the nearby Freedom Mine—making it a proven technical and economic success for both Dakota Gas and its Canadian customers.

## What if there is a CO<sub>2</sub> or SNG pipeline on my property?

Your property plat or title report will tell you if there is a pipeline easement on your property. Easements are written agreements that provide “right-of-way” to the pipeline company. The right-of-way enables Dakota Gasification workers to gain access to the pipeline for inspections, maintenance, testing, or emergencies.

### Please remember:

1. Keep the right-of-way free of buildings, structures, or other encroachments.
2. If you would like to use the right-of-way for any purpose, please contact us.
3. We may periodically prune trees and vegetation on or near the pipeline easement.



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

**Call 811 or 1.800.795.0555  
before you dig!**

Except in an emergency, an excavator shall contact the notification center and provide an excavation or location notice **at least 48 hours** before beginning any excavation, excluding Saturdays, Sundays, and holidays. If your company does excavation work, or if you are a homeowner or farmer who digs on your property, help us prevent pipeline emergencies by contacting the North Dakota (ND) One-Call Center at **1.800.795.0555** or **811**.

Damage from excavation activities and digging equipment is the number-one cause of pipeline accidents. Without proper coordination, excavation activities near underground pipelines can result in very dangerous situations.

#### **Before you dig:**

1. Determine if there are pipelines or other utilities in the area where you are planning excavation by calling the North Dakota (ND) One-Call Center at **1.800.795.0555** or **811**.
2. Within 48 hours, Dakota Gasification Company will send a representative to mark the exact location, route, and depth of the pipeline at no charge.
3. Don't try to guess the route or location of the pipeline, even if you see the markers.
4. Damage from excavating equipment is the number-one cause of pipeline accidents.
5. All work within Dakota Gasification pipeline right of ways (25 feet from center) will be done in the presence of a Dakota Gas representative.

## **What should I do if I disturb a CO<sub>2</sub> or SNG pipeline?**

Immediately call Dakota Gasification Company toll free at **1.866.747.3546**. Any gouge, scrape, dent, or crease to the pipe or coating may cause a future leak or break. We'll need to immediately inspect and repair any damage to the pipeline.

## **How do I recognize a pipeline leak?**

While leaks on pipelines are rare, it is important to know how to recognize the signs of a leak if one were to occur in your area.

#### **For SNG LOOK:**

- For dead or dying vegetation on or near a pipeline right-of-way in an otherwise green area;
- For dirt being blown or appearing to be thrown into the air.

#### **For CO<sub>2</sub> LOOK:**

- For frozen liquid around the pipe at the leak area, or a vapor cloud similar to that produced by dry ice.

#### **LISTEN:**

- For a blowing, hissing sound or any unusual sounds or noises.

## **What to do if you suspect a pipeline leak:**

- Turn off and abandon any equipment you may be operating. Don't light a match, start an engine, etc. that could cause heat or sparks.
- Leave the area quickly, moving up-wind if possible and warn others to stay away.
- Call Dakota Gasification Company immediately toll free at **1.866.747.3546**.
- Call your local **911**.
- Notify local authorities.

- Do not attempt to extinguish a fire.
- Do not attempt to operate any of the valves on the pipeline.

## I'm a public safety official, what do I need to know?

SNG is a flammable, odorless, colorless, and tasteless gas. CO<sub>2</sub> is nonflammable. Observe the following precautions for any public emergency:

- Turn off and abandon equipment and leave area quickly.
- Move up-wind (do not attempt to investigate the situation).
- Contact Dakota Gasification Company as quickly as possible using the information on the pipeline marker or by calling toll free at **1.866.747.3546**.
- Call your local **911**.
- Prohibit smoking, reroute traffic, and shut off electricity and gas.
- Do not attempt to operate any of the valves on the pipeline. This could make the situation worse or cause other accidents.

## How will Dakota Gasification Company respond to a pipeline emergency?

We will immediately dispatch personnel to the site to help handle the emergency and assist public safety officials. We will also take necessary operating action to minimize the impact of the leak. Public Safety personnel and others unfamiliar with the pipeline should not attempt to operate any of the valves of the pipeline. Dakota Gasification trained personnel will operate pumps and valves and take similar steps to minimize the impact of the leak.

Dakota Gasification will notify those residents living or working within the pipeline corridor that a pipeline emergency has occurred with

the potential to affect them. In Canada the pipeline corridor is two kilometers in width on each side of the pipeline or four kilometers total, while in the United States the pipeline corridor is two miles in width, one mile on either side of the pipeline.

Dakota Gasification will make these notifications through a Reverse 911 computerized call out system. A prerecorded message will be delivered to residents living or working within the pipeline corridor.

The Emergency message may differ depending on the situation at the time of the emergency and what pipeline and product may be involved in the emergency.

Dakota Gasification emergency response officials will decide which action is best suited to protect residents living or working in the area of a pipeline leak.

Residents may be requested to either “shelter in place” or “evacuate” at the time of the pipeline emergency.

Here are some tips on how to protect yourself in either situation.

### How to Shelter-in-Place

- Close and lock all windows and exterior doors.
- If you are told there is danger of explosion, close the window shades, blinds, or curtains.
- Turn off all fans, heating and air conditioning systems.
- Close the fireplace damper.
- Get your family disaster supplies kit and make sure the radio is working.
- Go to an interior room without windows that's above ground level.

In the case of a chemical threat, an above ground location is preferable because

some chemicals are heavier than air, and may seep into basements even if the windows are closed.

- Bring your pets with you, and be sure to bring additional food and water supplies for them.
- It is ideal to have a hard-wired telephone in the room you select. Call your emergency contact and have the phone available if you need to report a life-threatening condition. Cellular telephone equipment may be overwhelmed or damaged during an emergency.
- Use duct tape and plastic sheeting (heavier than food wrap) to seal all cracks around the door and any vents into the room.
- Keep listening to your radio or television until you are told all is safe or you are told to evacuate. Local officials may call for evacuation in specific areas at greatest risk in your community.

### How to Evacuate

If you are asked to evacuate because of a hazardous materials emergency, do so immediately. Before leaving your home or office, close your windows and shut all vents to minimize contamination. If time permits, place a sign on your door or front window to notify emergency responders that your building has been evacuated and no one remains inside. It is also a good idea to provide a telephone number where you can be reached.

In the event of a gas or vapor release, DO NOT try to outrun the cloud by going down wind. Eventually the vapors will catch up with you.

Always move cross-wind (90 degrees to the wind) from the leak. This is the quickest way to get out of the vapor cloud.

Pay particular attention to the wind direction and source of the leak.

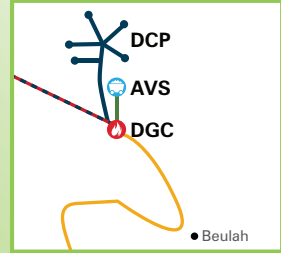
## Farming Near Pipelines

North Dakota One-Call law (Century Code 49-23) does not require a call to the location center for normal agricultural operations such as plowing, cultivating, planting, and harvesting, unless any of these activities disturb the soil to a depth of 18 inches (45.72 centimeters) or more. Activities such as building water ways, setting posts, burying rock piles, soil sampling, and any excavations of 18 inches or greater DO require notification. A word of caution, utilities can be buried at various depths beneath your farm fields and many farm projects can create a safety hazard due to the depth of these operations. Therefore, we strongly recommend that you follow the law before performing any excavations of eighteen inches or greater and call North Dakota One-Call at least 48 hours before beginning, excluding Saturdays, Sunday, and holidays. Protect yourself, your family and your farm.

## Company help ensure pipeline safety?

Maintaining the safe operation of our pipeline is just as important to DGC as it is to you. We help ensure pipeline safety by:

- Adhering to regulations defined by the Department of Transportation (DOT) Pipeline and Hazardous Materials Safety Administration.
- Control center monitoring and cathodic protection.
- Encouraging you to be our eyes and ears and communicating with all persons near our pipeline right-of-way.
- In-line tool inspection every five years.
- Marking all pipelines with above ground warning signs and monitoring all pipelines through air or ground patrol.



- DGC SNG
- DGC CO<sub>2</sub>
- DGC to AVS SNG
- DCP CO<sub>2</sub>

National One-Call Center 811 or ND One-Call 1.800.795.0555



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



At least 48 hours before you dig, call ND One-Call Center 1.800.795.0555 or 811.



Wait for the site to be marked.



Respect all markings.



Dig with care.

**IN AN EMERGENCY, or to report a suspected leak, please call:**

**Dakota Gasification Company (DGC) Pipeline**  
 toll free at **1.866.747.3546** and **911**  
 or email **DGCEmergency@bepc.com**.



**For additional information  
please call:**



**DAKOTA  
GASIFICATION  
COMPANY**

A BASIN ELECTRIC POWER  
COOPERATIVE SUBSIDIARY

**701.873.2100**

**Visit our website  
or email us at:**

[dakotagas.com/about-us/pipelines](http://dakotagas.com/about-us/pipelines)  
[dgcpipelines@bepc.com](mailto:dgcpipelines@bepc.com)

**For pipeline locations  
in your area go to:**

National Pipeline Mapping System (NPMS)  
[www.NPMS.PHMSA.dot.gov](http://www.NPMS.PHMSA.dot.gov)