



Important Information For Excavators, Contractors and Developers

This brochure contains information about pipeline safety to keep communities safe and prevent damage to pipelines owned or operated by Pembina U.S. Corporation or one of its affiliates (collectively, Pembina U.S.). Please keep for future reference.



This brochure contains information for those carrying out ground disturbance activities near Pembina U.S. pipelines. Excavators, contractors and developers play an important role in reducing the likelihood of damage to underground infrastructure.

Following the best practices outlined in this brochure and digging with CARE will ensure the safety of those conducting work on or near our pipelines, and those who live in the communities where we operate.

About Pembina

Pembina Pipeline Corporation (Pembina) is a leading energy transportation and midstream service provider that has served North America's energy industry for more than 70 years. Pembina owns an extensive network of strategically located assets, including hydrocarbon liquids and natural gas pipelines, gas gathering and processing facilities, oil and natural gas liquids infrastructure and logistics services, and an export terminals business. Through our integrated value chain, we seek to provide safe and reliable energy solutions that connect producers and consumers across the world, support a more sustainable future and benefit our customers, investors, employees and communities.

Pipelines are a safe and efficient means of transporting large quantities of crude oil, natural gas and natural gas liquids. Pembina U.S. pipelines and facilities are designed, constructed, and operated in a safe and environmentally responsible manner.

We know that maintaining the integrity of our pipelines is essential to the health and safety of the communities in which we operate. A commitment to safety is a shared responsibility between us and all our stakeholders, including the digging community.

U.S. pipeline systems

In 2019, Pembina U.S. acquired ownership of the U.S. portion of the Cochin Pipeline System, which transports condensate, from Kinder Morgan. The U.S. portion of the Cochin Pipeline System is owned and operated by Pembina Cochin LLC, an affiliate of Pembina U.S. Corporation.

The U.S. portion of the Vantage Pipeline and the West Spur Lateral pipelines are high vapor pressure (HVP) pipes that transport ethane.

Vantage Pipeline US LP (Vantage) is the owner and operator of the Vantage Pipeline and the West Spur Lateral. Vantage is an affiliate of Pembina U.S. Corporation.

The Aux Sable pipeline system is owned and operated by a Pembina U.S. subsidiary, and includes the Channahon Pipeline, which is a HVP propane / butane pipeline, and the Prairie Rose Pipeline, which is a HVP natural gas pipeline.

The Alliance Pipeline system consists of a 2,391-mile integrated Canadian and U.S. natural gas transmission pipeline system, delivering rich natural gas from the Western Canadian Sedimentary Basin and the Williston Basin to the Chicago market hub. The system has been in commercial service since December 2000 and, through an innovative suite of customer-focused services, delivers an average of 1.6 billion standard cubic feet (or 45.3 million standard cubic meters) of natural gas per day.

What is condensate?

Condensate is a low-density mixture of hydrocarbon liquids. It is typically used as a diluent in heavy oil production. Because condensate is typically liquid in ambient conditions and also has very low viscosity, it is often used to dilute highly viscous heavier oils that cannot otherwise be efficiently transported via pipelines.

What is ethane?

Ethane is a hydrocarbon that is isolated from natural gas. The petrochemical industry uses raw materials such as benzene, ethane, and propane from the oil and gas industry to manufacture products that we use every day. The Vantage Pipeline and the West Spur Lateral transport ethane, which is most commonly used to produce ethylene and polyethylene. These chemicals are needed to manufacture products like plastic, automotive antifreeze, and detergent.

What is propane/butane?



Propane and butane are hydrocarbons isolated from natural gas. The petrochemical industry uses raw materials such as propane and butane to manufacture products that we use every day. Propane and butane are used for cooking and heating. Butane is also used as a refrigerant and as propellant in aerosol cans.

What is fuel gas?

Fuel gas is a component of natural gas and is composed primarily of methane. Fuel gas is used to power natural gas engines and generators, and in various industrial applications.

Pipelines are safe and reliable

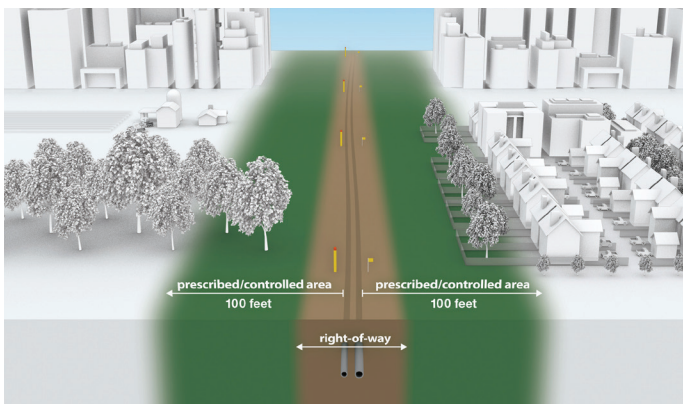
We conduct regular inspections, maintenance, and testing to confirm that our pipelines are operating safely. We monitor the operating conditions of the pipeline through sensors 24/7/365 from our state-of-the-art control room. We conduct aerial and ground inspections to ensure our systems are operating safely and to identify unsafe or unauthorized activity which could damage the pipe or impact safe operations.

We reinforce our commitment to excellence in safety in our daily operations by developing stringent standards and reviewing potential hazards, in addition to conducting regular safety meetings, contractor screenings, and inspections.

Pembina U.S. takes many steps to ensure safe and reliable operations which include a strict adherence to an Integrity Management Program and continuous monitoring and maintenance. Damage from third-party excavation and construction activities around pipelines is the most common cause of damage to pipelines. That's why safety is a shared responsibility and members of the digging community and the public have a role to play to protect pipelines from damage.

Right-of-Way

Regulations restrict certain activities near the near the Right-of-Way (ROW) or pipeline that could pose a threat to public safety and the safe operation of the pipeline.



Working and digging near pipelines

Markers should never be used to identify the location of a pipeline before excavating. Always call 811 or your One Call Notification Centre at least 2-3 business days, or as indicated by your One Call Notification Centre, as dictated by state law, before excavating to have pipelines and underground utilities located and marked. Once they are identified, respect the marks and dig carefully near the pipeline.

Pipeline markers

Pipeline markers are located along the pipeline right-of-way. Markers identify the area, but not the exact location or depth of the pipeline. They also specify the product transported, the operator's name and emergency contact number. Only a Pembina U.S. representative can identify the exact location of the pipeline.

Here are some examples of what our signage looks like.



Techniques for digging near a pipeline

Follow ground disturbance requirements of your State One-Call Law and Common Ground Alliance Best Practices.

Consider the following methods when digging near a pipeline: hand digging, soft digging, vacuum excavation methods and pneumatic hand tools. Non-invasive methods may be used for pavement removal. A Pembina U.S. field representative may be required to monitor excavation activity at the job site and can help you determine the most appropriate digging method. Alert Pembina U.S. if work crews will be crossing the right-of-way with motorized equipment or vehicles.

Planning work around pipelines

Some of the biggest threats to pipeline safety come from unauthorized construction, development, encroachment and digging activities. Notifying Pembina U.S. and your local One-Call Centre are your first steps to preventing damage to underground infrastructure and working safely around pipelines.

Pembina U.S may require a written consent before the following activities can occur:

- construction of a facility across, on, along, or under a pipeline (including the ROW)
- ground disturbance activities (excavation or digging)
- operation of a vehicle or mobile equipment across a Right-of-Way (ROW) or pipeline, outside the travelled portion of a highway or public road
- using explosives within 300 meters or 1,000 feet of Pembina U.S. pipeline Right-of-Way (ROW) or pipeline
- any activity that the company deems may negatively impact the safety of the pipeline

Always have a copy of your agreement onsite. It informs us of your activity and allows us to provide guidance to prevent incidents or damage to our pipelines.

What is Ground Disturbance?

Ground disturbance activities include any work, operation or activity that results in the disturbance of the earth. These activities include but are not limited to:

Tree planting	Auguring
Building a fence or pounding in posts	Topsoil stripping, levelling, grading
Excavating, trenching, digging	Quarrying, seismic exploration, blasting
Plowing or tilling	Installing drain tiles
Tunnelling, boring, drilling	Ditching

How to obtain written consent

Steps to obtain written approval from Pembina U.S.

1. Email landrequests@pembina.com with your name, legal land description, and a description of the work you would like to do.
2. Pembina U.S. will contact you and walk you through how to submit a request for permission to proceed with your activity in, along or adjacent to the Right-of-Way (ROW) or pipeline.
3. Pembina U.S. will review your request once your information has been received. Pembina U.S. may:
 - grant consent with standard conditions
 - grant consent that requires specific conditions be met to ensure safety
 - work with you to find solutions and resolve issues regarding the consent request
 - deny consent in the rare situation that a feasible safety solution cannot be found
4. Once consent has been granted, you must:
 - make a locate request to your local One Call Notification Center at least 2-3 business days, or as indicated by your local One Call Notification Center, before beginning the work. Pembina U.S. will arrange for a Company representative to be on site to inspect the area at time of crossing
 - always keep the written consent and documentation onsite
 - follow all terms and conditions laid out in the consent, and all instructions from Pembina U.S. personnel onsite

Importance of Depth of Cover

Depth of cover (DOC) is the vertical distance between the top of the pipeline and the surface of the ground. It is crucial for protecting both the pipeline and the interests of landowners. Adequate depth ensures the pipeline is shielded from surface activities like agricultural activity, construction, or heavy equipment traffic, reducing the risk of accidental damage and potential safety hazards.

If you are aware of areas where DOC has changed due to erosion, construction activities, or farming practices, please contact us at DPPA@pembina.com or 1-800-920-1979.

Dig with CARE

Before starting any work near the Right-of way, a locate request to your local One Call Notification Center is required. The One-Call Center will notify owners of the buried infrastructure in the area who will send out a company representative to locate and mark the facilities using paint, flags or other marks. A Pembina U.S. representative may contact you to discuss your planned activities.

Call Before You Click

Call 811 to contact your local One-Call Notification Center and place a locate request.

Allow Required Time for Marking

Allow 2-3 business days. Check with your local One Call Center for location specific timing.

Respect the Marks

Lines are marked by flags, paint or other markers (normally yellow for pipelines). If marks are destroyed or missing Call 811 to have utilities remarked.

Excavate Carefully

Hand dig to determine exact location of a pipeline.
A Pembina U.S. representative must be present.



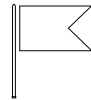
**Know what's below.
Call before you dig.**

If you have additional questions,

please contact Pembina U.S. toll free at 1-888-428-3222 and we will work with you to address your needs.

Know the Color Code

The colored flags or paint you will see once the lines have been located mark the location and type of underground utility:



White – proposed excavation



Pink – temporary survey markings



Red – electric power lines, cables, conduit and lighting cables



Yellow – gas, oil, steam, petroleum or gaseous material



Orange – communication, alarm or signal lines, cables or conduit



Blue – potable water



Purple – reclaimed water, irrigation, and slurry lines



Green – sewers and drain lines

Although rare, emergencies can occur. To prepare for these instances, Pembina U.S. participates in an Emergency & Continuity Management Program (ECMP), which includes comprehensive standards and processes to support the safety of the public, our workers and the environment.

The ECMP evaluates potential hazards from our operations as well as other hazards such as security breaches and natural disasters. Our comprehensive evaluation provides the foundation for our approach of prevention, planning, response and recovery. This approach allows for a safe and effective response to an incident. Emergency Response Plans (ERP) are maintained for Pembina U.S. facilities and products. These plans identify the organizational structure, equipment, and resources necessary to ensure that actions are taken for the protection of the public, employees and the environment. Pembina U.S. conducts ongoing responder training, exercises, and public consultation to ensure continuous improvement of our plans and program and that our personnel are ready to respond to emergencies.

What to do if you strike a pipeline

Whether it appears there is damage or not, follow these steps:

1. Stop all excavation and construction work and move away from the area on foot; let others know to do the same
2. Shut off all equipment and machinery
3. Call 911 as soon as you are in a safe location AND
4. Call 811 to have an emergency ticket sent out to all utilities in area that participate in state one call system.
5. Call Pembina U.S. emergency number and explain the situation
 - Pembina U.S. 24-hour emergency number:
1-800-360-4706
 - Aux Sable Prairie Rose (North Dakota):
701-628-7591
 - Aux Sable Channahon (Illinois):
815-941-5858
 - Alliance (US & Canada):
1-800-884-8811
6. Do NOT attempt to operate any valves

How to spot a pipeline release

Pembina U.S. pipelines carry different product, and warning signs differ depending on the type of resource transported.

Products have different characteristics if they are released:

Ethane enters the atmosphere as a hazardous and flammable gas. Contact with ethane may cause skin irritation and/or frostbite. Exposure to ethane may cause headache, dizziness or nausea. Ethane is heavier than air. At very high concentrations, ethane can cause suffocation due to the lack of oxygen in the air.

Condensate is a hazardous and extremely flammable liquid. Contact with condensate may cause headache, nausea, dizziness, skin and eye irritation.

Fuel gas is extremely flammable and may cause suffocation. If you feel unwell, seek medical attention immediately. Contact with rapidly expanding or liquified gas may cause skin irritation and/or frostbite.

Propane is an extremely flammable product that is heavier than air. Propane vapors may travel long distances to a point of ignition and then flash back. Exposure to skin may cause frostbite, blisters, tingling, pain and/or numbness.

In the unlikely event of a release, condensate is a hazardous and extremely flammable liquid. Contact with condensate may cause headache, nausea, dizziness, skin and eye irritation.

Know the warning signs

Although rare, it is important to know the warning signs of a pipeline release:



You might see:

- dead or dying vegetation in an otherwise green area
- dirt being blown or appearing to be thrown into the air
- a white vapor stream or mist-like cloud over the pipeline
- unexpected frost or ice on the ground
- discolored snow or vegetation
- a moist patch or pool of clear, light brown or yellow liquid



You might hear:

- an unusual hissing, blowing, or roaring noise



You might smell:

- a petroleum or hydrocarbon smell similar to gasoline or diesel fuel



If you suspect a release

In the unlikely event of an emergency, Pembina U.S. will immediately shut down the pipeline if necessary and activate our Emergency Response Plan.

If you recognize any of the warning signs:

- abandon any mechanized equipment and move as far away from the leak as possible, avoiding contact with escaping liquids and gases
- call 911 AND
- call Pembina U.S. emergency line that you see on a pipeline marker
- follow instructions provided to you by Pembina U.S. and local emergency responders

What you shouldn't do:

- do not touch or go near any liquid, gas or vapor cloud
- do not start your vehicle or any equipment that could be a potential ignition source
- do not smoke or light a match, and avoid heating sources or making sparks
- do not turn on or off anything that may create a spark, including cell phones, pagers, flashlights, keyless entry remotes, vehicle alarms, and light switches, until you are in a safe location
- do not attempt to operate or turn pipeline valves
- do not attempt to extinguish any flames or fires
- do not remain in a building if the smell is stronger inside than outside

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How to obtain more information about pipelines and pipeline operators where you work or live.

The National Pipeline Mapping System (NPMS) is an on-line mapping tool available to the public that enables you to view information on transmission pipelines that are under Department of Transportation (DOT) and Pipeline and Hazardous Materials Safety Administration (PHMSA) jurisdiction. By accessing the NPMS, you can view information on a county by county basis and obtain information on which transmission pipelines operate in your community. You can also obtain contact information for pipeline operators in your area. The NPMS can be accessed here: <https://www.npms.phmsa.dot.gov/>

Remember: The NPMS is not to be used to identify exact locations of pipelines. You must contact your local One-Call system before you start any digging activities.

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> 24-hour emergency line: **1-800-360-4706**

Aux Sable Prairie Rose (North Dakota): **701-628-7591**

Aux Sable Channahon (Illinois): **815-941-5858**

Alliance (US & Canada): **1-800-884-8811**

If you notice any unusual or suspicious activity on or near the pipeline or Right-of-way (ROW), please report it by calling 911 **AND** Pembina U.S. 24-hour emergency number above.

Call before you dig

Always call 811 or your local One-Call Notification Centre to have underground utilities marked.



Know what's below.
Call before you dig.



How to contact us

Pembina strives to be a trusted member of the community. We're committed to open, two-way communication with our stakeholders. We welcome the opportunity to make a connection with you — please contact us in any of the following ways.



www.pembina.com/safety/dppa/us

Community Relations:

Phone Toll Free: **1-888-920-1979** (Non-emergency calls only)

Email: community@pembina.com

Pembina's head office:

Pembina Pipeline Corporation

4000, 585 - 8 Avenue S.W.
Calgary, Alberta, Canada T2P 1G1

Phone: **403-231-7500**

Toll Free: **1-888-428-3222**