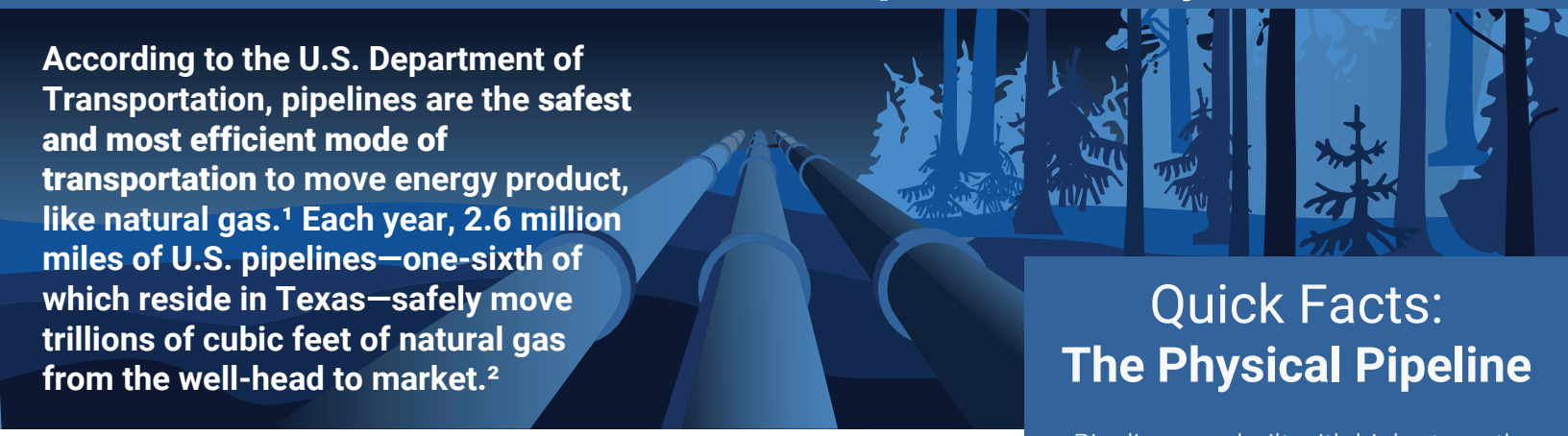
Texas Natural Gas Pipeline Safety

According to the U.S. Department of Transportation, pipelines are the safest and most efficient mode of transportation to move energy product, like natural gas.[1] Each year, 2.6 million miles of U.S. pipelines—one-sixth of which reside in Texas—safely move trillions of cubic feet of natural gas from the well-head to market.[2]



Permitting and Regulatory Oversight

Before breaking ground, companies put extensive work into the planning of a proposed pipeline route, considering the most efficient route that would affect the least number of landowners and have the smallest environmental impact. In addition, companies must obtain **permits and clearance from multiple federal and state regulatory agencies**, including:[3,4]

- U.S. Army Corps of Engineers
- Texas Railroad Commission
- The Pipeline and Hazardous Materials Safety Administration*
- U.S. Fish & Wildlife Service
- Federal Energy Regulatory Commission*
- Texas Commission on Environmental Quality

Planning & Construction

Safety is considered in every step of the planning, construction and operating phases. Before a pipeline ever goes into service, pipeline operators ensure the pipeline is sound to operate through a series of inspections and evaluations. Some of these tools and practices include:

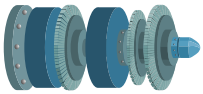
Hydrostatic tests: uses pressures that exceed maximum operating pressures to test for strength and leaks.

External protective coating: preserves the pipeline against corrosion.

Industrial radiography or ultrasonic inspection: tests the integrity of welding and seams.[5]

Continuous Monitoring & Maintenance

Once in service, pipeline operators closely monitor and manage lines from a Gas Control Center using a specialized Supervisory Control and Data Acquisition system to ensure the safe and reliable transport and delivery of natural gas.[6] Pipeline operators also **continually work to maintain and protect pipelines** using a number of additional tools and practices:[7]



"Smart pigs" or ***in-line inspection tools***: highly sophisticated device that can both clean the interior of a pipeline and identify potential pipeline defects before compromising the pipeline's safety.

State-of-the-art safety technologies: these include automated pressure control systems, computerized leak detection and emergency shutdown systems.

Quick Facts: The Physical Pipeline

Pipelines are built with high-strength carbon steel in accordance with strict engineering and metallurgical specifications set by the American Petroleum Institute and the Pipeline and Hazardous Materials Safety Administration, this includes standards for the dimensional, physical, mechanical and chemical properties of the carbon steel.

Large pipelines, like the 42-inch Permian Highway Pipeline, are manufactured by molding a steel plate into a cylindrical shape and welding the seam closed. The seam is then evaluated using ultrasonic and/or radiological inspections, in addition to pressure tests at levels much higher than the eventual operating pressure.

Natural gas pipelines are located underground, protecting them from extreme weather events.

FOOTNOTES

1. https://www.manhattan-institute.org/html/pipelines-are-safest-transportation-oil-and-gas-5716.html
2. https://www.rrc.state.tx.us/pipeline-safety/
3. https://phpproject.com/faqs/
4. https://www.rrc.state.tx.us/pipeline-safety/
5. https://primis.phmsa.dot.gov/comm/construction/index.htm?nocache=2196#RegulatoryProcesses
6. https://www.phmsa.dot.gov/pipeline/control-room-management/control-room-management
7. https://primis.phmsa.dot.gov/comm/IM.htm?nocache=3402

* Only regulates interstate natural gas pipelines.