

Thomas Gordon

The leakage rate in the SSEIS does not reflect the conclusions in other studies which go up to 3%. Some of the factors which influence this rate include the number of leaks in the US natural gas distribution system.

The American Chemical Society in Environ. Sci. Technol, Publication Date: June 10, 2020 in the article:

A National Estimate of Methane Leakage from Pipeline Mains in Natural Gas Local Distribution Systems

We estimate methane emissions from U.S. local distribution natural gas (NG) pipes using data collected from an advanced mobile leak detection (AMLD) platform. We estimate that there are 630,000 leaks in U.S. distribution mains...

While this article does not address the gas line to Canada specifically, it shows that gas line leaks are wide spread.

Also, the following article addresses the pipes themselves:

Supporting information for a national estimate of methane leakage from pipeline mains in natural gas local distribution systems

Zachary D. Weller,[◆], Steven P. Hamburg,[!] and Joseph C. von Fischer[◆]

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Our leaks per mile analysis (Section 3 of the main text) indicated that activity factors .212 are a function of both pipe material and pipe age. Furthermore, activity factors increase .213 exponentially with age. Current PHMSA reporting does require the reporting of the join .214 distribution of pipeline age and material, nor does it report the exact age of pipe more than .215 80 years. Requiring utilities to report these data would improve our estimates of the total .216 number of leaks and thus the total emissions from local distribution systems.

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Activity refers to the leakage

Types of gas lines and the pressure in them affect the leakage rate too.

These pipelines♦ including flowlines, gathering lines, transmission lines, distribution lines, and service lines♦ carry gas at varying rates of pressure. The higher the pressure of gas in a pipeline, the more potentially dangerous an accident with that pipeline could be.

Pipelines usually are buried underground, and pipeline markers do not always sit directly above the pipelines.

Flowlines

Flowlines connect to a single wellhead in a producing field. Flowlines move natural gas from a wellhead to nearby storage tanks, transmission compressor stations, or processing plant booster stations. Flowlines are relatively narrow pipes that carry unodorized raw gas at a pressure of approximately 250 pounds per square inch (psi).

Typically, they are buried 4 feet underground and can corrode, especially if they are carrying wet gas. They also are prone to methane leakage. According to the EPA, "methane leakage from flowlines is one of the largest sources of emissions in the gas industry."

Gathering Lines

Gathering lines collect gas from multiple flowlines and move it to centralized points, such as processing facilities, tanks, or marine docks. Gathering lines are medium steel pipes (usually less than 18 inches in diameter) that carry unodorized, raw gas at a pressure of approximately 715 psi.

Typically, gathering lines are buried 4 feet underground and carry corrosive content that can affect pipeline integrity within a few years.

Transmission Pipelines

Transmission pipelines carry natural gas across long distances and occasionally across state boundaries, usually to and from compressors or to a distribution center or storage facility. Transmission lines are large steel pipes (usually 2 to 42 inches in diameter; most often more than 10 inches in diameter) that are federally regulated. They carry unodorized gas at a pressure of approximately 200 to 1,200 psi.

Transmission pipelines can fail due to seam failures, corrosion, materials failure, and defective welding.

Distribution Pipelines

Distribution pipelines, also known as "mains," are the middle step between high-pressure transmission lines and low-pressure service lines. Distribution pipelines operate at an intermediate pressure. This type of pipeline uses small to medium pipes (2 inches to 24 inches in diameter) that are federally regulated and carry odorized gas at varying pressure levels, from as little as 0.3 psi up to 200 psi.

Distribution pipelines typically operate below their carrying capacity and are made from a variety of materials, including steel, cast iron, plastic, and occasionally copper.

Service Pipelines

Service pipelines connect to a meter that delivers natural gas to individual customers. Service pipelines are narrow pipes (usually less than 2 inches in diameter) that carry odorized gas at low pressures, such as 6 psi. Service pipelines typically are made from plastic, steel, or copper.

Therefore, the leakage rates are at best estimates so the higher values are closer to the actual amounts lost due to limits in testing, the distances the lines travel, and the size and pressures in these lines.

This refinery contributes to the total green house gases more than can be estimated with the low figure in the SSEIS.

Please deny this permit and the refinery.