



Natural Gas Compressor Stations – Controlling Sound

National Fuel is committed to safely constructing and operating pipeline systems that transport natural gas to ensure reliable, cost-efficient supplies for customers throughout the North American pipeline system with minimal environmental and community impacts.

One of the many important components of the natural gas transportation system is the compressor station. Compressor stations perform the essential task of compressing natural gas as it travels through pipelines. It is compression that allows the gas to continue flowing through the pipe and eventually to its final destination for delivery to homes, businesses and industrial users. Recognizing that the potential for increased noise related to aboveground pipeline infrastructure can be of concern to neighbors, National Fuel regards noise reduction as a top priority.

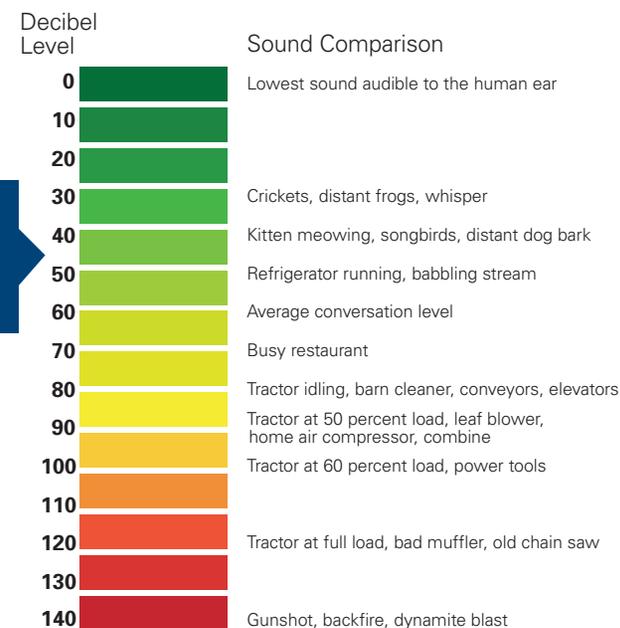
A Long History of Compression Engineering

- National Fuel has been in business for more than 110 years and is committed to the safe construction and operation of pipeline infrastructure, including its compressor stations.
- National Fuel safely operates 134 compressor units at 38 stations in New York and Pennsylvania. It has a long history of safe operation of compressor stations since its first station was placed into service in 1915.
- The Company's engineers have extensive experience in compression engineering and construction and bring the most up-to-date knowledge and techniques to every project.
- National Fuel compressor stations and other aboveground facilities are designed and engineered to reduce and eliminate detectable ground vibration and noise impacts via state-of-the-art noise-mitigation systems.
- The Company's compressor stations and transmission pipelines consistently achieve full compliance with audits by federal and state safety regulators.

48.6 dBA is a level much quieter than an average conversation

Facts about National Fuel Compressors and Sound

All new compressor station designs are federally required to achieve below a day-to-night average sound level of 55 dBA Ldn at the nearest noise-sensitive area, such as schools, hospitals, commercial buildings or residences. A 55 dBA Ldn sound level is equal to 48.6 dBA.



Data courtesy of the Texas Cooperative Extension, Texas A&M University

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National Fuel's latest compressor station design includes fully enclosing compressor units within highly sound insulated buildings. These buildings insulate mechanical noise and offer the highest degree of operational safety. National Fuel works with noise reduction experts that identify and "dampen" each possible source of noise from the compressor station operation. Some examples include:

- exhaust silencers
- air inlet silencing system
- low-noise electric driven cooling fans
- buried piping and acoustical above-grade pipe insulation to contain noise
- unit silencers to minimize gas venting noise during normal unit shutdown
- station gas vent silencers to minimize venting noise for any full-station shutdown
- noise-mitigation measures for station ancillary equipment

Additional Sound Controls

- Following station construction, National Fuel is required to perform and provide to federal regulators post-construction sound level measurements and mandated noise studies to ensure that noise-mitigation measures are meeting specified requirements.
- At its compressor station sites, National Fuel retains the area's natural foliage whenever possible, and if necessary, adds evergreen planting and builds earth berms for extra noise mitigation and aesthetic enhancement.
- The Company immediately investigates noise complaints and conducts station evaluations. Data and observations gathered from investigations may result in design modifications or equipment enhancements.
- Both during and after construction, local residents are provided with a National Fuel ombudsman to contact in the event of a noise concern.



National Fuel
National Fuel Gas Supply Corporation
Empire Pipeline, Inc.

For more information, visit www.natfuel.com/Supply/NorthernAccess2016

ADDITIONAL INFORMATION

Air Quality

As part of the regulatory review process for its proposed compressor station facility, National Fuel will submit a New York State Department of Environmental Conservation air permit application. This application will address potential air quality impacts, both during construction and operation. In addition, National Fuel must comply with all federal air quality and emissions-related regulatory requirements of the Clean Air Act (CAA) as governed by the Environmental Protection Agency (EPA). The CAA protects the public health and the environment through health and environmental science-based national standards known as National Ambient Air Quality Standards.

The CAA's national standards protect public health and are sensitive to populations including children, elderly, and individuals afflicted with respiratory diseases. In addition, these standards protect public welfare, including protection against visibility impairment, and harm to animals, crops, vegetation and buildings.

Sources, including compressor stations, must demonstrate source impacts are below CAA national standards at and beyond the facility property lines. National Fuel utilizes air-dispersion modeling and annual emission testing that is filed with state regulators to demonstrate compliance with CAA standards. For more information about the CAA, visit www.epa.gov/air/caa.