Natural Gas Pipeline Safety in Ohio

The PUCO is committed to ensuring the safe, reliable and environmentally sound operation of Ohio's natural gas pipeline system. PUCO investigators inspect each natural gas pipeline system in the state at least once every two years and review records and procedures implemented by utilities. When violations are detected, the PUCO orders corrective action and may assess fines and other penalties to ensure that Ohio's natural gas pipeline systems continue to deliver natural gas safely and reliably.

What rules and regulations apply to natural gas pipelines?

Natural gas pipeline safety rules are developed by the U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration (PHMSA). The state of Ohio has adopted the federal regulations, and the Public Utilities Commission enforces the regulations through a cooperative agreement with the federal government.

What is the general condition of natural gas pipelines in Ohio?

The condition of Ohio natural gas pipeline network varies by operator. Each operator has the obligation to demonstrate that their piping is in a condition that meets or exceeds the minimum federal safety standards. Most high pressure transmission lines are constructed with protected steel. Lower pressure distribution lines are made from plastic or steel, and older lines may be made from steel, cast iron or copper. Each operator submits an annual report to the PHMSA describing their pipeline network including the type of piping used and number of leaks detected and repaired. This data is available online at **http://www.phmsa.dot.gov/pipeline/library/data-stats**.

Are operators required to replace pipes after they reach a certain age?

The pipeline safety regulations do not specify an age limit for pipelines, but instead rely on performance standards to ensure safety. Among other criteria, pipelines must be protected from corrosion, have adequate wall thickness and be free of dents. Pipeline engineers determine what segments of pipe may be at risk and require further evaluation. The PUCO evaluates this information as part of its inspections.

What extra protections are in place for pipelines running through populated areas?

The pipeline safety regulations require operators to lower the maximum allowable operating pressure of the pipeline, increase the frequency of leak surveys and odorize gas so leaks can be readily detected.

What actions has the PUCO taken to increase natural gas pipeline safety above and beyond the federal pipeline safety regulations?

The PUCO has taken action to have some older piping materials removed and replaced. The PUCO recently required Ohio's four major natural gas utilities to gradually update old cast iron and bare steel pipelines with more modern protected steel and plastic lines.

How are new pipelines built? Is there any oversight?

The Ohio Power Siting Board certifies certain types of intrastate natural gas transmission pipelines. Check out the OPSB's **fact sheet**.

Olnh 8

Natural Gas Pipeline FAQ

Why are there increasing numbers of pipelines in Ohio?
Natural gas exploration and production has surged in the last few years as energy companies explore and produce within the Utica and Marcellus Shale natural gas formations. Natural gas is transported from the site of production to a refinery, and also to its end destination of consumption, by pipeline.

Who regulates the siting of pipelines?
The Ohio Power Siting Board (OPSB) certificates intrastate gas pipelines within the state of Ohio that are greater than 500 feet in length and 9 inches in diameter and designed with a Maximum Allowable Operating Pressure of greater than 125 psi. However, the OPSB does not have jurisdiction over production lines, gathering lines or liquid lines. Production lines are under the jurisdiction of the Ohio Department of Natural Resources (ODNR). Gathering lines and liquid lines fall under local zoning jurisdiction. Interstate lines fall under the jurisdiction of the Federal Energy Regulatory Commission (FERC).

What is a gathering pipeline?
For Power Siting purposes, a gathering line is any pipeline upstream from a processing facility, any line carrying gas from a processing facility to a fractionation plant and any line carrying natural gas from a processing plant to an interstate or intrastate pipeline.

What is a liquids pipeline?
For Power Siting purposes, liquids are defined as an individual finished product produced by a natural gas liquids fractionation plant and generally include ethane, propane, butanes and natural gasoline pipelines.

Who regulates the siting of compressor stations, processing facilities, and fractionation plants?
Compressor stations may fall under the jurisdiction of certified local building departments, where applicable. Processing facilities and liquid fractionation plants, however, are not under the jurisdiction of local building departments.

Does the Ohio Department of Natural Resources (ODNR) have a role in siting regulation?
The ODNR has jurisdiction over production operation facilities on the well head site which includes the siting of production pipelines.

Is there any further oversight once the pipelines are operational?

The Public Utilities Commission of Ohio (PUCO) regulates the safety aspects of most gas pipelines, including gathering lines, located within the state of Ohio. Pipeline operators must notify the PUCO before constructing new gas pipelines and again before placing these lines into service. The PUCO Pipeline Safety Section monitors the construction of these lines and conducts routine inspections and audits once the lines are placed in service. The only exceptions to PUCO safety jurisdiction are production lines, which are regulated by ODNR, and liquids and interstate lines which are regulated by the federal Pipeline and Hazardous Safety Administration (PHMSA), an agency of the U.S. Department of Transportation.

Where can I find more information?

- **Ohio Senate Bill 315**, passed on June 11, 2012, established a new regulatory framework for overseeing Ohio's oil and gas industry.
- Information about the PUCO and its role in pipeline safety may be found at: **www.puco.ohio.gov**.
- Information on the Utica Shale play and the ODNR Oil & Gas Division may be found at: **http://www.ohiodnr.com**.

Ohio Gas Infrastructure Jurisdiction

Project Type	Siting Jurisdiction	Safety Jurisdiction
Natural gas distribution/transmission (intrastate)*	Ohio Power Siting Board (OPSB)	Public Utilities Commission of Ohio (PUCO)
Natural gas transmission (interstate)	Federal Energy Regulatory Commission (FERC)	Pipeline and Hazardous Materials Safety Administration (PHMSA)
Production lines	Ohio Department of Natural Resources (ODNR)	ODNR
Gathering lines	Local zoning authorities	PUCO
Liquids lines	Local zoning authorities	PHMSA
Wellhead	ODNR	ODNR

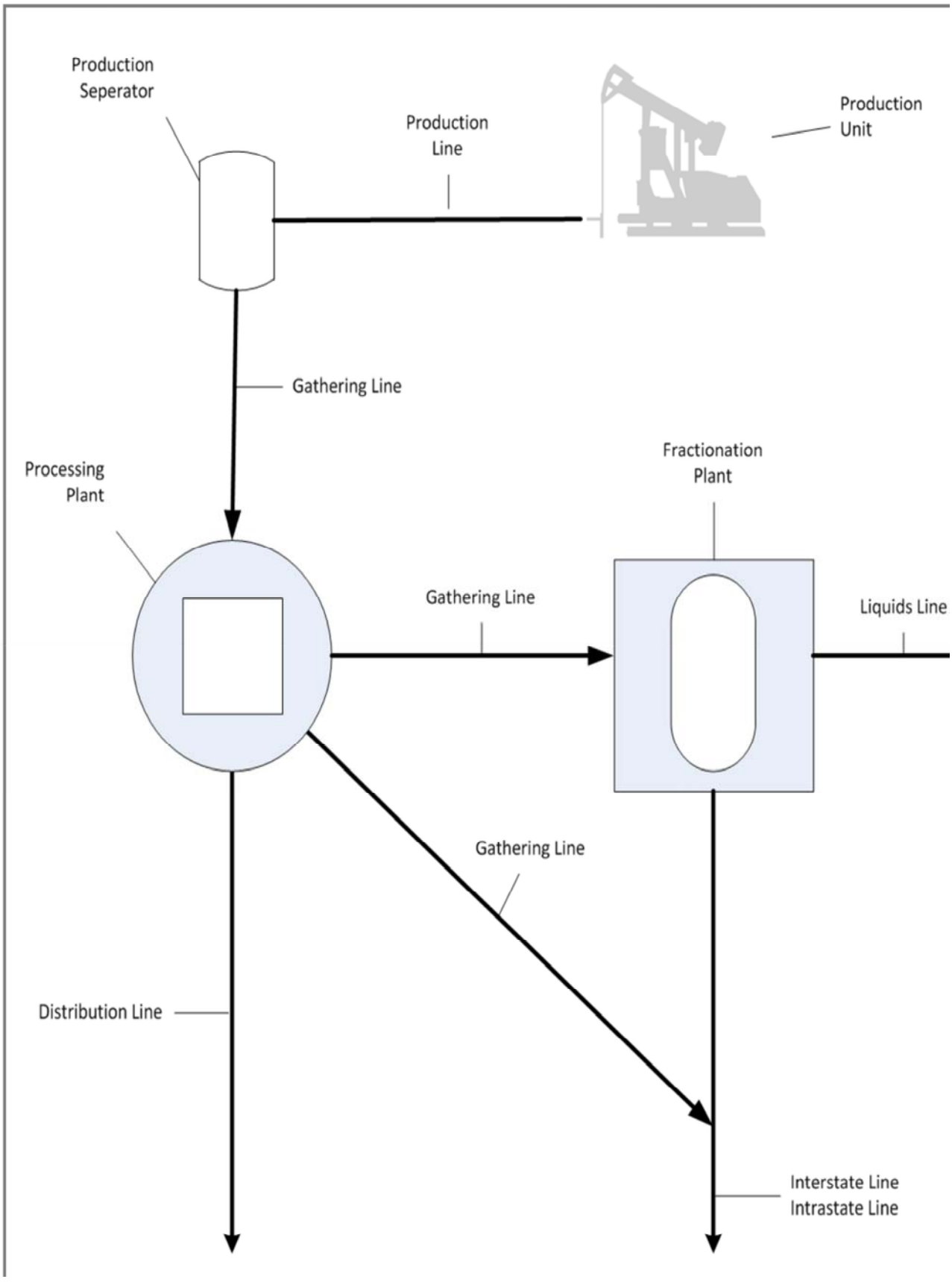
Compressor stations	Certified local building departments	Certified local building departments
Processing facilities and Fractionation plants	Local zoning authorities	Ohio Department of Commerce, Division of Industrial Compliance

*OPSB jurisdiction is limited to intrastate lines greater than 500 feet in length and 9 inches in diameter with a Maximum Allowable Operating Pressure of greater than 125 psi.

Contact Information

- Ohio Power Siting Board, 180 East Broad Street, Columbus OH 43215-3793, (866) 270-6772; **contactOPSB@puc.state.oh.us**
- Public Utilities Commission, 180 East Broad Street, Columbus OH 43215-3793, (800) 686-7826; **contactThePUCO@puc.state.oh.us**
- Ohio Department of Natural Resources, Oil & Gas Division, 2045 Morse Road, Building F-2, Columbus, OH 43229-6693, (614) 265-6922
- U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration, Central Region Office, 901 Locust Street, Suite 462, Kansas City, MO 64106, (816) 329-3800
- Federal Energy Regulatory Commission, 888 First Street, NE, Washington, DC 20426, (866) 208-3372., www.ferc.gov.

Natural Gas Infrastructure



FACT SHEET

Ohio State University Extension, 2120 Fyffe Road, Columbus, OH 43210

"Shale Oil and Gas Development" Fact Sheet Series

A Landowner's Guide to Understanding Recommended Pipeline Standards and Construction Specifications

Chris Zoller
Extension Educator, Tuscarawas County

With the drilling of gas wells comes the need to establish pipelines to move the gas from the point of drilling to the end users. Landowners across Ohio are being asked to sign agreements allowing companies to purchase acreage for pipeline construction. This fact sheet will provide landowners with an overview of items to consider regarding standards and construction specifications related to pipelines.

This fact sheet is intended for educational purposes only. We strongly encourage landowners who may be considering negotiating a pipeline easement to consult with an attorney familiar with such negotiations.

What is a Pipeline Right-of-Way?

A pipeline right-of-way is a piece of land, granted to a pipeline company, on top of and on either side of a natural gas pipeline. Also referred to as an easement, it provides certain interests and restrictions to the land that allows the pipeline company to install and maintain the pipeline. The right-of-way is established through an easement, or purchase of property, and results in the landowner giving up ownership of the affected area. Along with the sale come certain restrictions on the use of the land.

Who Approves Pipelines?

The Federal Energy Regulatory Commission (FERC) approves the location, construction, and operation of pipelines, facilities, and storage areas involved in moving gas across state lines.

The Public Utilities Commission of Ohio (PUCO) has regulatory authority over pipelines within Ohio and the Ohio Power Siting Board has authorization to issue certificates for the construction, operation, and maintenance of utility facilities.

Pipeline Standards and Construction Specifications

The Ohio Department of Natural Resources Division of Soil and Water Conservation (ODNR-DSWC) has developed a model pipeline standard and specification document to provide guidelines for controlling and minimizing any adverse impacts of pipeline construction on Ohio's soil and water resources. These standards were developed by the ODNR-DSWC when a 42 inch natural gas pipeline, known as the Rex Express Pipeline-East Project, was constructed throughout southern and eastern Ohio.

Following is a review of what items were included in this agreement and provides landowners who may be considering the placement of a pipeline across their land with items to consider prior to, during, and following construction. A detailed description of this document is available from your local Soil and Water Conservation District office or on-line at: http://ohiodnr.com/portals/12/CE/Pipeline/Ohio_Pipeline_Const_Standards.pdf.

Planning Phase

The planning phase consists of developing plans and maps of the construction area, sensitive soils, special features, and contact information.

Construction Plans and Maps:

Landowners should require the company to provide them with general construction plan maps that include the following information:

A. Pasture or grazing areas, unimproved grazing areas, permanent open pasture, improved pasture, and fence lines.
B. Cropland areas including hayland, rotation cropland, long-term cropland, and agricultural land enrolled in the Conservation Reserve or other set-aside programs through the Farm Service Agency.
C. Unique Agricultural Lands, including specialty crops, orchards, vineyards, maple sugarbushes, organic mucklands, and permanent irrigation systems.

Sensitive Agricultural Soils:

These are lands defined as cropland, hayland, or pasture that are more prone to disturbance during construction than other soils. Reasons for this include slope, wetness, and/or shallowness to depth of bedrock. These soils should be identified on the map and managed accordingly.

Other Features:

Landowners should require that the company, on the construction maps and plans, note the following information:

A. Subsurface drainage areas that can be identified, open ditches, diversions, terraces, buried utility lines, water sources, and unnamed water flows.
B. Depth of cover if it differs from the Construction Specifications.
C. Any off right-of-way roads, work, or storage areas. Other areas identified during construction should be considered and filed as a change in the construction plans.
D. Planned location of any compressor or valve stations, metering or regulating stations, and any other proposed facilities.
E. General location of trench breaks with notation of distance between breaks based on percent of slope.
F. Locations for subsurface drains to control soil saturation or aid trench breakers in minimizing water piping.

Point of Contact During Construction:

Prior to construction the landowner should request that the company provide the name, address, and telephone number of the representative assigned to the project during construction and operation. Landowners should also request that the company respond promptly to any concerns of the landowner during construction and operation.

Construction Specifications

A. Ingress and Egress Routes

Prior to construction the landowner and the company should reach a mutual agreement regarding routes that will be used for entering and exiting the right-of-way. This is a critical component of the agreement because, without such agreement, the company may access the right-of-way from any direction and may cause damage to fields, crops, timber, etc.

B. Temporary Roads

The location of any temporary roads should be agreed upon and in writing prior to construction. Whenever possible, it is suggested that existing roads be used. Any temporary roads should be constructed such that they do not impede drainage and minimize soil erosion. If temporary roads are to remain in place following construction, this should be agreed upon in writing and the plan should outline who has responsibilities for maintenance. It is in the best interest of the landowner to require the company be responsible for all maintenance. Should temporary roads be removed, it should be agreed that the property will return to the original landowner and in a condition equivalent to that which existed prior to construction.

C. Cleaning of Brush and Trees on the Right-of-Way

All parties should agree in writing as to the removal of trees, brush, and stumps of no value to the landowner. This may include, where allowed by law, burning, burial, chipping, or complete removal.

In areas where livestock are grazing and black cherry exists on the right-of-way, the company should be required to not allow any black cherry trees to wilt or be stockpiled. Black cherry, in its wilted state, is toxic to livestock.

D. Topsoil Removal and Protection

On agricultural lands, topsoil should be removed prior to any activity by any equipment. On all other acres the topsoil should be removed after clearing, grubbing, and prior to other construction activities. Topsoil shall be removed from the full width of the right-of-way and stockpiled along either edge and on the right-of-way. It is suggested that topsoil be separated from other extracted materials and construction activity. In order to best protect topsoil, the double ditching method of soil removal for pipeline construction is recommended. All topsoil should be removed, stockpiled, and returned to restore the original soil profile.

E. Depth of Cover

Except for above-ground piping facilities, it is suggested that pipelines be buried as follows:

On lands where there are existing subsurface drain systems, or drain tile is required to provide sufficient drainage, and bedrock is shallower than 96 inches, a minimum of 60 inches of cover is recommended. A minimum of 60 inches of cover should be maintained over the pipeline in those locations where is crosses surface drains, diversions, grassed waterways, open ditches, and streams.

On lands without drain tile and where the County Soil Survey (available through your local Soil and Water Conservation District office) indicates good drainage, a minimum of 48 inches of cover over the pipeline is recommended.

On non-agricultural land, unimproved pasture, and permanent pasture it is suggested a minimum of 36 inches of cover be maintained over the pipeline.

F. Rock Removal

The agreement should include language not allowing for the backfill of materials containing rocks of any greater concentration or size than existed prior to construction.

G. Repair of Damaged and Adversely Affected Tile Lines

It is suggested that all repairs and/or replacement of tile lines be completed prior to topsoil being applied.

If underground tile is damaged as a result of installation of the pipeline, it should be repaired in a manner that assures proper function of the tile at the point of repair. If necessary, the company shall take appropriate actions to replace, reconfigure, or replace the tile lines. Below are recommendations regarding drain tile repair:

It should be the responsibility of the company to locate all drain tiles within the right-of-way prior to installation. All identified tile lines should be marked with a four foot lathe to alert construction crews.

If tile lines are damaged, cut, or removed during construction they should be marked with a four foot lathe in the trench soil bank directly opposite each drain tile line.

All repairs should be made with materials of the same or better quality of those damaged.

In cases where the tile lines are severed by the pipeline trench, steel channel iron, steel angle iron, full round slotted steel pipe, half-round slotted steel pipe, or schedule 80 pvc pipe with 1/8 inch diameter holes are recommended to support the drain tile across the trench.

All pipeline repairs should be completed within 30 days following completion of the pipeline installation. Following construction, it is recommended the company be responsible for correcting all drain tile repairs that fall on the permanent and construction right-of-way. It is recommended that drain tiles not be placed below the pipeline.

Landowners should hold the company responsible for installation of additional drain tile necessary to properly drain wet areas on the permanent and temporary easement.

All soil conservation practices installed as a result of construction should be restored to their original condition.

H. Control of Trench Washouts, Water Piping, and Blowouts

The agreement should include the requirement that trench breakers be installed for the purposes of preventing trench washouts during construction and abating water piping and blowouts subsequent to trench backfill.

I. Pumping of Water from Open Ditches

It is recommended that no backfilling occur in water filled trenches and that all water be removed prior to backfilling. Should it become necessary to pump water from open

ditches, it should be pumped in a manner that does not cause damage to adjacent lands, crops, and/or pasture.

J. Subsoil Decompaction, Soil Shattering, and Stone Removal

The process of construction and installation of a pipeline requires the use of heavy equipment which has the potential to cause soil compaction. If not properly addressed, this compaction can lead to long-term negative effects on crop growth and yields. To remedy this potentially negative result, the subsoil should be ripped to a depth of not less than 16 inches using an appropriate tool.

The cost of applying fertilizer or other necessary soil amendments should be included in the damages paid and allow the landowner to apply the materials as needed based on soil sampling and crops grown.

Landowners may want to consider providing a stated time in which subsoil decompaction and soil replacement may not occur. For instance, November 1 to April 1 may be a time when unsuitable weather conditions may not allow for continuing restoration of the land.

K. Backfill Profile and Trench Crowning

On lands where materials excavated during trenching are insufficient in quantity to meet backfill requirements, it is suggested that the soil of adjacent agricultural land not be used as backfill or cover material.

Landowners should insist that under no circumstances should topsoil materials be used for pipe padding or trench backfill.

In all agricultural lands, ripped or blasted bedrock or extracted stone or rock may be used for trench backfill material, but no closer than 24 inches from the exposed construction surface of the right-of-way. Any rocks not used as backfill should be removed according to the mutually agreed upon plan. Crowning of the trench may occur during trench backfilling using subsoil materials over the trench to allow for settling of the trench. The stockpiled topsoil can be applied over the affected right-of-way after rock clean-up is completed. In those areas where the trench does settle after topsoil is applied, imported topsoil, not that from adjacent lands, should be spread to fill those areas that settle.

L. Land Leveling

After the completion of the pipeline, the company should restore the right-of-way to its original pre-construction elevation and contour. Leveling should be employed to counteract any uneven settling or surface drainage problems resulting from construction activity on the easement.

M. Weed Control

Areas of the right-of-way which may be traversed by company officials, or may contain pipeline structures, should be monitored in a manner which discourages the spread of weeds to adjacent lands being utilized for agricultural purposes. Pesticides should be applied by a qualified applicator.

N. Damages to Private Property

In the event of any damages that resulting from actions of the pipeline company during construction, maintenance, or operation of the pipeline, the landowner should be compensated

Summary

The construction of a pipeline across your property has the potential to provide additional income if you grant an easement. It is important that landowners understand, however, that granting the easement does potentially restrict the use of the affected area. We encourage all landowners to use this fact sheet when negotiating with a company interested in constructing a pipeline on your property and to always seek the advice of an attorney familiar with easement agreements of this nature.

References

Pipeline Standard and Construction Specifications; Ohio Department of Natural Resources Division of Soil & Water Conservation;
http://ohiodnr.com/portals/12/CE/Pipeline/Ohio_Pipeline_Const_Standards.pdf

Pipeline Construction Standards and Policies; Illinois Department of Agriculture;
http://www.agr.state.il.us/Environment/LandWater/pipelinestandards&policies.pdf

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FACT SHEET

Ohio State University Extension, 2120 Fyffe Road, Columbus, OH 43210

"Shale Oil and Gas Development" Fact Sheet Series

Understanding and Negotiating Pipeline Easements

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Introduction

Pipelines play an important role in the development of Ohio's shale resources. As shale development in Ohio continues to expand, so does the need for pipelines that transport shale gas resources. Many landowners may be approached by companies who want to construct a pipeline across their properties. Landowners facing this situation will benefit from understanding and negotiating the pipeline easement, also referred to as the pipeline "right-of-way." This fact sheet explains pipeline easements and reviews issues and terms for landowners to consider when negotiating an easement. For additional information on pipelines, pipeline regulation and pipeline construction see our pipeline fact sheet series on OSU Extension's shale education library at http://shalegas.osu.edu.

What is a Pipeline Easement?

Generally, an easement is a legal interest that allows someone the right to use another's property for a certain purpose. A pipeline easement specifically gives the easement holder the right to build and maintain a pipeline on a landowner's property. It doesn't grant the easement holder actual ownership of the land, just a right to use the land for pipeline purposes. The easement "runs with the land," meaning that it remains on the property and applies to all future property owners. The easement should be in writing, signed by the landowner and recorded with the county recorder. Typically, a pipeline easement is permanent and does not have a termination date, although parties can agree to an easement that lasts for a certain period of time. Note that the term "right-of-way agreement" has the same legal meaning as the term "easement," and that many refer to the piece of land that is the subject of the easement as a "right-of-way." For this fact sheet, we will use the term "easement" rather than "right-of-way."

Pipeline Easements and Oil and Gas Leases

An oil and gas lease might include pipeline easement rights as a provision of the lease. For this reason, landowners should examine existing oil and gas leases to determine if pipeline easement rights already exist. If so, the landowner should understand the extent of the easement rights granted in the lease. For example, the lease may grant the oil and gas company the right to establish gathering lines anywhere on the lease property. Or an oil and gas lease might prohibit the landowner from granting a pipeline easement to another company.

Landowners who have existing oil and gas leases should carefully review the leases and consult an attorney for clarification of any language that refers to pipelines. Landowners who are currently considering an oil and gas lease should consider removing any references to pipeline easements and negotiate those rights in a separate pipeline easement agreement.

Pipeline Easements and Eminent Domain

Eminent domain can play an important role in the development of pipelines and the negotiation of pipeline easements. If a landowner doesn't agree to grant a pipeline easement to a development company, the company may try to acquire the easement through the power of eminent domain. Ohio has a specific law in Ohio Revised Code 1723.01 that allows a private company that is organized "for transporting natural or artificial gas, petroleum, coal or its derivatives … through tubing, pipes, or conduits" to do two things:

1. To enter upon any private land to examine or survey for pipelines, and
2. To use eminent domain to take private land, or any right or interest in private land, as is necessary for the pipelines.

Some argue that the statute only grants eminent domain rights for transporting gas, and does not extend the right of eminent domain for the transport of gas derivatives such as ethane. While there is not strong legal support for this argument, we can expect to see litigation on this issue in the near future.

To use eminent domain, the company must prove that the company and landowner were not able to reach an agreement about granting a pipeline easement and that the taking of the pipeline easement is "necessary." The company must follow the procedures for eminent domain laid out in Ohio Revised Code Chapter 163.

For an *interstate* pipeline that runs between Ohio and another state, federal law could allow a company to use eminent domain to obtain land from unwilling landowners. Federal law states that a company may acquire property rights for a gas pipeline if the company has obtained a Certificate of Public Convenience and Necessity from the Federal Energy Regulatory Commission and the company and landowner have not been able to agree on compensation for the pipeline easement. See 15 USC §717(F).

Pipeline Easements are Negotiable

While a landowner will likely receive a "form" or "model" easement from a development company, the landowner should consider this form easement as a starting point for negotiating easement terms rather than as a final offer from the company. It is acceptable to respond to the company's easement offer with additional provisions that address the landowner's needs. The assistance of a knowledgeable attorney throughout this easement negotiation process can be invaluable and well worth the investment.

Before the pipeline easement negotiation process begins, take into account three key areas of concern:

1. *Impact on property.* What effects could there be on the property due to the construction, maintenance and long term presence of the pipeline, and are there ways to reduce those impacts?
2. *Income.* How much compensation should the landowner receive for the use of the land and for the impacts that will or might result from the pipeline?
3. *Eminent domain.* Does the company possess the potential power of eminent domain, and is the company willing to pursue eminent domain?

Pipeline Easement Terms

The following explains many of the key terms to consider in a pipeline easement. This list is a summary, and does not include all of the provisions that might exist. A landowner should understand each provision and determine whether it applies to the landowner's situation and should be a point of negotiation with the development company.

Location of the Pipeline

What is the company's proposed location for the pipeline? A landowner should carefully review the proposed location and consider its impacts upon the property. Are there areas of the property that the landowner does not want to disturb, such as important habitat, timber and soil resources or residential use areas? If so, the landowner should try to negotiate the location to avoid these areas. Because an easement usually prevents a landowner from building new structures over the easement area, the landowner should also try to determine where buildings or structures may be desired in the future and ensure that the easement will not cross those areas. Additionally, the landowner might consider asking the company to locate the pipeline parallel to property boundaries or other existing easements to reduce land use conflicts and ensure efficient land use.

Once the company and landowner agree to the pipeline location, the easement document should specify the exact location of the pipeline and the boundaries of the pipeline easement rather than using broad or general language such as "across the landowner's property." Problems or changes with the proposed route might occur during construction. To guarantee accuracy of the pipeline and easement locations after the pipeline is in place, the landowner can request that the company provide an "as-constructed" survey following the construction of the pipeline.

Pipeline Depth

Companies today place most pipelines underground. Although Ohio law requires that pipelines be buried at least 24 inches below the land surface, the landowner may want to negotiate a lower depth. Farmland owners should request additional depth to ensure that the pipeline will not interfere with crop production and other farming activities that might occur on the surface. The recommended depth of a pipeline on farmland is 48—60 inches below the land surface. Pipeline depth is measured from the land surface to the top of the pipe.

Width of the Easement

The pipeline easement width may range from 50 to 100 feet or more, depending on the type and size of pipeline, the nature of the landscape and construction and maintenance needs. Easement width might include land that is needed to be able to construct the pipeline, or additional width for construction could be addressed in a *temporary construction easement*, explained below under "construction rights." The

easement document should state the width in specific terms rather than in general terms such as "a width as is necessary to support a pipeline."

Construction Rights

There are two approaches to addressing construction needs for the pipeline. A company might include construction needs when determining the width of the easement. In this situation, the landowner would grant construction rights as a permissible use of the pipeline easement and the width of the easement would be wide enough to accommodate construction activity.

Another approach is to negotiate a *temporary construction easement* in addition to the pipeline easement. The temporary construction easement allows the company access to additional land along the pipeline easement in order to install the pipeline. When construction is complete, the temporary construction easement terminates and the company's rights of use "shrink down" to a lesser width that is designated as the pipeline easement. Temporary construction easements are often included in the same document as the pipeline easement.

For either approach, it is important for the landowner to understand the boundaries for construction activity and the potential impacts construction might create on the property. Be wary of language that expands the size of the easement by granting the company "a width as is necessary to construct the pipeline," or that gives the company broad rights to access and use non-easement property for construction and construction-related purposes. The preferred language for the landowner regarding construction rights is to state the precise boundaries where construction will occur.

The landowner should also place restrictions on construction-related activities such as use of the property by construction workers. These restrictions could address construction parking and worker sanitary stations and rest areas, and could prohibit non-construction activities on the property such as hunting, fishing, camping or similar activities by construction workers.

Construction Timeline

A valuable provision for the landowner to request is a timeline that outlines the time period for construction and installation of the pipeline. The timetable gives the landowner certainty as to when activity will occur and can help avoid conflicts between pipeline construction and important events for the landowner, such as farm planting or harvest seasons. A favorable timetable would include remedies for the landowner if the company causes hardships and inconvenience by failing to meet the construction timeline.

Construction Standards

The Division of Soil and Water Conservation in the Ohio Department of Natural Resources (ODNR) has developed a comprehensive set of standards for pipeline construction that address issues such as soil compaction, erosion and drainage. Adherence to these standards is very important for minimizing impacts on soil and water resources. A landowner can include the ODNR standards in the easement document, which will require the company to adhere to these best management practices. For further explanation, see our Fact Sheet, "A Landowner's Guide to Understanding Recommended Pipeline Standards and Construction Specifications" or visit
http://www.dnr.state.oh.us/portals/12/CE/Pipeline/Ohio_Pipeline_Const_Standards.pdf.

Pipeline development companies often use third party construction companies to install the pipelines. The easement should state that all third parties are also subject to the agreed upon construction standards and should make the development company liable for noncompliance by the construction company. Also, the landowner may request that the development company provide identification information for all third parties who will perform work on the land.

Crossing Waterways

Will pipeline construction require crossings of a ditch or waterway on the landowner's property? The easement can include a provision that requires the company to construct temporary crossings to prevent erosion and other interferences with the waterway, streambed and riparian areas.

Impacts on Woodlands and Timber

Pipeline construction projects often interfere with existing woodlands or timber stands. A landowner who does not want this type of interference should try to negotiate the pipeline location to avoid impacts on woodlands. If the pipeline will interfere with trees, the easement should address tree removal issues such as who will remove the trees, best management practices for tree removal, and who has rights to the timber. The landowner may want to use or sell the timber or may prefer to grant timber rights to the development company and seek compensation for the value of the timber. Landowners who harvest their timber should confer with the county Soil and Water Conservation District about developing a plan for utilizing best management practices. An additional consideration is restoration of the woodland area after construction; the landowner may negotiate for the company to reestablish trees and restore woodland habitat that was impacted by construction activities.

Drainage, Fencing, Gates and Other Improvements

The landowner may also need for the pipeline development company to replace or install improvements such as subsurface drainage, fencing, gates, storage tanks, outbuildings and other accessories. Address which improvements must be moved, how and where they will be moved and compensation for harm to the improvements. If there are livestock on the property, require procedures that contain the livestock during and after pipeline construction. A private third-party appraisal may be desirable to assess fair market value for harm to structures and improvements. Instead of compensation, the company could be responsible for replacing or repairing structures and improvements.

Construction of Associated Structures or Facilities

There are a number of structures and facilities associated with the construction and operation of pipelines, such as compressor stations, pump stations, meter stations and meter pits. Legally, these structures are usually referred to in the easement as "appurtenances." A landowner should examine the proposed easement to determine if the easement allows the development company to place appurtenances on the pipeline easement and if so, where and to what extent they may exist. If the landowner does not want these structures and facilities on the property, be sure that the easement language prohibits them. Alternatively, a landowner could limit placement of appurtenances to certain locations or require that the structure or facilities be hidden or visually pleasing. If the landowner does allow for these facilities, the landowner should request additional compensation.

Substances Permitted in the Pipeline

The easement should clarify what substances the pipeline may transport. Generally, the landowner would be wise to limit pipeline use to natural gas and its constituents and prohibit use of the pipeline for other substances such as wastewater, sewage and oil.

Number of Pipelines

The landowner might expect that the easement is for the construction of a single pipeline, but the easement language might allow more than one pipeline or "as many lines as regulations allow." If the landowner agrees to more than one line, payment should reflect the additional value of the easement that

multiple lines create for the development company. If the landowner is not willing to allow more than one pipeline, the easement language should prohibit multiple lines. Perhaps the landowner is willing to consider additional pipelines on the easement in the future; language could state that subsequent pipelines are possible, if approved by the landowner and with additional compensation.

Pipeline Pressure

What is the pressure of the pipeline proposed by the development company? The easement should state the maximum pressured allowed in the pipeline. It is advisable to consider a higher payment to the landowner for higher pressure lines because of potentially higher safety risks, especially when the pipeline is located close to human activity.

Indemnification

A landowner should seek a provision that protects the landowner from liability for all acts of the company related to the pipeline. Because companies often subcontract to third parties to construct the pipelines, liability protection should include acts committed by third parties. The company should agree to defend the landowner and hold the landowner harmless from any liabilities arising from the pipeline or from any pipeline-related activities.

Access to Pipelines for Inspection

The law requires companies to perform routine inspections of their pipelines to make sure they comply with safety regulations. The methods of inspection a company will use can vary—from gas sampling and leak detection by personnel on the ground to aerial patrols by plane or helicopter. Landowners should consider addressing how and where the company may access the property for inspections and consider requiring the company to provide notice of inspection, including the inspection time and nature of the activity. A farmland owner may want to prohibit inspections at specific times of the year, such as during harvesting or planting seasons. A routine inspection schedule could benefit the landowner, if the company is willing to agree to one.

A final consideration for the landowner is to address property damages and disruptions due to inspection, maintenance, repair and replacement. Soil compaction and erosion, loss of timber, water supply or property access and interference with livestock production are a few examples of potential disruptions that pose hardships on the landowner. Negotiate procedures that detail replacement, repairs or compensation for these disruptions.

Signage and Markers

Ohio Administrative Code section 1501:9-10-03 states that companies must identify the route of the pipeline on the surface in "a manner which is customary to the industry." Under federal regulations, markers are to be placed so that the location of the pipeline is accurately known. It may be in the landowner's best interest to require additional pipeline signage and markers so that the landowner can safely conduct agricultural, recreational or other types of activities without interfering with the pipeline.

Landowner's Rights of Use

It is advisable for the landowner to retain broad rights to use the easement area. The landowner should try to forecast all potential uses of the property in the future and specify that the uses do not violate the easement. Such rights can include rights to farm in, on and around the easement; graze livestock; conduct recreational uses; grant other easements or place temporary structures, accessories, driveways, roads, walks, parking areas and landscaping on the easement. Stating these retained

landowner rights of use within the pipeline easement will safeguard the landowner's ordinary use of the property and minimize inconveniences and misunderstandings in the future.

Termination or Abandonment of Easement

Both parties should agree to conditions that will legally terminate or end the easement. Easements typically last forever ("in perpetuity") as long as the company uses the easement for its stated purposes. However, the landowner may seek to clarify that there will be an automatic termination or abandonment of the easement if the company ceases to use the pipeline as intended or fails to utilize it for a certain period of time. For example, the easement could state that termination of the company's rights takes place if "no construction occurs within X years after entering into the easement agreement or there is no actual use of the pipeline for X years." Where there is a termination of the easement, the landowner may also want to require the company to remove the pipeline and other structures and restore the land surface after removal, so should be sure to include these obligations in the easement.

Disputes and Problems

How will the parties deal with disputes or problems that arise? The parties can agree upon methods for resolving disputes and include them in the easement. For example, a common dispute provision might prohibit a landowner from going to court over a dispute unless the landowner has first provided written notice of a problem to the company and given the company a specific period of time to address the problem. Another common provision is to require that the parties settle a dispute by arbitration or mediation rather than going to court. The landowner should carefully review these provisions with the landowner's attorney and ensure that the process for resolving disputes is fair and understood by the landowner.

Assignment Rights

The easement should state whether the pipeline development company may transfer its rights under the easement to another company. If the parties agree to allow an assignment, it is common for the easement to state that the company must provide written notice of an assignment to the landowner within a certain period of time, along with contact information about the new company and a statement that the easement will be binding on the assigned party.

Amendments to the Easement

What if the parties want to change or amend the easement in the future? The easement should outline whether amendments are permissible and what each party must do in order to formalize an amendment. It is common to include a provision stating that any amendments to the easement must be in writing and signed by each party or their successors.

Warranting Title

Another common clause often found in easements states that the landowner "warrants" clear title to the property and promises to compensate the company if a title problem occurs. A landowner's attorney would likely demand to remove this provision, as it is always possible that an unexpected and unknown discrepancy could arise in a landowner's title to the property.

Payment Provisions

Compensation is the final consideration a landowner should make, after gaining a clear understanding of how the pipeline may affect the landowner and the landowner's property. This is an important part of the negotiation process and requires the landowner to carefully assess property

impacts, other damages and property values. There are several elements that should make up the final offer of payment, which includes:

1. *Payment for the permanent pipeline easement.* The easement agreement should offer a payment for the actual land required for placing the pipeline on the property. This amount is usually offered as a set dollar amount *per linear foot* of pipeline that will be laid on the property. Sometimes the payment amount will be stated as "per rod," which is 16.5 linear feet. Many factors contribute to the amount the company offers, including the size and type of the pipeline, the importance of the location to the pipeline route, current rates in the area and current land values. Individual impacts and factors should also affect the payment. Landowners may benefit from talking with other landowners in the area to ascertain baseline values offered to others, but be aware that individual circumstances can lead to different values. In addition to the per-foot or per-rod payment, a company might also offer a signing bonus, which gives the landowner another fixed dollar amount for signing the easement.
2. *Temporary construction easement.* A company may seek a temporary construction easement that gives the company rights to use a larger area during the initial pipeline construction and reverts to a smaller area once the pipeline is completed (see further explanation above under "construction rights." The company should make an additional payment for this temporary easement, based on factors similar to those used to calculate the pipeline easement.
3. *Damages to the landowner.* Compensation to the landowner should also include any damages the landowner will incur as a result of the construction, maintenance and long-term presence of the easement on the property. We discuss many of these potential damages above, such as interference with land use, impacts on crop production or subsurface drainage and loss of timber. Damages should also include inconvenience impacts from the construction process.
4. *Costs to the landowner.* The landowner can also request compensation for additional costs incurred because of the pipeline, such as payments for an attorney, property appraisals, property surveys and recording fees.

Taxation on Pipeline Easement Payments

Landowners should be aware that income received for the easement creates tax payment obligations. For federal taxation purposes, income for an easement that lasts thirty years or more is considered a capital gain and must be reported as such. Income received for a "temporary" easement, one that lasts less than thirty years (such as a construction easement), is considered ordinary income for tax reporting purposes. Payment for damages to the landowner's property is considered capital gain. Because of these distinctions, it is important for the landowner to obtain a statement from the company that itemizes and explains the payments made to the landowner.

The Importance of Professional Assistance

This fact sheet should not be used to replace the services of an attorney or other professional. We strongly encourage landowners to consult with an experienced attorney and other advisors when considering and negotiating a pipeline easement.

References

Natural Gas Pipeline Right-of-Ways: Understanding Landowner Rights and Options; Penn State Extension (Apr., 2010).

This fact sheet is in draft form and has been submitted to Ohio State University Extension for final publication by The Ohio State University.

FACT SHEET

Ohio State University Extension, 2120 Fyffe Road, Columbus, OH 43210

"Shale Oil and Gas Development" Fact Sheet Series

Oil and Gas Pipeline Easement Checklist

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Peggy Kirk Hall
Director, OSU Agricultural & Resource Law Program

The following is a general list of typical provisions to include in an oil and gas pipeline easement agreement. Refer to our "Understanding and Negotiating Pipeline Easements" Fact Sheet for a more complete explanation of issues and terms. We also encourage landowners to seek the assistance of an attorney and other professionals who can help assess the easement agreement and address specific issues and concerns for an individual situation.

Granting Clause

_ Clear statement of the property rights landowner is granting.
_ No requirement for landowner to warrant a clear title to the property.

Easement Location

_ Accurate legal description of the location of the easement, including width of the pipeline easement and requirement for a post-construction survey establishing final easement location.
_ Location of temporary construction easement, if applicable.
_ Required minimum depth of pipeline, from land surface to top of pipe.

Limitations on Use of Easement

_ Number of pipelines allotted on the easement.
_ Actual or maximum size of pipeline.
_ Pipeline pressure limitations.
_ Limitations on types of substances to be conveyed through pipeline.
_ Limitations on additional surface and subsurface structures or facilities on the easement.
_ Landowner's rights to use the easement area for specified purposes.

Construction

_ Timetable for construction and installation of the pipeline.
_ Damages for injuries resulting from failure to meet construction deadlines.
_ Landowner's access rights to home, driveways, barns, fields, etc. during construction.
_ Adherence to Best Management Practices and Ohio Department of Natural Resources pipeline standards and construction specifications.
_ Methods for replacing topsoil and vegetation after construction.
_ Requirements for restoration of land surface after construction.

_ Restrictions on use of landowner's property for construction-related activities such as parking, equipment storage and sanitary stations.
_ Requirements for crossing waterways on the property during construction.
_ Minimization of impacts on woodlands and timber.
_ Minimization of impacts on field crops.
_ Procedures for addressing impacts on drainage, fencing, gates or other land improvements.
_ Management of livestock or other business uses on property during construction.
_ Markers to identify location of pipeline upon completion of construction.

Maintenance of the Pipeline

_ How and where to access the pipeline easement for inspection and maintenance.
_ Defined boundaries for inspection and maintenance activities.
_ Routine inspection and maintenance schedule, including prohibited times for inspection and maintenance activities.

Landowner Liability

_ Indemnification provision protecting landowner from liability for acts of company and third parties.

Termination and Abandonment

_ Termination date for easement, if applicable.
_ Conditions for automatic termination, such as failure to construct pipeline.
_ Clear definition of actions or inactions that result in abandonment of the pipeline.
_ Company's obligations for notification and removal of structures and equipment following termination or abandonment.

Miscellaneous Considerations

_ Procedures for addressing and handling disputes.
_ Assignment rights and procedures for assignment to another company.
_ Procedures for amending the easement agreement.

Payment Terms

_ Payment for the permanent pipeline easement, based on specific property characteristics and circumstances.
_ Payment for a temporary construction easement, if applicable.
_ Payment for damages resulting from construction, maintenance and long-term presence of the pipeline on the property, including harm to or loss of timber, crops and soil.
_ Reimbursement of attorney or appraisal fees, surveys and other costs.

Summary

Use this checklist to help assess the provisions in an oil and gas pipeline easement. This fact sheet is not intended to take the place of legal advice; landowners should seek the assistance of an experienced attorney to assist with pipeline easement review.

This fact sheet is in draft form and has been submitted to Ohio State University Extension for final publication by The Ohio State University.

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NORTH CENTRAL
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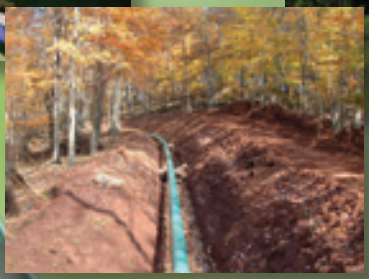
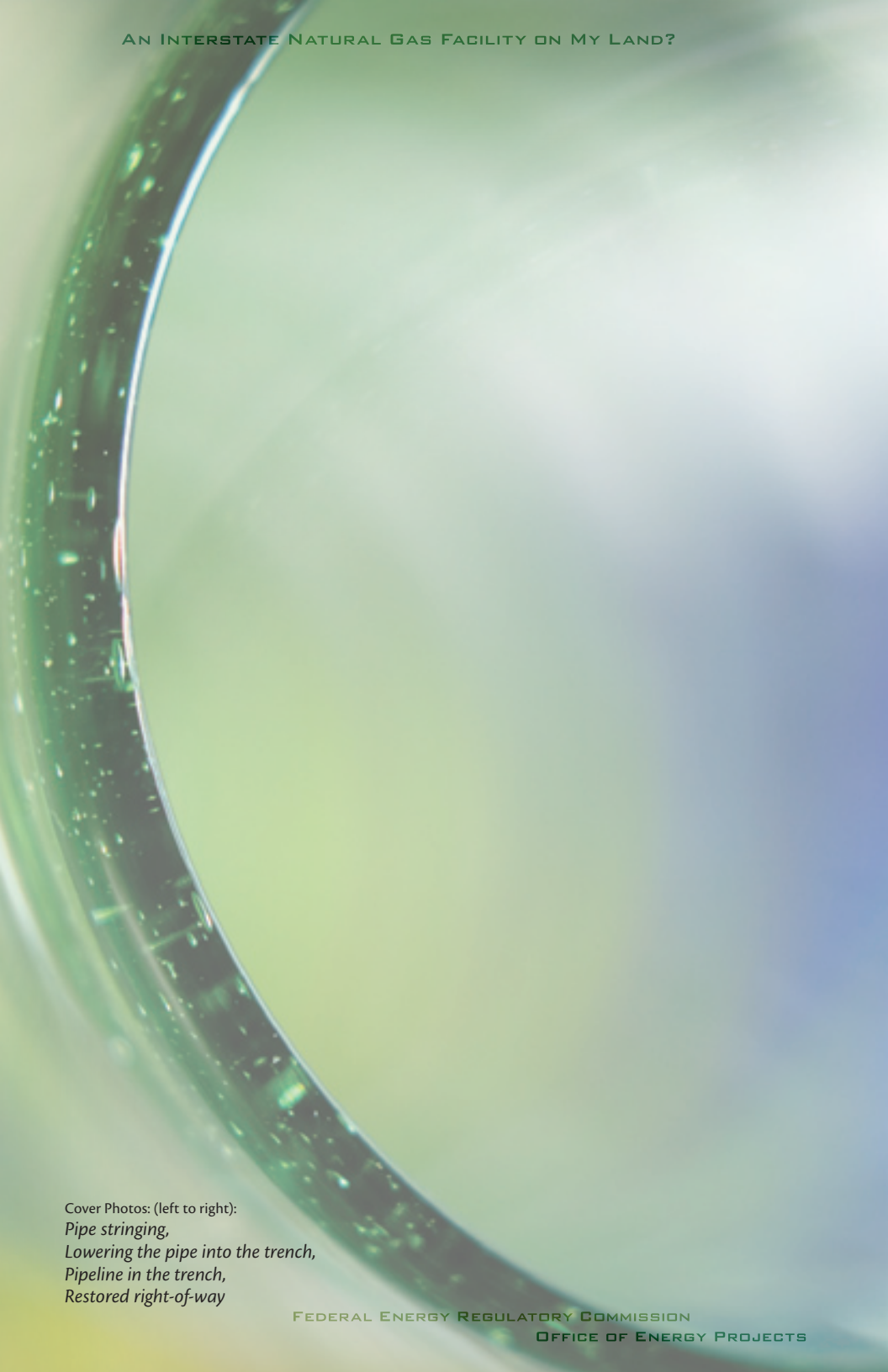
An Interstate Natural Gas Facility on My Land?

What Do I Need to Know?



Prepared by the Federal Energy Regulatory Commission

Federal Energy Regulatory Commission
Washington, DC
www.ferc.gov



Cover Photos: (left to right):
Pipe stringing,
Lowering the pipe into the trench,
Pipeline in the trench,
Restored right-of-way

Federal Energy Regulatory Commission
Office of Energy Projects

An Interstate Natural Gas Facility on My Land?

What do I Need to know?

The Federal Energy Regulatory Commission is charged by Congress with evaluating whether interstate natural gas pipeline projects proposed by private companies should be approved. The Federal government does not propose, construct, operate, or own such projects. The Commission's determination whether to approve such a project may affect you if your land is where a natural gas pipeline, other facilities, or underground storage fields might be located. We want you to know:

- *How the Commission's procedures work;*
- *What rights you have;*
- *How the location of a pipeline or other facilities is decided; and*
- *What safety and environmental issues might be involved.*

Background

The Commission approves the location, construction and operation of interstate pipelines, facilities and storage fields involved in moving natural gas across state boundaries. The Commission also approves the abandonment of these facilities.

Interstate pipelines crisscross the United States, moving nearly a quarter of the nation's energy long distances to markets in the 48 contiguous states, and are vital to the economy. Although pipelines generally are buried underground, they may have associated facilities that are above-ground such as taps, valves, metering stations, pig launchers, pig receivers, or compressor stations. A natural gas storage field includes subsurface gas storage rights and there may be storage field pipelines and gas wells associated with the storage rights. A Pipeline Glossary is provided at the end of this brochure to help you understand some of the technical terms that are associated with pipeline construction and above-ground facilities.

If a proposed pipeline route is on, or abuts your land, you will probably first learn of this from the company concerned as it plans and studies the route during either the Commission's voluntary Pre-filing Process or in the application development process. Once a company files an application requesting the Commission to issue a certificate authorizing the construction of a pipeline project, the company will mail you a copy of this brochure and other information within three days of the Commission issuing a Notice of Application. The Commission's staff will prepare an environmental study of the proposal; either an Environmental Impact Statement or an Environmental Assessment, depending on the scope of the project. For major construction projects, local media may be notified and public meetings may be held. You will have an opportunity to express your views and to have them considered. You will also have the opportunity to learn the views of other interested parties. The Commission may approve the project, with or without modifications, or reject it. If it is approved and you fail to reach an easement agreement with the company, access to and compensation for use of your land will be set by a court.

Understandably, the location of pipelines and other facilities may be of concern to landowners. The Commission's process for assessing pipeline applications is open and public, and designed to keep all parties informed.

This brochure generally explains the Commission's certificate process and addresses some of the basic concerns of landowners. The Commission's Office of

External Affairs at 1-866-208-3372 will be happy to answer any further questions about the procedures involved.

How the Process Begins

Q: How will I first hear about proposed facility construction?

A: If you are located in the vicinity of the project you may first learn of it through newspaper notices. If you are an owner of property which may be affected by the project, you will probably first hear of it from the pipeline company as it prepares environmental studies required for the Commission application. It is also possible that the company may seek to obtain an easement from you prior to filing the application. In the case of a compressor station or other above-ground facility, the pipeline company will often seek to purchase, or obtain an option to purchase, the property it wishes to use for the station or facility. This usually occurs prior to the filing of the application.

For a storage field, rights on certain parcels of land may only involve subsurface storage rights. The company will also notify you of the filing of the application with the Commission.

Q: How can I obtain more details about the company's application?

A: A copy of the company's application can be obtained from the company if you are an intervener (see next two questions and answers), although the company is not obligated to provide voluminous material or material that is difficult to reproduce. You may also obtain a copy for a nominal copying charge from the Commission's Public Reference Room. Call 202-502-8371 for details. The application may also be obtained through the Commission's Web site, **www.ferc.gov**, using the "**eLibrary**" link and the project's docket number. User assistance is available at 1-866-208-3676. Within three days of assignment of a docket number, the application will also be available in at least one location in each county in which the facility is located.

Note that in some cases you will not be able to view or print copies of large-scale maps or similar information about the location of the project from the Commission's Web site. However, the Web site will provide instructions for obtaining the material.

Q: How do I make my views known?

A: You may contact the company through the contact person listed in the notification letter you receive from the company.

There are two ways to make your views known to the Commission: first, if you want the Commission to consider your views on the various environmental issues involved in the location of the facility, you can do so by simply writing a letter. When submitting a letter to the Secretary of the Commission, you should identify the project's docket number in order for the comment to be successfully entered into the record on the eLibrary system.

The Commission undertakes several levels of environmental analysis. The Commission affords you the opportunity to comment at various stages in this process. Details are available from the Commission's Office of External Affairs at 1-866-208-3372. Check the Commission's Web site for details on filing electronically. By filing comments, your views will be considered and addressed in the environmental documents or a final order. Additionally, you will be placed on a mailing list to receive environmental documents in the case. You can also use eRegistration and eSubscription (see www.ferc.gov) to keep track of individual proceedings at FERC. Users with an eRegistration account may subscribe to specific dockets and receive email notification when a document is added to eLibrary for the subscribed docket.

Q: What is an intervener?

A: You may file to become what is known as an intervener. You may obtain instructions on how to do this from the Office of External Affairs or on our Web site at *http://www.ferc.gov/help/how-to/intervene.asp*. Becoming an intervener is not complicated and gives you official rights. As an intervener, you will receive the applicant's filings and other Commission documents related to the case and materials filed by other interested parties. You will also be able to file briefs, appear at hearings and be heard by the courts if you choose to appeal the Commission's final ruling. ***However, along with these rights come responsibilities. As an intervener, you will be obligated to mail copies of what you file with the Commission to all the other parties at the time of filing. In major cases, there may be hundreds of parties.*** You may file to become an intervener by sending a request to intervene by mail or overnight services to:

Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

You should include 14 copies of your request. Your request should include the docket number for the proceeding for which you are requesting to intervene. Alternatively, you may use eFiling to submit your request electronically through the Commission's Web site. If you use eFiling you do not need to send paper copies.

You must normally file for intervener status within 21 days of our notice of the application in the Federal Register, although the Commission may accept late intervention if good reasons are given. Visit the Federal Register at *http://www.gpoaccess.gov/fr/index.html*. You may also file for intervener status for the purposes of environmental issues during the comment period for a draft environmental impact statement.

Please note: "PF" dockets are assigned to projects that are in the pre-filing or planning stage. There is no provision for becoming an intervener in PF dockets. However, once the pre-filing stage has been completed and an application has been filed, you may file for intervener status.

CUSTOMER ASSISTANCE

For further assistance and public inquiries, please contact:

Office of External Affairs
1-202-502-8004
1-866-208-3372 (Toll-free)
customer@ferc.gov

For assistance with ferc.gov or eFiling, please contact:

FERC Online Technical Support
1-202-502-6652
1-866-208-3676 (Toll-free)
ferconlinesupport@ferc.gov

For materials and copying assistance, please contact:

Public Reference Room
1-202-502-8371
1-866-208-3676 (Toll-free)
public.referenceroom@ferc.gov

YOUR PROJECT'S DOCKET NUMBER

Key Issues Involving Location of the Project

Q: How is the pipeline route, compressor station or storage field location selected?

A: The pipeline company proposes the route or location, which is then examined by the Commission. The applicant must study alternative routes or locations to avoid or minimize damage to the environment. The Commission, interveners, or any commenter may also suggest alternatives and modifications to reduce the effects on buildings, fences, crops, water supplies, soil, vegetation, wildlife, air quality, noise, safety, landowner interests and more. The Commission staff's Alternatives analysis will consider whether the pipeline can be placed near or within an existing pipeline, power line, highway or railroad right-of-way. Storage fields are usually located in depleted oil or natural gas production fields or in salt deposits. Therefore, their location is fixed by geologic conditions. However, the facilities needed to develop and use a storage field can be moved to some extent.

Q: How do pipelines obtain a right-of-way?

A: The pipeline company negotiates a right-of-way easement and compensation for the easement with each landowner. Landowners may be paid for loss of certain uses of the land during and after construction, loss of any other resources, and any damage to property. If the Commission approves the project and no agreement with the landowner is reached, the pipeline may acquire the easement under eminent domain (a right given to the pipeline company by statute to take private land for Commission-authorized use) with a court determining compensation.

Q: Who pays taxes on the right-of-way?

A: The landowner pays taxes on the right-of-way unless a local taxing authority grants relief. The pipeline simply has an easement across a portion of the land.

Q: How large is the right-of-way and how is it maintained?

A: It is generally 75 to 100 feet wide during construction, although extra space is usually required at road or stream crossings or because of soil conditions.

The permanent right-of-way is usually about 50 feet wide. Routine mowing or cutting of vegetation is done no more than once every three years. A ten-foot-wide corridor, centered on the pipeline, may be mowed or cut annually. In cropland and residential areas the right-of-way is maintained by the landowner consistent with the presence of a pipeline.

Q: How large is a compressor station or storage field?

A: Usually the pipeline purchases ten to forty acres for a compressor station, of which about five acres are actually used for construction. A storage field could encompass many hundreds or even thousands of acres, depending on the geologic structure. Storage fields also frequently include a buffer zone or protection area forming a halo of some hundreds of acres surrounding the storage field itself.

Compressor Station

Q: Must the company obey local, county and state laws and zoning ordinances?

A: Generally, yes. If there is a conflict, however, between these ordinances and what the Commission requires; the Commission requirement prevails.

Q: How close can I build to the facilities?

A: For a pipeline, usually up to the edge of the right-of-way.

For a compressor station, the site is usually owned by the company. If you own property adjacent to the site, you may build on it.

For storage fields, unless there are surface facilities or pipelines, you may build anywhere on the surface. If you or someone else wishes to drill wells which would penetrate the storage formation, you must coordinate that activity with the company, and usually the state authority regulating well drilling.

Q: What about bushes, trees, fences, driveways and so forth?

A: Trees with roots that may damage the pipeline or its coating and other obstructions that prevent observation from aircraft during maintenance are usually not allowed. Driveways and other improvements without foundations are normally allowed. All improvements are subject to the terms of the easement and are subject to negotiation as long as the pipeline maintenance and safety are not affected.

Q. How long will the right-of-way be there?

A. Part of it is temporary and will be restored immediately after construction. The permanent right-of-way will remain until the Commission determines it may be abandoned by the pipeline company. This can be 20 to 50 years or more.

Q. In general, will I still be able to use the right-of-way?

A. The easement agreement will specify restricted uses on or across the right-of-way and any types of uses for which the company's permission must be sought. The continuation of past agricultural uses and practices on or across the right-of-way would be permitted. Buildings and large trees are usually not allowed. Special uses or activities that might have an impact on pipeline design (such as planned logging roads or drain tiles) should be negotiated with the pipeline company to minimize future conflicts.

Q: To what depth would the pipeline be buried underground?

A. The depth of cover would vary from 2 feet deep (in excavated rock) to usually 3 feet deep in soils. In special cases, the trench could be up to 5 feet deep in agriculture fields where deep tilling or other issues warrant a deeper trench.

Q: What if I have problems with erosion or other issues during restoration and/or maintenance of the right-of-way?

A. The landowner should first contact the pipeline company to address and resolve the issue. If the landowner is not satisfied that the problem has been adequately addressed, he or she can contact the Commission's Dispute Resolution Service Helpline at (877) 337-2237 or send an email to *ferc.adr@ferc.gov*.

Pipeline Installation Sequence

After a company has received authorization from FERC as well as all necessary permits, and has an easement on a property, construction would proceed as follows:

1) The civil survey (and any uncompleted environmental surveys) would be completed and the construction right-of-way would be marked/staked for the clearing crew.

2) The clearing crew would remove any trees or brush within the right-of-way that would interfere with construction.

3) Temporary erosion control devices would be installed as required.

4) Next, the right-of-way would be graded.

5) Topsoil would be separated from subsoil in agricultural/residential areas (or in other areas requested during the easement negotiations).

6) Heavy equipment, such as backhoes or trenching machines, would then dig the trench. In areas where bedrock is near the surface, blasting may be required.

7) The pipe would be delivered to the right-of-way in segments (called joints).

8) The pipe would be bent to fit the trench and welded together. All welds would be tested prior to placing the pipe in the trench.

9) The trench would be back filled and if topsoil was removed it would be returned.

10) Construction debris would be removed.

11) The right-of-way would be regraded; seeded; and temporary and permanent erosion control devices would be installed.

12) After the right-of-way has revegetated the temporary erosion control devices would be removed.

13) Prior to gas flowing, the pipeline would be pressure tested (normally with water) to ensure it does not leak.

A graphical representation of the pipeline installation sequence has been prepared on the following two pages.

Pipeline Construction

Moving assembly line
(graphic not to scale)

Clearing and grading

Ditching (rock-free)

Ditching (rock)

Padding ditch bottom

Stringing

continued below

Bending

Welding

X-ray and weld repair

Coating welds

Inspection and repair of coating

Lowering in

Backfill

Pressure testing for leaks

Cleanup

Restoring residential area

Reseeding the right-of-way

Restored right-of-way

Abandonment

Q: If the pipeline is being abandoned will it be removed from my property?

A: The Commission may decide there are environmental or other conditions that should determine the disposition of the pipeline. If not, the easement agreement which you or previous owners of the land signed may stipulate whether the pipeline is to be removed. You may also come to some agreement with the company on what they will do with the pipeline. Usually, above-ground facilities are removed.

Q: If a company abandons a pipeline, can it keep an easement on my property?

A: It depends on the terms of the easement and may be subject to negotiation between the landowner and the pipeline company. If there is more than one pipeline, the pipeline company will keep the easement.

Q: Will I be notified if abandonment is proposed?

A: You will probably be notified by the company if it proposes to relinquish the easement as part of the abandonment and the easement is not being transferred to another company. Otherwise, you may be notified by the Commission as part of the environmental analysis of the project.

Storage Fields

Q: What will happen to my property if a storage field is located beneath it?

A: Possibly nothing, since the storage field itself is usually thousands of feet beneath the ground surface. Wells are needed to inject and withdraw the stored natural gas or to monitor field conditions (observation wells). The wells require a surface site of roughly one acre for drilling and less than one tenth of an acre for the surface wellhead piping and other facilities.

If there are no facilities to be constructed on your property, the company will only need the storage rights to the geologic formation in which the natural gas

would be stored. This is also the case for any property within any designated "buffer zone" or "protective area" around the actual storage field.

Q: Why is storage important?

A: Underground natural gas storage can be used to balance the load requirements of gas users. Storage fields are the warehouses that provide a ready supply of natural gas to serve the market during periods of high demand.

Well drilling rig

For example, in the Midwest and the Mid-Atlantic regions, natural gas is primarily used during the winter because many homes are heated by natural gas. To accommodate this load profile, natural gas is injected into storage fields during the warmer months (April - October), and withdrawn in the colder months (November - March). However, since the 1980s, most new power generation equipment has been fired by natural gas, which has created summer peaking requirements for natural gas to accommodate air conditioning loads in many areas of the country. Storage helps to meet peak demand requirements both in winter and in summer.

Q: What types of facilities are associated with storage?

A: Most natural gas facilities in the U.S. consist of underground formations, combined with above-ground equipment. These facilities include wells (injection/withdrawal and observation, water supply, water disposal), wellhead valve assemblies, gathering lines (field lines, headers), metering and compression facilities, dehydration units, generators or transformers, associated electric equipment, roads, sheds/buildings and pipeline pigging facilities. A list of natural gas facilities that fall under FERC jurisdiction is available on the agency's Web site at *http://www.ferc.gov/industries/gas/indus-act/storage/fields-by-owner.pdf* . Natural gas storage facilities that are owned and operated by natural gas distribution systems and used to deliver gas to their customers fall under the authority of state regulatory agencies.

Natural gas can also be converted to liquefied natural gas (LNG) and stored in above-ground tanks. Facilities for making LNG are usually used by gas distribution companies for short-term peaking requirements, and are regulated under state authority. The Federal Energy Regulatory Commission has jurisdiction over a small number of these facilities.

The United States also has several large LNG import terminals, which include large LNG tanks as part of their operations. However, these terminals have no liquefaction capability, so they are not able to be used to store natural gas that is produced in the United States. Instead, the LNG that is imported is regassified before it enters the system of interstate natural gas pipelines for delivery to consumers.

The Gulf Coast area has the country's highest concentration of existing and planned LNG import terminals. In this region, the use of salt cavern and depleted reservoirs may be used as storage for the LNG imports.

Q: Are there different types of underground storage fields?

A: Most storage of natural gas takes advantage of natural geologic formations (reservoirs). There are three types of underground storage fields: (1) depleted oil and/or gas fields, (2) aquifers, and (3) salt caverns.

Depleted Oil and/or Gas Fields: Most of the natural gas storage in the United States consists of naturally-occurring oil or gas reservoirs that have been depleted through production. These consist of porous and permeable underground rock formations (usually 1,000 to 5,000 feet thick) that are confined by impermeable rock barriers and identified by a single natural pressure. Typically, this type of field has one injection / withdrawal cycle each year -- gas is injected in summer and withdrawn in winter. This type of storage facility is normally used for long term or seasonal system supply, although in some instances it is used for peak day deliveries. These formations contain volumes of gas that are permanently stored in the field (called cushion or base gas) that help to maintain the underground pressure required to operate the field. Storage gas is then added to the field. In field storage the base gas is generally about 50% of the total reservoir capacity.

Aquifer Storage Fields: This type of storage field uses a permeable rock formation containing water, called an "aquifer." The nature of the water in the aquifer may vary from fresh water to saturated brine. An aquifer would

have a high cushion gas requirement, generally between 50% and 80%, as the water in the portion of the reservoir being used for storage must be displaced constantly. They also have high deliverability rates but are limited to one injection/withdrawal cycle each year.

Salt Cavern Storage: This type of storage field uses caverns that are leached or mined out of underground salt deposits (salt domes or bedded salt formations). Salt caverns usually operate with about 20% to 30% cushion gas and the remaining capacity as working gas. Working gas can be recycled more than once per year (some up to 10 – 12 times per year), the injection and withdrawal rates being limited only by the capability of the surface facilities. Salt cavern storage has high deliverability and injection capabilities and is usually used for peak deliverability purposes, daily or even hourly. Most of the naturally-occurring salt caverns in the United States lie closer to the producer region—in Louisiana, Texas, and the Gulf Coast.

For more detailed information about natural gas storage, visit these Web sites:

- FERC Staff Report on Underground Natural Gas Storage
  http://www.ferc.gov/EventCalendar/Files/20041020081349-final-gs-report.pdf
- EIA: Basics of Underground Natural Gas Storage
  http://www.eia.doe.gov/pub/oil_gas/natural_gas/analysis_publications/storagebasics/storagebasics.html
- NaturalGas.org: Storage of Natural Gas
  http://www.naturalgas.org/naturalgas/storage.asp
- The Energy Information Administration (EIA)
  http://www.eia.doe.gov/oil_gas/natural_gas/info_glance/natural_gas.html

Q: How are storage field boundaries determined?

A: Boundaries are determined by the geologic characteristics of the formation in which the gas will be stored. Most also have buffer zones surrounding the portion of the reservoir to limit migration of the stored gas and to protect the integrity of the field.

Q: Can companies use the ground under my property without paying for it? Am I required to sign an easement?

A: A company that owns/operates a storage field can not use the underground portion of storage facilities without either owning mineral rights or having

some form of agreement with the owner of the mineral rights. Compensation for that use will come as a result of the property/mineral rights conveyed to the company by the current owner or attached to the deed from a previous property owner. Those property/mineral rights, depending on the facts of the particular situation, will most likely be in the form of a storage lease or an easement agreement.

A FERC certificate is not required in order for a company to negotiate the acquisition of a storage lease or easement. However, if FERC has issued a certificate approving the creation of a new storage field (or expansion of an existing field), that indicates that the agency has concluded that the storage field is needed and is in the public interest. In accordance with the Natural Gas Act (a law passed by the United States Congress in 1938), the FERC certificate gives the company the right to ask a state or federal court to award the needed property rights to the company where voluntary good faith negotiation has failed.

If the owner of the property/mineral rights and the company do not reach an agreement, the company can go to court to obtain the necessary rights through eminent domain. In such cases, the court will determine the amount that the company must pay to the owner of these rights. Similarly, if the storage field operations affect the surface property through construction of facilities or by reserving access rights, the company must also reach an agreement with the owner of the surface rights or go to court to obtain any necessary property rights through eminent domain. The court will determine the amount that the company must pay the owner of the surface rights. The state or federal court procedure is known as condemnation (or the exercise of eminent domain).

Q: How far from my home can a storage facility be located? If the company is just using the area under my land, do they require access to my land?

A: The storage reservoir itself is underground and does not require surface facilities on every property within the storage field boundaries. However, the company may need to construct and operate facilities on the surface, including injection and withdrawal wells to get the gas into and out of the subsurface rock formations, well lines that connect those wells to other pipelines in the storage field, compressor stations to pump the gas, and facilities that are used to clean and monitor the interior of certain underground pipelines. Where surface facilities are needed, the storage lease or easement agreements

developed between the landowner and the storage facility operator usually indicate minimum spacing of the facilities with respect to existing structures, like your home.

In most cases, if the company does not have any surface facilities on your property, the company would not need access to your property. However, the company may need access to your land to check the integrity of a pipeline crossing your property or to monitor the effects of previously abandoned facilities (such as an old gas well) or facilities owned by another company to insure that those facilities do not interfere with the company's storage operations. Because the need for access cannot be predicted, the storage lease or easement agreement typically references the right of the company to enter your property when needed. The company should inform the property owner when its employees plan to enter the property.

Q: Is all storage in the U.S. under the jurisdiction of the Federal Energy Regulatory Commission?

A: No. Only natural gas storage that is used in interstate commerce is under FERC jurisdiction. There are approximately 500 existing underground natural gas storage facilities in the United States. Of those facilities, approximately 50% are under FERC jurisdiction, the remaining are under state and/or local jurisdiction.

NOISE ISSUES

Q: How noisy is a new compressor station?

A: The noise attributable to any new compressor station, compression added to an existing station, or any modification, upgrade or update of an existing station, must not exceed a day-night average noise level of 55 decibels at any pre-existing noise-sensitive area (such as schools, hospitals, or residences). Companies conduct noise surveys during initial operation of the approved facilities and report the results to FERC to document compliance.

Q: How much noise is permitted from horizontal drilling?

A: Horizontal drilling is used to drill wells in different directions from one surface location. It can also be used to install underground pipeline through sensitive areas. Any horizontal directional drilling or drilling of wells should be

conducted with the goal of keeping the perceived noise from the drilling at any pre-existing noise-sensitive area (such as schools, hospitals, or residences) at or below a day-night level of 55 decibels. States may have their own allowable noise level requirements for construction sites.

The Responsibilities of Gas Companies

Q: Must companies post bonds to guarantee performance?

A: No, but the Commission inspects the right-of-way during and after construction to ensure that the terms of its certificate have been met.

Q: Can the pipeline company come on my land without my permission?

A: State or local trespass laws prevail until a certificate is issued by the Commission. Some states have laws that allow a company to get access to property for survey purposes. Procedures vary by state. Once a certificate is issued or an easement/survey agreement or court order is obtained, the company may come onto your land. Usually the company will notify you in advance.

Q: When can they start to build?

A: Construction cannot commence until the Commission issues a certificate, the applicant accepts it, and the applicant receives all other necessary permits and authorizations, including compliance with environmental conditions attached to the certificate. For most large pipelines, the time from filing an application to approval ranges from one year to two years. Once a certificate is issued, construction may start within a few weeks of the company having completed any outstanding studies or having met other preconditions set by the Commission.

Q: Why would the company approach me before the project is approved?

A: Because of planning and lead time the company may try to obtain easement agreements in advance. Also, a company must conduct environmental studies before it files an application with the Commission. For these studies to be as complete as possible, the company will try to obtain access to all of the proposed

right-of-way. If Commission approval is ultimately denied, or the route changes, the initial easement agreement with the landowner is usually void (depending on the wording of the right-of-way or access contract). Further, disputes over the wording of an easement agreement are subject to state law.

Q: Can the company place more than one pipeline on my property? Can the pipeline and the easement be used for anything other than natural gas?

A: The Commission grants a certificate and states that eminent domain may only be used for the proposed pipeline and related facilities in the exact location described and only for the transportation of natural gas. If the company wishes to install another natural gas pipeline under Commission jurisdiction, it must obtain additional approval from the Commission. Other utilities may wish to use an adjacent or overlapping easement, but they would have to obtain approval from you or from another permitting authority which can grant eminent domain (usually the state). Of course, you may agree to other uses.

Q: Can the company construct above-ground facilities on the right-of-way?

A: Yes, if they have been approved by the Commission. Above-ground facilities, such as valves, pig launchers and pig receivers, are commonly placed in the right-of-way and are strategically placed along the pipeline system for operation and safety purposes.

Valve

Q: How close can the pipeline be to other pipelines or utility facilities?

A: Pipelines must be at least a foot from any underground structure and two to three feet below ground. Companies usually want their pipelines to be 25 feet from another pipeline. If space permits, pipelines can be placed in another utility's right-of-way.

Q: Can I receive service from the pipeline?

A: No, not in most cases. Generally speaking, interstate pipelines are operating at pressures incompatible with direct residential use, which is provided by local distribution companies.

Q: Can a pipeline be placed in a river or the ocean?

A: A pipeline can be placed in the ocean or across a river; however, it is usually not acceptable to place one longitudinally down a river or other stream. There are different environmental, cost, design and safety issues associated with construction in a water body.

Q: How soon after construction will the company restore the land?

A: Commission rules require restoration as soon as the trench is backfilled and weather permits.

Q. What authorization allows the pipeline company to use eminent domain?

A: If the Commission authorizes the project and the necessary easements cannot be negotiated, an applicant is granted the right of eminent domain (section 7(h) of the Natural Gas Act and the procedures set forth under the Federal Rules of Civil Procedure (Rule 71A)). Under these conditions, the landowner could receive compensation as determined by the courts.

Safety Inspectors

Important Safety Issues

Q: Who is responsible for safety?

A: While the Commission has oversight in ensuring that pipeline and above-ground facilities are safely constructed and installed, once the natural gas is flowing in the new system, the U.S. Department of Transportation (DOT) takes over the responsibility during the operation for the lifetime of the pipeline. The DOT is also responsible for setting the federal safety standards for natural gas (and other) pipelines and related facilities. The ***Pipeline and Hazardous Materials Safety Administration*** can be contacted at 202-366-4595 or at *http://www.phmsa.dot.gov*.

Q: Are pipelines safe?

A: Accidents are rare and usually result from outside forces or unauthorized

action by someone other than the pipeline company. The DOT enforces strict safety standards and requires safety checks.

Q: Does natural gas smell?

A: Natural gas is odorless. An odorant, which smells like rotten eggs, is generally added for quick leak detection in more populated areas on interstate transmission pipelines and in local distribution pipelines in accordance with DOT safety regulations.

Further Environmental Issues

Q: What if my property contains endangered species, wetlands, or archeological sites?

A: Endangered species must be protected from the effects of construction and this could affect the location of the pipeline or other facilities. In the case of wetlands, if proper crossing procedures are used and no alternatives are available, they may be used for a pipeline right-of-way. If an archeological or historic site is eligible for listing in the National Register of Historic Places, impact to it must be minimized. It will either be excavated and studied, or the pipeline will be rerouted to avoid it. Landowners who want them usually are permitted to keep any artifacts after they are properly studied, subject to state law.

Q: Environmental studies were mentioned earlier. How do they work?

A: A Notice of Intent (NOI) to prepare an environmental assessment (EA) or an environmental impact statement (EIS) is issued for most major proposals. It is sent to federal, state and local agencies, local media and libraries, environmental groups, and, where the Commission is able to identify them, the affected owners of any land that would be crossed. For some major projects the NOI may announce a schedule of public meetings along the proposed route. The NOI seeks comments from interested parties on the scope of the environmental document, and the comments must be submitted to the Commission, normally within 30 days. After the comment period, the Commission staff will prepare an EA or a Draft EIS outlining its findings and recommendations. For major proposals, further comments are sought during 45 days allotted for review of a Draft EIS or 30 days in the case of an EA. These comments are addressed in the Final EIS or the final order granting or denying the application.

Glossary of Terms

(Glossary of Terms supplied courtesy of the Pipeline and Hazardous Materials Safety Administration. For further information, please consult their Web site at *http://www.phmsa.dot.gov*.)

COMPRESSOR STATIONS

Compressor Stations are facilities located along a natural gas pipeline which house and protect compressors. Compressors are used to compress (or pump) the gas to move it through the system. Compressor stations are strategically placed along the pipeline to boost the system pressure to maintain required flow rates.

EASEMENT

An easement is an acquired privilege or right, such as a right-of-way, afforded a person or company to make limited use of another person's or company's real property. For example, the municipal water company may have an easement across your property for the purpose of installing and maintaining a water line. Similarly, oil and natural gas pipeline companies acquire easements from property owners to establish rights-of-way for construction and operation of their pipelines.

LATERAL

A lateral is a segment of a pipeline that branches off the main or transmission line to transport the product to a termination point, such as a tank farm or a metering station.

LAUNCHER

A launcher is a pipeline component that is used for inserting an inline inspection tool, cleaning pig, or other device into a pressurized pipeline. After performing its task, the tool or pig is removed via receiver.

Launcher

LOOP

A loop is a segment of pipeline installed adjacent to an existing pipeline and connected to it at both ends. A loop allows more gas to be moved through the system.

METERING AND REGULATING (M&R) STATIONS

Metering and regulating stations are installations containing equipment to measure the amount of gas entering or leaving a pipeline system and, sometimes, to regulate gas pressure.

Metering and Regulating Station

PIG

A pig, also known as a "smart" pig, is a generic term signifying any independent, self-contained device, tool, or vehicle that is inserted into and moves through the interior of a pipeline for inspecting, dimensioning, or cleaning. These tools are commonly referred to as 'pigs' because of the occasional squealing noises that can be heard as they travel through the pipe.

RECEIVERS

A pipeline component used for removing an inline inspection tool, cleaning pig, or other device from a pressurized pipeline. The device is inserted into the pipeline via a launcher.

RIGHTS-OF-WAY (ROW)

A right-of-way is a defined strip of land on which an operator has the rights to construct, operate, and/or maintain a pipeline. A ROW may be owned outright by the operator or an easement may be acquired for specific use of the ROW.

TRENCH

A trench is a long narrow ditch dug into the ground and embanked with its own soil. They are used for concealment and protection of pipeline. Trenches are usually dug by a backhoe or by a specialized digging machine.

Pipeline in trench

VALVE

A valve is a mechanical device installed in a pipeline and used to control the flow of gas or liquid.

See *http://www.phmsa.dot.gov* for additional pipeline-related terminology definitions.

Additional Information

For additional information, contact:

Federal Energy Regulatory Commission
Office of External Affairs
888 First Street NE, Washington, DC 20426
Toll Free: 1-866-208-3372
E-mail: *customer@ferc.gov*
www.ferc.gov

Dispute Resolution Service Helpline
Toll Free: 1-877-337-2237
E-mail: *ferc.adr@ferc.gov*

Other related FERC documents you may find helpful are listed below. These are available on our Web site.

The following can be found at:
http://www.ferc.gov/industries/gas/enviro/guidelines.asp

- Guidance Manual for Environmental Report Preparation
- Guidelines for Reporting On Cultural Resources Investigations
- Handbook for Using Third-party Contractors to Prepare Environmental Assessments & Environmental Impact Statements (EIS)
- Upland Erosion Control, Revegetation and Maintenance Plan
- Wetland and Waterbody Construction and Mitigation Procedures

http://www.ferc.gov/for-citizens/citizen-guides.asp

- Your Guide to Electronic Information at FERC

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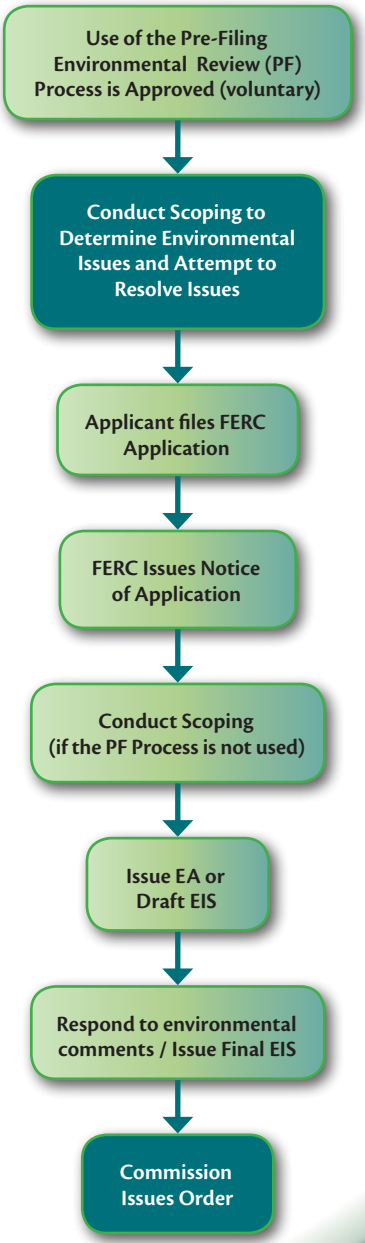
PROCESS FOR NATURAL GAS CERTIFICATES



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202-502-8659 (TTY)

www.ferc.gov/industries/gas.asp

Your project's docket number