PENNSTATE

College of Agricultural Sciences • Agricultural Research and Cooperative Extension

Natural Gas Exploration

A Landowner's Guide to Leasing Land in Pennsylvania

FACT-BASED INFORMATION

natural gas

Marcellus Education Team

www.naturalgas.psu.edu

If you are a property owner in northern or southwestern Pennsylvania, you've probably heard the phrases "natural gas exploration," "Marcellus shale," or "gas lease" on the news or from your neighbors. Maybe a gas company representative or landman has visited your home, asking you to sign a lease that grants permission to explore or drill for natural gas on your land. All of the talk and activity surrounding natural gas reserves in Pennsylvania can be exciting as well as confusing for landowners.

This guide is meant to be a tool for property owners, covering the basics of what you need to know, answering some common questions about natural gas exploration in Pennsylvania, and directing you where to go for further information. The guide outlines what the gas resource is, how and why landowners are likely to be contacted, how a gas lease works, and what to consider when making decisions about gas leasing. When you understand the gas exploration and leasing process, you can make better decisions for your land and your family.

Although natural gas has been extracted from underground sources in Pennsylvania since the early 1800s, new technologies—in particular, horizontal drilling and hydraulic fracturing—are making gas extraction from deep reserves more economically feasible. Increasing demand for cleaner domestic energy will bring about continuing exploration. The gas industry is seeking points of access to high-volume reservoirs of natural gas, called "plays," that lie far below the hills and valleys of Pennsylvania.

Natural gas exploration and extraction is a potentially valuable economic stimulus to rural communities in Pennsylvania. As landowners are compensated for the use of the resource and as the gas industry develops the regional drilling infrastructure, economic gains can be significant and everyone can benefit.

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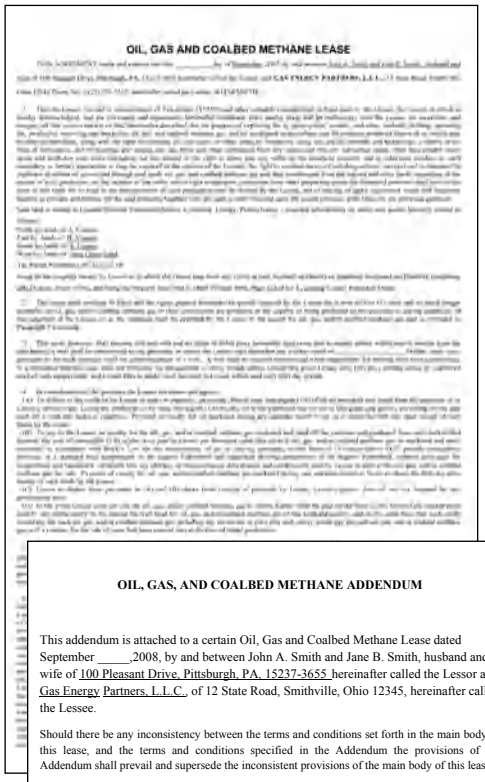


OIL, GAS AND COALBED METHANE LEASE

OIL, GAS, AND COALBED METHANE ADDENDUM

This addendum is attached to a certain Oil, Gas and Coalbed Methane Lease dated September _____,2008, by and between John A. Smith and Jane B. Smith, husband and wife of 100 Pleasant Drive, Pittsburgh, PA, 15237-3655 hereinafter called the Lessor and Gas Energy Partners, L.L.C., of 12 State Road, Smithville, Ohio 12345, hereinafter called the Lessee.

Should there be any inconsistency between the terms and conditions set forth in the main body of this lease, and the terms and conditions specified in the Addendum the provisions of the Addendum shall prevail and supersede the inconsistent provisions of the main body of this lease.

In the event a well is to be drilled on the herein premises, Lessee agrees to notify the then current farmer regarding crops grown hereon and pay farmer for any damages to growing crops caused by Lessee's operations hereon.

Lessee agrees to notify Lessor at least 45 days prior to commencing any construction activities on the leased premises to allow for Lessor's removal of marketable timber in the area(s) identified by Lessee for the proposed operations hereunder. Should Lessor choose not to remove such marketable timber, Lessee may remove said timber from the proposed operations area. Lessor shall then: (1) request Lessee to pay Lessor the value of any such marketable timber as damages at the prevailing stump price for the local area as determined by an independent timber appraiser, said marketable timber shall then become the property of Lessee and removed from the leased premises, OR (2) Lessor may request that Lessee stack the marketable timber on the leased premises at a mutually agreeable location in close proximity to the construction site, said marketable timber shall remain the property of Lessor."

It is agreed and understood that the Lessee shall repair and restore the surface of said premises as nearly as possible, including any damage to the existing drainage tile as a result of the Lessee's operations, to the condition in which said land existed at the time of the commencement of drilling operations upon the above described land. This work shall be completed within 90 days, weather permitting, after the cessation of the drilling operations upon the said lands. This work shall be done at the sole expense of the Lessee.

Location of any well(s) shall be approved by the Lessors or one of their representatives in writing prior to location thereof. Such approval shall not be unreasonably withheld or delayed. Upon receipt of Lessee's written location approval form, Lessor shall have fourteen (14) days from the date of receipt to approve and return said form or to advise Lessee in writing of their disapproval of a specific location(s) associated with said form and provide Lessee with an alternate location(s) that Lessee deems to be economically feasible and at a legal location pursuant to the rules and regulations of the State/Commonwealth. Lessor's failure to notify and return Lessee's written location approval form or to provide Lessee with such alternate location(s) within fourteen (14) days shall constitute Lessor's approval of the location(s) associated with said form.

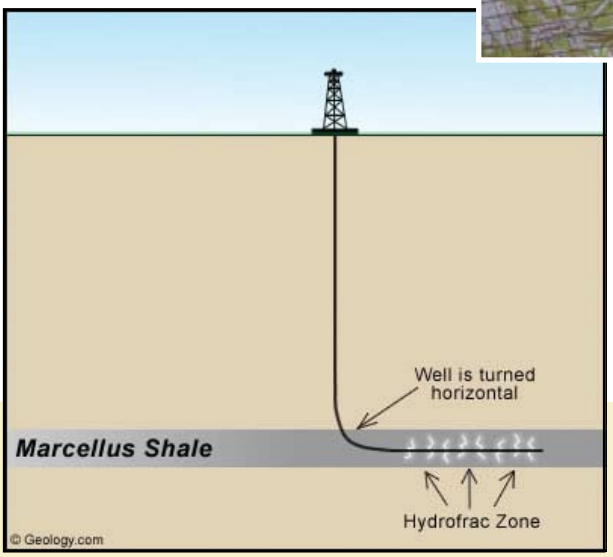
But as a private landowner, you might find yourself confused or frustrated by gas development activity that seems erratic. Good, nonbiased information about gas deposits and leasing is hard to come by because it's usually carefully guarded to prevent competing businesses from interfering with each other's gas development plans. And the sudden interest and pace of drilling have led to uncertainty and suspicion about the gas exploration process. As a property owner, you should understand the following points about natural gas leasing:

- Property owners generally have the right to explore and extract natural gas under their property unless this right has been leased, sold, or otherwise transferred to another party. (Public records, deeds, and real estate titles will indicate the status of these rights.) If you own these natural gas rights, you may lease the right to explore for gas to a company that has the equipment and expertise to recover or receive the gas for a period of time, and accept payment for the lease and royalties for the value of the gas. Please note that "mineral rights" and "natural gas rights" are not necessarily the same thing, and you should be clear on what rights are legally yours. Check the deed to your property for this information.
- Gas leases are legal and binding documents—they are contracts. They represent an official written agreement between two parties, usually between the gas company and the landowner. Because the leases are binding contracts, to protect your rights as a landowner you should have the proposed lease reviewed by a lawyer who is knowledge-able in PA oil and gas law and experienced in gas leases before entering into any contract. Once you sign a lease, there's really no way you can get out of it until it expires, unless you can prove fraud on the part of the gas company.
- Gas leases are partly negotiable.To reduce the time and effort of setting up a gas lease with many landowners, gas companies and their representatives may offer a preprinted gas lease document. This document can serve as a starting point for a two-way negotiation, or it can be fully accepted or rejected by the landowner. You can make changes to the lease by creating an addendum that is approved (signed) by both parties

Where is the gas?

The Marcellus shale, a deep layer of rock that lies 5,000 to 9,000 feet underground, runs from the southern tier of New York through the western portion of Pennsylvania, into the eastern half of Ohio, and through West Virginia. In Pennsylvania, the formation extends from the Appalachian plateau into the western valley and ridge. While this area has produced natural gas for years, many gas production companies are now interested in the Marcellus shale because of higher energy prices and new drilling technologies that could recover 50 trillion cubic feet of natural gas. Conservative estimates are that the Marcellus shale contains 168 trillion cubic feet of natural gas; in reality it could contain as much as 516 trillion cubic feet. The U.S. currently produces roughly 30 trillion cubic feet of gas a year, and demand for this gas is increasing steadily.

Natural fractures in the Marcellus shale are important to recovering large amounts of gas. As heavily organic sediments were laid down approximately 380 million years ago, the black shale of the Marcellus formed. As the organic material decayed and degraded, methane and other components of natural gas formed and are now trapped tightly in the dense shale. About 300 million years ago, the pressure of the gas caused fractures to form in the shale. These fractures run as slices from the northeast to the southwest and are fairly close together. While a vertical well may cross one of these fractures and other less productive fractures, new technology allows horizontal drilling, which can cross a series of very productive fractures.



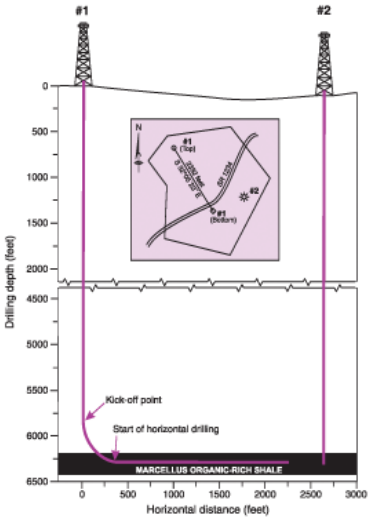
Where and how does drilling take place?

Gas wells are drilled in locations where a gas company has obtained the right to explore for and develop natural gas. Wells are spaced according to mineral laws and regulations, with the goal of extracting gas efficiently with as few wells as possible. Geologists and geophysicists working for gas companies use seismic data to interpret the formations of rock layers underground. If seismic data suggests a reasonable possibility of efficient gas access, a well will be drilled in a specific location. Such a well is drilled using long sections of drill pipe. Depending on the geology, the drillers may drill vertically for several thousand feet, then use special joints to turn the shaft 90 degrees over the course of several hundred feet and continue drilling horizontally for an additional distance of up to 5,000 feet. A steel casing is cemented in place to stabilize the surface of the well bore and protect groundwater resources. Horizontal drilling allows companies to extract more gas in a cost-effective manner. In many cases, multiple wells may be drilled side by side on the same well pad, radiating out in different directions.

How are landowners involved in the gas exploration process?

Nearly everyone who lives in northern or southwestern Pennsylvania has seen convoys of three or four slow-moving seismic trucks. These trucks contain seismic equipment that generates information about rock formations underground. The resulting "two-dimensional" picture of subsurface rock patterns gives gas exploration companies a useful image of where gas might be located deeper underground. In some areas, a "three-dimensional" system of seismic testing is used to clarify gas deposit geology. Extensive grids of cabling, small explosives, and geophones create and record new seismic data.

Landowners have to give written permission for exploration on their land. All proposed work should be clearly described in the lease or addendum, including compensation for any damages, before this type of work begins. After the two- or three-dimensional exploration process, some landowners find themselves intimately involved in gas exploration because their property is thought to be situated near or directly above a potentially valuable location for drilling and inclusion in a "drilling unit."



Gas leasing process and terms

Natural gas that is trapped underground has little or no value to landowners. It becomes a valuable resource only when companies with the proper equipment and technical ability begin to extract it from deep underground. Users of natural gas throughout the Northeast then pay transmission companies for the gas and its dependable supply. Consequently, the owner of the land from which the gas came is compensated for its value through the payment of a royalty.

Part of the process of determining value and compensating the landowner for the gas is the leasing of gas rights on private land. Leasing is necessary for companies to drill wells. Gas companies must have sufficient acreage under lease before a well can be drilled. Companies determine the drilling unit they want to work in and designate the boundaries of the unit in a process called unitization. Commonly, this is based on the geology of the area. Unit size can range from 100 to 500

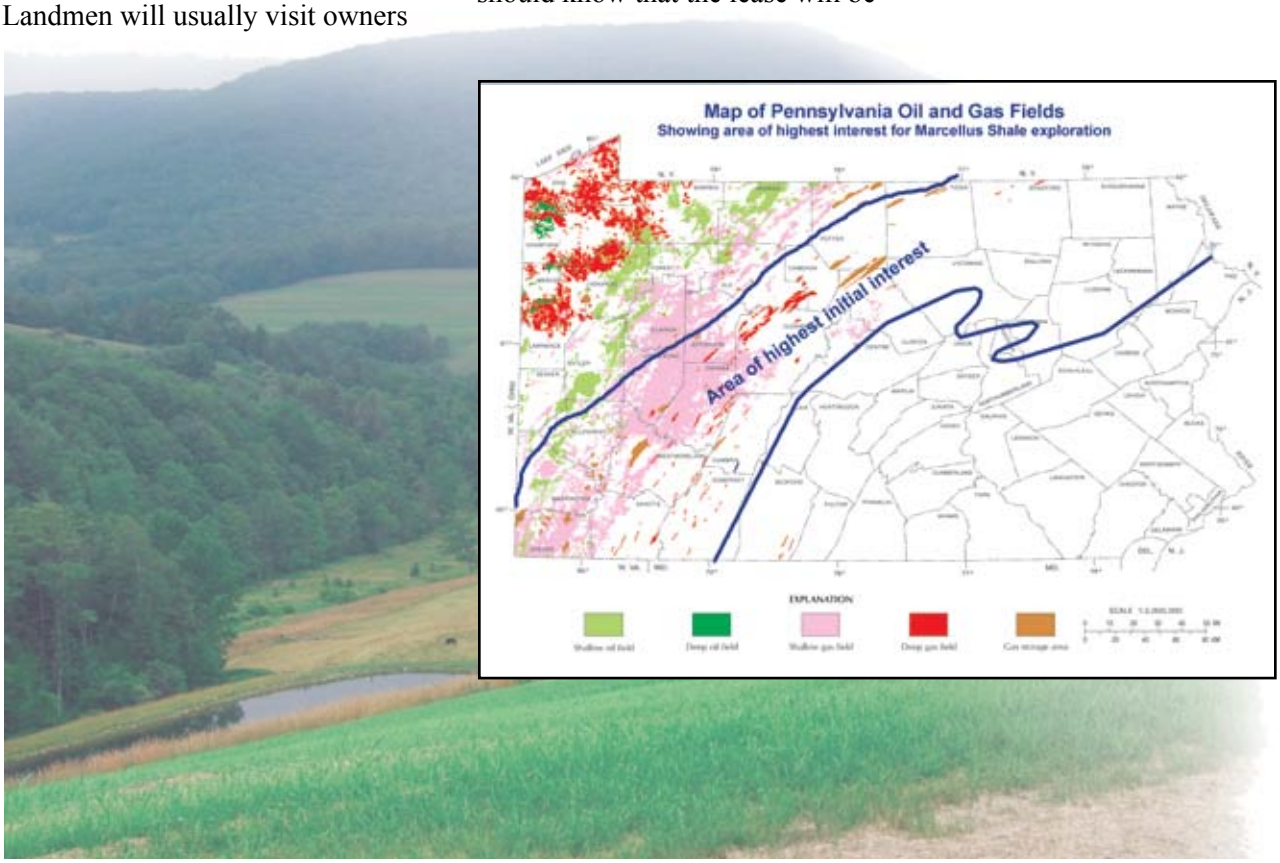
acres or more. Marcellus gas wells in PA are all above a geologic formation called the Onondaga layer, so PA Oil and Gas law doesn't currently set unit size. Landowners in the unit receive a pro-rated share of the royalty based on the acreage they have in the unit.

As gas companies and geologists understand where gas drilling might be worthwhile in Pennsylvania, they send contractors, called landmen, out to private homes and farms to secure the mineral exploration rights for a period of time as gas development begins. This practice helps prevent another company from tying up the mineral exploration rights and making exploration more complicated and expensive. Landmen will usually visit owners of large parcels first, to lock up as much land as possible in a short time. For landowners, this visit is often the first experience they have had with natural gas exploration.

Not all landmen are part of a gas company. Some are independent brokers, others are speculators, and still others are part of gas leasing companies. Each of these businesses will have a different motivation for securing a lease on a parcel of privately owned land. Depending on where seismic data suggests there are optimum gas deposits, different landowners will receive different offers regarding drilling, exploration, surface access, and payments.

In any scenario, you as a landowner should know that the lease will be the basis of negotiation and that the written terms of the contract will supersede anything that is said orally during contract negotiations. An effective gas lease should spell out clearly what each party is agreeing to during the gas exploration process. It should spell out the rights and responsibilities of each party in the agreement, how problems are to be handled, and how long the agreement lasts.

This guide will outline some things you should consider regarding gas leasing, but is not intended as legal advice. You should consult an attorney who specializes in gas leasing before making legally binding decisions.



1) Length of lease

Your lease agreement will specify a primary term, usually five years, and many signed gas leases are accompanied by bonus and rental payments that last through the primary term of the lease. Depending on the terms of the lease, gas production on the leased land or in the vicinity may lead to a secondary term that lasts as long as production is active, as defined in the lease. You and your attorney should carefully consider the language in the lease agreement because similar-sounding phrases, such as "so long as operations are conducted" and "so long as gas is produced in paying quantities" can have very different impacts.

2) Gas lease payments

In any contract, you need to know what you're giving up and what you're getting. If you are offered a gas lease, what you'll be getting is, of course, payment. The original offer might include payments as a signing bonus, land rental fees, and/or royalty payments.

- A bonus payment is a one-time payment for signing the lease.
- Rental payments including the bonus and annual rental amounts are normally made in one payment for the stated term of the lease and referred to as a paid-up lease. They can also be paid annually over the primary term of the lease.
- A gas lease may also specify a delay rental, in addition to the base rental. A delay rental is made to compensate the landowner for delays in gas production or drilling.

There are no "going rates" or standard rental payments in gas leases in Pennsylvania. The amount offered will depend largely on how close or far the property is from the anticipated gas deposit. Higher bonus and rental payments are usually offered based on a company's understanding of the area's geology and proximity to optimal drilling locations. Unfortunately, the information about where the best concentrations of natural gas deposits are located is hard to find and can be confusing for a nonscientist. Educating yourself through learning sessions offered by non-biased parties and talking with friends and neighbors is a good way to discover prices companies are offering in your area and region.

Some factors that may increase potential bonus or rental payments include when the property:

- occupies a large portion of prime natural gas geology in your area
- is relatively near the prime gas geology
- owner is willing to allow less-restricted exploration or drilling

Factors that may decrease potential bonus or rental payments include when:

- the property comprises a small portion of acreage designated by companies as prime geology

- the property is not likely to be near the best geology
- the lease restricts gas exploration on the surface (sometimes this makes only a small difference)

Before settling on a lease, the landowner should consider what home or farm expenses might relate directly to the lease. Legal fees, property tax increases, and other expenses may be necessary when entering into a lease, or during drilling, for the designated term(s). These expenses should be considered with the company's offer so that you can see your net economic gain. The timing and method of rental and bonus payments should be clearly stated in the gas lease. Failure to make payments may cancel the lease, but only if it is so stated in the lease.

Royalties are payments made to you, the landowner, by the energy company when natural gas is extracted from your land. Royalties, which are based on the terms agreed to in the lease, recognize the landowner's right to a portion of the value of the gas, resulting from the lease of exploration rights.

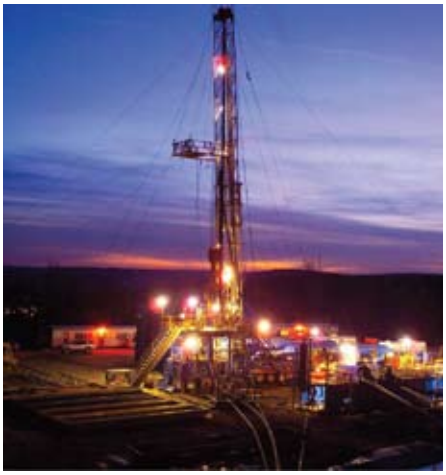
Pennsylvania law states that a gas lease is not valid unless it guarantees the landowner royalties of at least one-eighth, or 12.5 percent, of all natural gas removed from the property. You may negotiate with the energy company for a royalty payment that exceeds this minimum.

Leases are usually written to stop the rental payments when royalty payments begin. If the production unit only occupies a portion of the property, the lease should be clear as to whether the royalty and rental terms apply to the entire parcel or just the portion in the unit. A royalty may apply only to the producing portion of the property, yet stop rental payments on the rest of the property. If applicable, you should determine how a royalty payment on a portion of your property might affect your overall rental payment expectations. Having your attorney include a Pugh* clause in the addendum gives you the option of separating these residual acres from the lease and potentially re-leasing them at a future time.

**A Pugh clause—a provision or addendum in a gas lease agreement that addresses whether the entire parcel of land will be held under a lease agreement, if only a portion of the leased land is developed. Specific terms of a Pugh Clause can greatly vary among lease agreements.*

There are two types of Pugh Clauses. The Horizontal Pugh Clause basically states that any land included in a lease that is not within a producing unit will be released at the end of the primary lease term. The Vertical Pugh Clause states that the lease will continue, past the primary term, for all depths to the base of the deepest-producing formation and that all depths below will be released.

A shut-in royalty is paid where one or more wells are fully developed, but not producing marketable gas. This may be due to lack of pipeline connections, market timing to increase wellhead revenue, or other production and transmission circumstances. A private gas lease



may state a period of time, such as six months, that the landowner would have to wait before the shut-in royalty starts. During that time, the gas company may reserve the right to change the well, drill a different well, or otherwise adjust its production. Again, you will need to read the lease carefully, with your attorney, and make sure you understand what payments will come, how they will be made, and when they will stop. Royalties from gas and mineral properties are taxable as ordinary income.

Some gas leases might include a provision for free natural gas for the landowner. This agreement would entitle you to receive a specified amount of the natural gas extracted from your property at no cost. Generally, you would be responsible for the piping of the free gas from the wellhead to your residence, which can potentially add significant expense to you. As an alternative, the lease agreement may provide for you to receive a payment in lieu of free natural gas.

3) Surface or subsurface rights

When considering gas leasing, you should understand the extent of the rights you are granting to the energy company and seek to limit those rights if necessary. A standard lease will probably give the energy company very broad rights to use of your property's surface. Surface exploration may include tracked or wheeled equipment in fields and forests to record geologic data, the use of small explosives to create sound waves that record seismic data, movement or construction of drilling rigs, land grading for the construction of a drilling pad and access road, equipment storage, and parking or work site activity for personnel, among other things. If you sign a lease granting surface rights, you can limit those rights. You can state, for example, that you have the final say on where a well is sited or where access roads are built on your property. You should also make sure you are protected in the event that drilling activities cause damage to crops, livestock, buildings, or personal property.

Some landowners restrict any surface activity for gas exploration on their land. In many, but not all of these cases, the parcel may be too small to conduct worthwhile surface explorations, and the gas company will offer the landowner a gas lease that requires permission for surface access only if necessary. If you chose to, you could negotiate terms that prohibit any surface activity whatsoever. Your contract addendum would state that the gas company has no surface rights but that you are granting subsurface rights.

In Marcellus shale areas of Pennsylvania, energy companies are interested in large blocks of land, and often they want groups of neighbors to agree to unitization. In this case, if you are part of the unit, and the energy company would drill a well on your neighbor's property, you would still be paid a royalty based on your pro-rated share. If the well was drilled on your property in the unit, and your lease provided

for you to receive a well siting fee (often $2,000 to $15,000), you would receive that beyond the royalty payments.

4) Storage of gas

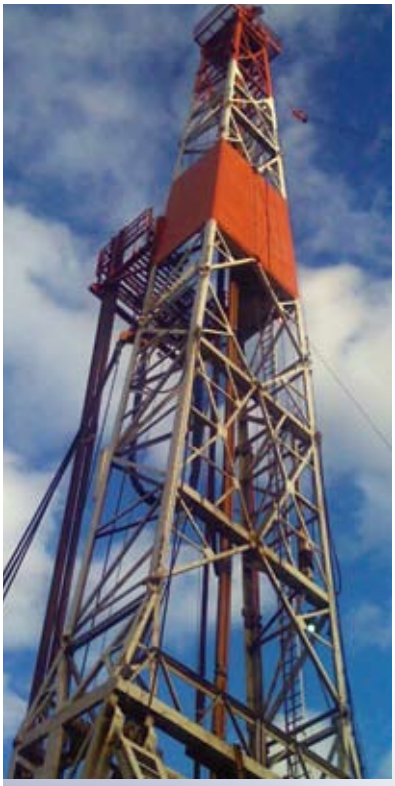
In certain cases, natural gas can be pumped back into a gas well after being extracted elsewhere. Gas is stored to take advantage of seasonal market changes. Gas is in higher demand in the winter, so gas extracted during the summer can be pumped down into the gas formations under pressure, anticipating release closer to winter. Gas storage poses little hazard to the landowner; it makes use of depleted reservoirs. Although gas storage can increase wellhead revenue, it can also complicate the private gas lease. You should consider gas storage separately from the original exploration and drilling lease, and develop a separate gas storage lease, possibly for added income. Gas storage leases are often arranged with a completely different company, so if gas storage is proposed in the exploration lease, it can often be easily negotiated out. Be alert to the ways in which gas storage will affect your lease payments. For example, a well might be "shut in" and not producing marketable gas. If that well is converted for storage, a storage fee similar to a rental payment would continue, but with no royalties. These payment changes should be described clearly in the lease or addendum.

5) Pipelines

When you are considering signing a contract, you should watch out for terms that would give blanket access to the gas company for pipeline right-of-way. If gas is being moved from a drilling unit that you're receiving a royalty from, pipeline access is expected by the company and is reasonable for the landowner to grant. If the right-of-way is for gas to be transported from a unit that is not on your property, then this should be negotiated separately, and the gas company should pay you an additional fee for this use.

6) The other party in the agreement

When you agree to and sign a gas lease, you are entering into a binding legal relationship with a business—a relationship that may continue for many years. Before signing the lease, you should know exactly with whom you are making the agreement. The other party may not be a gas company, but rather a speculator, a broker, or an independent landman who might sell the lease or take partial ownership of the royalty. Landowners who intend to sign a gas lease should be ready to negotiate a clause making lease assignments or sales subject to their approval. You should make sure you understand with whom you are dealing and whether your lease is freely assignable.



7) Leasing considerations for site-specific factors

As a landowner, you might not be sure what is worth negotiating and what is not, particularly if the energy company doesn't give you much information about the potential for drilling. Landowners who want to control surface activity on their property can stipulate such details as road construction, repair or compensation for timber stand damage, effective restoration of impacted farmland, and other site-specific factors in a private lease. If your lease agreement allows for any surface access, you and your attorney should ensure that your interests are protected in writing. Issues you may want your lease or addendum to address include the following:

- The extent to which water may be used, such as from a farm pond, well, or stream, during the drilling process.
- The fairly assessed value of, and compensation for, damage to crops, timber, or water resources.
- Implementation of effective conservation and land restoration, such as:
  - Protection of agriculture soils during exploration and well operations, so farmland is restored to full productivity afterwards.
  - Protection or replacement of farm infrastructure, such as roadways, livestock travel lanes, drainage features, and fences.
- Road location and construction review by the landowner and a qualified engineer or forester.
- The site of the well relative to other property uses.
- Possible timing of surface operations to allow for livestock pasturing, hunting, or other rural land activities that have restricted seasons.
- A separate written agreement on location of pipelines in the property.

When negotiating a lease, you should also include a provision to require the gas company to indemnify you for any liability you might incur as a result of drilling activity. Indemnification means the gas company will protect you against, or compensate you for, any loss, damage, or injury that happens on your property as a result of drilling. The indemnification clause should be written to address all possibilities, including situations such as someone tripping over the drilling equipment, contamination of a neighbor's water well, an explosion caused by the release of natural gas, etc.

Also, since litigation is expensive even if you ultimately win a case, the indemnification clause should include a duty to defend so that the gas company is obligated to hire an attorney for you to defend against any lawsuit.

Making Decisions about Gas Leasing

When the moment arrives and you're sitting at the kitchen table, holding a preprinted gas lease contract and wondering whether to sign it, what do you do? The decision to sign a gas lease rests entirely with the parties named in the lease document—namely, you and the energy company or landman. There is no legal requirement that could force you into signing a lease with a gas company, and public authorities cannot use the power of eminent domain in the natural gas exploration process.

Since you are not legally obligated to sign a gas lease, the decision to sign is personal.

Remember: In any contract, you're giving something up and you're getting something in return. Financial issues play a large part in the decision, but land use and oil and gas rights are also part of the picture. If any part of the agreement is unclear or seems unfair, you can negotiate until you feel your interests are tended to. An attorney can help greatly with this process.

Gas lease language

The language on a gas lease contract is difficult for most non-lawyers to understand. Sentences tend to be long and tedious, full of legal terms landowners do not see very often, including judicial determination, leasehold, lessee, cash equivalency, etc.). Few landowners can read through each sentence in the preprinted lease and understand its meaning and implication for their property. Gas company representatives may interpret the wording, but anything they say out loud is not what will bind the parties in the contract. The wording in the printed contract will bind the landowner to the gas exploration process, for better or worse. The preprinted lease gas companies provide is usually as favorable or more favorable to them than to the landowner. Generally the use of multiple addenda will allow the landowner the opportunity to modify the lease to balance it, making it equally favorable to both parties.

The role of legal counsel

A qualified attorney can interpret a gas lease document. Your attorney can suggest changes, amend the document, and add the specific terms you want. Finally, an attorney can represent you if trouble arises. For example, if royalty payments are not made in the manner agreed to in the lease, an attorney can employ his or her knowledge and influence to resolve the matter. Many lawyers in Pennsylvania are able to help with gas lease contracts; however, some attorneys have additional experience in oil and gas rights that better equips them to work out special arrangements. It is fair to ask a lawyer if he or she has experience with gas lease contracts and what compensation will be required for this legal assistance. In fact, before you hire an attorney, it's very important to be certain that you understand the attorney's fee. Attorneys charge differently.

Extension's role

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Penn State Cooperative Extension provides educational resources for landowners concerned about the natural gas leasing and exploration process. County extension offices may host an educational workshop, discuss leasing arrangements, or refer you to regulatory or legal specialists. Although extension educators cannot provide legal advice, they can provide additional insights about gas leasing.

For more information about gas exploration and leasing, visit Penn State's natural gas exploration and leasing Web sites:
www.naturalgas.psu.edu
www.wpsu.org/gasrush

Where can I find out if gas companies are leasing in my area?

Contact your local cooperative extension office. Penn State Cooperative Extension has Natural Gas Exploration and Leasing Teams that can help answer your questions and direct you to more detailed information.

What should I do if I am asked to lease my land for gas exploration?

Ask the gas company representative or landman for a copy of the lease and say you will look it over. Never sign anything on the spot. Ask a qualified attorney to review the lease and explain its impact on you and your landholdings.

My neighbors have been approached by gas companies, but no one has knocked on my door. How do I get in touch with the gas companies?

You can go to Penn State's natural gas exploration and leasing Web site, www.naturalgas.psu.edu, where you'll find a listing of energy companies in your area. When you call several energy companies to inquire on their interest in your landholdings, it's helpful to have your tax parcel number(s) handy because they will ask for that, as well as the township or county you live in.

What is an addendum? Why is it so important?

Leases are standard documents that are drawn up to favor the gas company. You and your attorney can protect your rights by preparing an addendum that includes terms of agreement that you specify. It is not uncommon for 20 or more of these to be added to the typical industry lease to modify it in a way that is more beneficial to you, the landowner.

Do I need an attorney? And if so, what type of attorney do I need?

To protect yourself and get the best outcome, you should consult an attorney. Exploring and drilling for gas is a million-dollar venture for energy companies. If a successful gas deposit is tapped on your land, your signature could represent a million-dollar decision. Before signing any natural gas lease agreement, you need to know what you are getting and what you are giving up. An attorney with experience in gas law is your best assurance to get the most out of your gas lease agreement.

One way to find a good attorney is through word-of-mouth. Who are your friends and neighbors using? You can also find a list of attorneys at www.naturalgas.psu.edu.

What is a landman?

A landman is an agent who works for a drilling company or who is contracted by a drilling company or

broker. The mission of a landman is to negotiate the lowest possible lease price and most advantageous terms for the energy/gas/drilling company. During the early stages of this process, hundreds of landmen might converge on an area to close leases quickly while landowners are just starting to understand the value of their mineral assets. When you are visited by a landman, it's time to seek qualified legal help.

My neighbor got more than ten times what I leased for. Can I demand more?

You would have to speak with an experienced attorney in gas law. But unfortunately, the answer is probably no. Remember, a gas lease is a binding legal contract. The time to do the research and make sure that the lease is most beneficial to you is before signing the lease agreement. Once you sign, you are legally bound by the terms you agreed to.

I own only four acres. My neighbors have leased. Are the gas companies interested in my little piece of land?

Yes. Although you may never have a drill rig on your property, if your property is in a drilling unit, you are due royalties based on the number of acres you have in the unit. Unless you have specific reasons not to lease, leasing could prove rewarding if gas is produced from your drilling unit.

Is it better to form a group of neighbors or go it alone?

Your decision to lease or not to lease should be based on what's important to you. You may want to join or form a group that has the same goals for land use since the amount of property available to the company by the group often increases its interest and typically provides greater leverage when negotiating terms of the gas lease. On the other hand, if you and your neighbor have different goals for your land, you might want to negotiate on your own.

If I sign a lease, how, when, and how much will I get paid?

You may be offered a one-time bonus payment from the energy company when you sign the lease. You might also receive a delay rental payment, which is an annual payment that would end when a well is drilled on your property. Royalty payments start when natural gas is extracted from your land. The state law requires that you be paid a minimum royalty of 12.5 percent, but you may negotiate for more. All of these types of payments are negotiable.

There are many factors that determine the amount and manner of payments you will receive after signing a gas lease. These include the current natural gas market, past drilling results in your vicinity, amount of acreage to be leased, the presence of pipelines or other infrastructure in the area of your property, and more.

The company that wants to lease my land is offering only a $10 per-acre bonus. Should I accept its offer?

Never accept a first offer on the spot. Before you accept or sign anything, do your research. Talk to your neighbors to find out what they have been offered or have negotiated. There may be other natural gas exploration companies that would offer you better lease terms than the one that first contacted you. Contact 4 to 6 companies with the capacity to drill Marcellus wells and determine their interest in your landholdings. Talk with an attorney who is familiar with oil and gas law about negotiating for the best terms. Contact a member of the Penn State Natural Gas Leasing Team to find out more about companies that might be leasing in your region.

What is a drilling unit?

A drilling unit is the area from which an actual well would draw its gas. The unit is designated by the company and based on the geology of the area, and is where the gas would be drawn from when a particular well is drilled. You and your neighbor(s) in the unit share the royalty money from the gas well on a pro-rated basis based on acreage you have in the drilling unit.

What is the law of capture? Does it mean my neighbor can take the gas out from under my land?

The Law of Capture states that if a well is drilled on a property, anything that comes up out of that well belongs to the owner of that property. But in the case of natural gas in the Marcellus shale, this is not as much of a concern. First of all, it's illegal to drill under property that is not leased. Furthermore, because the gas in the Marcellus shale is in dense rock rather than pockets, there's little concern about a Marcellus well extracting natural gas from a neighboring property. The Marcellus shale has to be hydraulically fractured to release the trapped gas, and this fracturing commonly will release gas up to 1,000 feet from the bore hole. The gas companies typically design the drilling units to allow enough distance around the wells so that gas produced from them will be from that unit only.

What is a right of first refusal?

A right of first refusal is a term in the lease you should insist on instead of an option to automatically renew. The right of first refusal gives the gas company the right to match any competitor's offer for renewing the lease at the end of the primary term. For your purposes, this is preferable to the option to automatically renew, which allows the gas company to renew the lease for the same number of years as the original lease. As a landowner, you should not agree to

the option to automatically renew because essentially it locks you into the original offer. The right of first refusal will ensure that you get the best offer possible upon renewing your gas lease.

If I sign a lease allowing a gas company to explore and drill for natural gas on my land, does that also include storage and transportation of gas?

No. If a gas company wants to store gas on your property, or transport gas from someone else's property across your land, you should be compensated for that separately. You and your attorney should make sure that provisions for storage and transmission of gas are not included in a standard gas lease unless the gas is transported from your drilling unit.

My farmland is assessed under the clean and green program. How will gas leasing affect its status?

Clean and Green is a preferential assessment that allows the landowner to pay lower real estate taxes. It is a state program that is administered at the county level, and separate counties in Pennsylvania view the Clean and Green assessment differently. Depending on what county you live in, you may have to pay back taxes if you allow gas exploration and drilling on your land. If your land is assessed under Clean and Green, you'll want an addendum stating that the gas company will reimburse you for any back taxes you have to pay as a result of gas leasing and/or exploration.

Preserved land—If your land is under any kind of preservation or conservation easement program, there are limitations on how you can develop the land. You should discuss these issues with your attorney.

How can I be sure my water supply won't be contaminated if I allow drilling on my property?

A properly drilled well will ensure the protection of your fresh groundwater supply. When a well is drilled, a steel casing is cemented in place to protect groundwater resources. Also, remember that the natural gas is about 5,000 to 9,000 feet underground, while the groundwater supply is only about 400 feet underground.

If you are still concerned, you can have a predrilling survey of your water supply done and then have your water tested again after a well is drilled. If there are any changes, you can file a complaint with the regional office of the Bureau of Oil and Gas Management, Pennsylvania Department of Environmental Protection. All drinking water sources within 1,000 feet of the proposed natural gas well will automatically be tested as part of the well permitting process with DEP.

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Portions of this manual have been adapted from "Gas Exploration and Leasing on Private Land: Tips and Guidance for Landowners," prepared by Jim Ochterski and published by Cornell University Cooperative Extension.

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Penn State Resources

Penn State Cooperative Extension
www.naturalgas.psu.edu

Agricultural Law Resource & Reference Center, Penn State
www.dsl.psu.edu/centers/aglaw/gas.cfm

Pennsylvania's Gas Rush: Uncovering the Impacts of Natural Gas Development
www.wpsu.org/gasrush

State Agencies

Pennsylvania's Department of Agriculture
www.agriculture.state.pa.us

Pennsylvania Department of Community and Economic Development, Governor's Center for Local Government Services
www.newpa.com/default.aspx?id=20

Department of Conservation and Natural Resources Website
www.dcnr.state.pa.us

Pennsylvania Department of Environmental Protection
www.depweb.state.pa.us

Pennsylvania Bureau of Oil and Gas Management Website
www.dep.state.pa.us/dep/DEPUTATE/MINRES/OILGAS/oilgas.htm

Pennsylvania Department of Transportation (PennDOT)
www.dot.state.pa.us

Other Agencies

Susquehanna River Basin Commission (SRBC)
www.srbc.net

Delaware River Basin Commission (DRBC)
www.state.nj.us/drbc

Pennsylvania Local Technical Assistance Program (LTAP)
https://www.dot7.state.pa.us/LTAP/

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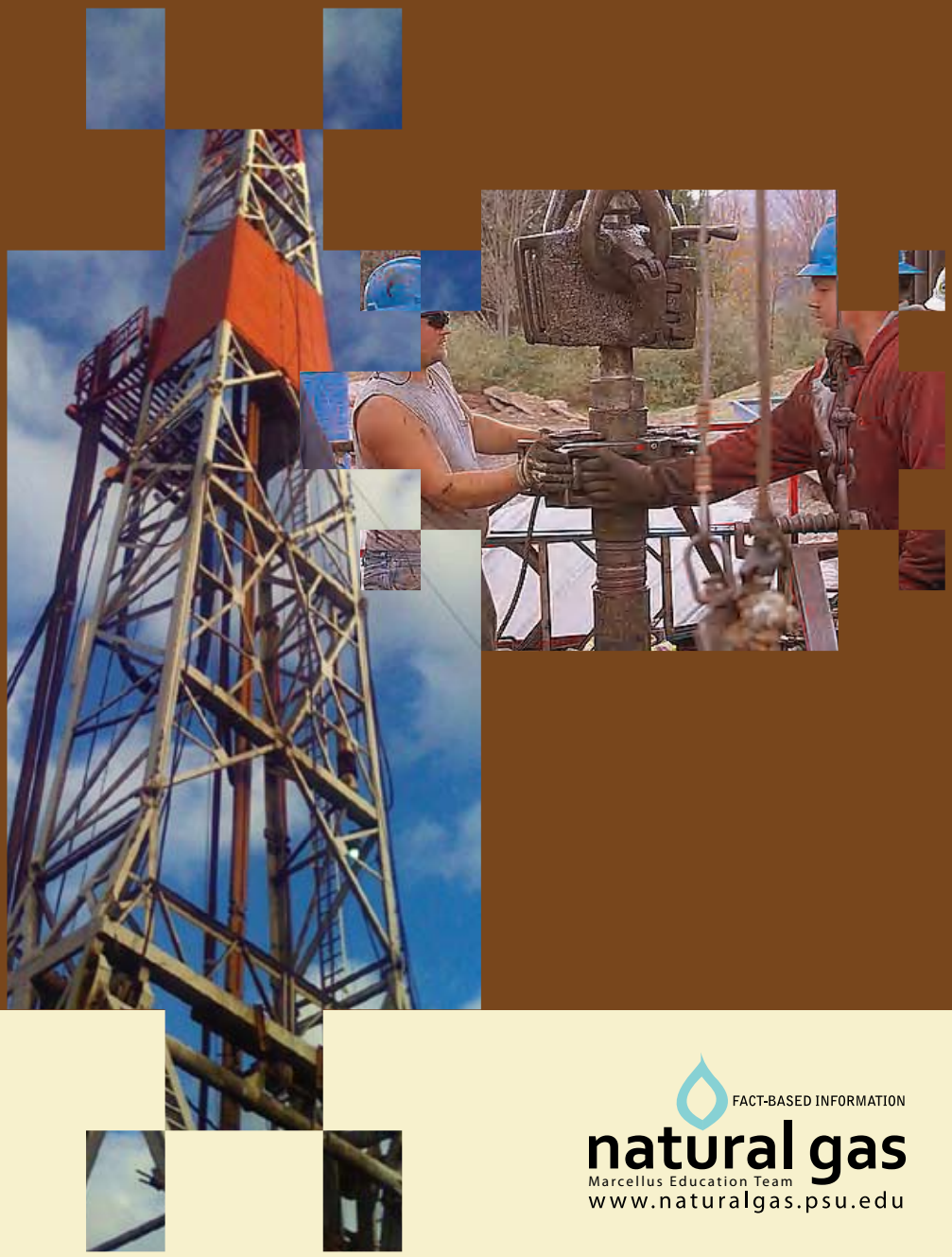

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