CHAPTER 26

Ten Years of Federal Underground Gas Storage Condemnations

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Ten years ago the operators of federally regulated underground gas storage fields had ill defined legal rights to protect their operations. This uncertainty allowed storage operators to settle some problems by threatening precedent setting litigation. As the price of gas rose, settlements became impossibly expensive. Therefore, in 1982, Columbia Gas Transmission Corporation (Columbia) began a series of condemnation suits to confirm the federal rights needed to protect their gas storage fields.

This Chapter reviews the rights and responsibilities this litigation has established, as well as the questions that remain unanswered. It is established that Section 7(h) of the Natural Gas Act accords operators of federally certificated underground gas storage fields the right to condemn underground gas storage easements within the "map area" of their storage fields, including the protective area. This means that invasive drilling or production within the storage field can be stopped. The storage operator retains title to injected storage gas. State law trespass claims for actual and punitive damages have been replaced with a federal cause of action for inverse condemnation, with an award of "just compensation" only. Drilling expenses for production wells within the "map area" of a storage field are not compensable.

The measure of the just compensation due for the condemnation of underground gas storage easements has followed a tortured legal course. A definitive precedent has not yet been achieved. Landowners have argued for a unit times price income capitalization method for computing just compensation. Columbia has sought
use of the diminution in fair market value. As the result of a decision by the Sixth Circuit, this issue is now before the Ohio Supreme Court to determine the Ohio law to be used as the federal rule of decision.


About 80% of the gas consumed in the northeast and midwest is delivered by large diameter pipelines from Texas, Louisiana, and Canada. The remainder comes from Appalachian producers. The pipelines and the wells produce continuously. Consumer demand fluctuates with the seasons -- low in summer and high in winter.

Underground gas storage fields accumulate gas during the summer for winter delivery. Most fields are near the northeast and midwest markets. Others are near the sources of supply. All serve the purpose of balancing continuous supplies from pipelines and wells with demand fluctuations.

Underground gas storage is safer and cheaper than above ground gas storage. Natural gas stored underground is inert because it contains no oxygen -- it can not burn or explode. Underground gas storage uses various naturally sealed underground spaces as occur in depleted gas production fields and aquifers. Almost all Appalachian storage fields are in depleted gas production formations where the fact of production proved the quality of the container. The technical aspects of this Chapter deal only with this kind of storage field.

§ 26.03. Establishment of an Underground Gas Storage Field.

An underground gas storage field must deliver large amounts of gas when needed. This deliverability is achieved by selecting for storage depleted formations that have produced large amounts of gas and little fluid. This production history is the best indication that a formation can provide the needed deliverability. It means the formation has good porosity -- the amount of pore space available to store gas -- and permeability -- the cracks connecting the pore spaces. These cracks and pores in the rock are virtually invisible to the eye. Yet, that they held large amounts of production gas for millions of years proves their capacity to hold large amounts of storage gas with security.

The security of a gas storage field is generally provided by an impermeable barrier surrounding the storage field. The location of this barrier is determined by dry holes surrounding the previously prolific production wells. Unfortunately, these dry holes are not a perfect indicator of an impermeable barrier. Sometimes the storage gas migrates beyond the area originally thought to have an impermeable barrier. Storage operators monitor observation wells around their storage fields to ensure security and to detect migrating storage gas. Observation wells are generally depleted production wells with little gas pressure. An increase in this pressure indicates storage migration.

To construct an underground gas storage field existing wells are reequipped or plugged, new wells are drilled, and pipelines are laid to connect the wells to a compressor station.

The first gas injected raises the pressure in the field to achieve the required deliverability. This is known as base gas and remains in the field until storage operations are abandoned. Next, working gas is injected to achieve a maximum operating pressure that is no higher than the original pressure of the production field. The pressure is gradually reduced as working gas is removed to meet winter demand. Pressure is restored during the summer injection season and reduced again the following winter. This cycle continues until abandonment of the storage field. An underground gas storage field is often the size of several townships.

All of this is not nearly as simple as this explanation. Each storage field presents unique, often difficult problems. Since it is impossible to burrow down to the storage formation for direct observations, all
knowledge of the field must come from remote observations of characteristics like pressure and volume. Learning about an underground gas storage field is like trying to define a tire when only the valve stem is visible and the only available measurements are volume and pressure.

It frequently takes decades to establish the boundaries and operating characteristics of a gas storage field. This is because the storage gas may be slow to migrate through the formation. That slowness is sometimes frustrating to explain because rapid scientific advances seem the norm in most other fields. Slow acquisition of knowledge is a fact of life in the underground gas storage business.

§ 26.04. Acquisition of Necessary Property Rights.

Before storage operations, oil and gas rights on most of the properties within the storage area are typically held by paying production under production leases or combination production and storage leases. When storage operations start, production wells on previously leased properties are either plugged or reconditioned for storage operations. If the leases held by these production wells are combination production and storage leases, the storage provisions are invoked and annual rentals substituted for royalties. If the production lease does not include storage rights, a new storage lease must be obtained before the production well is converted to storage operations. New leases may also be necessary on other properties where additional storage wells must be drilled to enhance the field's ability to deliver storage gas when demand is at its peak.

The author has no experience with the use of the condemnation rights discussed in this Chapter to acquire rights to convert production wells to storage wells or to drill new storage wells, but believes these rights could meet that need.

Most landowners voluntarily lease necessary underground storage rights to the storage operator. It is not often that landowners are offered money for rights that they do not use, to authorize an operation that causes them no inconvenience whatsoever. The movement of the gas deep within the earth poses no threat to surface activities. The gas is inert and is held within rock formations that contained gas during geologic time. It causes a landowner less disruption than an airliner 30,000 feet above the property.

However, some landowners refuse to lease to the storage operator or anyone else. They simply wish to be left alone. If surface rights are not required, an assurance of no oil and gas drilling activity and an oral consent to underground storage may be all the gas storage operator can obtain without condemnation. Unleased properties like this are called "windows" in the storage field. They are the properties that create the problems that ultimately lead to condemnation.

These "windows" almost always appear where there are no wells, pipelines, or other facilities. When storage operations are begun, rights are obtained before facilities are constructed so that "windows" with wells or pipelines are unlikely. When it is not necessary to construct new facilities, obtaining rights is not so critical. Even when a facilities location is needed, it is sometimes easier to build the facilities elsewhere. Since there are no facilities in the protective area or buffer zone around the storage field, "windows" are more frequently found in this area than in the reservoir area. Storage operators always try to obtain storage rights to all the properties in a storage field. The existence of "windows" means the storage operator must continually monitor drilling permit applications to protect the integrity of the storage field. If drilling is threatened, immediate legal action becomes imperative. Therefore, storage operators are anxious to obtain storage rights from all landowners within a storage area. While the amounts paid the landowners are modest, most landowners readily accept these payments as something of a windfall for which they sacrifice nothing.

The fundamental reason it is necessary to condemn underground gas storage rights is to prevent drilling into the geologic formation where gas is being stored. Drilling into the storage horizon could produce storage
gas. Even more potentially disastrous are well stimulation techniques like hydrofracturing that can penetrate the barrier containing the gas in the storage field and ruin the entire field. The basic purpose of hydrofracturing and other well stimulation techniques is to increase the permeability -- cracks -- in the storage formation. If these cracks penetrate the impermeable barrier that contains the storage gas, it could cause the storage field to leak, thereby ruining the entire storage field. This danger is greatest in the protective area surrounding the storage field where the impermeable barrier is believed to exist and "windows" most frequently appear. Therefore, the ability to prevent invasive drilling is critically important to storage operators.

§ 26.05. The Right to Condemn Underground Gas Storage

Easements.

Although interstate pipelines were granted a federal right of eminent domain in 1947 by an amendment to the Natural Gas Act, none sought to extend this right to protect underground gas storage fields from unwanted drilling until Columbia filed the Parrott case in 1982. The decisions flowing from that first case have created gas storage corollaries for many issues in the petroleum land business.

Not wanting to create a bad precedent, Columbia's determination to condemn was made with great care. The Natural Gas Act does not explicitly authorize condemnation of underground gas storage easements. This authority must be found in the general language authorizing condemnations for "the necessary land or other property, in addition to right of way, for the location of compressor stations, pressure apparatus, or other stations or equipment necessary to the proper operation of such pipe line or pipe lines . . .".

While this language is reasonably broad, whether it authorized the condemnation of underground gas storage easements was hardly a certainty. There is no specific mention of the rights needed to establish and operate underground gas storage fields. The closest reference is to "pressure apparatus." Since underground gas storage fields are critical to the maintenance of pressure in an interstate gas pipeline system, this seemed a persuasive argument. If underground gas storage did not exist, gas service would be far more expensive and far less reliable. Despite this, the right of condemnation was vague.

In 1982, Columbia carefully selected the Parrott property in southern Ashland County, Ohio for the test case. Columbia proceeded when the gas price increases caused by the Natural Gas Policy Act of 1978 (NGPA) put it in the position of a bank without a law against bank robbery. It faced a frontal assault on its suddenly more valuable assets by those who found the temptation of drilling into a gas storage field irresistible.

[1]--The Parrott Case.

Stanley Parrott was a fine gentleman and a farmer. Anyone would enjoy doing business with him, except the gas company. He disliked Columbia. He believed that his father had been mistreated by Columbia in the early thirties.

Mr. Parrott's family had owned 80 acres in Ashland County for most of the century. Columbia had a gas well on this property and paid Mr. Parrott's father a royalty of $80 per year for this well. When depletion reduced production, Columbia offered to continue operating, if the royalty could be reduced to $50 per year. Mr. Parrott's father refused. Columbia plugged the well and abandoned the lease. This infuriated Mr. Parrott's father and, later, his son.

Mr. Parrott would not sign a gas storage lease even though he engaged Columbia's leasing agent in long conversations. This was a problem because the development of the Weaver Storage Field surrounded three
sides of Mr. Parrott's property with storage wells.

Therefore, Columbia thought this an appropriate property for its test case. There would be no difficulty proving that a well drilled on Mr. Parrott's property would probably produce storage gas, making condemnation necessary.

There was, however, an unanticipated problem. The property was not within the area of the storage field as defined by the maps filed with the Federal Power Commission (FPC) as part of the original application for a certificate of public convenience and necessity authorizing operation of the Weaver Storage Field. This happened because the eastern boundary of the Weaver Storage Field proved to be about three miles east of its originally estimated location.

This fact was slowly ascertained over a period of about 20 years. The storage engineers observed pressure increases in observation wells along the eastern boundary of the storage field. As a result, they converted some of the observation wells to active storage wells and established other observation wells further east. This process was repeated several times before the gas stopped moving east. It was during this expansion that the storage wells near the Parrott property were drilled and activated.

Although Columbia reported these new wells to the Commission, it never revised the maps that had accompanied the original application. It believed that those maps only served to identify the general area of the storage field, not its precise boundaries. The map itself confirms this belief because it is a general, small scale map that is little more than a schematic.

Although this approach satisfied Columbia and the Commission, it did not satisfy Federal District Judge David Dowd when he was asked to authorize condemnation of an underground gas storage easement beneath Mr. Parrott's property. He gave Columbia what it sought by ruling that Section 7(h) of the Natural Gas Act allowed the condemnation of such an easement. However, he also ruled that condemnation would only be allowed within the area of the map on file with the Federal Energy Regulatory Commission (FERC).

Judge Dowd denied condemnation because Mr. Parrott's property was more than a mile from the boundary of the old map. While this decision confirmed the right of interstate pipeline companies to condemn underground gas storage easements within the geologic formation used for gas storage, they may only do this within the area of the map on file with FERC as a part of their certificate of public convenience and necessity authorizing operation of the storage field. This is now referred to as the "map rule."

The Sixth Circuit affirmed Judge Dowd's ruling. In another case, the Supreme Court approved the Parrott ruling that underground gas storage is an integral part of the interstate transportation of natural gas.

Columbia's response to the "map rule" was to file amended maps with FERC that reflected the boundary realities learned from operations since certification. The Natural Gas Pipeline Company of America followed suit in April, 1989, by requesting a certificate for expansion of the protective zone of their storage fields based on the Parrott decision. This certificate of public convenience and necessity was granted on September 21, 1989. This exercise did not change the geologic boundaries of any storage reservoirs. It provided the Commission with refined storage engineering estimates of their location.

The actual location of a storage reservoir is not defined by a map. It is defined by the geology of the storage field established hundreds of millions of years ago when the sands were deposited in some ancient sea. The boundaries have not changed since then. The storage field boundaries drawn on a map by engineers are no
more than an estimation of the boundaries established in some ancient deltaic deposit. Therefore, the notion that Columbia expands its storage fields when it files a new map is incorrect. It only refines its estimate of the boundary locations.

The extent of the "map area" was defined by the Johnson case,\(^{(22)}\) which held that the right of condemnation extends to both active and protective areas of gas storage fields. This decision was confirmed by Hostettler.\(^{(23)}\) Both the reservoir and the protective areas are defined on the certificate maps filed with FERC. The protective area defines the location of the permeability barrier containing the storage gas. The protective area may be as much as a mile wide in order to guard the integrity of this critical barrier. Including the protective area in the "map area" is critical because drilling and hydrofracturing in the permeability barrier could permanently destroy the integrity of the storage container.

[2]-The Underground Gas Storage Easement.

Before the Parrott case, Columbia acquired its storage rights pursuant to gas storage leases that required annual payments. While this was an acceptable vehicle for negotiated leases, the Fifth Amendment requirement that "just compensation" be paid for appropriated property meant that an annual rental payment would only acquire rights for one year. Not wanting to file annual condemnation actions, Columbia needed to appropriate permanent storage rights.

For this reason, the right sought in all the condemnation cases is an underground gas storage easement. This easement gives Columbia the right to store gas in the geological formation used by that particular storage field. It includes enough of the strata above and below the storage horizon to protect the integrity of the storage field. In one case, Hostettler,\(^{(24)}\) Columbia sought to appropriate surface rights. The order granting a preliminary injunction implicitly approved condemnation of the surface rights necessary to operate a storage well, although the case was ultimately settled without a definitive ruling.

Whenever Columbia negotiates storage rights with landowners, it is willing to use either a lease or an easement. It is the landowner's choice. What the landowner loses in either event is the right to drill into the storage formation. All other landowner rights remain unaffected.


An underground gas storage easement is the right to store gas in a single underground geologic formation. Its only practical effect is to prevent prospecting for oil and gas in that one formation. It does not limit surface rights or the right to produce oil and gas from other geologic formations, including deeper formations. It does not include the right to produce native oil and gas reserves, if any.

This is a limited right of condemnation. The limits are set by the certificate of public convenience and necessity for the underground gas storage field issued by FERC or its predecessor, the Federal Power Commission.

[1]-The Operator's Burden of Proof.

In order to meet its burden of proof that it has a right to condemn, the storage operator must prove:

1. It is a natural gas company regulated by FERC pursuant to the Natural Gas Act;

2. It holds a valid certificate of public convenience and necessity from FERC or the FPC for the storage field where condemnation is sought;
3. The easement sought is in the certificated geologic formation; and

4. The affected real property is within the "map area" of the storage field defined by the certificate of public convenience and necessity.

The "map rule" defines the location of the right to condemn with precision. If the property is within the "map area," the right to condemn is unquestioned. This is far more precise than requiring proof of the need to condemn.

Once the storage operator meets its burden of proof on these four requirements, the burden of proof shifts to the landowner to prove the appropriate amount of just compensation.\(^{(25)}\)

[2]--Stopping the Drilling Rigs.

Before West published the "advance sheet" opinion in Parrott, Columbia used the case as precedent in Bowman\(^{(26)}\) to stop drilling. The bulldozer was already making a location on the Bowman farm when Columbia's lawyer, the author, applied to Judge Dowd for a temporary restraining order to stop drilling. Since the Bowman farm was within the "map area" of the storage field, Judge Dowd issued the order. The author literally stood on the county road waving the order at the bulldozer operator. A fellow in a three piece suit waiving papers on an otherwise deserted county road was sufficiently bizarre that the operator investigated and complied with the court's order. The defendants allowed the TRO to become a preliminary injunction that prohibited drilling during the pendency of the suit.

The next case came to be known as Kies I. This single 20 acre tract was the subject of three different suits\(^{(27)}\). The defendants voluntarily agreed to refrain from drilling even though the property was outside the "map area." They agreed to wait for the Sixth Circuit decision in Parrott. When the "map rule" was upheld, Judge Dowd dismissed Kies I because Columbia had no right of eminent domain outside the "map area."\(^{(28)}\)

This led to Kies II\(^{(29)}\) where Columbia tried to stop drilling, claiming that the only reason for a well on the Kies tract was to steal Columbia's storage gas. Columbia sought a preliminary injunction enjoining any drilling during the pendency of the action. Columbia's hope was to stop exploration until it could get amended maps approved by FERC.

Judge Dowd, although unimpressed, recognized an important principle: a storage operator maintains legal title to injected storage gas even when the gas migrates beyond the boundaries of the storage field.\(^{(30)}\) Therefore Judge Dowd held that the well could be drilled but that any storage gas produced belonged to Columbia. He also gave Columbia un-limited access to the drilling rig to conduct whatever tests were necessary to determine if it was producing storage gas. Apparently the defendants were not fully convinced by their own testimony that they would only encounter native gas, because they never drilled the Kies well. Ultimately, Columbia acquired the gas storage easement after revision of the FERC maps gave it an undisputed right to condemn.\(^{(31)}\)

Before Kies II, Columbia drew a new judge for its fourth condemnation, Johnson.\(^{(32)}\) This filing occurred on a Thursday afternoon with the lessee's lawyer promising that drilling into the Wayne Storage Field would commence on Friday morning and be completed before Monday. The new judge was on vacation. Therefore, Columbia had to take its case for a temporary restraining order to the "miscellaneous" judge -- the judge who is on call for emergencies. This judge denied the request and it appeared as if Columbia's storage field would be breached before the assigned judge would return on Monday.

Astonishingly for this part of Ohio, preparing the drilling site turned out to be difficult and drilling did not
commence as indicated. Columbia returned to court on Monday and the assigned judge persuaded the defendants to agree to a preliminary injunction. This is the closest anyone has come to drilling into a Columbia storage field since Parrott was filed.

§ 26.07. Expenses Incurred to Drill Within a Storage Field Are Unreasonable and Unrecoverable.

The Johnson case produced a second decision, holding that drilling expenses incurred within the "map area" of a certificated underground gas storage field after October 30, 1985 need not be reimbursed as a part of just compensation.(33) The operator spent $20,000 obtaining a drilling permit, making a location, and setting surface casing. When condemnation stopped his operation, he sought reimbursement. Judge Dowd allowed recovery of all expenses incurred prior to October 30, 1985, the date of the Sixth Circuit decision in Parrott, but none incurred after that date. Before this decision, he found the right of condemnation subject to reasonable doubt; therefore, it was not unreasonable to ignore the possibility of condemnation. Once the right of condemnation was secure, further activities were unreasonable. Most of the $20,000 was spent before October 30, 1985, so Columbia lost the battle but won the war.

Therefore, the current state of the law is that persons drilling within a federally certificated gas storage field have no claim for compensation when their operations are halted. Drilling is at the peril of the operator.

§ 26.08. The Title to and the Remedy for Migrating Storage Gas.

Storage gas may be found beneath properties where there are no storage rights. This can happen because the storage operator was unable to obtain storage rights and the right of condemnation was unsettled when the field was activated. Sometimes the storage gas migrates beyond the predicted boundaries of the storage field. This causes two problems: What remedies are available to the landowner for the presence of storage gas beneath its property without its permission? What remedies does the storage operator have when its storage gas is produced by a gas production well?

[1]--Landowner Remedies for Migrating Storage Gas.

In early underground gas storage condemnations, the property owners claimed trespass and sought punitive damages for migrating storage gas. In Bowman v. Columbia Gas Transmission Corp.,(34) $10,000 actual damages and $30,000 punitive damages were awarded by the jury because Columbia's storage gas had been migrating in and out of the Clinton Formation 3,000 feet beneath the surface of the property for 20 years before Columbia filed for condemnation. This award was made even though the storage gas caused the Bowmans no inconvenience or risk whatsoever. On appeal, the Sixth Circuit said the issue had not been preserved for appeal. The trial judge found this holding so incredible that he has responded by adopting the practice of regularly stating, during trials, "That issue is preserved for appeal."

Since he could not get a definitive ruling on this issue from the Sixth Circuit, the trial judge reconsidered the question in the Arnholt(35) case and reversed himself. He held that state trespass law does not apply to storage gas that migrates away from a federally certificated and regulated underground gas storage field. Instead, he found that the federal remedy of inverse condemnation applies and that just compensation is the measure of damages. Most significantly, he ruled that punitive damages were inappropriate.

The just compensation to be awarded for an inverse condemnation resulting from migrating storage gas only applies to past migration of gas. No future gas storage rights are acquired by inverse condemnation. If a storage operator needs future gas storage rights, those must be obtained by negotiation or condemnation. Inverse condemnation is retrospective while condemnation is prospective.

This inverse condemnation remedy is an advantage of federally regulated storage fields. State trespass law
may apply to storage fields that are not federally regulated. This could result in an award of actual and punitive damages as in *Bowman*. Since juries are much more likely to be sympathetic to a farmer than to a gas company, these damages could be spectacularly disproportionate to the nonexistent actual harm.

[2]--Storage Operator Remedies for Production of Storage Gas.

The other risk of migrating storage gas is that it may be produced by another's gas well. Some remedies for a storage operator who has lost gas to a production well are established while others are still being developed.

When natural gas is produced, it is converted from real property to personal property. Title to this newly created personal property is vested in the owner of the production well that produced the gas.

When natural gas is reinjected into a storage formation it retains its character as personal property. The first case to consider this problem mistakenly analogized gas to wild animals, holding that the gas reverted to its natural state with the storage operator losing title. This view has been properly rejected. It can be regarded as settled that the storage operator retains title to gas it injects into the storage formation.

In *Hostettler*, an injunction was issued to stop production of storage gas from a foreign well. Columbia should have been able to obtain a judgment against the owner of the well for the value of the storage gas produced. However, before the precedent was set, the case was settled.

A statute of limitations issue that may also arise when a storage operator seeks to recover the value of storage gas taken from a production well. What statute should be applied? The storage operator will argue that the well owners are exercising real estate rights and, therefore, the (typically) 21 year real estate statute of limitations should apply. The well owners will urge the (typically) 2 year statute applicable to unintentional torts. There is no obvious answer to this conflict. Therefore, storage operators should move to stop the production of storage gas as soon as they suspect this might be happening. They should not wait until their proof is fully developed. As soon as there is a reasonable basis for the belief, the case should be filed. Refinement of proof and settlement can both be accomplished after filing suit.

§ 26.09. The Measure of Compensation Remains an Open Question.

The most unsettled and controversial problem in federal underground gas storage condemnation law is the value of appropriated underground gas storage easements. Landowners complain that they have lost valuable oil and gas reserves, entitling them to levels of compensation that exceed the total value of the tract burdened by the storage easement. Storage operators believe that whatever they offer to settle these cases is a wind-fall for the landowner because the depleted formations used for gas storage have no value and the acquisition of a gas storage easement does not reduce the value of the landowner's property. These wildly differing views have caused the valuation evidence presented at the just compensation trials to differ by tens and even hundreds of thousands of dollars.

The source of this problem is the conflicting beliefs regarding the productive potential of the storage formation. Storage operators view these formations as depleted and useless for anything but gas storage, which means the landowner is not losing anything of value. Some landowners disagree. With seeming uniformity, these landowners have a well-developed hope that someday they will realize significant wealth from the appropriated formation. Therefore, they view the appropriation as depriving them of this wealth. Actually, what has been taken is their hope and some will not easily relinquish hope.

Their belief is that they have lost a winning lottery ticket and they want to recover their potential winnings.
Storage operators are willing to pay the cost of the lottery ticket but not the unrealized bonanza.

§ 26.10. The Factual Problem.

An underground gas storage easement appropriation takes only the right to drill for oil and gas in the storage formation and nothing else. Some landowners and their oil and gas lessees believe this right to drill is the equivalent of a successful oil and gas well. Therefore, they believe just compensation should be computed by measuring the value of a successful oil and gas well. This approach can produce a result higher than the total value of the farm to be encumbered by the underground gas storage easement.

Not surprisingly, storage operators resist this method. In their view, the fact that the property is within a storage area proves that the appropriated formation is either depleted or too tight to be productive. If the property is within the storage field's reservoir area, the storage formation beneath it should have the same good porosity and permeability that makes the reservoir suitable for storage operations. This means that any native hydrocarbons that might have existed beneath the property have been produced by the production operations that preceded storage (unless they are in an isolated pocket, which is unlikely). The other possibility is that the appropriated property is in the protective barrier area around the storage field, i.e., in the vicinity of the impermeable barrier that traps the storage gas. This barrier necessarily has virtually no permeability. So tight a formation can not produce paying quantities of hydrocarbons. In either event, the fact that the property is within a storage field strongly indicates that it has no potential for native oil and gas production.

The landowners whose underground gas storage rights must be appropriated are not convinced. Frequently, they have neighbors who are reaping the benefits of successful wells. They hope to be equally as fortunate. When a gas storage operator deprives them of this hope, they want compensation for what they hoped to receive.

This leads to a definitional problem between storage operators and landowners. As stated in McCullough, property owners claim to have lost "native oil and gas reserves," "the right to produce native oil and gas," or even, "native oil and gas" itself. (44) There, the Sixth Circuit approved the storage operators claim that the property owners only real loss was "the right to prospect for oil and gas" in the storage formation. (45)

The property owners' characterizations of their loss seek to minimize the risks that attend economically profitable production. Yet, the risk of failure is the reason no "real world" market highly values the right to prospect for oil and gas wells in the kinds of formations generally used for underground gas storage in Appalachia. The signing bonuses and delay rentals paid property owners for leases are $1 to $10 per acre. The principal considerations offered to landowners are the 1/8th landowner royalty and free gas. Both are worthless without actual production. Leases are traded for overriding royalties that are also based on actual production. During ten years of litigation, no transaction has been discovered where the right to prospect for oil and gas was sold for cash only.

This lack of clearly applicable comparable sales is one of the reasons determining just compensation for condemnation of underground gas storage easements has proven so intractable. Lacking the reality check provided by comparables, the property owners claim their loss is the value of their hoped for oil and gas wells. Yet, they do not want to account for the high risk associated with oil and gas prospecting.

Actually, the value of the right to prospect should be severely discounted from the value of successful prospecting to reflect the very real risk of failure. Before a well is drilled, it is impossible to know if it will make or lose money. Even after a well is drilled and completed, whether it will be profitable can not be known. Petroleum engineering estimates of reserves are unreliable. Because of the risk, the value of the right to prospect can not be determined by calculating the value of successfully exploiting this right. Yet,
this is what landowners have advocated with surprising success.

§ 26.11. The Measure of Compensation – Basic Legal Principles.

[1]--The Constitutional Requirement.

The obligation of an interstate pipeline to pay for appropriated easements is based on the Fifth Amendment to the United States Constitution which provides; "nor shall private property be taken for public use, without just compensation."(46)

In general, "just compensation" means the fair and reasonable market value of the appropriated property interest evaluated as of the date of taking. The landowner is entitled to be put in as good a position from a pecuniary standpoint as if the property interest had not been taken, but is not entitled to anything more. The constitution has no bias for condemnor or condemnee:

[The condemnee] is entitled to receive the value of what he has been deprived of, and no more. To award him less would be unjust to him; to award him more would be unjust to the public. Although the payment of the award in these cases does not come from the government, its amount is nonetheless of concern to the public. The capital expenditures of interstate pipelines are included in their rate base, and FERC allows recovery of these expenditures from ratepayers. The ultimate victims of any excessive "compensation" are residential consumers and other end-users of gas that has been transported through or sold at wholesale from the interstate pipeline system that owns the particular storage field.(47)

The market value of condemned land is ordinarily determined in one of two ways: (1) by comparable sales of land, or (2) by an estimate through the "willing buyer-willing seller" method. Reasonably contemporaneous arm's length sales of comparable real estate are the best evidence of market value. These true-life transactions are usually better evidence of value than the opinions of witnesses.(48) Recent sales of the condemned tract itself are naturally even more significant.(49)

Where evidence of comparable sales is sparse, market value may be estimated as the price able and willing buyers would pay to those who are willing, but not forced to sell. In other words, the price that the condemned tract would bring when offered for sale by one who wants to sell, but is not forced to sell, and sought by one who would like to buy, but is not required to buy.

The value of the condemned property is measured from the point of view of the market. The standard is the market value of what has been taken, not the value either the condemnor or condemnee has gained.(50) Therefore, the value of the storage formation as a gas storage container is not a proper element of compensation; it is not a use to which the property is reasonably susceptible(51) by the landowner.

The special value to the condemnor [sic] as distinguished from others who may or may not possess the power to condemn has long been excluded as an element from market value. . . . That is a value which the [condemnor] itself created and hence in fairness should not be required to pay.(52)

This means that the value of the storage easement to the storage operator may not be used to determine just compensation. Only the actual market value of the underground gas storage easement is relevant.

Actual market value means exactly that -- the value of the property in the market. It is not the value to either the condemnor or the condemnee. The United States Supreme Court settled this issue in United States v. Petty Motor Co.;(53)
The Constitution and the statutes do not define the meaning of just compensation. But it has come to be recognized that just compensation is the value of the interest taken. This is not the value to the owner for his particular purposes or to the condemnor for some special use but a so-called "market value." It is recognized that an owner often receives less than the value of the property to him but experience has shown that the rule is reasonably satisfactory. Since "market value" does not fluctuate with the needs of condemnor or condemnee but with general demand for property, evidence of loss of profits, damage to good will, the expense of relocation and other such consequential losses are refused in federal condemnation proceedings.\(^{(54)}\)

[2]-The Burden of Proof.

In federal condemnation law, the landowner bears the burden of proving the value of the property appropriated -- the same burden of proof as any other party seeking a monetary recovery. The United States Supreme Court has squarely decided that "[t]he burden of establishing the value of the lands sought to be condemned was on respondent [landowner]."\(^{(55)}\) The federal rule has not wavered.\(^{(56)}\)

This is sound law. The Fifth Amendment neither creates nor disparages the federal power of eminent domain. Rather, it creates a remedy for affected property owners.\(^{(57)}\) "Just compensation" is affirmative relief for landowners and, as a basic tenet of law, one who seeks relief bears the burden of establishing the right to it.

The burden of proving the amount of compensation due varies between federal and state rules. In some states, the fact finder is simply an assessor and no burden of proof is assigned.\(^{(58)}\)

[3]-The Value of Affected Land Is the Limit of Compensation.

In underground gas storage easement condemnations, the property owners have regularly sought compensation far in excess of the total fair market value of the real property encumbered by the appropriated easement. As illogical as this may seem, it actually happened in two cases. In both \textit{Johnson}\(^{(59)}\) and \textit{McCullough}\(^{(60)}\) the landowner was awarded more for the underground gas storage easement alone than the total value of the land. In \textit{Johnson}, \$18,500 was awarded for an easement beneath land worth \$14,500. In \textit{McCullough}, \$213,798 was awarded for an easement beneath land worth \$154,200. The values for the affected properties were set by the only real estate appraisal expert to appear in each case. Columbia presented the appraisal experts in an unsuccessful effort to limit the compensation to something less than the total value of the affected real property.

These efforts were successful in \textit{Jasinski},\(^{(61)}\) where the judge ruled that compensation could not exceed the total fair market value of the property affected by the easement. The logic of this proposition seems indisputable.

Landowners argue, however, that the real property market does not accurately evaluate the right to prospect for oil and gas because most buyers and sellers are unsophisticated in these matters. Since the properties involved are generally sold for agricultural purposes, that is how they are evaluated in the market. Neither the buyer nor the seller tries to determine whether the property may have additional value as an oil and gas prospect. Therefore, landowners argue that their recovery should not be limited by the fair market value of the property.

Of course, if the real property market places little value on the right to prospect for oil and gas, this is a strong indication that the loss of that right also has little value. Since this is not the answer landowners want, they urge ignoring market value.
In the place of fair market value, landowners have urged that just compensation should be determined by a unit times price income capitalization method. This method awards as just compensation the present value of a postulated income stream produced by hypothetical wells to be drilled on the subject property.

In two jury trials and a trial before the Rule 71A(h) Commission, landowners persuaded the court to give instructions with four alternative methods of valuation. Two of the methods were ignored by both parties. The other two embody the conflict between property owners and gas storage operators. The unit times price income capitalization method advocated by landowners states:

2. The Existence of Sufficient Natural Gas Allowing for the Commercial Recovery in Sale of Natural Gas. A second method of determining fair market value, and in turn just compensation, rests upon evidence offered by landowner that sufficient natural gas remains under the landowner tract so as to allow the commercial recovery and sale of that natural gas. If the landowner so proves, then in determining just compensation, you may assess the foreseeable net income flow from the property for its productive life reduced to a present value figure.

In other words, in fixing just compensation, you would determine the probable revenues and costs for the production and sale of native natural gas from the condemned tract and reduce the net sales value by the interest the landowners will enjoy for an early, one time payment.

All landowner trial evidence to date has been based on this instruction. This evidence is generally offered by petroleum geologists and engineers who study the geology and production characteristics of oil and gas wells in the neighborhood of the subject property. From this, they theorize the characteristics of one or more hypothetical wells they propose should be drilled on the subject tract. Using these theoretical characteristics, they calculate the amount of oil and gas the well or wells will produce each year for the life of the well, usually about 20 years. They project the market value of the oil and gas over this 20 year period and multiply this times the amounts of oil and gas they expect to be produced. They deduct their estimated drilling and production costs to create a theoretical income stream. Then they do a present value calculation to account for the time value of money and estimate the present value of their postulated net income stream.

A more speculative enterprise is hard to imagine. The landowner experts claim to predict the productive characteristics of hypothetical wells even though surrounding wells always prove that each well is very different from all of others. Courts ought to take judicial notice that oil and gas prices and interest rates can not be predicted for one year with any degree of accuracy, let alone for a 20 year period. Even the costs and expenses are speculative when projected that far into the future. Yet, the landowner experts defend their hypothecations as the best available evidence of the value of the rights appropriated.

Columbia has regularly and unsuccessfully objected to this evidence because it is unrelated to market value. No landowner expert has claimed that the appropriated rights, or even the whole farm for that matter, could be sold for anything approximating the results they achieve with this method. In addition, this evidence is speculative. This means it can not pass the standard requirement for an expert opinion of reasonable certainty. Furthermore, even if all the elements in these somewhat complex unit times price income capitalization calculations were reasonably probable, the final result would be unlikely. If reasonably probable means a 51% chance, then the multiplication of two reasonably probable opinions produces a probability of about 26%. This improbability gets progressively worse with each step in the landowner advocated formula.
The author conjectures that Judge Dowd has consistently given this instruction, hoping that an appeal would obtain a definitive answer from the Sixth Circuit. Columbia tried to get this definitive answer in the McCullough appeal. While the Sixth Circuit reversed the outlandish result produced by the unit times price income capitalization method, it ducked the issue by (incorrectly) ruling that state law applied.

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[5]--The Diminution in Value Instruction.

Just compensation for underground gas storage easement condemnations should be measured as the difference between the fair market value of the real property subjected to the easement before and after the date of filing the condemnation complaint. This is the standard approach to all appropriations of a partial interest in real property. It fairly determines the landowner's actual loss in terms of the fair market value of the particular real property. It avoids the wonderland compensation the unit times price method can produce.

Landowners object that this method is difficult to apply to gas storage easement condemnations because there are few comparable or other indicia of value that can be used. They also know that real property markets do not highly value the right to prospect for oil and gas. Simply stated, this method can not produce wealth equivalent to the Wells of their dreams.

[6]--The McCullough Case.

The McCullough case illustrates the different approaches to the determination of just compensation for an underground gas storage easement. Therefore, the tortured and still ongoing course of this case will be discussed in some detail.

Columbia condemned an underground gas storage easement beneath 264 acres of a 399 acre farm in Wayne County, Ohio. The 264 acres were within the "map area" of the Wayne Storage Field; the remainder of the farm was outside the "map area." All but a tiny corner of the 264 acres was in the protective area of the storage field.

Columbia's term storage lease on the McCullough farm had expired and the landowner had leased to a producer who was about to drill a well when Columbia condemned. Columbia learned of the producer's intentions by checking the Ohio Division of Oil and Gas list of permit applications for activity in the vicinity of its storage fields.

When Columbia condemned, the landowner and the producer agreed to treat the condemnation case like an oil well. The producer agreed to pay all the expenses of the litigation and give the landowner 1/8th of any amount that might be recovered. The landowner has allowed the producer to control the litigation and cooperated whenever needed. This seems a sensible arrangement. It certainly is far better than a dispute between the farmer and the producer over who is entitled to what share of the compensation. Columbia has not yet encountered that situation, but will certainly exploit it when it does.

The same two lawyers who tried McCullough had tried the Bowman and Johnson case to juries before Judge Dowd. In both cases, the judge and the lawyers determined that the jurors really did not understand the cases. Therefore, both parties suggested, and Judge Dowd agreed, to assign the case to a Rule 71A(h) Commission for determination of just compensation. The three member Commission consisted of a lawyer as chairman and two members with extensive Ohio oil and gas production experience. Judge Dowd and the lawyers hoped this talented panel would cast some enlightenment on this difficult situation. Those hopes were disappointed.
Despite a furious fight over the instructions to be given the Commission, Judge Dowd gave the same instructions on the determination of just compensation as he had given to the Bowman and Johnson juries. These instructions recite four alternate methods of determining just compensation: (1) comparable sales of underground gas storage easements; (2) unit times price, which is the present value of the income stream expected from hypothetical oil and gas wells; (3) capitalization of rental payments for the right to store gas; and (4) diminution of the fair market value of the condemned tract as a whole by reason of the taking of the storage easement.

Methods (1) and (3) relate compensation to the amount the storage operator is willing to pay for storage leases or easements. In McCullough, neither party presented evidence based on methods (1) or (3).

Method (2), the unit times price income capitalization instruction, was the entire focus of the landowners' evidence. Their geologist predicted a bar of clean, permeable sand connecting the two best wells north and south of the McCullough tract. Based on this prediction, their petroleum engineer averaged the production from these two exceptional wells, predicting that two proposed wells on the McCullough farm would produce an income stream with a present value of $873,803. These experts agreed that the appropriated rights or even the entire farm could not be sold for anything approximating this amount. Thus, the amount was not intended to be an indication of market value.

These experts admitted that they had no way to assign any degree of probability to their opinions. Their opinions were simply speculation. Even worse, the petroleum engineer testified that his opinions were based on the accuracy of the petroleum geologist's opinions. Thus, the prediction of production with a present value of $873,803 was a guess based on a guess. Despite this uncertainty, Columbia's objections and motions to strike were overruled.

Columbia pointed out that 7 of the 12 wells surrounding the property, including 1 well on the appropriated 264 acres, were dry holes and the other 3 were marginal producers. Only the two wells averaged by the defendants' experts were any good.

The 264 acres was in the protective area around the storage field. Therefore, the Clinton Formation beneath it probably contains an impermeable barrier that prevents migration of storage gas. The fact of impermeability means this barrier necessarily lacks the porosity and permeability necessary for good production. Columbia demonstrated the existence of this barrier with pressure evidence from nearby storage wells showing the typical spiking pattern \(^{74}\) caused by storage injections and withdrawals. This consistent pressure pattern and steady injection and withdrawal volumes proved the existence of the barrier by demonstrating a successful storage operation that was not losing gas. The defendants' postulated bar of clean, permeable sand penetrated the area where the barrier had to exist to support Columbia's already successful storage operation. Successful storage is inconsistent with the good clean sand bar theory. Therefore, the hypothetical wells supposedly drilled into this bar could not produce the amounts suggested by the defendants' experts.

In addition to evidence that the hypothetical McCullough wells would be dry or marginal, Columbia introduced evidence that the fair market value of the McCullough farm would be diminished at most by $50 per acre or $13,200 for the 264 acres. Columbia argued that method (4), the diminution of fair market value instruction, should be applied.

Columbia's MAI real property appraisal expert performed three property appraisal studies. He performed a typical appraisal of the fee simple value of the 399 acre McCullough farm and the 264 acre portion being encumbered by the underground gas storage easement without considering oil and gas potential. He found that the 264 acre parcel had a fair market value of $141,000 if there was no reasonable probability of economical oil and gas production from the property. From the studies described below, he concluded that
the absolute maximum that a good prospect of economical oil and gas production could increase the
property's value was $50 per acre. This meant that the maximum value of the 264 acres, assuming a very
promising oil and gas prospect, was $154,200. In that case, the appropriation had reduced the value of the
property by $50 per acre for a total diminution of value of $13,200.

Columbia argued that this would be more than just -- it would be generous compensation. Actually, the
most thorough study by Columbia's expert indicated that the right to prospect for oil and gas was worth only
$13 per acre.

The first study performed by this expert involved searches of the records in Wayne and two surrounding
counties for matched pair comparison sales of property. The expert found three matched pair comparison
sales with and without the right to prospect for oil and gas. In two instances, the right to prospect for oil and
gas made little or no difference in the value of the properties. In one case, a farm with productive oil and
gas wells was purchased and then sold six months later with the first purchaser retaining the oil and gas
royalties. The retention of this income caused the sale price of the property to drop $53 per acre. Since this
actual production was a near certainty, the appraiser believed it had more value than the McCullough's
hypothetical production. Therefore, he concluded from the matched pair comparison study that the
maximum increase in value attributable to the right to prospect for oil and gas was $50 per acre.

He also studied every arm's length sale of farms of 20 acres or more in the McCullough's township and the
four surrounding townships for a period of five years. He adjusted each sale price to account for every
positive and negative characteristic of each property except oil and gas. Columbia's storage personnel
independently determined whether each sale included a right to prospect for oil and gas. The results were
combined by a statistician who found that sales that included a right to prospect for oil and gas had an
average value $13 per acre higher than sales without this prospect.

From all of these studies, the only real property expert to appear at the trial concluded that the most that the
fair market value of the 264 acre tract could be diminished by the appropriation was $50 per acre for total
compensation of $13,200. Columbia urged this as the proper result.

Because the property owners only presented unit times price evidence, which Columbia tried to refute, the
Rule 71A(h) Commission apparently came to the mistaken conclusion that the issue was the amount of oil
and gas that would be produced by the hypothetical wells. They did not comment on Columbia's evidence or
on what method of compensation was appropriate.

Instead, the Commission averaged production from a number of surrounding wells and did a present value
calculation of their own to predict the value of the hypothetical production from two hypothetical wells on
the McCullough farm. Using this method, they recommended an award of $213,798, or $59,598 more than
the undisputed total fair market value of the 264 acres.

Judge Dowd affirmed this award and Columbia appealed to the Sixth Circuit. On appeal, Columbia argued
the unit times price income capitalization instructions were prejudicial error and that a diminution of value
measure of compensation should have been used.

Surprisingly, the landowners agreed that diminution of value is the fundamental measure of just
compensation for a partial taking, and argued that their evidence encompassed a diminution of value
approach. They did not argue that the unit times price instruction given by Judge Dowd was correct.

Instead of adopting the diminution of value instruction, the Sixth Circuit surprised everyone by holding that
state rather than federal law should be used as the federal rule of decision. It remanded the case for a
determination of the applicable Ohio law.
The Sixth Circuit *McCullough* decision has two fundamental flaws. First, the Circuit referred only to Section 7(h) of the Natural Gas Act\(^{(76)}\) to find that there was no federal measure of compensation for the appropriations it authorized. It forgot that the Fifth Amendment to the United States Constitution specifies the measure of compensation for all federal appropriations -- it must be "just."

As a result of this error, the Circuit began a "*Kimbell Foods*"\(^{(77)}\) analysis to determine if state law should be used as the federal rule of decision by referring to the state procedural sentence of Section 7(h).\(^{(78)}\) It found this to be one reason state law should be used. It failed to realize that the sentence had been superseded in 1951 by Rule 71A of the Federal Rules of Civil Procedure.\(^{(79)}\) State procedure has not been used for federal condemnations since 1951.

Both sides were appalled by this decision and joined forces to try to get a rehearing, a hearing *en banc*, or the issuance of a writ of *certiorari*. These joint efforts were rejected.\(^{(80)}\)

Now Judge Dowd has certified the case to the Ohio Supreme Court to learn the measure of just compensation for the appropriation of an underground gas storage easement to protect a federally certificated underground gas storage field according to Ohio law. Its decision should apply only to *McCullough*.

Future cases should correct the Sixth Circuit's errors in *McCullough*. The measure of compensation for federal underground gas storage condemnations should be measured by the "just compensation" standard of the Fifth Amendment. Certainly state law can not apply where the United States Constitution does.

[7]--Evaluating Imaginary Income from Hypothetical Wells

**Produces Speculative Values with No Market Basis.**

The method of valuation favored by landowners is the second method in Judge Dowd's instructions to the *McCullough* Commission. This instruction allows the introduction of petroleum geological and engineering opinions of the probable amount of oil and gas that will be produced by hypothetical wells from beneath the subject tract. This predicted production is multiplied by the predicted price of oil and gas for as long as 20 years to determine the annual income from this production over the life of the wells. The predicted costs of drilling and production are sub-tracted from this income prediction. An estimated interest rate for as long as 20 years is then applied to this income flow to create its present value.

By using this method, landowners attempt to "prove" that their loss is greater than the value of the entire fee simple interest in the subject tract. In order to do something this illogical, they must ignore the value of the real estate even though the appropriated easement is an interest in real estate. Instead, they focus on the value of oil and gas as though it had already been lifted to the surface. Thus, they evaluate a real property right as though it had been exercised to create personal property rights to oil and gas.

In addition to these conceptual problems, the landowners face some difficulties of proof that are inherent in the requirements of this method. The first is that they must demonstrate that each step in the complex computation, as well as the ultimate result, is "reasonably probable." Without denigrating the sciences of petroleum geology or engineering, it should be apparent to anyone familiar with those fields that they will have a great deal of difficulty testifying that a particular amount of production is reasonably probable for an as yet undrilled well.

Yet, that is not the only problem in determining the volume of oil and gas. The landowners must also prove the market value of this production during the life of the hypothetical well to a reasonable probability. The
wild price fluctuations of the last 10 years should demonstrate the impossibility of making such a prediction. Equally impossible is predicting the interest rates needed to perform the required present value calculation.

When this inherently speculative method is placed in the underground gas storage field context, it develops additional intrinsic problems. If there are good wells nearby that have been substantially depleted or exhausted, and the appropriated storage formation beneath the subject tract is assumed to have similar characteristics, it will be so permeable that whatever native oil and gas may have been deposited beneath the subject tract would have migrated to the nearby production wells. Assuming the opposite, that the storage formation has poor productive characteristics, there is no chance of economical oil and gas production. Either way, there is little chance of good production from the appropriated storage formation regardless of its characteristics.

Another intrinsic problem landowners ignore is that the proposed wells on the subject tract are likely to drain oil and gas from neighboring tracts. For example, the landowners' geologist in McCullough drew circles around his proposed wells indicating the area he thought the wells would drain. About half of this drainage area was outside the boundaries of the McCullough farm. Thus, the McCulloughs were asking compensation for the native oil and gas beneath their neighbor's property. They ignored their neighbor's correlative right to drill their own oil and gas wells.\(^{(81)}\) If every landowner were awarded compensation on this basis, the storage operator could be forced to pay for the same gas twice, thrice, or even more often. Landowners collectively could receive far more compensation by owning numerous drilling unit sized tracts than one large tract. This can not be the law.

Unit times price income capitalization values a speculative business by assuming success. Claims that a future event enhances the value of real property should only be considered when that future event is shown to be reasonably probable. Value based on the possibility of speculative events should be consistently rejected.

Unit times price income capitalization can not produce a result that is reasonably probable even if all the elements that go into the calculation could be proved with reasonable probability. This is because the probability of each element is multiplied by the probability of the other elements. When reasonably probable predictions are multiplied the likelihood of accuracy is also multiplied so that the results become exponentially more unlikely.

The reason the income capitalization method of valuation should be rejected is well summarized in the recent case of United States v 69.1 Acres of Land,\(^{(82)}\) where the court wrote:

Whitehurst [337 F.2d 765 (4th Cir. 1964)] was the government's appeal from an inflated award based on the so-called "royalty" or "income capitalization" method of ascertaining just compensation. This method, disfavored by federal courts, takes a specified number of units of the mineral, multiplies it by projected prices into the future, then discounts the flow of income to a supposed present value. These valuations almost always achieve chimerical magnitude, because, in the mythical business world of income capitalization, nothing ever goes wrong. There is always a demand; prices always go up; no competing material displaces the market. As the seminal case on the subject stated, "[it] would require the enumeration of every cause of business disaster to point out the fallacy of using this method of arriving at just compensation."\(^{(83)}\)

After the phrase "chimerical magnitude," the Fourth Circuit added the following footnote: "An apt illustration appears in the record. One government appraiser, using the income capitalization approach, calculated a "before" value for the 269.1 acres of $1,223,681. The landowner concedes that this "valuation" cannot pass the giggle test."\(^{(84)}\)
These factual problems are some of the reasons federal courts have disapproved of attempts by condemnees to equate just compensation for economically producible minerals to a hypothetical unit-times-price formula.

The classic and oft-quoted rationale for the hostility toward unit-times-price evaluations was stated in *United States ex. rel. TVA v. Indian Creek Marble Co.*:(85)

Fixing just compensation for land taken by multiplying the number of cubic feet or yards or tons by a given price per unit has met with almost universal disapproval of the courts. This is true because such valuation involves all of the unknown and uncertain elements which enter into the operation of the business of producing and marketing the product. It assumes not only the existence, but the continued existence of a stable demand at a stable price. It assumes a stable production cost and eliminates the risks all business men know attend the steps essential to the conduct of a manufacturing enterprise. It eliminates the possible competition of better materials of the same general description and of the possible substitution of other and more desirable materials produced or possible of production by man's ingenuity, even to the extent of rendering the involved material unmarketable. It involves the assumption that human intelligence and business capacity are negligible elements in the successful conduct of business. It would require the enumeration of every cause of business disaster to point out the fallacy of using this method of arriving at just compensation. No man of business experience would buy property on that theory of value. True it is that quality and quantity have a place in the mind of the buyer and the seller, but the product of these multiplied by a price per unit should be rejected as indicating market value when the willing seller meets the willing buyer, assuming both to be intelligent.(86)

A willing buyer and a willing seller take into account every variable that simplistic unit-times-price estimations ignore. Therefore, an estimate of the value they would agree upon is the measure of compensation; not the buyer's best-case profit scenario.

When unit-times-price estimations are taken further and capitalized into a present net value, courts are even more circumspect, for similar reasons:

As noted in *Whitehurst*, the capitalization of income method may be appropriate in certain cases, but where such method is used all of the factors that must necessarily be taken into account should be established by proper evidence. Where several of the elements or factors relied on by the commission are without objective evidential support, that method is faulty and can obviously lead to unfounded and enhanced valuations. Again, it appears clear that comparable sales are the best evidence of the value of condemned land, which sales on the whole reflect the principle of a willing seller and a willing buyer concluding arms-length negotiations. The income capitalization method is justified mainly when better evidence is not available. Great care must be taken, or such valuations can reach wonderland proportions. It is necessary to take into consideration manifold and varied factors, like future supply and demand, economic conditions, estimates of mineral recoverability, the value of currency, changes in the market-place, and technological advances. Many of these factors are impossible to predict with accuracy.(87)

While there is no outright prohibition of unit-times-price and income capitalization evidence in federal condemnation cases, it has only been allowed in a few exceptional cases, subject to very strict criteria and proof.(88)

For instance, in *United States v. 2,847.58 Acres*,(89) the lands condemned were part of a proven oil field that had produced from the early 1900s until the condemnation proceeding was instituted. The condemnee established the amount of *proven* reserves left in place, and then presented evidence that each barrel of oil was worth one dollar in the ground. The Sixth Circuit approved this method, finding that it reflected *market*
The witness Nosow emphasized the fact that he was not giving the value of the oil if it were produced and brought to the surface, but was testifying to what a willing buyer would pay and a willing seller would take for these mineral reserves in place. The witness Glenn testified that he used a formula that oil in place in this field would sell for $1.00 per barrel. He further testified that it is a common practice to buy and sell oil reserves on the basis of a price per barrel for recoverable oil in place.\(^{(90)}\)

The Sixth Circuit then went on to discuss and approve *Indian Creek Marble*’s general propositions that the proper measure of damages in a partial taking is diminution of value\(^{(91)}\) and that unit-times-price valuations would be inappropriate in those cases because the "after" value would reflect the loss of mineral rights. The court made the critical distinction:

In the present case, the government condemned the entire mineral interests of the owners and there was testimony of a common practice of buying and selling such interests in place. Expert testimony of what a willing buyer would pay for such interests and a willing seller would accept, both being under no compulsion, was perfectly competent to establish value. The record discloses that what the government characterizes as a "rule of thumb" was, according to qualified experts, a formula used in the marketplace.\(^{(92)}\)

Thus, *United States v. 2,847.58 Acres* approved hard evidence of a real-world market standard. The court did not indulge methodology that ignored real world risks. Further, by limiting recovery to "oil in place," the court implicitly recognized correlative rights and restricted recovery to what was taken from the condemnee. The court did not compensate for what the condemnee could have drained from other tracts.

In *United States v. 103.38 Acres*,\(^{(93)}\) the court faced another permutation of the same problem. The parties agreed that the highest and best use of the condemned land was coal mining; their estimates of recoverable coal only ranged between 52,000 to 83,000 tons. It was also agreed that this coal could be economically mined. In other words, a great many of the elements that have been disputed in the gas storage condemnations cases were undisputed in *103.38 Acres*.

The condemnees in *103.38 Acres* offered evidence of value based on a capitalization of their expected royalties from coal production. This evidence was disregarded by the trial court. The Sixth Circuit reversed:

In the absence of probative comparable sales, we believe that some form of royalty capitalization is an appropriate means of valuing the mineral deposit located on the Oldfield land. As we have already observed, the goal of the trier of fact in eminent domain proceedings is to duplicate marketplace calculations to the greatest possible extent. Valuation evidence based on royalty capitalization will further this purpose if, and only if, the offering party can establish: 1) that an active market exists for the mineral in place; 2) that transactions between willing buyers and sellers in that market commonly take the form of royalty payments; and 3) that the figures on which an award might be based represent the conclusions of an industry expert. If all of these conditions are satisfied and they clearly are in this case the trier of fact should be able to approximate the sum a landowner could reasonably expect to receive for his mineral on the open market at the time of the taking.\(^{(94)}\)

However, even after approving use of this method on remand, the court rejected the landowner's evidence that a coal operator could hypothetically "afford to pay" $7.33 per ton as a royalty.

Again, we emphasize that a condemnation award must reflect a property's fair market value. In this case, the trier of fact must ascertain the value of the Oldfield coal in the actual market for mineral in place. The fatal flaw in the owners' cash flow method is its lack of demonstrable relationship with this "real" market in coal value:
royalties. In order to validate the cash flow approach in our eyes, the owners would have to establish that royalty rates are in fact fixed in the marketplace by a process which parallels Mr. Straton's calculations. All the evidence below, however, points to a contrary conclusion.

Our review of Mr. Straton's methodology indicates that his figure of $7.33 per ton represents the sum a coal operator could hypothetically afford to pay for the privilege of mining the Oldfield tract without sacrificing a reasonable return on his investment... This division was based on Mr. Straton's "knowledge of the coal industry," without additional explanation. Mr. Straton's expertise is not at issue. We do, however, note that he could not cite a single instance of such a coal royalty negotiation...

Testimony introduced by the United States further militates against uncritical acceptance of the method that produced a royalty rate of $5.16 per ton. Mr. Donan indicated that in his search for "comparable sales" in the vicinity of the Oldfield property, he examined the courthouse records of about fifty coal tracts which were subject to mineral leases. In each instance, he testified, the lease called for royalties at the rate of $2 per ton. This evidence strongly suggests a "going rate" in the marketplace instead of the individually negotiated rate Mr. Straton's method employs.

In summary, we believe that probative evidence of a coal deposit's "royalty value" must be defined as evidence derived from or demonstrably related to the actual market in mineral royalties. On the basis of the record below, we conclude that the owners' cash flow analysis lacks these essential characteristics.

To reiterate, unit-times-price and income capitalization evidence is rarely approved by federal courts. When it has been permitted, it has been securely tethered by the requirement that it reflect market reality.

The landowner's first burden is proving the reasonable probability of the presence of native oil and gas in paying quantities. However, even if that burden is met, federal case law is unanimous that just compensation must be grounded in market value. Therefore, the landowner must go beyond unit-times-price and income capitalization, and prove what a willing buyer would pay for the minerals in place. This hypothetical buyer would doubtless take into account the quantity of the minerals and their current price -- as well as the risk -- compare other investments with perhaps less risk, demand, likely marketability, and, indeed, "every cause of business disaster." The price this willing buyer would pay is the part of the value of the tract as a whole attributable to the right to prospect in the storage formation. That part will be reflected in the "before and after" values and is compensable. Daydreams of quixotic production are not compensable.


[1]--In General – Just Compensation for a Partial Taking Is

Diminution of Value.

Underground gas storage easement condemnations take only a partial interest in the subject tract, making them analogous to other partial taking cases. In all partial interest appropriations by federal authority, the measure of just compensation is the difference between the fair market value of all the contiguous property of the same owners immediately before and immediately after the taking.

"Diminution of value" is measured by the "before and after" rule:

In partial taking cases, the proper measure of compensation is the difference between the fair and reasonable market value of the entire ownership immediately before the taking and the fair and reasonable market value of what is left immediately after the taking.
This method tethers compensation to the traditional standard; the fair market value of the appropriated property. Fair market value is the price a purchaser, who is willing but not required to buy, would pay and the price a seller, who is willing but not required to sell, would accept. (100)

The particular strength of the federal rule lies in its ability to provide a coherent measure of the cumulative effect of many constituent (and sometimes competing) elements of value. Judge Henley of the Eighth Circuit Court of Appeals explains:

[D]ifficulty seems to be encountered in cases in which the government has taken only part of a single holding; while the solution to the problem is simple, it seems to be frequently missed. And, the difficulty seems to arise out of the concept of "severance damage." . . . Where the partial taking not only deprives the owner of the property that is actually taken but also diminishes the value of the property remaining to the owner, this diminution is often and "somewhat loosely," referred to as "severance damage."

It is incorrect to think of "severance damage" as a separate and distinct item of just compensation apart from the difference between the market value of the entire tract immediately before the taking and the market value of the remainder immediately after the taking. In the case of a partial taking, if the "before and after" measure of compensation is properly submitted to a jury, there is no occasion for the lawyers or the trial court to talk about "severance damage" as such, and indeed it may be confusing to do so. The matter is taken care of automatically in the "before and after" submission. (101)

The landowner is entitled to have the fact finder consider all proven elements of value which bear on the market value of the appropriated tract. However, these elements of value are included only to the extent that they influence the overall market value; that is, to the extent they "would induce a reasonable seller to demand more for the property and would induce a reasonable buyer to pay more on account of the existence of the value factor." (102) Moreover, where there are several value factors, they must be measured as a cumulative effect on market value, rather than merely added together, because some elements of value, even though they individually affect market value, may interfere with one another (e.g., parcel with value for prime farm land, for residential development, and for coal strip mine).

The "before and after" rule provides the simple and just solution for these valuation problems, and anchors the determination of just compensation to the realities of the market:

It is not in contemplation of law, by statute or otherwise, that after the sovereign has taken from a citizen and paid him for that which it has taken, that the citizen can on the same market sell his residue for an amount which, added to the compensation he has received, aggregates more than the value of the whole from which the part was taken. That cannot be just compensation, for just compensation is compensation only, and compensation is simply that amount of money required to leave the owner with property, including his compensation, of the same market value as that which he had prior to the taking. The whole theory of compensation revolves around the idea of willingness to sell, under no compulsion, and willingness and ability to buy, but with no coercive need. In these circumstances the parties believe they have knowledge of the value, before and after. They subtract the after value from the before value, and the condemnor compensates in cash. Nothing could be fairer, and any other method of arriving at compensation could conceivably arrive at something else, either more or less, than compensation. (103)

If a court adopts the unit times price income capitalization methodology suggested by landowners, the fears of the Indian Creek Marble court could be realized. In underground gas storage easement condemnations, landowners have consistently sought compensation greater than the fair market value of the whole farm. This is inherently erroneous. The fundamental approach to determining just compensation is the fair market value of the appropriated property. This is best determined by ascertaining the value of the entire tract.
before and after condemnation.

[2]--Diminution of Value Has Been Used by State Courts in Gas Storage Easement Condemnations.

While there are no reported cases addressing the proper measure of just compensation for takings of gas storage easements under the federal right of eminent domain, state courts have considered this question. Most have employed the general diminution of value rule applicable to other partial takings.\(^{(104)}\) Cases that have employed different rules are not applicable to federal condemnation proceedings.\(^{(105)}\)

In *Peoples Gas Light and Coke Co. v. Buckles*,\(^{(106)}\) the court reasoned:

No taking of the fee or damages to the surface of the land is involved. Plaintiff’s taking amounts to no more than an easement, and the usual measure of damages payable to such cases is based upon the diminution of the fair cash market value of the property burdened by the easement.

We know of no factors or considerations involved in the condemnation of an easement for the underground storage of gas which requires it to have a different measure of damages than the customary measure of damages for easement acquisition.\(^{(107)}\)

There is no reason to apply any different measure of damages to underground gas storage cases. In *Milby v. Louisville Gas & Electric Co.*,\(^{(108)}\) when faced with condemnation of both the storage space and an existing well, the court said:

We are reversing the judgment because of excessive damages. Upon retrial the case will be governed by the principles laid down in *Commonwealth, Department of Highways v. Sherrod*, Ky., 367 S.W.2d 844, particularly the principles that taking damages are not to be separated from resulting damages, and that the evidence is to be addressed solely to difference in market value of the whole tract before and after the taking.

[T]he witnesses in estimating "before" value will be entitled to give consideration to the existing gas well and to the underground storage space as elements of value, to the extent that they can be shown actually to enhance the market value of the tract. But this means an actual market enhancement -- it means that the existence of the well and the storage space must be factors that would enter into the sale price on an available potential market.\(^{(109)}\)

This is what landowner advocates of the application of the unit times price income capitalization method of valuation have not demonstrated. Their speculations have no market value foundation. Indeed, no one has yet demonstrated that knowing the results of a unit times price income capitalization analysis has ever affected the market value of any real property.

These state cases mean that a subsurface easement is subject to the same valuation methods as a surface easement for a road or a pipeline. They do so in a logical and compelling manner, illustrating how the general "before and after" rule should be applied to gas storage easement condemnations as the exclusive method of determining value.

[3]--The Threshold Question Is Whether Economical Production of Oil and Gas is Reasonably Probable.
What an underground gas storage easement appropriation takes from a landowner is the right to prospect for oil and gas in the storage formation. To prove that this element constitutes anything more than a nominal part of the market value of the subject tract, the landowners must first prove by a preponderance of the evidence that it is reasonably probable that native oil and gas can be produced in paying quantities from the storage formation.

The United States Supreme Court has established a standard of "reasonable probability" to determine whether asserted elements of value are compensable in federal eminent domain proceedings:

In respect of each item of property [market value] may be deemed to be the sum which, considering all the circumstances, could have been obtained for it; that is, the amount that in all probability would have been arrived at by fair negotiations between an owner willing to sell and a purchaser desiring to buy. In making that estimate there should be taken into account all considerations that fairly might be brought forward and reasonably be given substantial weight in such bargaining. The determination is to be made in the light of all facts affecting the market value that are shown by the evidence taken in connection with those of such general notoriety as not to require proof. Elements affecting value that depend upon events or combinations of occurrences which, while within the realm of possibility, are not fairly shown to be reasonably probable should be excluded from consideration for that would be to allow mere speculation and conjecture to become a guide for the ascertainment of value -- a thing to be condemned in business transactions as well as in judicial ascertainment of truth.

This standard of "reasonable probability" is the usual test for the compensability of mineral interests. An occasional court has softened the "reasonable probability" test, to take into account a real standard of valuation accepted in the market. In Eagle Lake Improvement Co. v. United States, the court permitted a "reasonable possibility" test for the presence of minerals when it was proved that this created discernable market value:

As held in Olson v. United States, 292 U.S. 246, 257, 54 S. Ct. 704, 78 L.Ed. 1236, elements affecting value that depend upon occurrences which, though possible, are not reasonably probable, should be excluded from consideration as too speculative and conjectural to afford a basis for the judicial ascertainment of value. In Texas, however, a mineral lease is recognized by law as being property having a market value even if it covers undeveloped territory. Where oil interests are involved, a reasonable probability of successful development is sufficient to make leasehold estates of great value; indeed, where there is a reasonable possibility of production in paying quantities, mineral rights are a common subject of barter and sale, and therefore have a definite, ascertainable market value, even where the prospects of successful development are too speculative and remote to be "reasonably probable." In any event, such leases have a nominal value.

Though these cases are exceptions to Olson's "reasonable probability" test, they very much support the purpose of the rule. The Olson rationale is that the determination of just compensation may become divorced from market value unless bound to it by a stringent standard. Elements of value that are not reasonably probable generally reside in the realm of speculation rather than in the responsible business marketplace. The "exceptions" to Olson have been made to reflect the reality of the local market. Therefore, if it can be proved that a reasonable "possibility" of finding oil and gas in paying quantities has a discernable, real market value, this should be the test. So far, no landowner has attempted to prove that a mere possibility of oil and gas production has a real market value. This would seem an appropriate standard if it can be proved. Otherwise, the Olson standard should apply. Judge Dowd has agreed that the landowners must prove by a preponderance of the evidence that it is reasonably probable that native oil and gas could be produced in paying quantities before allowing use of the unit times price income capitalization formulation.
[4]--Diminution in Value Accounts for the Loss of the Right to

Prospect for Oil and Gas – Minerals Are Not Separately Evaluated.

If the right to prospect for native oil and gas in the storage formation is proved as an element of value, then the landowner must go on to prove by a preponderance of the evidence the extent to which the probability of the presence of these minerals affects the market value of the subject tract as a whole.

Appellant [the condemnor] rightly contends that if the condemned land contains a mineral deposit, such as gravel, it is proper to consider this fact in determining the market value of the land as a whole, but it is not permissible to determine separately the value of the mineral deposit and add this to the value of the land as a unit. (116)

This is the proper approach to evaluating the loss of the right to prospect for oil and gas caused by the condemnation of an underground gas storage easement. The threshold question is whether there is a reasonable probability of economical oil and gas production from the storage strata. If this is proven, the question becomes how much has that fact increased the value of the property. Whatever amount the value of the property has been increased is the amount that the value will be decreased as a result of the condemnation of the underground gas storage easement.

When a landowner claims that the value of a tract is enhanced by a mineral deposit, the proper inquiry is as to the effect, if any, the deposit has on the total fair market value of the appropriated property. (117)

When an underground gas storage easement is appropriated, the measure of just compensation should be the same as any other partial taking -- the difference between the fair and reasonable market value of all the contiguous property of the same owners immediately before and immediately after the taking. The essential inquiry is whether the fair market value of the property has been enhanced by the value of the right to prospect for oil and gas in the geologic formation to be used for underground gas storage beneath the property. The landowner is entitled to the amount of this enhancement. This is the amount of the true loss. With this amount and the continued value of the property, the landowner will be in the same position as before the appropriation. This is the aim of just compensation.

If a reasonable probability of successful oil and gas exploration beneath the subject tract is not proven, this inquiry should end. It seems impossible that the value of property can be enhanced by speculation that some imprudent producer might drill a probably unproductive well. Therefore, nominal compensation should be awarded. The only possible exception might be allowed if there were proof that the market value of the property would actually be enhanced by a mere possibility of economical oil and gas production. In the Appalachian Basin, this seems very unlikely.

No landowners have chosen to approach the valuation question from a real estate prospective. They prefer the potential windfall of the unit times price income capitalization approach. Real property values present no similar possibility. In the farm country of Ohio, where these cases have been brought, it would be very unusual to find a farm that has had its value substantially enhanced by the prospect of drilling. Farms are sold for their value as farms. The possibility of oil and gas exploration adds very little value. Columbia has consistently presented this type of evidence in the cases that have been tried.

In the early cases, Columbia presented real estate appraisers who testified that the market value of farm properties reflected the quality of the property as a farm -- the buildings, the fertility of the fields, the location, and all of the other factors related to surface characteristics that cause people to buy real estate. These appraisers opined that the most that the value of a farm might be enhanced by a reasonable
probability of economical oil and gas production was five percent of the total value.

Purchasers seldom buy farms because of their oil and gas potential. It is regarded as so risky and speculative that very little is paid for this right. This means landowners suffer little, if any, actual market value loss from the appropriation of underground gas storage easements. Hence, in storage condemnation cases, the landowners want to evaluate speculative oil and gas production instead of the real estate interest that has actually been appropriated.

Some will object that this diminution in the fair market value of the real property will result in rather limited compensation. The fact is that an underground gas storage easement has very little effect on the market value of the property it encumbers.

In the most recent underground gas storage easement trial, the trial court applied the diminution value test to determine the amount of just compensation. The usefulness of this precedent may be limited because this was the only evidence the trial court had to consider. The property owner's expert, a petroleum engineer, experienced some difficulty when Columbia's lawyer asked him on voir dire about his ability to determine whether his predictions were reasonably probable. As an apparent result of this voir dire, he refused to offer an opinion based on "reasonable certainty" of the amount of oil and gas beneath the subject tract. Therefore, the only available evidence was the diminution in the real property value of the property presented by Columbia.

[5]--Are the Amounts Storage Operators Pay for Underground Gas Storage Rights Admissible Evidence of Value?

Generally, the amounts paid to acquire property that could have been condemned by the purchaser is not admissible as evidence of the value of appropriated property. These sales do not satisfy the fundamental fair market value requirement that they reflect transactions between willing buyers and sellers not acting under any form of compulsion. It is well-settled that evidence of transactions where the sale was forced or subject to being compelled is not admissible as evidence of market value.

Obviously, neither party can be considered willing when a transaction is consummated under the threat of condemnation. Because of this, it is well settled that what an entity with the power of condemnation pays for a property interest is not admissible to establish the value of a similar interest.

As one commentator has concluded:

Even in those jurisdictions where evidence of comparable sales is admitted it is generally held by the weight of authority that evidence of the sale of a parcel of land subject to condemnation to the proposed condemnor or to another potential condemnor may not be admitted as evidence of the value of the land condemned. Evidence showing what the company seeking to condemn has paid for other lands would probably be taken by the jury as indicating the market value when, as a matter of fact, it does not tend to show the market value of the land. A company condemning land might be willing to give more than it is worth, and the owner of land might be willing to take less than it is worth, that is, less than its market value, rather than have a lawsuit. Moreover, when a company seeks to get land or condemn it for public uses, having the power to condemn, the landowner would probably come to some agreement with it rather than have a lawsuit, and this agreement would show a compromise rather than the market value of the land. There are many reasons which might be advanced in support of this almost, if not quite, universal rule. As heretofore stated, such sales are almost always in the nature of a compromise. The landowner, on the one side, may force a sale; and the condemnor, on the other, must have the land, even though it costs more than its
This is one reason the amounts paid by Columbia for underground gas storage easements or leases have never been introduced by either side as an indicator of value. This policy should be continued. The amounts paid by storage operators for underground gas storage rights are actually settlements of potential litigation from the point of view of both the operator and the landowner. It is also well settled that settlements of potential lawsuits are not admissible.

§ 26.13. Conclusion.

When diminution of value is established as the acceptable measure of just compensation for federal condemnation of underground gas storage easements, the legal tools needed to protect federally certificated underground gas storage will be in place. Unit times price income capitalization is raw speculation that produces unjust results.

1. This Chapter is written essentially from the storage operator's point of view. The author has represented Columbia in a number of the cases discussed herein. The Foundation has published two previous articles on condemnation and underground gas storage: M.H. Petricoff & H.L. Snyder, "Underground Gas Storage: Condemnation Problems Under the Natural Gas Act," 9 Eastern Min. L. Inst. ch. 16 (1988) and J.P. Holland, "Underground Storage of Natural Gas: A Legal Overview," 3 Eastern Min. L. Inst. ch. 19 (1982).


3. Columbia Gas Transmission Corp. v. An Exclusive Underground Gas Storage Easement (Parrott), 578 F. Supp. 930 (N.D. Ohio 1983), aff’d, 776 F.2d 125 (6th Cir. 1985). This right is alluded to in Natural Gas Pipeline Co. of Am. v. Iowa State Commerce Comm’n, 369 F. Supp. 156 (S.D. Iowa 1974); See also, Mississippi River Transmission Corp. v. Tabor, 757 F.2d 662 (5th Cir. 1985).

Because Rule 71A(c)(1) of the Fed. R. Civ. P. dealing with condemnation cases suggests that the first defendant listed be the land itself, all condemnation cases filed by the same interstate pipeline company have names so similar that they are often indistinguishable. Therefore, courts have often adopted the oil and gas leasing convention of referring to the name of the landowner to create distinguishable names, e.g. Parrott.


8. Columbia Gas Transmission Corp. v. An Exclusive Gas Storage Easement (McCullough), 962 F.2d 1192 at 1194 (6th Cir. 1992), discussed, infra, at § 26.11[6].

9. Columbia currently pays $4 per acre per year and East Ohio Gas Co., $5 per acre per year. Both also provide free gas to properties with storage wells.

10. Stanley Parrott was the landowner in Columbia Gas Transmission Corp. v. An Exclusive Gas Storage Easement (Parrott), 578 F. Supp. 930 (N.D. Ohio 1984), aff’d, 776 F.2d 125 (6th Cir. 1985).

12. 3. In 1991, a pipeline problem in the southwest curtailed deliveries to Columbia's system during a period of particularly cold weather, which meant that 85% of the gas deliveries had to be drawn from storage. As a result of storage, almost no one knew there was a problem. Without storage, there would have been a disaster.


16. 7. By coincidence, the first three storage cases were assigned to Judge Dowd, the senior federal district court judge in Akron. Parrott, 578 F. Supp. 930 (N.D. Ohio 1983); Bowman v. Columbia Gas Transmission Corp. (Bowman), No. C84-510 (N.D. Ohio 1985); and Columbia Gas Transmission Corp. v. An Exclusive Gas Storage Easement (Kies I), No. C84-3692 (N.D. Ohio 1985). Sometime after these first cases were filed Judge Dowd assumed jurisdiction of all Columbia storage cases for a period of nearly 5 years. Therefore, he is responsible for most of the underground gas storage condemnation decisions. He still has the largest underground gas storage condemnation docket.

17. 8. The reason for this ruling is the language at the beginning of the condemnation section of the Natural Gas Act, § 7(h), which says: "When a holder of a certificate of public convenience and necessity . . ." 15 U.S.C. § 717f(h). Judge Dowd ruled that the certificate only extended to the boundaries of the storage field as defined by the map on file with FERC.


19. 10. Schneidewind v. ANR Pipeline Co., 485 U.S. 293, 294 n. 1 (1988). This case establishes that the Natural Gas Act preempts state regulation of interstate pipeline companies and should allow those companies to seek the protection of the federal courts for any federally certificated function.

20. 11. FERC, Docket Nos. CP-86-283-000 (March 18, 1986), CP-87-84-000 (November 2, 1987).


24. 15. Id.


27. 3. Kies I, No. C84-3692 (N.D. Ohio 1985); Columbia Gas Transmission Corp. v. James R. Smail (Kies II), No. C86-1196A, 1986 WL 20906 (N.D. Ohio 1986); and Kies III, No. C87-1388 (N.D. Ohio 1989). The Kies family owned this tract when the litigation began but sold to the oil and gas lessee during the first case. Despite this sale, the original landowner's name stuck to all three storage cases.


37. 4. *See, e.g.*, *Lone Star Gas Co.*, 353 S.W.2d at 879.

38. 5. *Hammonds* v. Central Ky. Natural Gas Co., 75 S.W.2d 204 (Ky. 1934).


42. 1. Columbia pays $50 per acre for underground gas storage easements.

43. 2. For example, in *McCullough*, 962 F.2d 1192 (6th Cir. 1992), Columbia claimed the easement was worth at most $13,200; the undisputed evidence was that the farm was worth $154,200 if there was a reasonable probability of economical oil and gas production, but the landowners wanted $873,803. The Commission awarded $213,798. The district court affirmed and the Sixth Circuit reversed.

44. 3. *McCullough*, 962 F.2d at 1194.

45. 4. *Id.*

46. 1. *U.S. Const.*, amend. v.


49. 4. *U.S. v. 15.00 Acres*, 468 F. Supp. 310, 317 (E.D. Ark. 1979); Simmonds v. *U.S.*, 199 F.2d 305 (9th Cir. 1952); *U.S. v. Certain Parcels*, 144 F.2d 626 (3d Cir. 1944).


51. 6. Elements of value that are not "reasonable probable" are not compensable in federal eminent domain actions. *Olson v. U.S.*, 292 U.S. 246 (1934).
52. 7. Cors, 337 U.S. at 333-334.


54. 9. Id. at 377-378. See also, Montana R. Co. v. Warren, 137 U.S. 348, 352-53 (1890); U.S. v. Miller, 317 U.S. 369, 375 (1943); and U.S. v. An Easement and Right of Way 100 Feet Wide, 447 F.2d 1317 (6th Cir. 1971).


56. 11. Accord U.S. v. 1,291.83 Acres of Land, 411 F.2d 1081, 1084 (6th Cir. 1969); U.S. v. 429.59 Acres of Land, 612 F.2d 459, 462 (9th Cir. 1980); U.S. v. 47.14 Acres of Land, 674 F.2d 722, 725 (8th Cir. 1982).


63. 18. McCullough, 962 F.2d 1192.

64. 19. One suggested the use of comparable sales of underground gas storage easements. The other suggested capitalizing the lease payments for underground gas storage easements. The problem with both methods is that the only entity purchasing these rights is the storage operator and it has condemnation rights. As a result there are no arms length sales of underground gas storage easements or leases because these sales are coercive by definition. See discussion in text, infra, at § 26.12[5].

65. 20. See, e.g., McCullough, C88-0936A (N.D. Ohio) (Instructions to Commissioners at 6).


67. 22. See discussion in text, infra, at § 26.11[6].


70. 25. Id. at 776; U.S. v. 69.1 Acres of Land, 942 F.2d 290 (4th Cir. 1991); U.S. v. 47.14 Acres of Land, 674 F.2d 722 (8th Cir. 1982).


72. 27. The author and Howard Petricoff of Vory, Sater, Seymour & Pease in Columbus, Ohio.

73. 28. See Fed. R. Civ. P. 71A(h).

74. 29. A typical graph of storage pressures over time shows a high pressure every fall and a low pressure every spring. When connected these pressure values produce a series of up and down spikes.
75. 30. *McCullough*, 962 F.2d at 1195-1199.


78. 33. 15 U.S.C. § 717f(h). See *McCullough*, 962 F.2d at 1195-99 (statutory language provides that federal courts should look to practice and procedure of state in eminent domain actions).


81. 36. See the myriad of Texas cases regarding Rule 37 spacing exceptions, e.g., Marrs v. Railroad Comm'n, 77 S.W.2d 941, 948 (Tex. 1944) ("Every owner or lessee is entitled to a fair chance to recover the oil or gas in or under his land . . . and any denial of such fair chance amounts to confiscation.") *Accord* Pattie v. Oil & Gas Conserv. Comm'n, 402 P.2d 596 (Mont. 1965) and Elliff v. Texon Drilling Co., 210 S.W.2d 558, 562 (Tex. 1948), both recognizing correlative rights.

82. 37. 942 F.2d 290 (4th Cir. 1991).

83. 38. *Id.* at 293-94 (quoting United States *ex rel.* TVA v. Indian Creek Marble Co., 40 F. Supp. 811, 822 (E.D. Tenn. 1941)). One of the judges on *69.1 Acres* was Associate Justice (Retired) Powell, formerly of the United States Supreme Court.

84. 39. *Id.* at 294 n. 2.

85. 40. 40 F. Supp. 811 (E.D. Tenn. 1941).

86. 41. *Id.* at 822.


89. 44. 529 F.2d 682 (6th Cir. 1976).

90. 45. *Id.* at 685.

91. 46. *U.S. v. 2,847.58 Acres* is an entire taking of a mineral-only interest -- the government already owned the surface.


94. 49. *Id.* at 212-13 (citation omitted).

95. 50. U.S. v. 103.38 Acres, 660 F.2d at 214-15 (emphasis by the court).
97. 1. The courts refer to partial takings both when less than the entire tract is affected and when the interest appropriated is less than the fee -- like an easement. In some cases, like McCullough, the appropriation is partial for both reasons. Whether the appropriation is part of the tract, part of the fee, or part of each makes no difference to the legal analysis.

Whether the interest taken is less than the fee should be obvious. Whether the affected parcel is a whole or part of a larger whole is not necessarily obvious. One farm may be an accumulation of several parcels and an appropriation may only affect one of them. This should be considered a partial taking because the appropriation of one parcel may affect the operation of the whole farm. Therefore, the compensation question should be how much has the appropriation diminished the fair market value of the entire farm.

When determining whether a taking is whole or partial, courts should respect the way real estate has been accumulated and organized by the owners. All contiguous land of the same owners should be treated as one parcel and, if only a portion of this is taken, the taking is partial and the question is how much has the fair market value of the whole been diminished. Property owners should be allowed to prove larger wholes under other circumstances as well. If several members of one family operate contiguous tracts in different ownership as a single farm, this might be considered a whole. Under special circumstances, contiguousness may not be required.


99. 3. 9.20 Acres, 638 F.2d at 1127.

100. 4. 4 Nichols on Eminent Domain, §§ 12.01 – 12.02 (3d rev. ed. 1993).

101. 5. 91.90 Acres, 586 F.2d at 86 (citations omitted). These concerns were echoed by the U.S. Court of Claims to two parties who had not used the "before and after" approach: "This [before and after] approach also serves to lessen the pitfalls and problems that arise when a series of factors affecting value are added together to arrive at a total severance damage determination." Georgia-Pacific Corp. v. U.S., 640 F.2d 328 (Ct. Cl. 1980).

102. 6. Id. at 87.

103. 7. Indian Creek Marble Co., 40 F. Supp. at 818.


105. 9. The only reported storage condemnation case which explicitly rejects diminution of value and allows value to be awarded for storage purposes (value to condemnor) is Consumers Power Co. v. Allegan State Bank, 174 N.W.2d 578 (Mich. Int. App. Ct. 1969), aff'd, 202 N.W.2d 295 (Mich. 1972). However, to reach its decision, the court acknowledged that the federal and Illinois rules were to the contrary. Id. at 589 nn. 5-8. None of the landowners in any of Columbia's storage condemnation cases has suggested that the measure of just compensation is equal to the value of the easement to Columbia, inferably because that suggestion would invite error.

Transok Pipeline Co. v. Darks, 565 F.2d 1150, 1156 (10th Cir. 1977), cert. denied, 435 U.S. 1006 (1978), approves, albeit vaguely, diminution of value: "[T]he appellants' witnesses testified to a total loss of value as a result of the taking of the easement, and Transok's witnesses indicated no substantial taking and need for compensation at all."

Louisiana law is markedly different. Most significantly, it allows separate evaluation of every element of value and, apparently, merely adds them together. See Southern Natural Gas Co. v. Poland, 406 So. 2d 657 (La. Int. App. Ct. 1981), cert. denied, 412 So. 2d 86 (La. 1982), cert. denied 459 U.S. 833 (table adding together separate elements of value: Storage Rights, Surface Rights, and Mineral Rights). Southern is also the only reported storage condemnation that approves income capitalization evidence. The reservoir condemned in that case was in the final stages of actual production, and an expert testified that an additional 20 months would exhaust recoverable reserves. Using the ceiling prices established by FERC, the 20-month production time, and a reasonable
discount, the expert calculated a present value of the otherwise certain production. The table provided in the opinion reveals that the total awarded was $814.15. *Id.* at 666.

*Mississippi River Transmission Corp. v. Tabor*, 757 F.2d 662 (5th Cir. 1985), again applying Louisiana law, contained, in the court's own words, "unique circumstances." In that case, the existence of recoverable reserves was not at issue and the FPC had *ordered* Mississippi River Transmission to buy those reserves at an in-place rate of 18.3/Mcf. Hence, the court approved use of a unit-times-price method of determining compensation.

Therefore, there are two reasons, one legal, one factual, that distinguish the Louisiana cases from the federal gas storage condemnations. Legally, Louisiana, unlike federal law, allows separate evaluation of elements of value apart from the land. Factually, these cases involved proven, ongoing gas production and presented few speculative factors for the fact finder. This has not been the situation in any federal condemnation to date.

106. 10. 182 N.E.2d 169, 176 (Ill. 1962).

107. 11. *Id.* at 176 (citations omitted).

108. 12. 375 S.W.2d 237 (Ky. 1963).

109. 13. *Id.* at 239.

110. 14. Ohio law does not recognize ownership in place of native oil and gas. Instead, landowners have the right to prospect for those minerals through wells drilled on their lands. *Back v. Ohio Fuel Gas Co.*, 113 N.E.2d 865, 868 (Ohio 1953). Though the measure of compensation in this case is "grounded upon the Constitution of the United States," *U.S. v. Miller*, 317 U.S. 369, 63 S. Ct. 276, 283 (1943), and not in state law, Columbia believes that the element of mineral value recognized by Fifth Amendment jurisprudence is substantially equivalent to Ohio's right to prospect.


112. 16. St. Genevieve Gas Co. v. TVA, 747 F.2d 1411, 1413 n. 4 (11th Cir. 1984) ("The commission and the district court asked the proper question: Was there 'a reasonable probability . . . that [limestone] or gas in paying quantities might be produced [?]'").

113. 17. 141 F.2d 562 (5th Cir. 1944).

114. 18. *Id.* at 564 (emphasis added; footnotes omitted). *See also*, Cal-Bay Corp. v. U.S., 169 F.2d 15 (9th Cir. 1948), *cert. denied*, 335 U.S. 859.

115. 19. The instructions to the *McCullough Commission*, *supra*, § 26.11[4].


119. 23. The author.


