WHITE PAPER:

Legal Issues Related to Coalbed Methane Storage in Abandoned Coal Mines in Virginia, West Virginia, Pennsylvania, Utah, Colorado and Alabama

June 20, 1998

ACKNOWLEDGMENTS

This draft report was prepared under Work Assignment 3-1 of the U.S. Environmental Protection Agency Contract 68-W5-0018 by Raven Ridge Resources, Incorporated, and Penn, Stuart and Eskridge. This report is a technical document meant to be used for information dissemination.

DISCLAIMER

The views represented in this report do not necessarily reflect the views of the U.S. Environmental Protection Agency. The mention of trade names or commercial products does not constitute endorsement or recommendation for use.

1. History of Coalbed Methane Development

Coalbed methane, also known as coal seam gas, occluded natural gas, and gob gas, has historically been considered one of the greatest dangers to coal mining. Collected methane gas was intentionally vented to prevent accidental explosions or asphyxiation. Commercial extraction of coalbed methane was economically impractical.[1] Consequently, when deeds, contracts and statutes relating to coal and mining rights were drafted, the drafters rarely considered the question of coalbed methane ownership because it was considered valueless.[2]

Modern extraction methods have now made coalbed methane production practical. The analysis of coalbed methane ownership is thus complicated by the need to determine the intent of the parties at the time the contracts and/or deeds were drafted and executed. Courts are being called upon to determine the ownership of coalbed methane in situations where mining and mineral rights have been divorced from other incidents of ownership of the lands at issue. In its simplest form, the question is whether the entity which acquires the coal and/or gas rights, also acquires the coalbed methane rights.

The issue will also give rise to questions concerning the storage rights of coalbed methane. Can coalbed methane be stored in abandoned coal mines? If so, who owns the container space — the coal owner or the surface owner? These questions necessarily involve a complex interaction between traditional property and mineral rights laws.

In order to gain a perspective of coalbed methane development and the ensuing case decisions, it is essential to look at the beginning of coalbed methane development in the United States. The first serious research regarding coalbed methane production occurred in the 1970s when the U.S. Bureau of Mines and U.S. Steel developed a test project in the Black Warrior Basin in Alabama.[3] This program was expanded by the Bureau of Mines and the Department of Energy into a 23-well project. The project demonstrated that 73% of the "in-place" methane could be produced through vertical wells.[4] The Gas Research Institute (GRI) began its coalbed methane research in the 1980s. Its activities relating to coalbed methane have included estimating and evaluating the resource, cooperative well studies, reservoir engineering analysis, fracturing and completion work, operational improvements and recompletion of wells.[5]

The increased production of coalbed methane in the Appalachian, Black Warrior, San Juan, Piceance, Powder River and Greater Green River Basins indicates that coalbed methane has emerged as a valuable energy resource. In 1982, the national annual coalbed methane production was virtually zero.[6] By 1990, production nationwide had risen to 195 billion cubic feet (bcf), approximately 475 bcf was produced in 1992, and 1993 production reached 730 bcf.[7] Coalbed methane production increased to 858 bcf in 1994.[8] The number of coalbed methane wells in the nation had grown from a handful in 1982 to more than 6,600 in 1992.[9] By 1994, coalbed methane accounted for five percent (5%) of the nation's natural gas production.[10] Nationwide coalbed methane production increased by fifty percent (50%) during the period

between 1992 and 1994.[11] According to Richard A. Schraufnagel at GRI, coalbed methane production in 1995 reached 900+ bcf and 1996 coalbed methane production topped the 1,000 bcf mark.[12]

As coalbed methane development continues to increase and landowners gain additional knowledge of the value of this commodity, we may anticipate that additional ownership issues, such as storage and ownership of the storage container, will arise.

2. Coalbed Methane Ownership Issues as Related to Coalbed Methane in Abandoned Mines

In evaluating the use of abandoned coal mines for storage of coalbed methane, it is important to analyze the issues surrounding the ownership of the coalbed methane itself. An understanding of these ownership issues is necessary to recognize the potential ownership issues involving storage: (1) who has the power to grant storage rights?; (2) who owns the container space once the mineral it held is depleted?; (3) who determines when the mineral is actually depleted?; and (4) who owns the abandoned mine and shafts? These issues may give rise to the same interpretive issues raised by the parties engaged in coalbed methane ownership disputes.

Additional ownership issues relating to storage of coalbed methane in abandoned coal mines involves the use of cushion gas. In any storage facility, there must be a pocket or cushion of gas in place in order to provide the pressure needed to operate the facility.[13] Cushion or base gas is the gas in the reservoir (abandoned mine) which is native to the reservoir and/or injected into the reservoir.[14] If the cushion gas is native coalbed methane, that is gas remaining in the mine, the importance of coalbed methane ownership issues is apparent. Who will be compensated for the coalbed methane remaining in the mine -- the coal owner, the gas owner, the surface owner? How does the fact that there is coalbed methane in the mine affect the ownership of the abandoned mine container space?[15] If no cushion gas exists or there is not enough cushion gas to maintain pressure in the abandoned mine, how will the injected gas affect the ownership issues? These issues will surely arise and will need to be answered in establishing an abandoned mine storage environment.

Thus, it is imperative that we examine the issues of coalbed methane ownership. The question of the extent of mineral rights conveyed or reserved generally includes a consideration of the intent of the parties or drafters of the instruments (deeds and leases) or statutes which created the rights.[16] Therefore, courts are now being called upon to determine the intent of individuals who historically gave little, if any, consideration and likely never formed any intent as to the ownership of coalbed methane. In some instances, however, the courts must also decide whether the intent of the parties or legislators is or should be a factor in the coalbed methane ownership determinations.[17]

a. Coal Owner Argument

Many cases analyzing the coalbed methane ownership issue have included arguments regarding the definitions of “coal”[18] and “gas.”[19] The location of the coalbed methane in the coal seam provides the coal owner with a substantial claim. The coal owner may claim that the coalbed methane is an inherent part of the coal and that ownership of the

coal seam includes ownership of the "gas" contained within it.[20] The coal owner may further argue: (1) coalbed methane is adsorbed onto the coal; (2) the physical bond between the coal and the coalbed methane is so close that the two cannot be separated; and (3) the coal seam is the source of and the reservoir for the coalbed methane.[21]

b. Oil and Gas Owner Argument

The gas owner may argue that the chemical composition of coalbed methane is nearly identical to that of natural gas.[22] This fact provides the gas owner with a significant argument for ownership. Another theory the gas owner may espouse is that the right to produce coalbed methane from coal is no different than the right to remove natural gas from other subsurface formations (i.e. the sandstone formation, which may not belong to the gas estate owner).[23] The plain meaning of "gas" appears to definitively include coalbed methane. In contrast, "coal" commonly means a solid mineral, not a gas.[24] The oil and gas owner may also argue: (1) recovery methods parallel that of natural gas; (2) the migratory nature of coalbed methane is the same as that for natural gas; and (3) reversion of the container space to the gas owner once the coal is mined gives them a right to the gas (in cases where the gas owner is also the surface owner). However, in analyzing the ownership issue, only a few courts have held that "gas" includes coalbed methane.

c. Surface Owner Argument

A surface owner may claim an interest in the coalbed methane, although this position is clearly the weakest. In states where the ownership of the container space reverts to the surface owner once the coal is removed, a surface owner could claim that since he owns the container space where the coal was situated, he could also claim ownership of the coalbed methane within that space. This would not, however, be a substantial argument. The gas or coal owner could easily counter that as the "mineral" owner, they are entitled to ownership of the mineral within the container space. One fact situation that may afford an ownership claim by the surface owner is where the coal, oil and gas have been specifically severed. The surface owner could claim that since coalbed methane was not contemplated (but considered to be a hazard) at the time of the severance, ownership of the non-severed mineral, the coalbed methane, remains with the "surface" or "other mineral" owner.[25]

For example, assume that Landowner A owns the property in fee simple (no prior mineral severances). Landowner A sells the property to Landowner B reserving the coal. Landowner B subsequently sells the property to Landowner C reserving the oil and gas. Landowner A owns the coal and Landowner B owns the oil and gas. Thus, Landowner C, the "surface owner," would apparently own the residual minerals. If the coal owner (Landowner A) and the oil and gas owner (Landowner B) do not own the coalbed methane, the "surface owner" (Landowner C) as the residual mineral owner

could claim the coalbed methane ownership. The issue is further complicated by coal lessees, oil and gas lessees and mineral lessees.

3. Coalbed Methane Case Decisions

There are nine (9) decided, one (1) pending, and two (2) settled coalbed methane cases in the United States of significance to coalbed methane ownership. Many of the opinions have arisen in Alabama. In all of the cases, slightly different fact situations resulted in different holdings. The decided cases represent the landmark decisions and issues surrounding coalbed methane ownership. All of these cases are relevant to storage issues in Virginia, West Virginia, Pennsylvania, Utah, Colorado, and Alabama, because the theories and analyses of the various courts will provide insights into past and current views on coalbed methane ownership. The issues discussed in these cases may afford an opportunity for understanding the interpretive issues that may be faced by storage operators in these states.

a. Decided Cases

i. *United States Steel Corp. v. Hoge*, 468 A.2d 1380 (Pa. 1983)

In *Hoge*, the Pennsylvania Supreme Court held that the gas which is present in the coal necessarily belongs to the coal owner. The court was asked to determine the ownership of coalbed methane, found in the "Pittsburgh" or "River" vein of coal owned by United States Steel Corporation (U.S. Steel), which underlaid certain tracts of land owned by Hoge, Cowan and Murdock (Hoge).
-U.S. Steel acquired ownership of the coal through a severance deed dated July 23, 1920.

The severance deed granted, in pertinent part, "all the rights and privileges necessary and useful in the mining and removing of said coal, including . . . the right of ventilation."[26] Hoge's predecessor in title reserved "the right to drill and operate through said coal for oil and gas without being held liable for any damages."[27]

In formulating its conclusion, the court considered the history of gas development; the general nature of coal ownership rights; and the language contained in the severance deed in question. The court held that, as a general rule, such gas as is present in coal must necessarily belong to the coal owner, so long as it remains within his property and subject to his exclusive dominion and control.

In examining the language in the severance deed, the court gave "effect to all its terms and provisions, and construe[d] the language in light of conditions existing at the time of its execution."[28] At the time of the severance deed, the court found that commercial exploitation of coalbed gas was very limited and sporadic. Thus, even though the unrestricted term "gas" was used in the reservation

clause, the court did not believe the parties intended to reserve all types of gas. The court found “implicit in the reservation of the right to drill through the severed coal seam for ‘oil and gas’ a recognition of the parties that the gas was that which was generally known to be commercially exploitable.”[29] The reservation

was limited by the court to the right to drill through the coal seam to reach the oil and gas lying below the coal strata.

ii. *Ownership of and Right to Extract Coalbed Gas in Federal Coal Deposits*, (M-35935), 88 I.D. 538 (1981)

The Department of the Interior issued this 1981 opinion which concluded that coalbed methane gas was not reserved by the federal government when it reserved coal under the 1909 and 1910 Acts and that the federal government did reserve coalbed methane gas under the 1914 Act when the government reserved gas. The Solicitor's Opinion also concluded that federally owned coalbed gas should be exploited under oil and gas rather than coal legal authorities. These conclusions rested on six principles:

(1) the 1909 and 1910 Acts and their legislative histories;
(2) the 1914 Act and its legislative history;
(3) the Mineral Leasing Act;
(4) other federal legislation addressing the exploitation of associated minerals;
(5) common law and scientific principles; and
(6) coal and gas legal authorities in relation to exploration and production of coalbed gas.[30]

iii. *Rayburn v. USX Corp.*, No. 85-G-2661-W, 1987 U.S. Dist. LEXIS 6920 (N.D. Ala. 1987), *aff'd without opinion*, 844 F.2d 796 (11th Cir. 1988)

In *Rayburn*, the United States District Court for the Northern District of Alabama held that title to the coalbed methane was vested in the coal owner. The court's holding in *Rayburn* was "based on the language of the deed in question and is not a declaration that in all instruments the interpretation will be the same."[31] The pertinent language in the 1960 severance deed on which the court based its decision is as follows:

> Grantors herein covenant and agree that any right to explore for or produce oil and gas, or to drill wells for the exploration for or production of oil and gas in the above-described lands *shall be subject to the requirement that all coal seams located in said lands penetrated in such exploration or drilling operations shall be encased or grouted off* . . . .[32]

The court found this language to be clear and unambiguous. The clearly expressed intent of the parties was that the methane in the coalbed not be available to any well drilled by oil and gas lessees or assigns.[33]

iv. *Rights to Coalbed Methane Under an Oil & Gas Lease for Lands in the Jicarilla Apache Reservation*, No. M-36970, 98 I.D. 59 (1990)

The Department of the Interior rendered a decision addressing the question of whether coalbed gas was granted under oil and gas leases issued for Indian lands. The Department concluded that coalbed gas was granted under these leases. First, the Department determined that coalbed gas is "natural gas," noting that this conclusion was not altered by the physical status of coalbed gas and recognizing that many types of gas take gaseous or liquid forms in reservoir rock.[34] Second, the Department concluded that the term "oil and gas deposit" as used in Indian leases includes coalbed gas.[35] Third, the Department concluded that coalbed gas was conveyed under Indian oil and gas leases irrespective of whether the parties had a specific intent to convey that resource.[36] Fourth, the Department reached these conclusions in reliance upon the 1981 Solicitor's Opinion.[37]

v. *Carbon County v. Baird*, No. DV 90-120, 1992 WL 464786 (Mont. Dist. Ct. Dec. 14, 1992), *rev'd sub nom. Carbon County v. Union Reserve Coal Co.*, 898 P.2d 680 (Mont. 1995)

The court in *Carbon* held that the conveyance of "coal and coal rights with the right of ingress and egress to mine and remove the same"[38] included ownership of the coalbed methane gas contained in the coal as well as the exclusive right to develop such gas.

Union Reserve Coal Company was the successor in interest to a 1974 contract of sale that agreed to sell "all coal and coal rights with the right of ingress and egress to mine and remove the same."[39] In 1991, Florentine Exploration and Production, Inc., obtained an oil and gas lease on the property in question. The lease granted Florentine "the exclusive right for the purpose of mining, exploring by geophysical or other methods, and operating for and producing therefrom oil and all gas, including coal seam methane of whatsoever nature or kind . . . ."[40] Florentine attempted to secure a protective coal seam methane gas lease from Union. Florentine, however, drilled a well before securing the protective lease and Union later rejected the offer. Carbon County, the original grantor, initiated the suit and Florentine was allowed to intervene. Florentine sought to quiet title to the coal seam methane gas as conveyed to it pursuant to the aforementioned lease.

Coal seam methane was described by the court, in the findings of fact, as a product of the coalification process.[41] The court thus held that coal is both the source of and the reservoir of the methane. The combination of methane gas and coal was noted by the court to be the cause of frequent and tragic

explosions in coal mines.[42] In addition, the court noted that it was important for the coal mine operator to be able to mine the coal in the most economical and effective method.[43] Thus, it is necessary that the coal operator have control over

the drilling of wells into the coal seam in order to minimize disruptions to the mining process caused by the drilling and completion of wells in the coalbed.[44]

The decision in the case turned on the interpretation of the language granting the "coal and coal rights." The court relied upon the legal precedents rendered in *United States Steel Corp. v. Hoge*;[45] *Rayburn v. USX Corp.*;[46] and, *Pinnacle Petroleum Co. v. Jim Walter Resources, Inc.*[47] In each of these cases, the courts found in favor of the coal owner. The court noted that removal of methane gas is essential to the mining of coal. Before the coal can be safely mined, the coal operator must remove the methane.[48] These facts and legal principles, combined with the fact that coal is the source of and the reservoir of the coal seam methane gas, led the Montana court to hold that the conveyance of "coal and coal rights with the right of ingress and egress to mine and remove the same"[49] by Carbon County included "coal seam methane gas as a product of the coalification process, and included with it the ownership of the coal methane gas contained in the coal, as well as the exclusive right to develop or dispose of and [*sic*] coal seam methane."[50] Accordingly, the court held that Florentine trespassed upon the coal. Thus, Florentine's complaint requesting that the court declare it the owner of the coal seam methane gas and its counterclaim that it had acquired the right to produce the coal seam methane gas under the lease were dismissed.[51]

The district court decision was appealed to the Montana Supreme Court.[52] The main issue before the court was whether coal seam methane gas was a constituent part of the coal estate granted to Union.[53] The Montana Supreme Court closely examined the plain meanings of the terms "coal" and "gas" and concluded that coal and gas are mutually exclusive terms.[54] The court opined that "[s]ince coal seam methane gas is a fluid hydrocarbon and is produced at the wellhead, it falls within the statutory definition of gas and again it is distinguishable from coal, a solid hydrocarbon."[55] It also noted that coal seam methane gas is potentially severable from the coal seam.[56]

The *Carbon County* Supreme Court reversed the district court and ruled that the district court had erred in awarding Union Reserve the right to produce the coalbed methane gas from the coalbeds.[57]

The court stated that "Union Reserve only acquired the coal and the incidental right to mine and remove the coal."[58] It found that Florentine had been given the right to extract the coal seam methane gas, and that Union Reserve could

extract and capture the gas only for purposes of safety incidental to its coal mining operations.[59] Accordingly, it concluded that coalbed methane gas "is separate from coal and is not a constituent part of the coal estate."[60]

vi. *Vines v. McKenzie Methane Corp.*, 619 So. 2d 1305 (Ala. 1993)

In *Vines*, the Supreme Court of Alabama held that the ownership of methane gas, with the accompanying rights to develop and produce it, was included in the coal and mineral conveyances. The conveyancing language contained in two (2) pre-1910 mineral deeds (Deeds) was at issue. The deeds conveyed the following estates: (1) "all of the coal, iron ore, and other minerals";[61] and (2) "all the coal and other minerals."[62] McKenzie Methane Corporation (McKenzie) obtained coalbed methane leases (Leases) from the successors in interest to the grantees in the Deeds. McKenzie planned to drill coalbed methane wells independent of mining operation. The Grantors sought to prevent drilling operations on the property arguing that coalbed methane was not considered valuable at the time of the Deeds. Thus, coalbed methane was not conveyed by the Deeds and the Leases were, therefore, ineffective. At the trial court level, summary judgment was granted in favor of McKenzie.

The Alabama Supreme Court noted that coalbed methane is produced from coal seams and is formed during and as a by-product of the coalification process. It further noted that although some of the methane migrates out of the coal, a large amount remains behind and is physically bound to the coal. Because coalbed methane is liberated during mining and poses a significant hazard to the miners, it must be removed. The court found that the existence of coalbed methane in commercial quantities was recognized in Alabama as early as the 1920s. It was not, however, a significant industry until the 1980s.[63]

The court relied upon the legal precedents rendered in *United States Steel Corp. v. Hoge*;[64] *Rayburn v. USX Corp.*;[65] and *Carbon County v. Baird*.[66] In each of these cases, the courts held that the coal estate owner was also the owner of the coalbed methane gas.

The Alabama Supreme Court held that the evidence in the case at bar confirmed that the processes for coalbed methane gas drilling and coal mining are inextricably entwined.[67] The drilling process was noted by the court as an intrusion upon coal mining. The court, in keeping with earlier Alabama law construing mineral leases, held that "an express grant of 'all coal' necessarily implies the grant of coalbed methane gas, unless the language of the grant itself prevents this construction."[68] The court found that neither of the Deeds in question contained any limiting language, and in fact, clearly reserved only the surface rights. Accordingly, the court held that the ownership of methane gas, with the accompanying rights to drill for it, was necessarily included in the mineral estates granted in the Deeds and affirmed the summary judgments for McKenzie.[69]

vii. *Cantley v. Hubbard*, 623 So. 2d 1079 (Ala. 1993)

The Alabama Supreme Court in Cantley interpreted a 1929 warranty deed in an action involving conflicting claims to production royalties from three methane gas wells in a coal degasification field. In a 1924 patent, the United States reserved all the coal underlying the land in question. In a 1929 warranty deed, the grantor (a successor in interest to the United States) reserved "[a]ll mineral reserved to the United States."[70] On a motion for summary judgment, the court held that this language reserved all the minerals that were owned by the grantor at that time, i.e., all the minerals less the coal that had been reserved by the United States. The portion of the reservation "to the United States" was interpreted by the court as "merely an erroneous recitation of the prior reservation."[71] The court held that all mineral rights, other than coal, were clearly reserved by the grantor of the 1929 warranty deed. Thus, by implication, the coalbed methane was reserved by the 1929 warranty deed's grantor.

The *Cantley* court referred to *Vines v. McKenzie Methane Corp.*,[72] in a footnote and stated that it made no judgment as to the possible interests held by other parties because the question of whether a lease of coal rights included the right to explore for and produce coalbed methane was not raised.[73]

viii. *NCNB Texas Nat'l Bank v. West*, 631 So. 2d 212 (Ala. 1993)

In *West*,[74] the appeal arose from a Mobile County Circuit Court decision in which the trial court held that the language granting the coal contained in the chain of title deeds (Deeds) vested ownership of the coalbed methane in the coal owners/lessees (Jim Walters Parties) and not in the gas owners (Trustee Bank). The Alabama Supreme Court affirmed in part, reversed in part and remanded the case for further proceedings.

The Alabama Supreme Court's decision in these cases, as in the lower court, hinged on the interpretation of the reservations and the conveyancing language contained in the Deeds. The Deeds granted the following estate: "all the coal, and mining rights . . .";[75] and reserved the following estate: "all interest . . . other than the above-described interests in coal and mining rights . . . . Grantor specifically reserves all of the oil, gas, petroleum and sulphur . . . ."[76] The Jim Walter Parties maintained that the coalbed gas was granted to them by virtue of the Deeds. Conversely, the Trustee Bank argued that the Deeds reserved the coalbed gas.

The trial court relied heavily upon the legal precedent rendered in *Hoge* and held that the coalbed gas belongs to the coal owner. However, the Alabama Supreme Court reached a different conclusion in part. In determining the intent of the parties to the Deeds, the Supreme Court relied upon general deed construction cases. The Supreme Court agreed with the trial court's analysis

that the Deeds were not ambiguous. However, the Supreme Court did not agree that, as a matter of law, a reservation of "all gas" did not include coalbed methane. The court, focusing on the "plain meaning" of the words used in the Deeds and basic principles of property law, held:

> the fact that the coalbed methane gas is produced by, and stored within, coal seams does not require the conclusion that a grant of 'all coal' includes coalbed methane gas, nor does it require the conclusion that a reservation of 'all gas' does not include coalbed methane gas . . . . However, careful analysis of the law of real property indicates that the ownership of coalbed gas depends upon its location at the time the gas is recovered or 'captured,' at which time it is reduced to possession.[77]

The court reasoned that under the rule of capture, gas that migrates from one property to another is subject to recovery and possession by the holder of the gas estate on the property to which the gas migrates.[78] The Supreme Court evaluated the conveyance of coal "as a distinct property [which] also includes that bundle of property rights included within the coal, such as the rights incident and necessary to the recovery of the coal."[79] Thus, the Supreme Court held that the rule evolved to settle disputes between oil and gas owners on separate tracts of land. The court held that this rule was also applicable to coalbed methane gas, a migratory mineral resource.

> Thus, so long as the coalbed gas is bound within the coal seam in which it originated, the holder of the coal estate has the right to extract the gas and reduce it to possession. However, once the coalbed gas migrates out of the stratum in which it originated, the right to recover the gas belongs to the holder of the gas estate (footnote omitted).[80]

As to the venting of coalbed gas for mining purposes, the Supreme Court held, and the Trustee Bank agreed, that "[to the extent that ventilation is required by law, the coal owner will not be liable to the owner of the gas rights for any waste of methane gas that occurs during ventilation."[81] The court held that the Trustee Bank had no interest in coalbed gas recovered from horizontal or vertical wells drilled directly into coalbeds before the coal is mined. The Trustee Bank does, however, have an interest in coalbed methane gas that migrates out of the coal seams, such as gas collected within the gob zone.

Thus, the court held that:

> absent a clear showing to the contrary, the reservation of all gas includes the right to coalbed methane gas that migrates into other strata from out of the source coal beds where it formed. . . . based on the facts and circumstances of each case, and absent a clear

showing . . . to the contrary, the reservation of coalbed methane

> gas does not include coalbed gas contained within its source coal seam, and that the holder of the coal estate has the right to recover *in situ* such gas as may be found within the coal seam. However, once that gas escapes unrecovered from the coal and migrates into other strata, then the holder of the gas estate has the right to reduce to possession the coalbed methane gas from the other strata. If the coal owner captures and sells gob gasses that have migrated into other strata, the gas owners are entitled to share in any profits on such sales, after taking into account the cost borne by the coal owner in capturing and marketing the gas.[82]

The Alabama Supreme Court affirmed the portion of the trial court's holding that the Jim Walter Parties "have the exclusive right to produce and own coalbed methane gas from horizontal boreholes and vertical degasification wells drilled directly into the source coal seam."[83] The Supreme Court, however, reversed the trial court's holding regarding the right to recover coalbed methane from the gob area above the source coalbed and, instead, held that the Trustee Bank "has the exclusive right to produce and own all the coalbed methane gas that has been, or that will be, produced from gob wells . . . ."[84] The case was remanded to the trial court for further proceedings regarding the determination of factual and legal issues.

ix. *Southern Ute Indian Tribe v. Amoco Production Co.,* 874 F. Supp. 1142 (D. Colo. 1995), *rev'd* 119 F.3d 816 (10th Cir. July 16, 1997)

In 1991, the Southern Ute Indian Tribe (Tribe) sued Amoco Production Company,[85] other oil companies, individual oil and gas lessees and federal defendants in their capacities as trustees for the Tribe, claiming ownership of the coalbed methane underlying approximately 200,000 acres within the Southern Ute Indian Reservation in southwest Colorado. On September 13, 1994, the United States District Court of Colorado held that under the 1909 and 1910 Acts (the "Acts"), which were the source of title to the coal, the reservation of "coal" did not include coalbed methane. The Tribe appealed that decision.[86]

On July 16, 1997, the United States Court of Appeals for the Tenth Circuit reversed the lower court's decision and held that the Tribe, as the successor in interest to the United States' statutory reservation of coal, is the owner of the coalbed methane underlying the subject lands. In reaching its decision, the court analyzed the Acts that were the source of the Tribe's interest. The Acts provided that patents issued for lands belonging to the United States "shall contain a reservation to the United States of all coal in said lands, and the right to prospect for, mine, and remove the same."[87]

In analyzing the Acts, the Court of Appeals utilized various principles of statutory interpretation. It found that the legislative history of the Acts "suggested" that

Congress intended to adopt "an interpretation of coal which encompassed both the present and future economic value of coal, including value that could only be realized through advances in technology such as those which drive the present day exploration for CBM."[88] The Court was persuaded by the historical context and legislative history of the Acts that the coalbed methane was reserved to the United States. The Court noted that its decision was also supported by previous interpretations of analogous statutory mineral reservations.

Finally, the Court considered the 1981 Solicitor of the Department of the Interior opinion, *Ownership of and Right to Extract Coalbed Gas in Federal Coal Deposits*.[89] The Court found that the Solicitor's opinion was not binding policy because it was not promulgated through the rule-making process nor adjudicated. It was only a "public pronouncement that Interior will not assert the federal government's right to CBM under its reservation of coal" but rather under its oil and gas reservations.[90] The Court also stated that the case on which the Solicitor relied in support of his conclusion was overruled on appeal and that the opinion was inconsistent with Interior statements made contemporaneously with the Acts. The Court was convinced that the Solicitor's interpretation of the Acts was arbitrary because he did not explain how "Congress could have intended to convey a substance neither known to be valuable nor severable at the time of the enactments," and so omitted potentially determinative factors from his analysis.[91] The *Southern Ute* case was remanded to the trial court to address various issues raised by the defendants.[92] Subsequently, the Tenth Circuit Court of Appeals granted a rehearing en banc (before the full Court). A hearing was held on March 17, 1998, but no decision has been rendered to date.

b. Pending Case

i. *James C. Street v. OXY USA, Inc.*, Case No. 162-90 (Va. Cir. Ct., filed June 29, 1990)

The plaintiffs in *James C. Street v. OXY USA, Inc.,* filed a bill of complaint, in the Circuit Court of Buchanan County, Virginia, requesting a declaratory judgment to determine the rights of the parties to the natural gas and coalbed methane gas in a 458-acre tract. Street alleges that an 1887 deed, to OXY's predecessors in title, did not convey the coalbed methane or the natural gas underlying the 458-acre tract. Thus, Street, as surface owner, contends that title to the natural gas and coalbed methane is vested in him. The coal lessee, Garden Creek Pocahontas Company (Garden Creek), and the coal sublessee, Island Creek Coal Company (Island Creek), were allowed to intervene in the case. Garden Creek alleged that as coal lessee it had the right to: (1) release coalbed methane into the atmosphere as a safety measure in its mining operation; and (2) capture the coalbed methane by virtue of its coal lease on the property.

Subsequently, Garden Creek and Island Creek filed a motion for summary judgment. They have argued that the 1887 deed which conveyed "all the coal

and mineral in, upon, and underlying" the 458-acre tract did in fact convey the natural gas to OXY's predecessors in title. In support of their argument, Garden Creek and Island Creek cited the decision in *Warren v. Clinchfield Coal Corp.*[93] The court in *Warren* held that the generic term "minerals," unless otherwise qualified, embraced not only solid minerals but oil and gas as well.[94] As of the time this document was completed, no decision had yet been reached on the intervenors' motion for summary judgment.

c. Settled Cases

i. *Pinnacle Petroleum Co. v. Jim Walter Resources, Inc.*, No. CV-87-3012 (Ala. Cir. Ct. July 28, 1989) (order partially granting defendant's motion for summary judgment)

In *Pinnacle*, Pinnacle Petroleum Company (Pinnacle) derived its interest in the oil and gas underlying the property in dispute through a printed form oil and gas lease dated August 31, 1978, from E.L. Hendrix and wife, to Alabama Basic Land Enterprises, Inc. Typewritten onto the first page of the Hendrix lease was the statement: "this lease does not include coal."[95]

Jim Walter Resources, Inc. (Jim Walter) derived its interest in the coal through a lease dated December 6, 1984, from The First National Bank of Tuscaloosa, Trustee, to the United States Pipe and Foundry Company. The coal lease referenced the Hendrix oil and gas lease and indicated that the coal lessee could remove and dispose of the coal seam gas subject to any right of the oil and gas lessee or its assignees.[96] The coal lease also made specific provisions for the removal of coal seam gas and royalty payments should the coal seam gas be sold.[97]

Pinnacle's arguments for partial summary judgment were (1) that its gas lease covered coalbed methane because methane is technically a "gas";[98] and (2) that after extraction of the coal is completed, the mined area reverts to the grantor.[99] Since a gob well produces methane only after mining occurs, this is a post mining method of extraction, and the methane should revert to the coal lessor.[100] Jim Walter relied primarily on the *Hoge* and *Rayburn* decisions in arguing that the coalbed methane was owned by the coal estate as a result of: (1) the characteristics of coalbed methane; (2) the history of coalbed methane production; (3) the acknowledged right to remove the coal included the incidental right to remove the coalbed methane; and, (4) the conveyancing instruments revealed the intent of the parties as to the coalbed methane ownership and development.[101]

In its July 28, 1989 order, the court held that Jim Walter, as the coal lessee, had the exclusive right to produce coalbed gas from the property that was the subject

of the lawsuit.[102] The action remained on the docket to settle factual disputes about whether any of the gas produced by Jim Walters was gas other than

coalbed methane.[103] However, since that time, the case was dismissed with prejudice pursuant to a stipulation by the parties.

ii. *Finite Resources, Ltd. v. Western Fuels-Illinois, Inc.*, No. 93-L-47 (Ill. Cir. Ct., filed July 20, 1993)

In *Finite*, Finite Resources, Ltd. (Finite), filed suit claiming that Brushy Creek Coal Company, Inc. (Brushy Creek), owed it royalties on the coalbed methane gas Brushy Creek was venting for its coal mine operation. Western Fuels-Illinois, Inc. (Western), the coal owner, leased its interest in coalbed methane to Finite. Thereafter, Brushy Creek and Western obtained a permit from the Illinois Department of Mines and Minerals, Division of Oil and Gas for the venting of methane gas.[104] Finite claimed that Western and Brushy Creek were in violation of the coalbed methane gas lease terms and claimed the following damages: (1) damages in excess of $250,000 for Western's failure to plug the Henk No. 1 well; (2) damages in excess of $250,000 for Western's alleged coalbed methane waste; and (3) damages in excess of $250,000 for Brushy Creek's alleged coalbed methane gas waste.[105]

Brushy Creek and Western filed a countersuit claiming that Finite breached the development covenants of the coalbed methane lease and asked the court to declare the lease terminated.[106] Brushy Creek and Western sought damages in the amount of $200,000.[107] Brushy Creek and Western claimed that since Finite did not develop the land as required in the coalbed methane lease, methane levels in the mine increased, and the mine was evacuated.[108] The damages included the claimed costs of drilling the methane ventilation well and loss of income from coal mining operations.[109] Other issues raised by Brushy Creek and Western involved Finite's royalty payments, rights to wells drilled prior to the lease and rental of these well sites.[110] This case was settled by the parties before trial. Therefore, the issues were never decided by the court.

4. Ownership Claims to Storage Container Space

If the property that will be utilized for storage is a fee property (surface and no mineral severances -- all property rights are together in one bundle), there are no specific or problematic issues involved in acquiring storage rights.[111] However, complications may arise as the result of concurrent and future interests.[112] For example, the bundle of property rights may be separated into: (1) surface ownership; (2) coal ownership; (3) gas ownership; (4) oil ownership; and/or (5) residual mineral ownership (minerals other than coal, oil, and gas). Each of these ownership interests may have been leased to companies for development. The lessees of the mineral estates can then create additional burdens upon the leasehold -- overriding royalties, production payments, working interests, joint venture agreements, and farmouts, etc. Furthermore, the ownership interests themselves may be varied: (1) life estates; (2) remainders; (3) possibilities of reverter or reversion; etc.

a. Mineral Owner

A few jurisdictions have held that the mineral owner is the owner of the container space.[113] However, some jurisdictions have significantly limited the application of such a rule of law.[114] In one recent case, use of a mine as a storage container was contingent upon the fact that the minerals in the mine were not exhausted and the mine was not abandoned.[115]

b. Surface Owner

The majority of jurisdictions hold that the surface owner, not the mineral owner, owns the container space once the mineral occupying the space has been depleted and mining (or production) of the mineral is abandoned.[116] One justification for this approach is that rights to underground storage are in no way related to the use or enjoyment of the mineral interest.[117]

5. Coalbed Methane Federal Regulatory Environment

a. Purpose and Public Policy

Congress has enacted a statutory scheme governing coalbed methane that seeks to promote development of coalbed methane and also encourages states to develop their own statutory framework. This statutory scheme is part of the National Energy Policy Act of 1992 (EPACT) signed into law by President George Bush on October 24, 1992.[118] EPACT established its public policy to encourage coalbed methane development and to aid in the resolution of competing ownership claims.[119]

In implementing the provisions governing coalbed methane, the Secretary of Interior (the Interior Secretary), with the participation of the Secretary of Energy (the Energy Secretary), shall --

> (A) consider existing and future coal mining plans,
> (B) preserve the mineability of coal seams, and
> (C) provide for the prevention of waste and maximization of recovery of coal and coalbed methane gas in a manner which will protect the rights of all entities owning an interest in such coalbed methane resource.[120]

The purpose of the coalbed methane provisions of EPACT, as described in the Department of Energy's Implementation Status Report, is to emphasize development of technologies for coalbed methane recovery and encourage resolution of ownership issues surrounding coalbed methane.[121]

b. Affected States

Section 13,368 of EPACT is titled "Ownership of Coalbed Methane."[122] Application of section 13,368 is limited to coalbed methane deposits in "Affected States." [123] “Affected

States" are those states designated by the Interior Secretary, with the participation of the Energy Secretary.[124]

Subsection (b) of section 13,368 mandates that the Interior Secretary, in conjunction with the Energy Secretary, publish a list of Affected States in the Federal Register. The Affected States, to be included on the Secretary's list, are those states: (1) having ownership disputes, uncertainty or litigation regarding coalbed methane ownership; (2) having significant coalbed methane deposits and disputes, uncertainty or litigation which are impeding the development of coalbed methane; (3) that do not have statutory or regulatory procedures encouraging the development of coalbed methane; and (4) that do not have extensive development of coalbed methane.[125] The Affected States list originally included the same seven states originally listed in EPACT: Illinois, Indiana, Kentucky, Ohio, Pennsylvania, Tennessee and West Virginia.[126] Under the statutory provisions, "[i]f an Affected State has not placed in effect, by statute or by regulation, a substantial program promoting the permitting, drilling and production of coalbed methane wells (including pooling arrangements) within the State within 3 years after becoming an Affected State," the Interior Secretary, along with the Energy Secretary, will administer this section and promulgate the necessary regulations to carry out the program within the Affected Sate.[127] The effective date of the Affected States list was October 24, 1992, the effective date of the statute.[128]

An Affected State may seek removal from the list by one of the following methods: (1) a legislatively-approved Governor's petition [129] (2) a state law; or (3) a legislative resolution.[130] States that have been officially removed from the list of Affected States include West Virginia,[131] Pennsylvania,[132] Ohio,[133] Indiana,[134] and Illinois.[135]

6. Coalbed Methane Storage in Abandoned Coal Mines in Virginia

a. Summary of Coalbed Methane Development in Virginia

The first coalbed methane production in Virginia occurred in 1988.[136] The production figure for coalbed methane was not, however, reported separately from the conventional gas production. By 1989, coalbed methane production accounted for one percent (1%) of the total gas production (17,935,376 mcf) or 181,526 mcf.[137] Thus, coalbed methane was being extracted and reported although coalbed methane was not included in the Virginia Gas and Oil Act until 1990.[138]

Virginia has been leading the Appalachian Basin in development of coalbed methane, and there are no signs of any decline in production. In 1993, Tom Fulmer of the Division of Gas & Oil reported to the Virginia Oil and Gas Association (VOGA) members that natural gas development in Virginia had grown at an "incredible" rate.[139] The 1993 production for coalbed methane was 19.9 bcf (19,900,000 mcf).[140] The year 1993 marked the first time, since operators began developing coal seam gas in the late

1980s, that coalbed methane production in Virginia surpassed conventional gas.[141] This trend has continued throughout the 1990s. By 1996, total gas production had risen to

54.3 bcf with coalbed methane production at 34.2 bcf representing sixty-three percent (63%) of the total production.[142]

b. Coalbed Methane Regulatory Environment in Virginia

The Virginia Gas and Oil Act provides that "no person shall commence any ground disturbing activity for a well . . . geophysical exploration or associated activity, facilities or structures without first having obtained from the Director a permit to conduct such activity."[143] This Act sets specific guidelines for permit applications and for coalbed methane production wells.[144]

c. Underground Storage of Gas in Virginia

As of 1994, the certification of storage fields in Virginia is governed by the State Corporation Commission of Virginia (SCC).[145] The Utility Facilities Act of Virginia provides that "[i]t shall be unlawful for any public utility to construct, enlarge or acquire, by lease or otherwise, any facilities for use in public utility service . . . without first having obtained a certificate from the SCC that the public convenience and necessity require the exercise of such right or privilege." This Act further provides that a certificate will only be issued after a hearing on the matter and after notice is provided to all interested parties.[146]

At the present time, there are three (3) different types of storage fields in operation in Virginia, none of which store coalbed methane. Two (2) of the fields are storing natural gas. The Early Grove Gas Storage Field utilizes a depleted gas field. The Saltville Storage Field uses salt caverns. One (1) of the fields, Washington Gas Light Co.'s facility, stores liquefied petroleum gas in a rock cavern.

d. Agencies Having Jurisdiction Over Storage of Coalbed Methane

An overview of the regulatory schemes affecting gas storage fields in Virginia indicates an overlap in the jurisdictions of the regulatory bodies. The Department of Mines, Minerals and Energy's Division of Gas and Oil (DGO) has jurisdiction over storage well operations. The DGO issues storage well permits and inspects the wells. [147] There are no separate statutes or regulations for storage well permits at this time. The statutes and regulations governing production wells are applied.

The State Corporation Commission of Virginia also has jurisdiction over storage facilities. The SCC governs ratemaking and approves certificates of convenience and public necessity. Additionally, the Utility Facilities Act implies statutory jurisdiction to the SCC over the operations of storage fields and related facilities.[148]

The Department of Mines, Minerals and Energy's Division of Mines (DM) may also have jurisdiction over certain aspects of storage operations. The DM regulates vertical ventilation holes (VVHs) drilled for mine safety. Under current practices, the conversion

of a VVH to or from a coalbed methane production well falls under the dual jurisdiction

of the Division of Mines and the Division of Gas and Oil. Similarly, the conversion of a VVH to a gas storage well would encounter the same dual jurisdiction.[149]

Transportation pipelines raise related complications. Intrastate pipelines fall within the SCC's regulatory jurisdiction.[150] However, gathering pipelines are within the purview of the Division of Gas and Oil.[151] Interstate pipelines are governed by the Federal Energy Regulatory Commission.[152]

e. Issues Related to Storage of Coalbed Methane in Abandoned Mines in Virginia

With regard to ownership of storage space in Virginia, once the coal is removed, the ownership of the container space reverts to the surface owner, at least in cases where the coal owner either reserved or was conveyed "all the coal with the rights to mine and remove the same." [153] However, in light of the increased importance of coalbed methane development, there are no guarantees that dissimilar fact situations will result in the same ownership interpretation by Virginia courts.

There are no case decisions in Virginia regarding ownership of coalbed methane. Therefore, the resolution of issues regarding ownership of coalbed methane already present in the abandoned mine is uncertain due to the lack of precedent in Virginia or consensus from a majority of jurisdictions.

7. Coalbed Methane Storage in Abandoned Coal Mines in West Virginia

a. Summary of Coalbed Methane Development in West Virginia

The first coalbed methane production in West Virginia probably occurred in the early 1990s, although the West Virginia statutory provisions governing coalbed methane did not take effect until 1994. As compared to conventional gas production, coalbed methane production in West Virginia still represents only five percent (5%) of the total gas production, if that much.[154]

Nevertheless, coalbed methane production is increasing rapidly in West Virginia. In southern West Virginia, seventeen wells were permitted in 1995. These include fifteen wells in the Welch field in McDowell and Wyoming Counties and two wells in the Slab Fork field. Twelve new wells were permitted in southeastern West Virginia in 1995. For 1996, four new coalbed methane wells were permitted in southeastern West Virginia, all to be drilled by U.S. Steel Mining. There has also been coalbed methane production reported in Northern West Virginia, although the information regarding number of wells permitted is not complete. In Monongalia County, located in Northern West Virginia, eight coalbed methane ventilation wells were permitted in 1995. In 1996, three new wells were permitted in that county.[155]

b. Coalbed Methane Regulatory Environment In West Virginia

The West Virginia Coalbed Methane Wells and Units Article of the Environmental Resources Act statutes concerning coalbed methane gas were promulgated to facilitate coalbed methane development by creating workable solutions to the issues arising from competing or conflicting ownership claims.[156] This Act includes: (a) commitments for venting of coalbed mines; (b) provisions to ensure safe recovery of coalbed methane, while preserving the mineability of coal seams; and, (c) provisions for preventing waste and maximizing recovery. There is strong coal protective language in these provisions. This Act includes requirements for coalbed methane ventilation, future and current safe coal mining and maximization of recovery, in addition to permitting, spacing, and pooling requirements for coalbed methane wells. [157]

c. Underground Gas Storage in West Virginia

There are also statutory provisions in West Virginia imposing certain obligations upon the operators of underground gas storage reservoirs. [158] Although these provisions do not specifically mention coalbed methane, they appear to apply to coalbed methane. [159]

The Office of Oil and Gas is not aware of any storage fields in which coalbed methane is stored.[160] There are numerous conventional gas storage fields in West Virginia. According to a survey conducted by the American Gas Association, there are at least thirty-four natural gas storage reservoirs.[161]

d. Agencies Having Jurisdiction Over Storage of Coalbed Methane

In West Virginia, the Office of Oil and Gas, under the supervision of the Division of Environmental Quality, has jurisdiction over gas storage wells, coalbed methane production wells, underground gas storage reservoirs, and the conversion of vertical ventilation holes to wells.[162] With regard to storage of coalbed methane in abandoned mines, the Office of Mining, under the supervision of the Division of Environmental Quality, may also have jurisdiction. [163]

The Public Service Commission of West Virginia has jurisdiction over the issuance of certificates of public necessity and setting of rates for a public utility's intrastate transportation of gas by pipeline. [164] Because none of the gas storage facilities in West Virginia are considered by the Public Service Commission to be public utilities, the Commission does not require certificates from those operators or set their rates. [165] However, the Federal Energy Regulatory Commission does issue certificates of necessity and set the rates for the transportation and sale of natural gas in interstate commerce. [166] The Public Service Commission of West Virginia has also been empowered to prescribe and enforce safety standards for all intrastate and interstate pipeline facilities and to regulate safety practices of persons engaged in the transportation of gas. "Transportation of gas" is defined as the "gathering, transmission or distribution of gas by pipeline or its storage." [167]

e. Issues Related to Storage of Coalbed Methane in Abandoned Mines in West Virginia

With regard to storage ownership issues, West Virginia follows the general rule that the container space reverts to the surface owner once the mineral is no longer recoverable.[168] This, of course, can be a very fact specific determination. The conveyancing language of relevant deeds and leases, intent of the parties, and surrounding circumstances must be considered in making this determination.

There are no decided cases in West Virginia regarding ownership of coalbed methane. Therefore, the resolution of any questions that arise concerning ownership of the coalbed methane already present in the mine is uncertain due to the lack of precedent in West Virginia or consensus from a majority of jurisdictions.

8. Coalbed Methane Storage in Abandoned Coal Mines in Pennsylvania

a. Summary of Coalbed Methane Development in Pennsylvania

There are six coalbed methane fields in southwestern Pennsylvania -- the Oakford, Gump, New Freeport, Lagonda, Waynesburg and Blairville fields.[169] The coalbed methane production is mostly from Indiana County, in southwestern Pennsylvania. Coalbed methane production has been increasing since 1992 in Pennsylvania. In 1992, coalbed methane production in Pennsylvania was 350,000 million cubic feet (mcf). In 1994 and 1995, coalbed methane production rose to 1,000,000 mcf.[170] Pennsylvania's Campbell's Mill pool is the largest commercial coalbed methane project with 26 producing wells.[171]

The number of permits issued each year in Pennsylvania for coalbed methane wells has varied in the last five years. In 1997, 44 permits were issued for coalbed methane wells.[172]

b. Coalbed Methane Regulatory Environment

Pennsylvania has enacted legislation governing oil and gas exploration and production. The Pennsylvania Oil and Gas Act (Pennsylvania Act) sets forth the permitting, drilling, operating, casing, plugging, reporting, financial responsibility, registration, restoration, and gas storage requirements for oil and gas operations.[173] There is no separate legislation addressing coalbed methane in Pennsylvania. The Pennsylvania Act does apply to coalbed methane, however. Furthermore, the permitting process is the same for coalbed methane wells as for natural gas wells under the Act.[174]

The Pennsylvania Oil and Gas Conservation Law governs oil and gas wells which are drilled to a depth of at least 3,800 feet, and penetrate the Onondaga horizon.[175] Because of the extra depth and high pressures encountered in these wells, special requirements for casing, well spacing, waste prevention, and pooling are necessary.[176]

In addition, the Pennsylvania Coal and Gas Resource Coordination Act provides for coordinating the activities of operators of coal mines and gas wells. The Resource Coordination Act applies to all gas wells that penetrate workable coal seams.[177]

c. Underground Gas Storage in Pennsylvania

Underground gas storage reservoirs in Pennsylvania are also regulated by the Bureau of Oil and Gas Management under the supervision of the Department of Environmental Protection.[178] Although these provisions do not specifically mention coalbed methane, they would probably apply to coalbed methane storage.[179] There are specific provisions that must be followed by any person who is injecting gas into or storing gas in a storage reservoir.[180] The Act also includes provisions granting certain eminent domain rights for storage operations, but these provisions do not address the right of eminent domain with regard to abandoned coal mines.

According to the Pennsylvania Act, nothing contained in the chapter on underground storage reservoirs "shall apply to the storage of gas or liquids in storage reservoirs excavated in rock formations specifically for storage purposes."[181] Therefore, artificially made storage caverns are exempted from these regulations, but natural rock formations are not. These regulations do apply to depleted reservoirs, which would probably include the use of abandoned coal mines for storage.[182]

In addition, the Pennsylvania Act provides that "injection of gas for storage purposes in any workable coal seam, whether or not such seam is being or has been mined, shall be prohibited."[183] A "workable coal seam" is defined as a "coal seam in fact being mined" or "in the judgement of the department, can reasonably be expected to be mined by underground methods."[184] Because the determination of whether a coal seam can reasonably be expected to be mined is made by the Department of Environmental Protection, Bureau of Oil and Gas Management, a storage operator should consult with the Department in this regard to determine whether injection of coalbed methane into an abandoned mine is permissible.

There are numerous conventional gas storage fields in Pennsylvania. According to a survey conducted by the American Gas Association, there are at least sixty natural gas storage reservoirs, although none of these are abandoned coal mines.[185]

d. Agencies Having Jurisdiction Over Storage of Coalbed Methane

The Bureau of Oil and Gas Management, under the supervision of the Department of Environmental Protection, has jurisdiction over gas storage wells, coalbed methane production wells, underground gas storage reservoirs, and the conversion of vertical ventilation holes to wells. [186] With regard to storage of coalbed methane in abandoned mines, the Bureau of Mining and Reclamation and Bureau of Deep Mine Safety, under the supervision of the Department of Environmental Quality, may also have

jurisdiction.[187]

The Pennsylvania Public Utility Commission has jurisdiction over the issuance of certificates of public convenience and setting of rates for a public utility's intrastate transportation of gas by pipeline.[188] A "public utility" includes any person or corporation owning or operating facilities for "transporting or conveying natural or artificial gas. . . by pipeline or conduit, for the public for compensation." [189] Therefore, the Public Utility Commission would have jurisdiction over a gas storage facility operated by a public utility. The Federal Energy Regulatory Commission issues certificates of necessity and sets the rates for the transportation and sale of natural gas in interstate commerce. [190]

e. Issues Related to Storage of Coalbed Methane in Abandoned Coal Mines in Pennsylvania

Regarding ownership of storage space, Pennsylvania presently appears to follow the general rule that the container space reverts to the surface owner once the mineral is no longer recoverable.[191] However, conveyancing language of relevant deeds and leases, intent of the parties, and surrounding circumstances must be considered in making any determination of title to storage space.

There is one case in Pennsylvania determining coalbed methane ownership issues.[192] Although, in this case, the Pennsylvania Supreme Court held that coalbed methane belonged to the coal owner so long as it remained within his dominion and control, the Court decided the issue by examining the intent of the parties, deed language, and surrounding circumstances. Therefore, the resolution of any questions that arise concerning ownership of the coalbed methane already present in the mine will depend on the particular fact situation.

9. Coalbed Methane Storage in Abandoned Coal Mines in Utah

a. Summary of Coalbed Methane Development in Utah

The first commercially feasible coalbed methane wells in Utah were completed in 1990 in the Uinta Basin's Book Cliffs coal field.[193] Production in the state is from the Blackhawk and Ferron trends in the east-central part of Utah.[194] The Blackhawk Formation (of the Mesaverde Group) is stratigraphically higher than the Ferron Sandstone Member (of the Mancos Shale).[195] From 1993 through March, 1996, the coalbed methane leasehold interest in 83,489 acres was acquired by various companies.[196] In 1993, 856,600 mcf of gas were produced in the state. By 1997, Utah's annual coalbed methane production had reached 20,643,492 mcf.[197]

b. Coalbed Methane Regulatory Environment in Utah

Utah does not have any statutes or rules dealing specifically with drilling for or production of coalbed methane. Natural gas is defined to include coalbed methane.[198] Therefore, drilling for coalbed methane and its production are governed by the Utah Oil

and Gas Conservation Act of 1983 (Act) and the Oil and Gas Rules (Rules). The Board of Oil, Gas and Mining (BOGM) is the policy-making body for the Division of Oil, Gas and Mining (DOGM), both of which are within the Department of Natural Resources.[199] The Act gives the BOGM broad authority over gas production. The Rules require a permit before commencing drilling, plugging back or deepening of any well or any surface disturbance which is associated with such activity.[200]

c. Agencies Having Jurisdiction Over Underground Storage in Utah

The Act gives the BOGM jurisdiction over underground and surface gas storage,[201] and directs that the BOGM adopt rules necessary for the regulation of storage.[202] BOGM rules specifically address injection operations, including operations to introduce gas into a reservoir for storage purposes. These operations must be permitted by the BOGM.[203] Additionally, "well" is defined as "an oil or gas well, injection or disposal well . . . ."[204] The DOGM considers storage wells to fit within this definition. Therefore, any injection/withdrawal wells at a storage facility are subject to the well requirements set forth in the Act and the Rules.

The Division of Public Utilities of the Utah Department of Commerce (DPU) and the Public Service Commission of Utah (PSC) also have jurisdiction over storage operations. The DPU is responsible for the implementation and enforcement of policies promulgated by the PSC. The PSC has broad authority over all public utilities in Utah, including the ability to "require every public utility to construct, maintain and operate its line, plant, system, equipment, apparatus, tracks and premises in such a manner as to promote and safeguard the health and safety of its employees, passengers, customers and the public . . . ."[205] Public utility is defined to include gas corporations[206] which deliver gas on an intrastate basis.[207] A storage operator which qualifies as a utility would be subject to the PSC's rules.

In addition to the statutes and rules governing utilities, any storage facility, regardless of whether it is operated by a utility, is subject to the safety standards for intrastate gas pipelines.[208] These standards, which are administered by the Pipeline Safety Section of the DPU, apply to any pipelines in a storage facility. "Pipeline means all parts of those physical facilities through which gas moves in transportation, including pipe, valves and other appurtenance [*sic*] attached to pipe compressor units, metering stations, regulator stations, holders, and fabricated assemblies."[209] In this context, "transportation of gas means the gathering, transmission, or distribution of gas by pipeline or the storage of gas . . . ."[210] The PSC has adopted the federal Department of Transportation Office of Pipeline Safety Regulations.[211]

Some aspects of developing or operating an underground storage facility in an abandoned mine may require a permit from the Division of Water Quality (DWQ). The DWQ implements and enforces the rules created by the Water Quality Board (WQB) pursuant to the Water Quality Act.[212] The Water Quality Act gives the WQB the authority

to issue discharge permits.[213] If it is necessary for the storage operator to discharge water, in order to de-water the abandoned mine, a permit would be required.

Counties and local governments could impose additional requirements on a storage operator. Under Utah law, a local government is permitted to legislate on subjects which are already addressed by state legislation so long as the local ordinance does not conflict with state law and local regulation of the subject has not been foreclosed by the state.[214] It appears that no localities currently have any regulations dealing specifically with underground gas storage. Some counties, however, do impose requirements on production operators.

d. Underground Storage of Gas in Utah

There are currently at least three underground gas storage facilities operating in Utah.[215] All of these fields are considered interstate facilities and are, therefore, under the jurisdiction of the Federal Energy Regulatory Commission,[216] and the federal Department of Transportation.

e. Issues Related to Storage of Coalbed Methane in Abandoned Mines in Utah

In considering the prospect of coalbed methane storage in abandoned coal mines in Utah, several major issues must be addressed. With regard to ownership of the storage space, these issues include: (1) who owns the abandoned mine and the container space that remains after the mineral has been depleted? and, (2) if ownership depends upon the mineral being depleted or no longer recoverable, when is the mineral actually no longer recoverable, and who makes this determination? Utah has not addressed many of these questions surrounding ownership of the storage space. In addition to issues related to ownership of the storage space, an entity considering storage of coalbed methane in abandoned coal mines in Utah must also address questions related to ownership of the coalbed methane already present in the mine that will be used as cushion gas and how the injection of gas into the mine will affect ownership of the coalbed methane already present. There are no decided cases in Utah regarding ownership of coalbed methane.

Although Utah's eminent domain statutes provide for the condemnation of underground formations for underground gas storage along with any other interests necessary to operate and maintain the storage facility,[217] the statutes do not specify from whom the interests must be acquired. The statutes provide that any party occupying "or having or claiming an interest in" the property may appear as a defendant in the condemnation action.[218] The complaint must name "all owners and claimants of the property" or contain a statement that they are not known.[219] Therefore, even if the right of eminent domain is utilized to acquire the property, it is necessary to determine the ownership of the container space. It appears that the issue of container space ownership has never been addressed in Utah and, therefore, any potential claimant of the property would be

a necessary party to the eminent domain action.

10. Coalbed Methane Storage in Abandoned Coal Mines in Colorado

a. Summary of Coalbed Methane Development in Colorado

Coalbed methane production in Colorado primarily takes place in Archuleta, Garfield, La Plata, Las Animas, Mesa and Rio Blanco Counties. In 1993, 134,320,019 mcf of coalbed methane were produced in Colorado. Production totaled 185,695,954 mcf in 1994, 239,853,831 mcf in 1995, and reached 274,621,938 mcf in 1996. Between January and November of 1997, 294,196,918 mcf of coalbed methane were produced in Colorado.[220]

b. Coalbed Methane Regulatory Environment in Colorado

The Colorado Oil and Gas Conservation Commission (OGCC) is vested with the authority to regulate oil and gas operations in the state. Pursuant to the Oil and Gas Conservation Act (ACT), the OGCC is authorized to regulate "[o]il and [g]as operations so as to prevent and mitigate significant adverse environmental impacts on air, water, soil, or biological resource resulting from oil and gas operations to the extent necessary to protect public health, safety, and welfare, taking into consideration cost-effectiveness and technical feasibility."[221] There are no Colorado statutes or regulations dealing specifically with coalbed methane.

c. Agencies Having Jurisdiction Over Underground Storage in Colorado

An overview of the state regulatory schemes affecting gas storage in Colorado indicates that several entities have regulatory authority over some aspect of underground storage. At least two state agencies currently exercise jurisdiction over the existing storage facilities in Colorado. However, neither of these two administrative bodies appear to be exercising the full extent of authority to which they are entitled under the relevant statutes, regulations and/or case law.

The Public Utilities Commission of Colorado (PUC) currently inspects two of the, at least, nine storage facilities in Colorado to ensure compliance with the United State's Department of Transportation Office of Pipeline Safety's Pipeline Safety Regulations. Currently, the PUC only inspects those facilities where the storage field is integrated into the supply system, and the cost of the facility is rolled into the utility company's rates. Only if violations were reported or complaints were filed, would the PUC inspect other facilities.[222] When the PUC does inspect a facility it relies on the federal Department of Transportation Office of Pipeline Safety Regulations.[223]

The OGCC Rules specifically require written authorization from the OGCC before engaging in gas storage operations.[224] However, other than permitting and overseeing the initial drilling of storage wells, the Oil and Gas Conservation Commission appears to be exercising little authority over storage facilities.

Another state agency that could exercise some control over a storage facility is the Water Quality Control Division (WQCD) of the Department of Public Health and Environment. The WQCD administers the Colorado Water Quality Control Act[225] (Water Quality Act) and the Rules promulgated by the Water Quality Control Commission (WQCC) pursuant to the Water Quality Act. If it is necessary to de-water the mine for storage, a discharge permit must be obtained. Furthermore, if the WQCC determines that the presence of methane in state ground water poses a threat to public health, safety or welfare, it could promulgate standards regulating the introduction of methane gas into ground water. However, to date, the WQCD and the WQCC have declined to exercise any regulatory authority over storage.

Counties and local governments could impose additional requirements on a storage operator. In *Board of County Comm'rs, La Plata County, Colo. v. Bowen/Edwards Assoc., Inc.,*[226] the Colorado Supreme Court recognized that the Local Government Land Use Control Enabling Act of 1974[227] gives local governments broad authority to plan and regulate land use within their jurisdictions. The court found that La Plata County's Oil and Gas Regulations, which were intended to reduce conflicts between varying land uses, set environmental quality standards and regulate surface disturbances, were within the scope of the county's legislative power. The court further found that the regulations were not preempted by the Colorado Oil and Gas Conservation Act.[228] However, a locality's ability to regulate oil and gas operations is not unlimited. In *Voss v. Lundvall Brothers, Inc.*,[229] the Colorado Supreme Court recognized the City of Greely's right to regulate aspects of oil and gas operations in ways that "do not frustrate and can be harmonized with the development and productions of oil and gas in a manner consistent with the stated goals of the Oil and Gas Conservation Act."[230] However, the court found that the city's complete ban on all oil, gas and hydrocarbon wells could not stand in light of the state's interest in the development of oil and gas, as demonstrated in the Oil and Gas Conservation Act.[231]

Of those Colorado counties which have underground storage facilities located within their borders, only Jefferson County[232] and Mesa County[233] have enacted oil and gas regulations. These regulations do not appear to address underground storage.

d. Underground Storage of Gas in Colorado

There are currently at least nine underground gas storage facilities operating in Colorado.[234] One of these facilities, the Leyden Mine Storage Field, has been storing natural gas in an abandoned coal mine since 1959.[235] In 1996, as the result of a complaint filed with the OGCC alleging contamination of well water by gas which had leaked from Leyden's storage facility, the OGCC entered an order stating that, among other things, the OGCC does have jurisdiction to investigate the complaint.[236] It appears that the decision regarding jurisdiction was limited to this particular complaint and that no further action was ever taken. In contrast with the OGCC decision to exercise jurisdiction over the alleged leak, it appears that the WQCD did not deem itself to have jurisdiction over the particular situation.[237]

e. Issues Related to Storage of Coalbed Methane in Abandoned Mines in Colorado

In considering the prospect of coalbed methane storage in abandoned coal mines in Colorado, several major issues must be addressed. With regard to ownership of the storage space, these issues include: (1) who owns the abandoned mine and the container space that remains after the mineral has been depleted? and, (2) if ownership depends upon the mineral being depleted or no longer recoverable, when is the mineral actually no longer recoverable, and who makes this determination? Colorado has not addressed many of the questions surrounding ownership of the storage space.

In addition to issues related to ownership of the storage space, an entity considering storage of coalbed methane in abandoned coal mines in Colorado must also address questions related to ownership of the coalbed methane already present in the mine that will be used as cushion gas and how the injection of gas into the mine will affect ownership of the coalbed methane already present. In spite of the fact that the *Southern Ute*[238] case involved a dispute over the ownership of coalbed methane located in Colorado, neither the district court nor the Tenth Circuit discussed Colorado law in their decisions. As discussed above, both courts' inquiries involved determining Congress's intent when it reserved coal in the federal acts. In its decision, the Tenth Circuit specifically noted that state court decisions regarding coalbed methane ownership, such as *West*[239], *Vines*[240], *Hoge*[241] and *Carbon County*[242], "ultimately have little to offer in terms of our interpretation of congressional intent in the 1909 and 1910 Acts."[243] However, like the other coalbed methane cases discussed in this section, the *Southern Ute* decision does illustrate how a Colorado court might approach the problem of coalbed methane ownership on federal lands.

Although Colorado has enacted legislation authorizing the condemnation of property, (both surface and underground storage space) for underground natural gas storage, the statutes merely provide a mechanism for acquiring property. The Colorado eminent domain statutes require the condemnation petition to list "all persons interested as owners or otherwise" in the property.[244] It may also be necessary to make an effort to purchase the property before a condemnation petition can be filed.[245] However, neither the Underground Storage Act nor the eminent domain statutes specify from whom storage rights must be acquired or to whom any offer to purchase must be made. Therefore, even if the right of eminent domain is utilized to acquire the property, it is necessary to first determine the parties that may own the container space.

11. Coalbed Methane Storage in Abandoned Coal Mines in Alabama

a. Summary of Coalbed Methane Development in Alabama

Some of the earliest research into coalbed methane production occurred in Alabama.

In 1978, the American Public Gas Association funded a three well research commercial recovery of the gas (as opposed to mine degasification) and the first time production from more than one coal seam within the same wellbore was attempted.[246] In that same year, Jim Walter Resources and Kaneb Energy, acting as a partnership, began research into coalbed methane production.[247] In 1981, both U.S. Steel and Jim Walter Resources began selling coalbed methane recovered in Pleasant Grove, Alabama.[248] In 1983, Alabama became the first state to implement rules specifically governing coalbed methane production.[249]

There are currently twenty-one coalbed methane production fields in Alabama. Eighteen of these fields are located partially or entirely in Tuscaloosa County.[250] Two of the fields are located in the Cahaba Basin, and nineteen are in the Black Warrior Basin.[251] The most productive field has been the Brookwood Field, producing 155,444,464 mcf of gas between 1981 and 1996.[252]

b. Coalbed Methane Regulatory Environment in Alabama

Alabama has enacted statutory provisions and administrative rules and regulations governing oil and gas operations. In addition, Alabama has promulgated administrative rules and regulations that apply specifically to coalbed methane operations. These administrative rules and regulations apply to the permitting, drilling and production of gas.[253] "Gas" is defined by the oil and gas statutory provisions (Act) to mean "[a]ll natural gas, including casinghead gas, and all other hydrocarbons not defined as oil."[254] The administrative rules and regulations (Rules) further define "gas" to include "occluded natural gas found in coalbeds."[255] "Coalbed methane gas well" means a "well capable of producing occluded natural gas from a coalbed or coalbeds."[256] The purpose of the Act is to prevent waste of oil and gas and to protect correlative rights.[257] The Act and the Rules are implemented and enforced by the Oil and Gas Board of Alabama (Board).[258] Prior to drilling any oil or gas well, the oil or gas operator must file an application and fee with the Supervisor to obtain a well permit.[259]

The Board may use moneys in the Coalbed Methane Gas Well Plugging Fund to provide for the proper plugging of a well when the following conditions are satisfied: (1) the failure of the operator of a coalbed methane gas well to plug such well may pose a threat to the environment or the public health, safety or welfare; (2) the operator of the well shall have failed or refused to plug the well within a period deemed reasonable by the Board; and (3) the bond filed by the operator is inadequate to provide for the payment of the costs of plugging the well.[260] Where costs of plugging have been incurred by the Board, the operator of the well and all working interest owners shall be jointly and severally liable to the state for repayment of the amount of the moneys expended from the Fund.

c. Agencies Having Jurisdiction Over Underground Storage in Alabama

Alabama has enacted statutory provisions governing underground gas storage reservoirs. These provisions are also implemented and enforced by the Board. "Underground storage" is defined as "[s]torage in an underground reservoir."[261] "Gas" is

defined to specifically include "occluded natural gas found in coalbeds."[262] Furthermore, an "underground reservoir" means "[a]ny subsurface sand, stratum, formation, aquifer, or cavity, cavern or void (whether natural or artificially created), suitable for or capable of being made suitable for the injection and storage of gas therein and the withdrawal of gas therefrom."[263] Prior to use of an underground reservoir as a storage facility for gas, the Board must enter an order, after notice and hearing, approving such proposed storage. The Board must also designate the horizontal and vertical boundaries of the storage facility, such boundaries to include any necessary and reasonable buffer zone to insure safe operation of the facility and to protect against pollution, invasion, and escape or migration of gas.[264]

The Alabama Public Service Commission (PSC) is authorized to regulate gas pipelines and transportation.[265] "Transportation of gas" is defined as the "gathering, transmission, distribution and storage of natural gas and the transmission and distribution by pipeline of all kinds of gas other than natural gas."[266] The PSC regulates gas pipelines that transport gas on an intrastate basis in situations where the gas has been cleaned and pressurized to the point that it is ready for sale.[267] All pipeline systems in Alabama must "be constructed, operated and maintained . . . to be in compliance with the defined federal minimum safety standards."[268] The PSC has not enacted its own regulations relating to pipeline safety.[269] Instead, it enforces the federal Department of Transportation Office of Pipeline Safety Regulations.[270]

d. Underground Storage of Gas in Alabama

There is currently one underground natural gas storage facility operating in Alabama. Mobile Gas Services operates the Bay Gas Storage Facility in Washington County which stores gas in the McIntosh Salt Dome. [271]

e. Issues Related to Storage of Coalbed Methane in Abandoned Mines in Alabama

An entity considering storage of coalbed methane in abandoned coal mines in Alabama must address questions related to ownership of the coalbed methane already present in the mine that will be used as cushion gas and how the injection of gas into the mine will affect ownership of the coalbed methane already present. Although Alabama has addressed the issue of coalbed methane ownership more times than any other state, the Alabama cases probably would not resolve a dispute over ownership of gas present in an abandoned mine. It appears that, at least in a situation involving severance language similar to that in *West,*[272] the coal owner owns any gas captured from the source coal seam, while any gas that has migrated into other areas from the source seam belongs to the gas owner. However, even if the severance language in the instruments involving the storage property is similar to a decided case, other questions may arise. For example: should gas that is present in the empty space where the coal seam was located be considered as within the source seam? Any questions that might arise surrounding title to injected gas would likely be resolved by Ala. Code § 9-17-153(b),

which states that all gas injected into a storage facility is the property of the storage operator.

Alabama's Underground Gas Storage Act provides for the condemnation of "all surface and subsurface rights and interests necessary or useful for the purpose of operating [a gas] storage facility. . . ."[273] Before the right of eminent domain may be exercised, a storage operator must obtain the approval of the State Oil and Gas Board of Alabama.[274] The condemnation of interests must follow the procedures set forth in the Alabama Eminent Domain Code. Although the Alabama Gas Storage Act and the Alabama Eminent Domain Code create a mechanism for a storage operator to acquire the interests necessary to establish a storage facility, they do not identify from whom the interests must be obtained. Therefore, even if the right of eminent domain is utilized to acquire the property, it is necessary to determine the ownership of the container space. It appears that the issue of depleted mineral space ownership has never been addressed in Alabama. It is unclear whether the mineral owner or the surface owner owns the space remaining after minerals are removed. Additionally, disputes could arise over the point at which a deposit is considered depleted. Therefore, any potential claimant of the property would be a necessary party to the eminent domain action.

12. Conclusion

This report did not attempt to undertake an in-depth analysis of all the issues related to coalbed gas storage in abandoned coal mines in Virginia, West Virginia, Pennsylvania, Utah, Colorado, and Alabama. Rather, it attempts to generally survey the state statutes, regulations, and cases related to coalbed methane ownership issues, container space ownership issues, and gas storage issues in the above-referenced states.

In considering the storage of coalbed methane in abandoned coal mines in each of the states discussed, there are several major issues that should be addressed. With regard to ownership of the storage space, these issues include: (1) who has the power to grant storage rights?; (2) who owns the abandoned mine and the container space that remains after the mineral has been depleted?; and (3) if ownership depends upon the mineral being depleted or no longer recoverable, when is the mineral actually no longer recoverable, and who makes this determination? Many questions related to these issues are yet to be answered since precedents have not been established in the area of gas storage, particularly in abandoned coal mines. Although the rule adopted in the jurisdictions of Virginia, West Virginia, and Pennsylvania appears to be that the container space reverts to the surface owner once the mineral is no longer recoverable, this is a very fact specific determination. The conveyancing language of relevant deeds and leases, intent of the parties, and surrounding circumstances must be considered in making this determination. Furthermore, questions regarding storage ownership issues still remain in each of the states. For example, when does the mineral become no longer recoverable, and what happens if the mine is abandoned and there is still recoverable

coal? Furthermore, what if new techniques are discovered providing a means for recovering coal previously thought unrecoverable? These are issues that will need to be addressed in each state where storage of coalbed methane in abandoned mines is considered.

In addition to issues related to ownership of the storage space, an entity considering storage of coalbed methane in abandoned coal mines in Virginia, West Virginia, Pennsylvania, Utah, Colorado, or Alabama must also address questions related to ownership of the coalbed methane already present in the mine that will be used as cushion gas, or how injection of gas into the mine will affect ownership of the coalbed methane already present. Also, questions may arise regarding how coalbed methane in the mine will affect ownership of the storage space. Although courts in Pennsylvania and Alabama have determined coalbed methane ownership issues, varying factual circumstances would result in different interpretations of relevant deeds and conveyancing instruments. Therefore, even in Pennsylvania and Alabama, as well as in the other states, the resolution of any questions that arise concerning ownership of the coalbed methane already present in the mine will depend on the particular fact situation.

Other considerations involved in storage of coalbed methane in abandoned mines include which regulatory bodies will claim to have jurisdiction over the operations. In this report, we have identified those agencies in Virginia, West Virginia, Pennsylvania, Utah, Colorado, and Alabama that will most likely assert some jurisdiction over or interest in such storage operations. The relevant jurisdictional agencies range from the oil and gas permitting agency to the utility rate commissioners and vary in each state.

ENDNOTES

1. *Southern Ute Indian Tribe v. Amoco Prod. Co.*, 874 F. Supp. 1142 (D. Colo. 1995) *rev'd* 119 F.3d 816 (10th Cir. 1997) ; *see also* J. Thomas Lane, *Fire in the Hole to Longwall Shears: Old Law Applied to New Technology and Other Longwall Mining Issues*, 96 W. VA. L. REV. 577, 621 (1994).

2. *See infra* notes 16-17 and accompanying text.

3. Richard A. Schraufnagel et al., *Coalbed Methane Development Faces Technology Gaps*, OIL & GAS J., Feb. 5, 1990, at 48.

4. *Id.*

5. Matt Benson, *VOGA's Work Reaps Success Within Political Arena*, AM. OIL & GAS REP., Aug. 1994, at 127.

6. Stephen D. Ban, GAS RESEARCH INST., EXECUTIVE RESEARCH LETTER (Feb. 1993).

7. *Id.*; Benson, *supra* note 5.

8. Scott H. Stevens, et al., *Technology Spurs Growth of U.S. Coalbed Methane*, OIL & GAS J. Jan. 1, 1996, at 57.

9. 11 GAS RESEARCH INSTITUTE, QUARTERLY REVIEW OF METHANE FROM COAL SEAMS TECHNOLOGY No. 1 at 2 (David G. Hill ed., Aug. 1993) [hereinafter QUARTERLY REVIEW NO. 11]; *see also* Benson, *supra* note 5.

10. Stevens, *supra* note 8 at 56.

11. *Id.* at 57.

12. Telephone interview with Richard A. Schraufnagel, Gas Research Institute (Sept., 1997).

13. James P. Holland, *Underground Storage of Natural Gas: A Legal Overview*, 3 EASTERN MIN. L. INST. 19-1 at 19-4 (1982).

14. *Id.*

15. *See* Section IV, Ownership Claims to Storage Container Space, for the discussion of this issue.

16. *See Southern Ute Indian Tribe v. Amoco Production Co.*, 874 F. Supp. 1142 (D. Colo. 1995) (basing its decision, in part, on legislative intent) *rev'd* 119 F.3d 816 (10th Cir. 1997); *Combs v. Hounshell*, 347 S.W.2d 550, 552 (Ky. 1961) (finding that the goal of deed construction is to effect the intent of the

parties as that intent can be gathered from all of the provisions of the deed); *Conner v. Hendrix*, 72 S.E.2d 259, 265 (Va. 1952) (finding that the provisions are to be viewed as a whole, with effect and meaning being accorded to every word used in the instrument, if possible); *Horne v. Horne*, 26 S.E.2d 80, 84 (Va. 1943) (holding that intent is to be gathered from the language used throughout the instrument); *Ward v. Baylor*, 153 S.E. 894, 896 (Va. 1930) (finding that in interpreting an instrument, a court will generally attempt to determine the purpose and intent of the grantor); *James River & Kanawha Power Co. v. Old Dominion Iron & Steel Corp.*, 122 S.E. 344, 349 (Va. 1924) (finding intent of the deed is to be gathered from the deed as a whole); *see also* 30 U.S.C. §§ 181-287 (1994) (originally enacted as the Mineral Leasing Act of 1920, ch. 85, 41 Stat. 437); 30 U.S.C. §§ 541-541(I) (1994) (originally enacted as the Uraniferous Lignite Act of 1955, ch. 795, 69 Stat. 679); 43 U.S.C. § 299 (1994) (originally enacted as the Stock-Raising Homestead Act of 1916, ch. 9, 39 Stat. 862); 30 U.S.C. § 81 (1994) (originally enacted as Act of Mar. 3, 1909, ch. 270, 35 Stat. 844); 30 U.S.C. §§ 121-123 (1994) (originally enacted as Act of July 17, 1914, ch. 142, 38 Stat. 509); 30 U.S.C. §§ 83-85 (1994) (originally enacted as the Coal Lands Act of 1910, ch. 318, 36 Stat. 583); Act of June 15, 1880, ch. 223, 21 Stat. 199.

17. *Id.* A court cannot consider intent of the parties unless it determines that an ambiguity in the language exists. *See* J. Maddox' dissenting opinion in *Cantley v. Hubbard*, 623 So. 2d 1079, 1082 (Ala. 1993).

18. "Coal" is defined under the Bureau of Indian Affairs, Department of the Interior, the agency charged with governing certain mineral regulations, as "*combustible carbonaceous rock, classified as anthracite, bituminous, subbituminous, or lignite* by A.S.T.M. designation O-388-666." Amoco Production Company's Brief in Support of its Motion for Summary Judgment on the Class Action Claim and the Class Action Defenses at 13, *Southern Ute Indian Tribe v. Amoco Prod. Co.,* No. 91-B02273 (D. Colo. filed Dec. 31, 1991) [hereinafter *Amoco's Brief in Support*]. The Dictionary of Mining, Mineral and Related Terms defines "coal" as:

> *A solid, brittle, more or less distinctly stratified, combustible carbonaceous rock*, formed by partial to complete decomposition of vegetation . . . not fusible without decomposition and very insoluble. The boundary line between peat and coal is hazy . . . as is the boundary line between coal and graphite and the boundary line between carbonaceous rock and coal . . . .

Id. at 108 (citing the DICTIONARY OF MINING, MINERAL AND RELATED TERMS 222 (1969)) (emphasis added).

Webster's Dictionary defines the term "coal" as follows:

> *[A] black or brownish black solid combustible mineral* substance formed by the partial decomposition of vegetable matter without free access of air and under the influence of moisture and in many cases increased pressure and temperature, the substance being widely used as a natural fuel and containing carbon, hydrogen, oxygen, nitrogen, and sulfur as well as inorganic constituents that are left behind as ash after burning . . . .

Id. at 108-09 (citing WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 432 (1976)) (emphasis added).

19. "Gas" has been defined as "[t]he aeriform fluid, having neither independent shape nor volume, but tending to expand indefinitely." *Amoco's Brief in Support, supra* note 18, at 111 (citing A GLOSSARY OF THE MINING AND MINERAL INDUSTRY 295 (1920)). The agency charged with governing certain mineral

regulations, the Minerals Management Service, Department of the Interior, defines gas as: "[A]ny fluid, either combustible or noncombustible, which is extracted from a reservoir and which has neither independent shape nor volume, but tends to expand indefinitely; a substance that exists in a gaseous or rarified state under standard temperature and pressure conditions." *Id.* (Citing 43 C.F.R. § 3000.0-5 (1992); *accord* 30 C.F.R. §§ 206.151, 216.6(I) (1992)).

Another definition of gas is "a fluid (as air) that has neither independent shape nor volume but tends to expand indefinitely . . . ." *Amoco's Brief in Support, supra* note 18, at 112 (citing WEBSTER'S NEW THIRD INTERNATIONAL DICTIONARY 937 (1976)).

20. Paul N. Bowles, *Coalbed Gas: Present Status of Ownership Issue and Other Legal Considerations*, 1 E. MIN. L. INST. 7 (1980).

21. *See Rayburn v. USX Corp*., No. 85-G-2661-W, 1987 U.S. Dist. LEXIS 6920 (N.D. Ala. 1987) (memorandum opinion and order), *aff'd without opinion*, 844 F.2d 796 (11th Cir. 1988); *Cantley v. Hubbard*, 623 So. 2d 1079 (Ala. 1993); *Vines v. McKenzie Methane Corp*., 619 So. 2d 1305 (Ala. 1993); *Pinnacle Petroleum Co. v. Jim Walter Resources, Inc.*, No. CV-87-3012 (Ala. Cir. Ct. July 28, 1989) (order partially granting defendant's motion for summary judgment); *Carbon County v. Baird*, No. DV 90-120, 1992 WL 464786, at *9 (Mont. Dist. Ct. Dec. 15, 1992), *reversed sub nom. Carbon County v. Union Reserve Coal Co*., 898 P.2d 680 (Mont. 1995); *United States Steel Corp. v. Hoge*, 468 A.2d 1380 (Pa. 1983)*; Rights to Coalbed Methane Under an Oil & Gas Lease for Lands in the Jicarilla Apache Reservation*, (M-36970), 98 I.D. 59 (1990); *Ownership of and Right to Extract Coalbed Gas in Federal Coal Deposits*, (M-35935), 88 I.D. 538 (1981).

22. *Amoco's Brief in Support, supra* note 18 at 108-09; *see also Skelly Oil Co. v. Savage*, 447 P.2d 395, 402 (Kan. 1968) (finding that liquids produced from a well are associated with the gas and such liquids are produced along with the gas; the gas cannot be produced without carrying with it the associated liquids); *Blocker v. Christie*, 340 S.W.2d 320, 321 (Tex. Civ. App. 1960) (finding that the evidence showed that the liquids involved look like oil, taste like oil, smell like oil and are stored and sold like oil; when the gas leaves the well head it is gaseous, and is also gaseous as it existed in the well).

23. Bowles, *supra* note 20, at 7-12.

24. *Amoco's Brief in Support, supra* note 18, at 108-09.

25. Bowles, *supra* note 20, at 7-12. The "surface" owner claim to coalbed methane would not be applicable in cases where only the surface was granted to the owner. It would, however, be applicable in situations where the coal, oil, and gas had been conveyed, but the other ("residual") minerals were owned by the "surface owner."

26. *United States Steel Corp. v. Hoge*, 468 A.2d 1380, 1382 (Pa. 1983).

27. *Id.*

28. *Id.* at 1384.

29. *Id.* at 1385. *See also Hiltabidle v. BBC/DRI Blacklick Joint Venture*, No. 2336 Pittsburgh 1996 (Superior Court of Pennsylvania 1997) where the Superior Court held that coalbed methane lessees,

by virtue of their rights in the coalbed methane, possessed the right to use the surface to the extent necessary to extract the coalbed gas.

30. *Amoco's Brief in Support*, *supra* note 18 at 57-62.

31. *Rayburn v. USX Corp.*, No. 85-G-2661-W, 1987 U.S. Dist. LEXIS 6920 at *5 (N.D. Ala. 1987).

32. *Id.* at *2 (emphasis added).

33. *Id.* at *8-*9.

34. *Rights to Coalbed Methane Under an Oil & Gas Lease for Lands in the Jicarilla Apache Reservation*, No. M-36970, 98 I.D. 59, 61-62 (1990).

35. *Id.* at 62-63.

36. *Id*. at 63.

37. *Id.* at 63-64.

38. *Carbon County v. Baird*, No. DV 90-120, 1992 WL 464786, slip op. at 4 (Findings of Fact).

39. *Id.*

40. *Id.* at 5.

41. *Id.* at 7.

42. *Id.* at 8.

43. *Id.* at 10.

44. *Id.*

45. 468 A.2d 1380 (Pa. 1983).

46. Civ. No. 85-G-2661-W (N.D. Ala. July 28, 1987), *aff'd without opinion*, 844 F.2d 796 (11th Cir. 1988).

47. No. CV-87-3012 (Ala. Cir. Ct. July 29, 1989).

48. Memorandum at 23, *Carbon County* (No. DV 90-120).

49. *Carbon County*, No. DV-90-120, slip op. at 4 (Final Judgment and Decree).

50. *Id.* at 5-6.

51. *Id.* at 7.

52. *Carbon County v. Union Reserve Coal Co.*, 898 P.2d 680 (Mont. 1995).

53. *Id.* at 686.

54. *Id.*

55. *Id.* at 687.

56. *Id.*

57. *Id.*

58. *Id.* at 688.

59. *Id.* at 689.

60. *Id.* at 688.

61. *Vines v. McKenzie Methane Corp.*, 619 So. 2d 1305, 1306 (Ala. 1993).

62. *Id.*

63. *Id.* at 1307.

64. 468 A.2d 1380 (Pa. 1983).

65. Civ. No. 85-G-2661-W (N.D. Ala. July 28, 1987), *aff'd without opinion*, 844 F.2d 796 (11th Cir. 1988).

66. No. DV 90-120, 1992 WL 464786 (Mont. Dist. Ct. Dec. 14, 1992), *rev'd sub nom. Carbon County v. Union Reserve Coal Co.*, 898 P.2d 680 (Mont. 1995).

67. *Vines*, 619 So. 2d at 1308.

68. *Id.* at 1308-09. *See generally Carter Oil Co. v. Blair*, 57 So. 2d 64 (Ala. 1952).

69. *Vines*, 619 So. 2d at 1309. Two of the justices rendered a dissenting opinion, contending that the Deeds were ambiguous. Thus, the dissent concluded that the trial courts erred in holding, as a matter of law, that the parties to the Deeds could have contemplated the conveyance of coalbed methane gas, which was of no commercial value at the time of the Deeds. The date of the conveyance and the minerals commonly recognized at the time of the conveyance were determinative of the issue. This interpretation was based on several cases. *Id.*

70. *Cantley v. Hubbard*, 623 So. 2d 1079, 1080 (Ala. 1993).

71. *Id.* at 1079.

72. 619 So. 2d 1305 (Ala. 1993).

73. *Cantley*, 623 So. 2d at 1080. Justice Maddox entered a dissenting opinion stating that the reservation in the 1929 warranty deed contained a "latent ambiguity" and thus concluded that summary judgment was inappropriate. *Id.* at 1082.

74. For additional discussion of the *West* case, see John Land McDavid, Summary, *Construction of Express of "all coal" in Deed*, 9 E. MIN. LAW FOUND. CASE UPDATE 16 (1994).

75. *West*, 631 So. 2d at 216.

76. *Id.* at 216-17.

77. *Id.* at 222-23.

78. *Id.* at 224.

79. *Id.* at 223 (citing *Williams v. Gibson*, 4 So. 350, 353-54 (Ala. 1888)). The *Williams* court based its findings on the "rule of capture." *See* Robert E. Hardewicke, *The Rule of Capture and Its Implications as Applied to Oil and Gas*, 13 TEXAS L. REV. 391, 393 (1935)).

80. *West*, 631 So. 2d at 224.

81. *Id.* at 229.

82. *Id.* On December 10, 1993, the Alabama Supreme Court overruled an application for rehearing. The court, however, modified its October 8, 1993 opinion by adding the final sentence of the above-referenced quote.

83. *Id.*

84. *Id.* Justice Maddox, however, wrote a dissenting opinion. He interpreted the deeds at issue as ambiguous and, therefore, determined that the rules of deed construction set forth in *Nettles v. Lichtman*, 152 So. 2d 450, 452 (Ala. 1934) and *Williams v. Johns-Carroll Lumber Co.*, 192 So. 278, 280 (Ala. 1939) were applicable. Justice Maddox did not believe that the parties to the Deeds contemplated coalbed methane development at the time the deeds were executed. He reasoned: "Why would a party retain the right to something which is only a waste product with well-known dangerous propensities? . . . It strains credulity to think that the grantor intended to reserve the right to extract a valueless waste product with the attendant potential responsibility for damages resulting from its dangerous nature." *West*, 631 So. 2d at 232 (Maddox, J., dissenting) (quoting *Vines v. McKenzie Methane Corp.*, 619 So. 2d 1305, 1308 (Ala. 1993)). Although the definition of "gas," included in the oil and gas statutes in effect at the time, was broad enough to include coalbed methane, Justice Maddox also noted that such a conclusion was probably not the intention of the legislature. *Id.* at 230-31 (referencing Ala. Code § 9-17-1). Justice Maddox was unable to distinguish the *Vines* and *Hoge* cases from the case at bar and would have, therefore, applied the holdings in these cases (*Vines* and *Hoge*) to the present case. *Id.* at 232. *See also In re: Hillsborough Holdings Corp.*, 207 B.R. 299 (Bankr. M.D. Fla. 1997) (bankruptcy court applying Alabama law under *West* held that coalbed methane extracted from horizontal and vertical wells where the gas was "captured" directly from the coal seams was owned by coal owners, and coalbed methane captured by gob wells was owned by oil and gas owners since the gas did not remain within the coal until the time of capture).

85. *Southern Ute Indian Tribe v. Amoco Production Co.,* 874 F. Supp. 1142 (D. Colo. 1995) *rev'd* 119 F.3d 816 (10th Cir. July 16, 1997).

86. *Southern Ute Indian Tribe v. Amoco Production Co.*, 119 F.3d 816 (10th Cir. July 16, 1997).

87. *Id.* at 821.

88. *Id.* at 826.

89. 88 Interior Dec. 538 (1981).

90. *Southern Ute*, 119 F.3d at 833.

91. *Id.* at 836.

92. For a detailed analysis of the case at the trial court level, *see* Elizabeth A. McClanahan, *Coalbed Methane: Myths, Facts, and Legends of its History and the Legislative and Regulatory Climate into the 21st Century*, 48 OKLA. L. REV. 471, 498-506 (1995).

93. 186 S.E.2d 20 (Va. 1986).

94. *Id.* at 22.

95. M. Jill Morgan & Elizabeth A. McClanahan, *Competing Ownership Claims to Coalbed Methane in the Appalachian Basin*, LANDMAN, July-Aug. 1990, at 23.

96. *Id.*

97. *Id.*

98. *Id.*

99. *See International Salt Co. v. Geostow*, 878 F.2d 570, 575 (2d Cir. 1989); *see* note 115.

100. Morgan & McClanahan, *supra* note 95.

101. *Id.*

102. *Pinnacle Petroleum Co.*, No. CV-87-3012 (Ala. Cir. Ct. July 28, 1989) (order partially granting defendant's motion for summary judgment).

103. *Id.* Litigation in the case continued in certain bankruptcy proceedings. The court granted Pinnacle's motion to sever claims against Jim Walter to allow Pinnacle to proceed against the solvent defendants. *Id.*

104. *Finite*, (No. 93-L-47).

105. *Id.* (Complaint at 2-5).

106. *Id.*; see Answer to Defendants/Counterplaintiff's Affirmative Defenses and Counterclaims at 1-2.

107. *Id.* at 10.

108. *Id.* at 9-10.

109. *Id.* at 10.

110. *Id.* at 11-12.

111. W.L. Summers, LAW OF OIL & GAS, § 758.1 at 84 (Supp. 1997).

112. *Id.*

113. *Attebery v. Blair*, 91 N.E. 475, 479 (Ill. 1910) (finding mineral owner could "use the space where the coal was found in any way which they saw fit"); *Lillibridge v. Lackawana Coal Co.*, 22 A. 1035, 1037 (Pa. 1891) (explaining that the surface owner "cannot possibly use any part of the space left by the removal of the coal, and hence they are not obstructed in the slightest degree. The right to use that space is exclusively in the" mineral owner).

114. *See Webber v. Vogel*, 42 A. 4, 5 (Pa. 1899) (stating that although *Lillibridge* is not overruled, the coal owner has a right to the mine space only while work was progressing. The coal interest did not include "an undisputed and perpetual right of way under another's land"); *Texas American Energy Corp. v. Citizens Fidelity Bank and Trust Co.*, 736 S.W.2d 25 (Ky. 1987). *See also Pomposini v. T.W. Phillips Gas and Oil Co.*, 580 A.2d 776 (Pa. 1990) (absent an express agreement, the right to extract gas did not include the right to use cavernous spaces owned by the lessor for the storage of gas).

115. *See International Salt Co. v. Geostow*, 878 F.2d 570 (2nd Cir. 1989) (granting right to use of excavated cavity so long as mine is not exhausted or abandoned to owner of mineral interest. Use of cavity is contingent upon the fact that the mine is not exhausted or abandoned. Mineral owner owns only the salt, not the excavation cavity or containing chamber. However, the court indicated a deed granting "'mines *and* minerals'" could entitle the mineral owner to the container space after minerals are depleted).

116. Summers, *supra* note 111, n. 67.5. *See*, *Ellis v. Arkansas Louisiana Gas Co.*, 450 F. Supp. 412 (E.D. Okla. 1978) (holding that a grant of minerals gives grantee the right to explore and produce the minerals — grant does not convey "the stratum of rock containing the pore spaces within which the oil and gas may be found") (the American rule is that the cavern which remains after the hard minerals are mined is owned by the surface owner) (portion of case involving prescriptive easement affirmed by 609 F.2d 436 (10th Cir. 1979)); *Emeny v. United States*, 412 F.2d 1319 (Cl. Ct. 1969) (oil and gas leases for purposes of mining and operating for oil and gas do not grant rights to store foreign minerals in closed structure or underground dome under leased property); *Miles v. Home Gas Co.* 35 A.D.2d. 1042 (N.Y. 1970) (grant of "all the oil, gas and minerals . . . together with right at all times to enter on said premises and to bore wells, make excavations, lay pipes and remove all oil, gas and minerals found thereon" conveyed rights pertaining only to production and transmission and could not be construed to cover use of depleted domes or strata for storage of gas from foreign fields); *U.S. v. 43.42 Acres of Land*, 520 F. Supp. 1042 (W.D. La. 1981)(in dispute over ownership of a salt cavern which was to be used for oil storage, the court held "that the facts presented by this case are more closely analogous to the general rule in common law states which provides that, after the removal of minerals, the opening left by the mining operations belongs to the land owner by operation of law"); *Mallon Oil Co.*, 104 IBLA 145, 150

(Sept. 2, 1988)("The general rule in the United States appears to be that, once the minerals have been removed from the soil, the space occupied by the minerals reverts to the surface owner by operation of law"); *Dep't of Transp. v. Goike*, 560 N.W.2d 365 (Mich. App. 1996) (storage space, once it has been evacuated of the minerals and gas, belongs to the surface owner).

117. Ali M.M. Modjehi, *Ownership Rights in Subsurface Natural Gas Storage Areas*, 16 Tulsa L. J. 470 (1981).

118. 42 U.S.C. § 13,201 *et seq.* (1997).

119. *Id.* § 13,368(b) (1997).

120. *Id.* § 13,368(d) (1997).

121. Hazel R. O'Leary, U.S. Dep't of Energy, Energy Policy Act of 1992 Implementation Status Report 13 (1993).

122. 42 U.S.C. § 13,368 (1997).

123. *Id.* § 13,368(a) (1997).

124. *Id.* § 13,368(p)(1) (1997).

125. *Id.* § 13,368(b) (1997).

126. 58 Fed. Reg. 21,589 (1993). The following states were permanently excluded from the list of Affected States: Colorado, Montana, New Mexico, Wyoming, Utah, Virginia, Washington, Mississippi, Louisiana and Alabama. 42 U.S.C. § 13,368(b)(4) (1997).

127. 42 U.S.C. § 13,368(c) (1997).

128. *Id.* § 13,368(b) (1997).

129. The state's governor must provide the legislative body, during its session, with a six (6) month notice of his/her intent to file a petition for removal from the list. At the end of the 6-month period, the governor may petition the Interior Secretary for removal, unless the legislative body disapproved of the petition by law or resolution. 42 U.S.C. § 13,368(b).

130. 42 U.S.C. § 13,368(b) (1997).

131. West Virginia was removed on December 8, 1994. 59 Fed. Reg. 63376.

132. Pennsylvania was removed on October 4, 1995. 60 Fed. Reg. 52005.

133. Ohio was removed on February 2, 1995. 60 Fed. Reg. 7576.

134. Indiana was removed on December 5, 1995. 60 Fed. Reg. 62255.

135. Illinois was removed on January 28, 1997. 62 Fed. Reg. 4075.

136. 1988 VIRGINIA GAS AND OIL REPORT, Virginia Department of Mines, Minerals and Energy, Division of Gas and Oil.

137. 1989 VIRGINIA GAS AND OIL REPORT, Virginia Department of Mines, Minerals and Energy, Division of Gas and Oil.

138. Va. Code Ann. §§ 45.1-361.1-361.40 (Michie Supp. 1990); 1990 Va. Acts 150.

139. Benson, *supra* note 5.

140. 1993 VIRGINIA GAS AND OIL REPORT, Virginia Department of Mines, Minerals and Energy, Division of Gas and Oil.

141. 1993 VIRGINIA GAS AND OIL REPORT, Virginia Department of Mines, Minerals and Energy, Division of Gas and Oil; Benson, *supra* note 5, at 127.

142. 1996 VIRGINIA GAS AND OIL REPORT, Virginia Department of Mines, Minerals and Energy, Division of Gas and Oil.

143. Va. Code Ann. § 45.1-361.29 (Michie Supp. 1997).

144. The permitting guidelines were promulgated pursuant to and authorized by the Act. Va. Code Ann. § 45.1-361.27 (Michie Supp. 1997). The regulations specifying permit application criteria are contained in 4 VAC 25-150-10 - 25-150-750 (1991). These regulations are currently under review by the Virginia Department of Mines, Mineral and Energy (DMME). On June 21, 1994, Virginia's Governor George Allen issued Executive Order Number Fifteen which provides that state agencies must conduct "a comprehensive review of all existing regulations, to be completed by January 1, 1997. . . . as to whether each existing regulation should be terminated, amended or retained in its current form." Exec. Order No. 15, 10 Va. Regs. Reg. 5457 (July 11, 1994). Each agency must also develop a procedure for ongoing reviews of its regulations, including evaluation and determination of the regulations' effectiveness. *Id.* The review schedule set forth by Order Number Fifteen provides that agencies reviewing more than ten (10) regulations "must complete their reviews and assessments for at least one-half of their regulations by July 1, 1995, and must complete their reviews of the remaining regulations by July 1, 1996." *Id.* For reviews due by July 1, 1995, final approval by the Secretaries of all agencies shall be completed by January 1, 1996. For all remaining reviews, the completion date is January 1, 1997. *Id.* at 5458; *see also* Barry McKay, *Legislative and Regulatory Update*, LANDMAN, Sept.-Oct. 1994, at 37.

Industry, government, and public comments obtained during regulatory working group meetings were submitted to the DMME in February, 1995. On July 8, 1996, the DMME published a Notice of Intended Regulatory Action (NOIRA) stating its intent to amend the Virginia Gas and Oil Regulations (VR 480-05-22.1 and VR 480-05-22.2) (the regulations have been renumbered as 4 VAC 25-150-10 - 25-150-750 and 4 VAC 25-160-10 - 25-160-230, respectively, due to an error in the original numbering system). 12 Va. Regs. Reg. 2733 (July 8, 1996). The revised regulations for the Virginia Gas and Oil Board (Board) were published in final form on July 21, 1997, and became effective August 20, 1997. 4 VAC 25-160-10 - 25-160-200 (1997). The public hearing on the permitting regulations (4 VAC 25-150-10 - 25-150-

750) was held October 8, 1997, at 10:00 a.m. at the DMME's Keen Mountain office. The written comment period continued until October 24, 1997.

145. Va. Code Ann. § 56-265.1 (Michie Supp. 1997).

146. Va. Code Ann. § 56-265.1 *et seq.* (Michie 1995).

147. Va. Code Ann. §§ 45.1-361.1 *et seq.* (Michie 1996 and Supp. 1997); 4 VAC 25-150-10 - 25-150-750.

148. Va. Code Ann. § 56-265.1 *et seq.* (Michie 1996 and Supp. 1997).

149. *See* 4 VAC 25-150-10 - 25-150-750.

150. Va. Code Ann. § 56-265.1 (Michie 1995 and Supp. 1997).

151. Va. Code Ann. §§ 45.1-361.1 *et seq.* (Michie 1996 and Supp. 1997). 4 VAC 25-150-720 - 4 VAC 25-150-750 (1991).

152. 42 U.S.C.S. § 7172(a) (Law. Co-op. 1997).

153. *Clayborn v. Camilla Red Ash Coal Co.*, 105 S.E. 117 (Va. 1920).

154. Telephone Interview with Mike Lewis, Assistant Chief, Office of West Virginia Oil and Gas (Jan., 1998).

155. Paul C. Lyons, *Coalbed Methane Potential in the Appalachian states of Pennsylvania, West Virginia, Maryland, Ohio, Virginia, Kentucky and Tennessee*, United States Geological Survey, Department of the Interior, Open File Report 96-73; Telephone interview with David Matchen, West Virginia Geological Survey (March, 1998).

156. W.Va. Code §§ 22-21-1 *et seq.* (1994).

157. *Id.*

158. W.Va. Code § 22-9-1 *et seq.* (1994).

159. *Id.* § 22-9-1 *et seq.* (1994); Telephone Interview with Mike Lewis, *supra* note 154.

160. *Id.*

161. American Gas Association, *Survey of Underground Storage of Natural Gas in the United States and Canada* (1997).

162. W.Va. Code § 22-1-7(4) (1994); Telephone interview with Mike Lewis (January, 1998) *supra* note 154.

163. Telephone interview with Mike Lewis, *supra* note 154.

164. W.Va. Code § 24-2-1 (1992). "Public utility" is defined as an entity "engaged in any business" that is a "public service." W.Va. Code § 24-2-2 (1992). A corporation which lays its own pipeline to transport

natural gas produced or purchased in a gas field and to deliver the same to industrial consumers with whom it has negotiated private contracts is not a public utility. *Wilhite v. Public Service Commission*, 149 S.E.2d 273, 150 W.Va. 747 (1966); Telephone interview with David Ellis, Director of Utilities Division, Public Service Commission (Jan., 1998).

165. Telephone interview with David Ellis, *supra* note 164.

166. 42 U.S.C. § 7172.

167. W.Va. Code § 24B-1 *et seq.* (1992); W.Va. Code § 24B-2(3)(1992); Telephone interview with David Ellis, *supra* note 164.

168. *Tate v. United Fuel Gas Co.,* 71 S.E.2d 65 (W.Va. 1952).

169. Paul C. Lyons, *Coalbed Methane Potential In the Appalachian States of Pennsylvania, West Virginia, Maryland, Ohio, Virginia, Kentucky, and Tennessee*, Department of the Interior U.S. Geological Survey, Open File Report 96-735.

170. *Id.*

171. Antonette K. Markowski, *Coalbed Methane Resources in the Northern Appalachian Coal Basin, Southwestern Pennsylvania and North-Central West Virginia*, Pennsylvania Geological Survey (September, 1997).

172. Telephone Interview with Frank Bialias, Bureau of Oil and Gas Management (February, 1998).

173. 58 P.S. § 601.101 *et seq.* (1996).

174. Telephone Interview with Carl Morgeneier, Division Chief of Subsurface Activities, Pennsylvania Bureau of Oil and Gas Management (February, 1998).

175. 58 P.S. § 403 (1996).

176. *Id.* §§ 407-409 (1996).

177. *Id.* § 503 (1996).

178. *Id.* § 601.101 *et seq.* (1996); telephone interview with Carl Morgeneier, Division Chief of Subsurface Activities, Bureau of Oil and Gas Management (February, 1998) .

179. "Gas" is defined as "[a]ny fluid, either combustible or noncombustible, which is produced in a natural state from the earth and which maintains a gaseous or rarified state at standard temperature of 60 degrees Fahrenheit and pressure 14.7 PSIA, any manufactured gas, any byproduct gas or any mixture of gases." *Id.* § 601.103 (1996); telephone interview with Carl Morgeneier, *supra* note 178.

180. 58 P.S. § 601.301(1996). Information required regarding oil and gas wells includes the name of the operator, date drilled, total depth, depth of production if the well was productive of oil or gas, the initial rock pressure and volume, the depths at which all coal seams were encountered and a copy of the

driller's log or other similar information. At the time of the filing of the maps and data such person shall file a detailed statement of what efforts have been made to determine that the wells shown on said map are accurately located and that to the best of such person's knowledge, the wells are all the oil or gas wells which have ever been drilled into or below the storage stratum within the proposed storage reservoir or within the reservoir protective area. This statement must also include information as to whether or not the initial injection is for testing purposes, the maximum pressures at which injection and storage of gas is contemplated, and a detailed explanation of the methods to be used or which have been used in drilling, cleaning out, reconditioning or plugging wells. *Id.*

181. *Id.* § 601.307(c) (1996).

182. Telephone interview with Carl Morgeneier, *supra* note 178. According to the Bureau of Oil and Gas, if the storage facility is an artificially created cavern, the Environmental Protection Agency will have jurisdiction. *Id.*

183. 58 P.S. §601.307(b) (1996).

184. *Id.* at §601.103 (1996).

185. American Gas Association, *Survey of Underground Storage of Natural Gas in the United States and Canada* (1997).

186. 58 P.S. § 601.103 (1996).

187. *Id.*

188. 66 Pa. C.S.A. §§ 102, 1102, 1103, 1317,1318.

189. *Id.* § 102. A "public utility" does not include "a producer of natural gas not engaged in distributing such gas directly to the public for compensation." *Id.*

190. 42 U.S.C. § 7172.

191. *Webber v. Vogel*, 42 A. 4 (Pa. 1899); *Pomposini v. T.W. Phillips Gas and Oil Co.*, 580 A.2d 776 (Pa. 1990).

192. *United States Steel Corp. v. Hoge*, 468 A.2d 1380 (Pa. 1983).

193. Robert W. Gloyn and Steven N. Sommer, *Exploration for Coalbed Methane Gains Momentum in Uinta Basin,* Oil and Gas J. May, 31, 1993, at 73.

194. *Coalbed Gas Production Soars in '95*, Petroleum News (Utah Geological Survey), May 1996.

195. *Id.*

196. *Id.*

197. Totals based on information provided by Dave Tabet, Utah Geological Survey. Production each year

was as follows: 1993 - 856,600 mcf; 1994 - 4,618,890 mcf; 1995 - 12,210,020 mcf; 1996 - 16,977,649 mcf; 1997 - 20,643,492 mcf.

198. Utah Code Ann. § 40-6-2 (9) (b).

199. Utah Code Ann. § 40-6-4 (1); Utah Code Ann. § 40-6-15.

200. Utah Admin. R. 649-3-4 (1).

201. Utah Code Ann. § 40-6-5(3)(e).

202. Utah Code Ann. § 40-6-5(2).

203. Utah Admin. R. 649-5-1(1).

204. Utah Admin. R. 649-1-1.

205. Utah Code Ann. § 54-4-14.

206. Utah Code Ann. § 54-2-1(14)(a).

207. Utah Admin. R. 1746-320-1(B)(12).

208. Utah Code Ann. § 54-13-1 *et seq.* gives the PSC jurisdiction over intrastate pipelines. Although interstate pipelines fall under the federal Department of Transportation's jurisdiction (49 U.S.C. § 60101 *et seq*. (1997)), the DPU has been inspecting interstate pipeline facilities in Utah pursuant to contracts with the federal Department of Transportation.

209. 49 CFR § 192.3 (1997).

210. 49 CFR § 192.3 (1997).

211. 49 CFR § 192. Utah Code Ann.§ 54-13-3(1) requires the PSC to adopt and enforce rules that incorporate the safety standards established in the federal Natural Gas Pipeline Safety Act (49 U.S.C. §§ 1671 to 1687). Utah Admin. R. 746-409-1(A) adopts and incorporates CFR Title 49, Parts 190, 191, 192, 193 and 199.

212. Utah Code Ann. § 19-5-101, *et seq*.

213. Utah Code Ann. § 19-5-104(1)(8).

214. *Walker v. Union Pacific R. Co.*, 844 P 2d. 335, 339 (Utah App. 1992).

215. *See* American Gas Association, *Survey of Underground Storage of Natural Gas in the United States and Canada (1997).*

216. 42 U.S.C. § 7172 (1997).

217. Utah Code Ann. § 78-34-1(6).

218. Utah Code Ann. § 78-34-7.

219. Utah Code Ann. § 78-34-6.

220. Based on information provided by Marnan Peacock, Colorado Oil and Gas Conservation Commission.

221. Colo. Rev. Stat. 34-60-106(2)(d). *See also* Col. Rev. Stat. § 34-60-106 (11) "The Commission shall promulgate rules and regulation to protect the health, safety, and welfare of the general public and the conduct of oil and gas operations."

222. *Id.* The PUC currently inspects the Leyden Mine storage field in Jefferson County and Roundup storage field in Morgan County because the Public Service Company of Colorado has rolled both facilities into its rates.

223. 49 CFR § 192; Colo. Rev. Stat. Ann. § 40-2-115(1.5) authorizes the PUC to adopt rules necessary to the administration and enforcement of the "Natural Gas Pipeline Safety Act of 1968" (49 U.S.C. 1671 to 1687).

224. 2 CCR 404-1-404.

225. Colo. Rev. Stat. § 25-8-101 *et seq.*

226. *Board of County Comm'rs, La Plata County, Colo. v. Bowen/Edwards Assoc., Inc.,* 830 P.2d 1045 (Colo. 1992).

227. Colo. Rev. Stat. § 29-20-101 *et seq.*

228. *Bowen/Edwards Assoc., Inc.,* 830 P.2d at 1057.

229. *Voss v. Lundvall Brothers, Inc.*, 830 P.2d 1061 (Colo. 1992).

230. *Id.* at 1069.

231. *Id.* at 1068.

232. Jefferson County, Colo., Jefferson County Zoning Resolution, Section 4: Drilling and Production of Natural Gas (1986).

233. Mesa County, Colo., Mesa County Land Development Code § 10.9.1 *et seq.* (1995).

234. *See* American Gas Association, *Survey of Underground Storage of Natural Gas in the United States and Canada (1997).*

235. *Id.*

236. OGCC Order no. 1-62 entered November 4, 1996.

237. *See* November 8, 1996, memo from George F. Moravec, Leader, Ground Water Unit, to David Holm, Director WQCD; see also memo from George F. Moravec, Leader, Ground Water Unit, to David Holm, Director, WQCD December 27, 1995.

238. *Southern Ute Indian Tribe v. Amoco Production Co.,* 874 F. Supp. 1142 (D. Colo. 1995) *rev'd* 119 F.3d 816 (10th Cir. 1997)

239. 631 So.2d 12 (Ala. 1993).

240. 619 So.2d 1305 (Ala. 1993).

241. 468 A.2d 1380 (Pa. 1983).

242. No. DV 90-120, 1992 WL 464786 (Mont. Dist. Ct. Dec. 14, 1992), *rev'd Sub Nom. Carbon County v. Union Reserve Coal Co.*, 898 P.2d 680 (Mont. 1995).

243. *Southern Ute*, 119 F. 3d at 828, n. 17.

244. Colo. Rev. Stat. § 38-1-102(1).

245. *See* Colo. Rev. Stat. § 38-1-102(1).

246. *History of Coalbed Methane in Alabama*, State Oil and Gas Board of Alabama <http://coalbed.com/history.html>.

247. *Id.*

248. *Id.*

249. *Id.*

250. *Coalbed Methane Fields of Alabama*, State Oil and Gas Board of Alabama <http://ogbweb.gsa.tuscaloosa.al.us/HTMLS/cbmflds.htm>.

251. *Coalbed Methane Resources of Alabama*, State Oil and Gas Board of Alabama <http://ogweb.gsa.tuscaloosa.al.us/HTMLS/coalmeth.htm>.

252. *Coalbed Methane Fields of Alabama*, *supra* note 250.

253. Ala. Rule 400-4-1-.01.

254. Ala. Code § 9-17-1(4) (1997).

255. Ala. Rule 400-1-1-.03(22).

256. Ala. Rule 400-4-1-.02(5).

257. Ala. Code § 9-17-2 (1997).

258. Ala. Code § 9-17-6 (1997).

259. Ala. Code § 9-17-24 (1997); Ala. Rules 400-1-2-.01; 400-4-2-.01.

260. Ala. Code § 9-17-134 (1997).

261. Ala. Code § 9-17-150(1) (1997).

262. Ala. Code § 9-17-150(2) (1997).

263. Ala. Code § 9-17-150(3) (1997).

264. Ala. Code § 9-17-152(a) (1997).

265. Ala. Code § 37-4-82 (1997).

266. Ala. Code § 37-4-80(3) (1997).

267. Telephone Interview with Chris Harvey, Administrator of Gas Pipeline Safety, Alabama Public Service Commission (May, 1998).

268. Ala. Code § 37-4-81 (1997).

269. Telephone Interview with Chris Harvey, Administrator of Gas Pipeline Safety, Alabama Public Service Commission (May, 1998).

270. *Id. See also* Ala. Code 37-4-80(6) (1997).

271. Telephone interview with David E. Boling, Assistant Supervisor, Production and Engineering, State Oil and Gas Board of Alabama (May, 1998).

272. 631 So. 2d 212 (Ala. 1993).

273. Ala. Code § 9-17-154 (1997).

274. *Id.*