

## **Financial Assurance: Environmental Protection as a Cost of Doing Business**

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# **FINANCIAL ASSURANCE: ENVIRONMENTAL PROTECTION AS A COST OF DOING BUSINESS**

## **Introduction**

The purpose of environmental financial assurance is to guarantee that a private operator can cover any present and future environmental costs of their activities. State and federal regulations generally establish what these costs are and how much assurance is required by the operator often before they can begin their operations. Despite the existence of current financial assurances, environmental reclamation is not actually guaranteed. As has recently been demonstrated in the coal industry, certain financial assurance mechanisms are less effective and others completely ineffective, especially when companies face the prospect of insolvency. Many traditional bonding mechanisms are not suited to cover the potential long-term costs required for effective environmental reclamation. Subsequently, these potential long-term costs have limited the possible assurance mechanisms available to operators. While certain financial assurance mechanisms like self-bonding poses a systemic risk to the environment and taxpayers, other mechanisms like the use of environmental trusts, may offer a commercially beneficial means to address present and future potential environmental costs.

The failure of environmental financial assurances is not limited to just the natural resource industry. However, the relatively recent bankruptcies in the coal industry has accurately illustrated the failures of self-bonding as an assurance mechanism. The use of self-bonding as the exclusive means of guaranteeing environmental reclamation has proven uniquely susceptible to complete failure. The positive attributes of such have not proven to outweigh its shortcomings. The potential decrease in an entity's financial value and subsequent insolvency demonstrate why self-bonding should not be permitted to ensure environmental reclamation.

Special environmental trusts may offer an economically viable alternative to traditional environmental assurance mechanisms. These trusts allow businesses to meet their statutory assurance obligations and provide the ability to redress future environmental degradation that may result from a business's operations. Special environmental trusts are not perfect, but present a pliable market based approach and can be available when other private assurance mechanisms are not.

This article seeks to define the major environmental assurance mechanisms in use currently with specific attention given to the practice of self-bonding and environmental trusts. In doing so, we have looked to the coal and oil and gas industries to determine any overlap in environmental assurance concerns. It is through a comparative analysis amongst these different industries that we may begin to appreciate the shortcomings of the current regulatory environment and the natural resource industry. The first part of this article discusses the main theories that impact the need and use of environmental assurance as a component of business. The second part defines the common assurance mechanisms in use. In the third part, we utilize the coal industry to illustrate the effectiveness and ineffectiveness of these mechanisms, specifically the act of self-bonding. The fourth part looks to oil and gas production and the environmental assurances common to that industry.

## **I. Theory of Environmental Reclamation**

The underlying principle for financial assurance in environmental law is that the polluter pays for their environmental costs.<sup>1</sup> This economic theory requires a business to internalize the costs derived from an activity that causes environmental harm by selling or providing a service or good that consumers demand.<sup>2</sup> If consumers do not demand the service or good, then there are no environmental costs. The greater the demand of the consumer for a service or good, the greater the economic incentive and motivation for the business and the greater the environmental cost. However, if an activity becomes economically unprofitable due to the environmental costs associated with the activity, then a business will not engage in the activity. This article does not question the polluter-pays concept, but rather seeks to evaluate the environmental laws designed to assure such cost internalization.

The most obvious environmental cost under the polluter pays principle, and what is specifically at issue here, involves a business's obligation to reclaim land damaged in the course natural resource extraction. Environmental remediation includes not only present restoration costs (i.e. returning the land to an acceptable state when mining activities have ended), but also future impact costs (e.g. water quality).<sup>3</sup> The difficulty comes in being able to predict the future as it relates to these potential costs in order to determine the amount of appropriate assurance. We have made great strides in utilizing past examples and technology to assist in forecasting future environmental harm; however, such harm will not always result. Subsequently our regulatory efforts must reflect the probability of said harm based upon the basis of known inputs and calculated results. This is akin to, a computer program that generates a desired outcome. The outcome translates into satisfactory environmental reclamation. As with any program, it will only function as well as its inputs or coding. Thus, generating the most reliable data to base the inputs on will determine the accuracy of its predictive nature. The rise of predictive analytics and big data could offer a means of improving our ability to predict environmental costs associated with a business's activity based upon the facts surrounding the operation itself (i.e., drilling depth, rock formation, location, etc.).

The risks of natural resource extraction operations have been broken down into certain and uncertain categories.<sup>4</sup> These risks can also be temporally distinguished into short, medium, and long-term environmental harms.<sup>5</sup> Certain financial assurance

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<sup>1</sup> Boris Mamylyuk, *Analyzing the Polluter Pays Principle Through Law and Economics*, 18 *Southeastern Env'tl. L.J.* 40, 41-42 (2009).

<sup>2</sup> *Id.* at 43-44 (discussing the need over time to internalize environmental costs to solve the social costs of pollution).

<sup>3</sup> Sarah Surber, *Writing a Check that the State Can't Cash: Water Pollution from Coal Mining and the Imminent and Inevitable Failure of the West Virginia Special Reclamation Water Fund*, 27 *Tul. Env'tl. L.J.* 1, 2-4 (2013) (explaining the myriad water reclamation issues West Virginia will face from past coal mining).

<sup>4</sup> See W. Blaine Early III, *Bond What You Know and Insure What You Don't: A Comment on A Market Approach to Regulating the Energy Revolution*, 45 *Env'tl. L. Rep.* 10756, 10756 (2015) (describing how some known risks, those more directly associated with the drilling process, are more certain than other uncertain risks that are less predictable like upward migration of fracturing fluids and potential seismic activity's ability to contaminate ground water through hydraulic fracturing).

<sup>5</sup> See David A. Dana & Hannah J. Wiseman, *A Market Approach to Regulating the Energy Revolution: Assurance Bonds, Insurance, and the Certain and Uncertain Risks of Hydraulic Fracturing*, 99 *Iowa L. Rev.* 1523, 1542-43 (2014).

mechanisms may be appropriate for some risks but not others. Subsequently, while there is no perfect financial assurance mechanism there are those that have proven to be more effective than others given the type of risk.

There are generally two main regulatory approaches to facilitate the internalization of environmental costs associated with private operations. They are commonly referred to as command-and-control and market-based methods.<sup>6</sup>

Command and control refers to set rules as promulgated by statute or agency action that specifically directs the actions of an operator.<sup>7</sup> The regulatory agency or legislative body acting pursuant to their imparted authority establishes requirements for private operators.<sup>8</sup> The consequences for failing to comply with such requirements can take many forms including fines, directives to comply, and suspension of activities for noncompliance.<sup>9</sup> Suspension of operations can have an obvious immediate financial impact but also may affect future operations by that private entity. An operator's past activities can be taken into account to determine stricter requirements to assure compliance. Before an operator can begin their operations via a permit, they must demonstrate they are in compliance with the established "commands" of the regulator and assure they will remain so throughout their operations. Command-and-control regulation is the most easily recognized form of regulation but has serious disadvantages. It places the onus upon the regulator to create and consistently maintain effective requirements based upon constantly changing technology and activities of the operators.<sup>10</sup> Additionally, operators have little incentive to provide the regulators with information related to their activities or technological advancements that could affect the regulations that are being promulgated.<sup>11</sup> Subsequently, there is little incentive to improve beyond the minimum standards established by the regulation.<sup>12</sup> Command and control has been said to be an effective short-term means of curbing environmental degradation but comes at a high cost of compliance and loss of long-term effectiveness.<sup>13</sup>

A market based approach concerns any situation where the free market is utilized to mitigate environmental degradation. This approach incentivizes operators to reduce external environmental costs.<sup>14</sup> There are multiple economic means that qualify for the title of market-based approaches (i.e., environmental tax, pollution credits, etc.).<sup>15</sup> Essentially, an environmental risk is assigned an economic value.<sup>16</sup> It has been argued that "[m]arket-based regulation places a lesser information burden on regulators in some respects, as agencies implementing this approach do not need to specify precisely what practices regulated entities should follow in many and diverse technical situations, but rather they

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<sup>6</sup> *Id.* at 1547-49.

<sup>7</sup> *Id.* at 1547.

<sup>8</sup> *Id.*

<sup>9</sup> *Id.*

<sup>10</sup> *Id.* at 1548.

<sup>11</sup> *Id.*

<sup>12</sup> *Id.* at 1548.

<sup>13</sup> See Richard B. Stewart, *Models for Environmental Regulation: Central Planning Versus Market-Based Approaches*, 19 B.C. Env'tl. Aff. L. Rev. 547, 551 (1992).

<sup>14</sup> *Id.* at 1549.

<sup>15</sup> Eric W. Orts, *Reflexive Environmental Law*, 89 Nw. U. L. Rev. 1227, 1242-47 (1995).

<sup>16</sup> Dana & Wiseman, *supra* note 2, at 1548-49.

only have to put a price the costs of risk of environmental harm.”<sup>17</sup> Theoretically, the market-based approach offers an ongoing incentive to private operators to reduce environmental risks through innovation and their own behavior and reduces the cost of compliance.<sup>18</sup>

The market approach is easily confused with that of command and control from which it is rooted. Drawing a distinction between these two theories of regulation is akin to comparing civil code to the common law legal systems. Regardless of how financial assurance is labeled, a particular assurance mechanism is only effective if it appeals to both, the public’s interest in environmental quality and the business’s economic interests.

Anytime one describes a reason, justification, or approach as being “market based,” the common assumption is that it is better for business. However, this assumption may not always be true. Utilizing the private sector as a means of accomplishing public ends or for sharing oversight responsibility may merely add unnecessary complexity and avoidable costs. However, professors Dana and Wiseman adeptly described the use of environmental insurance, a more market-based approach though grounded in command and control, as a compliment to traditional command and control regulations to provide for certain long-term risks associated with hydraulic fracturing operations. The use of mandatory environmental insurance, as the authors describe, invokes several points of contention.<sup>19</sup> Most governmental entities use the more traditional command-and-control regulatory structure to regulate the industries discussed herein<sup>20</sup>, but the financial assurance mechanisms that are invoked, like described by Dana and Wiseman, can be analyzed through a market-based perspective.

Financial assurance mechanisms are often viewed “as an important complement to liability rules, restoration obligations, and other compliance requirements.”<sup>21</sup> Those assurance mechanisms that utilize private third-party insurers, sureties, or banks invoke the scrutiny of these private entities upon the operators’ activities to ensure that their own economic interests are preserved. In other words, instead of a governmental entity incurring all of the risk associated with an operator’s activities, these private third-parties perform their own financial and environmental risk assessments and impose their own requirements upon the operators based upon a market-based risk/return strategy. This type of “market based” approach is often touted to be more reflective of the potential environmental harm that could exist based upon the factors associated with the particular type of activity. However, where a party is permitted to self-bond, there is no third party entity and thus, no market check.

The number of and level of regulatory authorities may affect the effectiveness of environmental assurance mechanisms. Redundant or overlapping regulations may be more

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<sup>17</sup> *Id.* at 1549.

<sup>18</sup> *Id.*

<sup>19</sup> *Id.* at 1571. The authors argue that these issues or objections are rebuttable. *Id.* At 1572-86. The same general points raised relating to unconventional oil and gas exploration can be used regarding any new form of environmental assurance mechanism: commercial unavailability of the mechanism, the mechanism would “chill” economic activity, effectiveness of the mechanism to accomplish intended purpose, the mechanism unfairly disadvantages differing sized entities, and does the mechanism correctly incentivize/encourage the desired actions of an operator.

<sup>20</sup> *Id.* at 1549.

<sup>21</sup> James Boyd, *Financial Responsibility for Environmental Obligations: An Analysis of Environmental Bonding and Assurance Rules 1* (2001), <http://www.ucl.ac.uk/cserge/Boyd.pdf>.

costly for industry and for the regulatory body.<sup>22</sup> Redundant regulations must be distinguished with federal minimums that enable the states to recognize and implement rules that best fit the interests of their specific state. The debate between the role federal regulators, state regulators, or a combination of both should play in assuring environmental quality is ongoing and exemplified in this context. As illustrated below, the oil and gas industry and surface coal mining operations follow different regulatory structures. Recognizing autonomous state authority as it relates to environmental regulation raises issues that may compromise state regulators due to political pressures in that state or too close of a relationship with the private industry they regulate. Additionally, states are sometimes attributed with lacking the necessary resources to monitor and enforce regulations by themselves. Contrastingly, a “one size fits all” approach is rarely effective. Preserving some state autonomy is advantageous as long as there are meaningful regulations and federal resources available to assist in meeting these regulations.

Insolvency or outright abandonment by operators pose the greatest potential environmental harm. In a bankruptcy action, the unfulfilled environmental reclamation obligations can easily become a cost borne by society instead of the operator internalizing such.<sup>23</sup> This is no more evident than the existence of acts that make funds available for retroactive site cleanup across multiple industries. Where an operator self-bonds and files for bankruptcy, there is often little to no funds for reclamation. Furthermore, creditors and insiders often have their pick of the assets in a reorganization due to the leverage these entities have over the regulators. Insolvency of self-bonded operators allows the entity to externalize the environmental costs that should have been internally absorbed. “[B]ankruptcy filings increase[d] by 46 percent in 2015 – due primarily to a challenging energy sector environment.”<sup>24</sup> “79 publicly traded companies (with \$81 billion in combined pre-petition assets) are revealed to have filed for Chapter 7 or Chapter 11 protection in 2015.”<sup>25</sup> “Furthermore, eight of the [ten] largest Chapter 11 filings were initiated by companies operating in the oil and gas, mining and related sectors — a substantial 51 percent of the total public bankruptcies seen in 2015. Overall, 40 of the 79 filings involved oil and gas and mining companies.”<sup>26</sup> Requiring effective environmental financial assurance before an entity is allowed to begin operations can protect against operators escaping their responsibilities and imposing a cost upon society. Preventing the abandonment of an operator’s environmental obligations as a means of safeguarding the public purse is as important of a justification in this context as it is for preserving sovereign immunity. Here, the costs of reclamation not internalized by the operator requires public funds to be diverted; thereby, resulting in society unable to meet other needs or debt obligations. If these funds are not utilized for reclamation, then the public suffers a loss in environmental degradation most commonly in the form of water contamination.

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<sup>22</sup> See Dana & Wiseman, *supra* note 2, at 1546-47 (evaluating the use of a single regulator, or a federal regulator, versus multiple sets of regulators, such as state and federal regulators, who must operate in different political environments).

<sup>23</sup> Boyd, *supra* note 21, at 1 (“Bankruptcy, corporate dissolution, and outright abandonment are a disturbingly common means by which polluters avoid responsibility for environmental costs.”).

<sup>24</sup> Fraser Tennant, Bankruptcy Snapshot Reveals US Filings Up 46 Percent in 2015, *Fin. Worldwide*, Jan. 26, 2016, <https://www.financierworldwide.com/fw-news/2016/1/26/bankruptcy-snapshot-reveals-us-filings-up-46-percent-in-2015-with-energy-a-big-loser>.

<sup>25</sup> *Id.*

<sup>26</sup> *Id.*

## II. Common Environmental Financial Assurance Mechanisms

A guarantee to do something is assurance that what is being guaranteed will in fact be done. However, one should view certain guarantees by a promising party skeptically. This has given rise to a variety of financial assurance mechanisms that are designed to ensure promised performance. Since the focus of this article concerns environmental reclamation or rehabilitation, then the assurance mechanisms discussed herein are those most utilized by industries who disturb the natural environment and must guarantee they will cleanup after themselves. The most common mechanisms for environmental financial assurance<sup>27</sup> include surety bonds, cash, letters of credit, bond pools, insurance, trust funds, and self-guarantees or what is known as self-bonding.<sup>28</sup> However, not all of these financial assurance forms are used in every industry, nor are they all created equally.

### A. Surety Bonds

Environmental suretyships involve three parties: the “principal” as the primary obligor (operator seeking a permit), the “surety” (bonding company or financial institution) as the secondary obligor, and the regulatory agency who is the “obligee.” The principal is originally responsible to the agency and if they cannot satisfy their obligations then the surety is liable to the agency. A surety, the issuer of the guarantee, can then seek to recover from a principal whose default on the principal’s obligations caused the surety to be liable.<sup>29</sup> Even though bonding companies (sureties) can work through and with insurance groups, a surety should not be confused with an insurer. An insurance relationship is between only the principal and insurer where the insurer agrees to assume responsibility pursuant to an insurance policy. Unlike in an insurance arrangement, a surety is secondarily liable when the principal is in default; whereas, the insurer can seek recovery from the principal for any liability incurred by the surety.<sup>30</sup> Accordingly, most sureties/bonding companies will require the principal to execute an indemnification agreement and post collateral that will be released upon successful completion of the principal’s obligations.

A surety essentially promises to be liable for the acts or failure to act of the party who sought the assurance. Issues arise when the surety and the party who sought the assurance have a close relationship. A corporate guarantee by a self-interested corporation

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<sup>27</sup> Financial assurance in the context of environmental protection is also referred to as: “bonding,” “reclamation bonding,” “environmental surety,” “reclamation surety,” and often by other descriptive terms that illustrate assurance for reclamation efforts.

<sup>28</sup> BILL BRANCARD & CAROL LEACH, ROCKY MOUNTAIN MINERAL LAW INST., STRUCTURING FINANCIAL ASSURANCE FOR RECLAMATION: A REGULATOR'S PERSPECTIVE 19-1 (2006).

<sup>29</sup> ROCKY MOUNTAIN MINERAL LAW INST., ENVIRONMENTAL/RECLAMATION FINANCIAL ASSURANCES: BACK TO THE FUTURE 23-1 (2010) (“The surety relationship is a three-party relationship wherein the surety can seek reimbursement from the principal for amounts paid due to the principal's default.”).

<sup>30</sup> Environmental insurance is viewed as a means of calculated risk. Insurance is a two-party contract; whereby, the risk is spread amongst other insured. Should the insurer’s obligation arise under the contract, the insurance company pays without recourse against the insured.

(i.e. a parent company) carries significant risks, not the least of which is the prospect of insolvency of the surety and the obligor.

Corporate surety bonds are effective and easy for agencies to monitor since the onus of financial loss falls upon the surety. It is the surety that must consistently monitor the financial health of the principal and who bares the risk of a potential default by an insolvent principal. Subsequently, surety bonds may not necessarily be available to all principals depending upon the creditworthiness of the principal and the surety's threshold for risk.

## **B. Letters of Credit**

A financial institution is the entity who holds the title of "issuer" on behalf of the private company as the "applicant." The letter of credit is extended to the third party agency as the "beneficiary," who can request payment in the form of a "draw" pursuant to the underlying agreement between the applicant and beneficiary. The issuer must honor a beneficiary's draw request as long as the letter of credit has not expired. The issuer will often require an annual fee to be paid along with indemnification and/or a security interest.

## **C. Bond Pools**

Bond pools come in a variety of forms. They can be offered as an alternative to individual financial assurance (alternative bonding mechanism) or as a general safety net should there be any individual permittee reclamation shortfalls in a state. As an alternative bonding mechanism, a state may operate a bond pool as an alternative to a traditional surety relationship. A company's participation may be voluntary, but the state may only approve applicants who meet certain ongoing qualifications or are limited to those companies who have a proven record in the state. This pooling of resources is similar to how municipalities raise capital.<sup>31</sup> Issues can arise when a company's liabilities exceed or require too much of the bond pool, thus preventing the pool's ability to cover any other liabilities of the other participating companies. This form of bonding is financed through set pay-ins by participating bond members that are often at reduced rates than other traditional suretyship arrangements.

Bond pools can also be used as an ex post safety fund to cover the costs of any outstanding remedial obligations. In this way, the pool is not the primary means of assurance but is used as an additional source of funds should the need arise. A state usually funds bond pools through a tax on material extracted, set fees, or through collecting penalties from entities. In an industry wide downturn, these bond pools can be susceptible if multiple claims being made in a short time period.

## **D. Insurance**

Be it optional or mandatory insurance, the use of a contractual relationship between an operator and an insurer is exclusive to the contracting parties. Environmental insurance has the benefit of shifting the liability for environmental costs to a private entity, the

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<sup>31</sup> Municipalities mainly use bond pools together with other municipalities that share in the capital raised by the bonds. A bond pool allows smaller municipalities with low borrowing requirements to reduce their underwriting expenses and interest rates by joining in with other municipalities.

insurer, along with the burden of monitoring operator compliance. Since private insurers make a business decision in assessing risk-loss and setting premiums, the use of insurance has been deemed more of a “market approach.”<sup>32</sup> However, the cost of attaining insurance can be high, if not cost prohibitive, in many circumstances.

### **E. Trust Funds**

Trusts can be utilized to provide a more flexible means of environmental reclamation. Here, a private company, as the “settlor” creates and funds a trust for the benefit of the agency who should be the only “beneficiary.” A third party acts as the “trustee” who manages the trust corpus pursuant to the trust instrument that must comply with the requirements established by the beneficiary. The trust can hold diverse property interests and an operator can add additional funds based upon the expansion of an operator’s activities. Trusts also have the ability to generate interest or income on the contributions, thereby allowing those monies to be used in a variety of ways. The trust terminates and its assets or corpus are returned to the business (settlor) upon satisfactory reclamation or pursuant to the terms of the trust instrument itself. Monies can even be returned incrementally over time based upon stages of completed obligations. The number and amount of the contributions depend upon the trust instrument itself, but should be monitored so the accumulated amount is enough to cover costs of existing reclamation and projected future costs. Where a business has failed to make consistent contributions pursuant to the trust instrument or the contribution amounts are not enough to cover the potential long-term liabilities, a business’s insolvency can result in unreclaimed properties. Further issues arise where the business acts as the trustee themselves.<sup>33</sup> In such scenarios, the trust mechanism may not be so transparent leaving open more chance of an underfunded or mismanaged trust. As long as the adverse environmental effects can be abated, then the trust will exist and any excess funds can also be released to the settlor. A trust also has the added benefit of growing in value with proper management.

### **F. Self-Bonding**

Self-bonding allows a private entity to assure that it will meet its future reclamation responsibilities by relying upon its own financial position. If the private operator cannot fulfill its reclamation responsibilities due to a loss of its financial value, agency regulators have no recourse against the operator. Such a loss in value often manifests itself when the company files for bankruptcy. Self-bonding not only requires the agency to assess the financial integrity of the private entity initially but also to continually monitor the entity’s financial position until their reclamation efforts have concluded. This presents multiple issues. Regulating agencies are not equipped to make corporate valuations or engage in continued monitoring of the financial health of private entities; thus, the agency must take the private entity at its word. This is magnified by the fact that many mining activities are commodity-based and subject to significant market swings. Additionally, if a private entity’s financial position becomes dire before completing its reclamation obligations, then

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<sup>32</sup> See Dana & Wiseman, *supra* note 2, at 15.

<sup>33</sup> This situation is sometimes referred to as a “first party trust.”

any agency action to require more tangible assurance may push the private entity further down the road of insolvency and ensure the entity's failure to make any reclamation.

Issues of self-bonding are amplified when the operator seeking approval to self-bond utilizes the financial standing of an affiliated entity, thus creating a tower of cards. When one card is removed, the most valuable card in this context, then an entire corporate organization - parent company, subsidiaries, affiliated entities are vulnerable to insolvency. The borrowing of balance sheets amongst these entities only compounds the potential harm from the use of self-bonding.

Self-bonding does allow a lower barrier to entry for operators who already face significant upfront infrastructure spending or may not be able to find another means of assuring performance through another means as described above. However, allowing larger entities to self-bond and not smaller entities could act as a barrier to entry. Self-bonding is not uniformly permitted amongst activities that require environmental reclamation. In light of the many issues that exists with self-bonding, a migration away from this form of assurance is advisable.

### **III. Surface Coal Mining**

Surface coal mining has a significant impact upon the environment. Subsequently, it often invokes more attention than other activities that also involve the extraction of natural resources. However, coal like any other natural resource is a commodity. As a whole, commodities are generally more susceptible to market fluctuations than other industry sectors. The lack of product diversification contributes to this volatility and the higher chance of insolvency for those businesses engaged in these industries. Subsequently, where one of these industry participants pledges its own assets for financial assurance one day, the entity may fall below the minimum regulatory standards or worse the next day. As evidenced by the coal industry, where a particular industry has undergone consolidation and the resulting fewer actors have higher debt loads, devaluation of the primary product will have a cascade affect across an entire industry. The industry often takes on a "too big to fail" persona that comes at the cost of environmental reclamation. Insolvency of one company can be difficult, but where an entire market sector faces bankruptcy then the result could be disastrous. This unfortunate chain of events necessitates an evaluation of the existing environmental assurance mechanism.

#### **A. Surface Mining Control and Reclamation Act ("SMCRA")**

The Surface Mining Control and Reclamation Act of 1977 ("SMCRA"), was passed in response to concerns over the adverse impacts of coal mining activities.<sup>34</sup> SMCRA created the Office of Surface Mining Reclamation and Enforcement ("OSMRE") to ensure effective reclamation.<sup>35</sup> OSMRE is the regulatory authority responsible for administering

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<sup>34</sup> See Surface Mining Control and Reclamation Act of 1977 §101(d), 30 U.S.C. § 1201(d) (1977) (mentioning that due to "the expansion of coal mining to meet the [n]ation's energy needs makes even more urgent the establishment of appropriate standards to minimize damage to the environment").

<sup>35</sup> See *id.* §§ 1211, 1265 (requiring that "[t]he Secretary, acting through the [o]ffice, shall administer the programs for controlling surface coal mining operations").

regulations that comply with SMCRA.<sup>36</sup> Although OSMRE is the primary regulatory agency responsible for regulating surface mining and reclamation, states and Indian tribes can be approved by OSMRE to issue permits and enforce their own regulations.<sup>37</sup> This sharing of responsibility, by which a federal act establishes minimum requirements and delegates regulatory authority to the states, is commonly referred to as “cooperative federalism.”<sup>38</sup> Before a state or Indian tribe can be approved as the primary regulatory entity, they must demonstrate that their regulatory plans comply with SMCRA and the rules issued by OSMRE.<sup>39</sup> Twenty-four (24) states have primacy responsibility and at the time this article was written, nineteen (19) of these states allow for self-bonding.<sup>40</sup> For those state that do not seek primacy responsibility and any mining operations on federal land, OSMRE retains primary responsibility. OSMRE regularly evaluates state primacy programs regarding their administration, implementation and maintenance of approved regulatory programs.<sup>41</sup>

SMCRA also created the Abandoned Mine Land Trust Fund (“AML”) to reclaim abandoned or inadequately reclaimed mined areas existing prior to 1977.<sup>42</sup> The AML is funded through a reclamation fee on underground and surface coal mining.<sup>43</sup> Originally, the fees were set at \$0.35 per ton of surface mined coal and \$0.15 per ton of coal extracted from underground mines.<sup>44</sup> These fees were reduced ten percent in 2008 to \$0.315 and \$0.135 per ton respectively.<sup>45</sup> The most recent reauthorization of SMCRA further reduced the original fees in 2013 by 20% to \$0.28 per ton of surface mined coal and \$0.12 per ton of coal mined from underground.<sup>46</sup> OSMRE collects these fees and distributes the monies through grants to states with Abandoned Mine Reclamation Programs.<sup>47</sup>

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<sup>36</sup> *See id.* (dictating that the Secretary through the Office is the person who must administer the programs in this chapter).

<sup>37</sup> *Id.* § 1253.

<sup>38</sup> *Bragg v. W. Va. Coal Ass’n*, 248 F.3d 275, 288 (4th Cir. 2001) (citing H.R. Rep. No. 95-218, at 57 (1977), reprinted in 1977 U.S.C.C.A.N 593, 595).

<sup>39</sup> 30 U.S.C. § 1253.

<sup>40</sup> Office of Surface Mining Reclamation and Enforcement, Regulating Coal Mines, <https://www.osmre.gov/programs/rcm.shtm> (last visited Dec. 27, 2016). States with primacy include: Alabama, Alaska, Arkansas, Colorado, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Mississippi, Missouri, Montana, New Mexico, North Dakota, Ohio, Oklahoma, Pennsylvania, Texas, Utah, Virginia, West Virginia and Wyoming. *Id.*

<sup>41</sup> 30 C.F.R. §§ 733.11-12 (2016).

<sup>42</sup> 30 U.S.C. §§ 1231(a)-(c); Abandoned Mine Land Trust Fund, <http://epcamr.org/home/content/legislative-front-and-petitions/abandoned-mine-land-trust-fund/> (last visited Jan. 16, 2017) (“Since 1977 \$3.9 [billion] has been spent on the construction of completed reclamation projects. . . . [A]n estimated, outstanding \$9.8 [billion] required to reclaim remaining coal[-]related AML areas.”)

<sup>43</sup> 30 U.S.C. §§ 1231(b).

<sup>44</sup> Surface Mining Control Reclamation Act of 1977, Pub. L. No. 95-87, § 402(a), 91 Stat. 445, 457 (1977); Abandoned Mine Land Funding, <http://www.dep.pa.gov/Business/Land/Mining/AbandonedMineReclamation/AMLProgramInformation/Pages/AMLFunding.aspx> (last visited Jan. 16, 2017).

<sup>45</sup> The SMCRA Amendments Act of 2006, Pub. L. No. 109-432, § 402(a) (2006); Abandoned Mine Land Funding, *supra* note 44.

<sup>46</sup> 30 U.S.C. § 1232(a).

<sup>47</sup> *Id.* § 1232(g).

The purpose of SMCRA is to strike a balance between the economic interests of coal and its use as an energy source while also protecting the public and environment.<sup>48</sup> To achieve these ends, an operator must first submit a reclamation plan as a part of their permit application to the regulatory agency for approval.<sup>49</sup> The reclamation plan must identify the lands subject to the mining operations, existing conditions of the lands, proposed use of land following reclamation, engineering techniques used in the mining and reclamation process, and other considerations.<sup>50</sup> If reclamation is impossible, then no permit can be granted.<sup>51</sup> However, the lands do not have to be restored to the same state they were in before the mining operation.<sup>52</sup>

After the responsible regulatory agency grants the permit, but before it is issued, the operator must submit a performance bond as financial assurance.<sup>53</sup> The responsible regulatory agency must approve the reclamation bond in its amount and form before the permit is issued.<sup>54</sup> The government requires financial assurance from the operators to guarantee that the government will be able to cover the costs of the reclamation efforts laid out in the reclamation plan should the operator not do so.<sup>55</sup> The regulating agency ultimately determines the amount of the reclamation bond.<sup>56</sup> This determination depends upon the requirements of the approved reclamation plan and the probable difficulty in reclaiming the permitted area considering “such factors as topography, geology, hydrology, and revegetation potential.”<sup>57</sup> No one permit for an entire area shall be issued for a bond of less \$10,000.<sup>58</sup> Although the amount of the bond may be based upon the estimate made by the mining applicant, it is not limited to just the applicant’s projections.<sup>59</sup> The estimated cost of reclamation by the agency would often exceed the costs of the mining permittee given that the agency would have to hire a contractor who would not have the benefit of any existing equipment onsite or the familiarity of the site itself unlike the mining permittee.<sup>60</sup> Moreover, an operator’s estimates for reclamation will be far less than that of the actual costs borne by the state given the added administrative expenses associated with selecting and contracting with another entity.

Instead of posting a single bond to cover all, initial, and projected operations in a particular area, mining permittees may opt for cumulative or incremental bonding as a more

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<sup>48</sup> *Id.* § 1202(f).

<sup>49</sup> *Id.* § 1257(d).

<sup>50</sup> *Id.* § 1258(a).

<sup>51</sup> *See id.* § 1260(b)(2) (requiring that the applicant prove that reclamation can be accomplished).

<sup>52</sup> *See id.* § 1258(a)(3) (mentioning that the permit application must disclose what the purpose of the land will be after reclamation including alternative uses for the reclaimed land and how it fits in with current land use policies and plans).

<sup>53</sup> *Id.* § 1259(a); L. Thomas Galloway Thomas, *The Bonding Program Under the 1977 Surface Mining Control and Reclamation Act: Chaos in the Coalfields*, 89 W. Va. L. Rev. 675, 678 (1987) (“The requirement of a performance bond for each operation permitted under the 1977 Act was thought by Congress to be a pivotal component of a nationwide program to control the impacts of mining activities.”).

<sup>54</sup> 30 U.S.C. § 1259(a).

<sup>55</sup> *Id.*

<sup>56</sup> *Id.*; 30 C.F.R. § 800.14(a)(1) (year).

<sup>57</sup> 30 U.S.C. § 1259(a); 30 C.F.R. § 800.14(a)(2)-(3).

<sup>58</sup> 30 U.S.C. § 1259(a).

<sup>59</sup> 30 C.F.R. § 800.14(a)(4).

<sup>60</sup> Dragoo et al, ROCKY MOUNTAIN MINERAL LAW FOUND. No. 4 RMMLF-INST Paper No. 7, COAL MINE CLOSURE, RECLAMATION AND FINANCIAL ASSURANCE ## (2009).

cost effective approach.<sup>61</sup> Cumulative bonding involves the posting of a bond to cover the initial areas to be disturbed; and as the operations grow to encompass a larger area, the bond is increased as well.<sup>62</sup> Incremental bonding utilizes a series of separate bonds based upon a phased completion schedule.<sup>63</sup> These approaches are more cost effective because the mining operator is able to decrease the initial cost burden associated with bonding and initiating operations. Regardless of the approach taken, the regulatory authority is responsible for periodic review of posted bonds and can adjust the amount of the bond to reflect when the “affected land acreages are increased or decreased or where the cost of future reclamation changes.”<sup>64</sup>

A mining permittee may assign or otherwise transfer their rights granted under a mining permit pursuant to written regulatory approval.<sup>65</sup> A mining company remains liable on their bond for the extent of the permitted mining and reclamation efforts including any revegetation requirements under SMCRA.<sup>66</sup> A mining company remains liable for a former mine after the operator’s reclamation work is complete for a minimum period of time.<sup>67</sup> A performance bond may also be released in phases depending upon the progression of an applicant’s reclamation efforts.<sup>68</sup>

If a regulating agency finds the mining permittee in noncompliance (through refusal or inability to reclaim, violates the terms of the permit, or defaults on the conditions under which the permit was granted), then the operator will forfeit its bond.<sup>69</sup> The responsible regulatory authority then must begin procedures for the forfeiture of part of or the whole performance bond and takes the appropriate steps to apply such proceeds to the reclamation of the permitted area.<sup>70</sup> In the event that the bond is insufficient to cover the costs of the permitted reclamation, the regulatory authority may recover from the permittee any costs in excess of the forfeited bond.<sup>71</sup>

## **B. Financial Assurance Mechanisms under SMCRA**

SMCRA permits the use of surety bonds, collateral bonds, self-bonding or a combination of these performance bond forms.<sup>72</sup> Each state is permitted to set its own bonding standards. This has led to some differences amongst the states. Despite these differences, common issues necessitate a reevaluation of certain financial assurance practices.

### **1. Surety Bonds**

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<sup>61</sup> 30 U.S.C. § 1259(a) & (c); 30 C.F.R. § 800.11(d).

<sup>62</sup> 30 C.F.R. § 800.11(b), (d).

<sup>63</sup> *Id.* § 800.11(b), (d).

<sup>64</sup> 30 U.S.C. § 1259(e) (year).

<sup>65</sup> *Id.* § 1261(b).

<sup>66</sup> *Id.* § 1259(b).

<sup>67</sup> *E.g.*, 312 IND. ADMIN. CODE 25-5-7 (year) (extending liability past when the reclamation work is completed); N.M. Stat. § 69.25A-19(B)(20) (year) (extending the limit for liability for five full years or ten full years depending on the average annual amount of precipitation in that area).

<sup>68</sup> 30 U.S.C. § 1269(c); 30 C.F.R. § 800.40(a).

<sup>69</sup> 30 C.F.R. § 800.50(a).

<sup>70</sup> *Id.* § 800.50(b).

<sup>71</sup> *Id.* § 800.50(d).

<sup>72</sup> 30 U.S.C. § 1259(b), (c); 30 C.F.R. § 800.12.

As described above, a coal mining company executes a surety bond with a private entity to assure environmental reclamation. The surety bond is an indemnity agreement that is made payable to the regulatory authority should the coal mining company not satisfy its reclamation obligations.<sup>73</sup> These surety bonds are non-cancellable during their terms for lands that are being disturbed.<sup>74</sup> The surety must be licensed to do business in the state of the mining operation.<sup>75</sup> Sureties must not only comply with agency regulations, but also state law where the mine is being operated as it concerns commercial principles, contracts, property, surety, and any other state regulatory interests involving mining.

To attain a surety bond, a coal mining permittee must pay a premium that is “calculated as a percentage of the bond amount and is not directly related to the risk of loss or damage resulting from mining operations.”<sup>76</sup> In calculating the premium amount, the issuing corporate surety may take into account the “permittee’s credit rating and financial condition.”<sup>77</sup> The corporate surety may require an annual fee to maintain the bond. The corporate surety may also require contractual assurances from the mining permittee that the mining permittee is legally obligated to the corporate surety for any monies the surety must pay out on the permittee’s behalf.<sup>78</sup>

The availability and use of surety bonds in the surface mining industry appears to be declining. This decline is probably do to the length of time necessary to complete all phases of the reclamation process, especially the final revegetation phase. Additionally, the bonds are non-cancellable for the duration of the reclamation process. This process has become more complicated with the addition of the long-term treatment obligations involving water quality issues like acid mine drainage and the presence of selenium.<sup>79</sup> Surety bonds were traditionally utilized for short-term projects with defined release dates and do not necessarily lend themselves to the potential ongoing liabilities associated with water quality issues. Since the bonds are non-cancellable for an unfixed time depending on reclamation, the bonds may never be released. Surety bonds are often thought of as a credit instrument without a risk of loss. Moreover, the surety industry correctly perceives a longer reclamation process as a financial risk that may best be avoided by not acting as a surety. Subsequently, the mining industry is effectively short a mechanism for financial assurance.

## 2. Collateral Bonds

Collateral bonding under SMCRA involves the deposit of something of value with the regulatory authority or made payable to the regulatory authority upon demand.<sup>80</sup> These deposits can take on a variety of forms such as cash deposits, endorsed government bonds, negotiable certificates of deposit, irrevocable letters of credit, perfected security interest in

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<sup>73</sup> 30 C.F.R. § 800.5(a).

<sup>74</sup> *Id.* § 800.20(b).

<sup>75</sup> *Id.* § 800.5(a).

<sup>76</sup> Dragoo et al, ROCKY MOUNTAIN MINERAL LAW FOUND. No. 4 RMMLF-INST Paper No. 7, COAL MINE CLOSURE, RECLAMATION AND FINANCIAL ASSURANCE ## (2009).

<sup>77</sup> *Id.* at ##.

<sup>78</sup> *Id.* at ##.

<sup>79</sup> *See* 30 C.F.R. § 780.21(h). (requiring that permit applications require a hydrological reclamation plan).

<sup>80</sup> 30 C.F.R. § 800.5.

real property, or other investment grade securities.<sup>81</sup> Except for credit, cash accounts, and real property, the posted collateral is valued at its current market value and not necessarily its face value.<sup>82</sup>

If real property is used as a collateral bond, then the permittee must grant the regulatory authority a perfected first lien security interest in the property that enables the regulatory authority to sell the property should there be a forfeiture.<sup>83</sup> The fair market value of the real property must be determined by a certified appraiser and can include land covered by the permit as long as it is not disturbed under any permit while it is acting as collateral.<sup>84</sup> The posted bond value can be reevaluated at any time and subsequently increased or decreased if necessary by the regulatory authority.<sup>85</sup> The posted collateral should also be sufficient to cover the legal and liquidation fees, value depreciation, marketability, and fluctuations that could affect the amount of money available for the regulatory authority to complete any reclamation.<sup>86</sup>

Collateral bonds, regardless of the form, tie up assets that may be necessary to fund mining activities or that could be used for reclamation. As collateral, these securities cannot be leveraged to meet other liquidity needs of a mining operation. Because of this, collateral bonding may only be available to a select group of mining companies.

### **3. Trust Funds**

The use of a trust provides an appealing alternative to traditional bonding mechanisms. For example, sureties may be hesitant to involve themselves where a bond may not be released very quickly given the extent of the excavation and potential long term liability, while an environmental trust can allow for the continued long-term treatment of mine sites without involving a credit instrument. Additionally, trusts enable contributed assets to grow or at least avoid loss due to inevitable inflation unlike assurance bonds. If the trusts are managed by a private trustee, they may be able to generate greater returns than those managed by a governmental entity.

The terms of the trusts can be negotiated with the mining company to permit gradual contributions and an overall more cost effective means of assurance. These negotiations culminate in a consent order and an agreement between the mining company, the private trustee, and the governmental agency who becomes the irrevocable beneficiary. The agreement is used as the basis of the trust instrument itself. The private trustee is subject to approval by all parties. A trust may hold cash, real property, securities, certificates of deposit or any other interest. They can also be assigned bond proceeds and structured to work in concert with other assurance mechanisms.

The obvious issues associated with utilizing a trust is setting the parameters for asset investment that limit risk and provide for appreciation, contribution schedules, trustee selection, fees limitations, and potential tax consequences associated with the operation of a trust. The tax issue could be addressed as a means of incentivizing the use of

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<sup>81</sup> § 800.5(1)-(6).

<sup>82</sup> § 800.21(a).

<sup>83</sup> § 800.21(c)(1).

<sup>84</sup> § 800.21(c).

<sup>85</sup> § 800.21(e)(2).

<sup>86</sup> § 800.21(e)(1).

environmental assurance trusts. For example, nontaxable charitable trusts can be created, thus income from the trust will not be taxed. Otherwise, the trust instrument can specify that the permittee is responsible for any of the trusts earnings. Trustees can be compensated from the trust itself and can be required to provide quarterly or even monthly statements regarding trust balances and activity. Another drawback of trusts is the necessary contribution of the mining company initially and continued contributions with each phase of their operations. Even accounting for long-term treatment of the water quality due to acid mine drainage (AMD) and other pollutants, these contributions can be tiered given the time value of money. However, the contribution schedule is important because if a permittee does not follow through on their reclamation obligations, only the monies that have already been transferred along with any accumulated interest will be available. Where traditional bonding mechanisms may involve an irrevocable transfer of monies to secure assurance, it is only a small fraction of what is required. A trust requires a larger sum upfront, although it can be returned upon environmental satisfaction. This can be addressed through the trust initially accepting a bond or even offering a bond in conjunction with the trust mechanism itself. The bonds can then be released first, based upon the agreed upon stages of reclamation. Trusts naturally favor larger mining operations with multiple excavation sites because they can be organized under a single trust and take advantage of the benefits of larger sums of money through decrease trust fees and ease of future mining permitting if the monies were allowed to automatically reinvest. However, smaller permittees can pool their monies to be collectively managed in a single trust and also take advantage of decreased fees.

The use of trusts for mining reclamation is not new.<sup>87</sup> However, regulatory authorities should promote and expand the use of trusts as a means of financial assurance as a viable way to accomplish environmental reclamation given existing drawbacks such as the unavailability of traditional mechanisms, insolvencies, and long-term treatment ineffectiveness.

#### **4. Bond Pools**

The use of bond pools as a means of sole financial assurance is problematic. Often, these bond pools take in less money than is necessary to fund adequate reclamation activities. If one mine site requires long-term reclamation, a significant portion of the fund may be lost. This would compromise the integrity of the entire fund and leave it susceptible when there are multiple mine forfeitures within a short time period. In many states, participation is open to any company but subject to approval based upon applicants past experience, financial health, and reclamation record. Ohio's alternative bonding system requires companies with less than five years of mining history in its state to post a full cost bond, but those who meet this five-year mark can opt for either the full cost bond or bond pool.<sup>88</sup>

However, the use of a pooled source of monies that could be tapped only in emergency situations as a last resort could be an effective safety net. For example, West Virginia has a Special Reclamation Fund (SRF) that steps in to reclaim properties and water

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<sup>87</sup> Clean Streams Foundation, Inc., <http://www.cleanstreams.net/home> (last visited March 6, 2017) (serving as a trustee for funds that provide environmental reclamation services from the assets of these trusts).

<sup>88</sup> OHIO REV. CODE ANN. § 1513.08(C)(2) (2009).

from mine sites where the operator has filed for bankruptcy or abandoned the site.<sup>89</sup> The SRF is charged with the reclamation of mines permitted since August 1977 and is funded through forfeited bond collections, civil penalties and the Special Reclamation Tax on mined coal.<sup>90</sup> Bond pools should be looked to as an accompaniment to trust funds or another assurance mechanism that is for the total cost of reclamation. A group of companies could be part of a bond pool cover the costs of any reclamation shortfalls with a state's boundaries or to cover the costs of any reclamation should a permittee fail to perform any of its reclamation responsibilities.

## 5. Self-Bonding

SMCRA also permits a mining company to pledge their own security as assurance for reclamation. A private entity may become self-bonded if they “demonstrate[] to the satisfaction of the regulatory authority the existence of a suitable agent to receive service of process and a history of financial solvency and continuous operation sufficient for authorization to self-insure or bond such amount[.]”<sup>91</sup> As of March 2016, it is estimated that there are \$3.6 billion of self-bonded obligations amongst multiple states.<sup>92</sup> Of which, \$2.4 billion was held by coal companies currently in bankruptcy.<sup>93</sup> Unlike states under SMCRA, the Bureau of Land Management (“BLM”) has not permitted the use of new self-bonding or corporate guarantees since 2000.<sup>94</sup>

OSMRE permits the regulatory authority, be it a federal or state agency, to allow for self-bonding as long as the applicant has been in continuous operation for at least five years, designates an agent to receive process in the state of mining, provides evidence of financial solvency, and submits certain financial statements.<sup>95</sup> Financial solvency must be proven through a credit rating of A or higher for its most recent bond issuance.<sup>96</sup> It can also be proven by a net worth of at least \$10 million with a ratio of total liabilities to net worth of 2.5 times or less along with a ratio of current assets to current liabilities of at least 1.2 times.<sup>97</sup> Lastly it can also be proven as having fixed assets in the US of at least \$20 million with a ratio of total liabilities to net worth of 2.5 times or less along with a ratio of current assets to current liabilities of at least 1.2 times.<sup>98</sup> The applicant must submit financial statements completed for the most recent fiscal year along with an unaudited financial statement for the current fiscal year and any other financial information the

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<sup>89</sup> W. Va. Code 22-3-11(g) (2015).

<sup>90</sup> W. Va. Code 22-3-11(g), 3-11(i), 3-17(b), 3-17(d)(1)(B) (2015).

<sup>91</sup> 30 U.S.C. § 1259(c) (year).

<sup>92</sup> U.S. Senate Committee on Energy & Natural Resources, *Cantwell, Durbin to GAO: Investigate Self-Bonding by Coal Companies*, Mar. 8, 2016, <http://www.energy.senate.gov/public/index.cfm/democratic-news?ID=F2BA9FD5-A60A-4575-AF22-C5C6E60119FF> (“Companies currently operating coal mines under SMCRA have posted an aggregate of \$3.6 billion of self-bonds across multiple states.”)

<sup>93</sup> Notice of Availability of Petition to Initiate Rulemaking and Request for Comments on the Petition, 81 Fed. Reg. 31,880, 31,881 (May 20, 2016).

<sup>94</sup> See 43 C.F.R. §3809.555 (2016) (providing an exclusive list of acceptable financial assurance mechanisms and self-bonding nor guarantees are among those on the list).

<sup>95</sup> 30 C.F.R. § 800.23(b) (2016).

<sup>96</sup> § 800.23(b)(3)(i).

<sup>97</sup> § 800.23(b)(3)(ii).

<sup>98</sup> § 800.23(b)(3)(iii).

appropriate regulatory authority requests.<sup>99</sup> Additionally, the regulatory authority would accept a written guarantee (“corporate guarantee”) from an applicant’s parent company, or any guarantor (“non-parent corporate guarantee”), meeting these same requirements.<sup>100</sup> These corporate guarantees often come from essentially the same business family.<sup>101</sup>

Many of the large coal companies were permitted to self-bond through their subsidiaries despite the fact the parent company would not qualify under the minimum requirements for self-bonding set out by OSMRE. When a parent company files for bankruptcy, the subsidiary may still qualify for self-bonding even though a subsidiaries assets may be compromised by the parent company’s bankruptcy. Arch took advantage of this by utilizing Arch Western Resources, LLC, a subsidiary, whose debt was a small part of it’s parent company’s total debt. This enabled Western Resources to qualify for self-bonding when it’s parent company, Arch, would not qualify. Additionally, Western Resources was also able to claim the more valuable Wyoming assets on it balance sheet further presenting the image of security. By Arch shifting assets amongst entities, Western Resources could act as a corporate guarantor that could secure additional bonds for affiliated entities. Regardless, Western Resources filed for bankruptcy with Arch, thereby adding its assets to the proceedings. The use of complex corporate structures is common in many industries, but when self-bonding is permitted, it can make it difficult to determine the financial health of such complex entities.

An applicant will not be permitted to self-bond, or anyone to act as a guarantor for the applicant, when their existing and proposed bonds would exceed 25 percent of the applicant or guarantor’s tangible net worth in the United States.<sup>102</sup> When self-bonding is permitted, the applicant or a guarantor must execute an indemnification agreement to pay to the regulatory authority an amount, up to the bond amount, for the costs of reclamation.<sup>103</sup> Once a self-bond is posted, should the financial condition of the permittee or guarantor change by falling below the conditions of § 800.23(b)(3) or (d) stated previously, the permittee must notify the regulatory authority “immediately” and within 90 days, post an alternate form of bond.<sup>104</sup> If an alternate bond is not posted, then all mining operations must cease and the permittee must begin reclamation operations pursuant to the reclamation plan.<sup>105</sup> SMCRA permits the approval of an alternate system by a state or federal program that “achieve[s] the objectives and purposes of the bonding program[.]”<sup>106</sup> As evidenced by coal mining entities filing for bankruptcy and the subsequent loss of funds for reclamation, an alternate system may be prudent.

Self-bonding and corporate guarantees ultimately increase the risk of no reclamation and decreases the value of any financial assurance. The benefits of self-bonding include a means of providing required assurance when other means of assurance may not be available, thereby providing a lower cost of operations. The disadvantages of

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<sup>99</sup> § 800.23(b)(4).

<sup>100</sup> § 800.23(c).

<sup>101</sup> It should be noted that mining companies look to the layering of mining entities as a means of limiting risk and overall liability to their other operations.

<sup>102</sup> § 800.23(d).

<sup>103</sup> § 800.23(e).

<sup>104</sup> § 800.23(g).

<sup>105</sup> See § 800.16(e)(2) (allowing the regulatory authority to suspend or revoke the firm's charter or license to do business if the responsible financial authority files for bankruptcy).

<sup>106</sup> 30 U.S.C. § 1259(c).

self-bonding have proven to outweigh these benefits. As previously referenced, there are standards companies seeking to self-bond must meet; however, the lack of administrative resources and financial expertise by the regulatory agency make this option precarious. As has been recently seen, financial difficulties can cause a self-bonded company to fall below the statutorily set standards presenting the regulatory authority with a no-win scenario.<sup>107</sup> If the regulatory authority requires further assurance from the company, the company may not be able to provide such, further pushing the company closer to insolvency. The regulatory authority is often forced to enter into some alternative agreement that may ultimately fall short of original reclamation expectations. This threat is ubiquitous for coal companies. Coal, like any commodity, can suffer large price swings. Any industry that involves natural resource extraction often lack diversified portfolios and are especially susceptible to price fluctuations. This was evidenced recently by the decline in the cost of coal. The decline in price occurred after many coal companies just finished large acquisitions.<sup>108</sup> This price decline along with rising debt obligations created the perfect storm, exposing the shortcomings of self-bonding.

### **i. Bankruptcy**

In a nine-month period, between August 2015 and May 2016, the three largest coal companies in the United States filed for Chapter 11 bankruptcy. One of the most concerning shortcomings of self-bonding is the possibility of bankruptcy. A self-bonded company can look to bankruptcy as a means of escaping costly reclamation obligations by either extracting all value before dissolution of the company or through reorganization via Chapter 11. A company with outstanding reclamation obligations essentially leverages the prospect of some reclamation with that of no reclamation; thereby assuring itself of the company's continued existence. This major short-coming has manifested itself most recently with the coal industry, and history will repeat itself unless Congress prevents this practice from continuing.

Once an entity files for bankruptcy, an automatic stay is imposed,<sup>109</sup> and all creditors must get in line relative to their priority. Where "the government is acting for the benefit of the public at large, its conduct is not generally subject to the automatic stay."<sup>110</sup> This generally allows a state to exercise its regulatory or police power and require an operator who has filed for bankruptcy to maintain reclamation bonds despite an automatic stay.<sup>111</sup> Subsequently, a state may exercise its regulatory power under § 364(b)(4) of the

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<sup>107</sup> Individual states determine whether to permit a company to self-bond; however, the states may not be getting a complete picture of the financial health of the company since most have operations in multiple states and utilize numerous corporate layers.

<sup>108</sup> Alpha acquired Massey Energy in 2011 for approximately \$7 billion, making it the largest metallurgical coal producer and saddling it with significant debt right before the price of coal declined. Michael Erman & Ann Saphir, *Alpha Agrees to Buy Massey Energy for About \$7.1 Billion*, REUTERS, Jan. 30, 2011, <http://www.reuters.com/article/us-alpha-massey-idUSTRE70S0PC20110130>.

<sup>109</sup> 11 U.S.C. § 362(a).

<sup>110</sup> Maureen D. Carman & Richard Warne, *The Coal Company in Bankruptcy*, 25 Energy & Min. L. Found. §.7.04 (2004).

<sup>111</sup> See *In re Grace Coal Co.*, 155 B.R. 5, 5-7 (Bankr. E. D. Ky. 1993) (requiring that the debtor still had to comply with bonding requirements in bankruptcy); *U.S. v. Hubler*, 117 B.R. 160, 164-65 (W.D. Pa. 1990). ("The bond initially sought by plaintiff was not intended as a means of satisfying defendants' obligations, but instead was intended as a means of motivating defendants to comply with their obligations-- failure to

Bankruptcy Code to commence an action against a debtor who was self-bonded to require financial assurance despite an automatic stay.<sup>112</sup> Section 105 of the Bankruptcy Code does indicate that a bankruptcy court could order injunctive relief to excuse certain regulatory compliance.<sup>113</sup> Filing for bankruptcy does not allow for the filing company to avoid their compliance responsibilities under the law regarding bonding obligations. To do so, would enable a competitive advantage over those companies who have remained solvent and are subject to the regulations the bankrupt company gets to avoid. Allowing the government to step ahead of creditors for outstanding environmental obligations is controversial, but necessary. This is especially the case when parent companies utilize the financial health of their subsidiaries to take on more debt, and at the same time, those subsidiaries pledge the same assets for self-bonding purposes.

Instead of commencing formal actions against self-bonded coal companies who have recently filed for Chapter 11, states have opted to negotiate with these debtors. States can require that such operators seek financial assurances to replace their original self-bonding obligations; however, such alternative financial assurances may not necessarily be available or would eliminate any possibility of reorganization and along with it any available monies for existing reclamation obligations. Requiring distressed companies to replace all of their self-bonded obligations with fully collateralized bonds through third party sureties, would deplete the companies liquidity and end their continued operations. Subsequently, states have been forced to accept fractions of what is statutorily required for environmental reclamation. If a state does not accept the terms of the insolvent entity, then such entity can opt to not reorganize. Therefore, the state essentially must accept the terms of the debtor. Consequently, states are confronted with the proverbial Hobson's choice.

Although a state may not be prevented by the automatic stay to impose a debtor's compliance with required bonding requirements, some have questioned whether the stay bars these negotiated deals. As evidenced by the recent coal bankruptcies, states have claimed a "superpriority" to take before other creditors of the bankrupt entity. This bonding superpriority claim has been said to have priority over any or all administrative expenses of the kind specified in 503(b) of the Bankruptcy Code.<sup>114</sup> Settlements in bankruptcy are permitted by Bankruptcy Rule 9019(a), which provides that "[o]n motion by the trustee and after notice and a hearing, the court may approve a compromise or settlement."<sup>115</sup> Regardless, these settlement arrangements have been characterized as

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comply with the CO might have resulted in forfeiture of the bond but would not have relieved defendants of their obligations under the CO."); *Pennsylvania v. Peggs Run Coal Co.*, 423 A.2d 765, 767 (Pa. 1980) (deciding that the Pennsylvania Department of Environmental Resources' seeking injunctive relief and posting of bonds by Peggs Run Coal Co. was not subject to the automatic stay).

<sup>112</sup> *In re Kaiser Steel Corp.*, 87 B.R. 662, 665 (Bankr. D. Colo. 1988) ("It is clear that, as to its ongoing post-petition mining activities, the Debtor must comply with the laws of Utah and the State has a legitimate interest in enforcing those laws, particularly where the failure to do so would have an adverse impact on the environment.").

<sup>113</sup> Carman & Warne, *supra* note 102, §.7.04.

<sup>114</sup> *See, e.g.*, Motion of the Debtors and Debtors in Possession, Pursuant to Bankruptcy Rule 9019 for Entry of Stipulation and Order Concerning Reclamation Bonding of Their Surface Coal Mining Operations in Indiana at 12-16, *In re Peabody Energy Corp.*, No. 16-42529 (Bankr. E.D. Mo. July 26, 2016) (asking the court to approve its settlement with the State of Indiana regarding its reclamation bonding obligations)..

<sup>115</sup> Fed. R. Bankr. P. 9019(a).

being practically necessary.<sup>116</sup> This course of action pays homage to the adage that “something is better than nothing.”

On August 3, 2015, Alpha and 149 affiliate entities filed voluntary petitions for relief under Chapter 11 of the United States Bankruptcy Code (“Bankruptcy Code”) in the Eastern District of Virginia.<sup>117</sup> Alpha was estimated to have approximately \$700 million reclamation obligations outstanding because of their extensive use of self-bonding.<sup>118</sup> Alpha had approximately \$244.3 million in self-bonded reclamation costs in West Virginia.<sup>119</sup> The Court approved a settlement a \$24 million as a superpriority claim in conjunction with a collateral bond of \$15 Million in lieu of \$244.3 million outstanding reclamation obligations in the state.<sup>120</sup> Additionally, Alpha settled their self-bonding obligations with Wyoming for a \$61 million superpriority claim in lieu of a \$411 million substitution demand.<sup>121</sup> Alpha has agreed to replace its self-bonds in Wyoming with third-party guaranteed bonds as a condition of emerging from bankruptcy.<sup>122</sup> Alpha reached an agreement with federal officials to restructure and make cash payments that fall short of covering the estimated cost of reclamation and also spread out over a nine-year period.<sup>123</sup> The rest of its reclamation liabilities would be assumed by Contura, a new company spun out of Alpha and owned by senior creditors from Alpha, to include the two open pit mines in Wyoming, one mine in Pennsylvania and West Virginia, and six mines and an export terminal in Virginia.<sup>124</sup> Contura has anchored its reclamation obligations through equipment and other property as collateral.<sup>125</sup> Alpha will be left operating 29 mines, most of which are in West Virginia and will inherit inactive mines that have not been reclaimed.<sup>126</sup> The bifurcation of the old Alpha raises multiple issues regarding the future financial health of both parts. More pointedly, the question remains whether the new Alpha’s projected payments will last and even if they do, will they be enough to cover the ever-growing amount of reclamation. Additionally, whenever equipment is pledged as collateral, it is often linked to the underlying price of the commodity and subsequently

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<sup>116</sup> See *In re Alpha Natural Res.*, 544 B.R. 848, 857 (Bankr. E.D. Va. 2016) (stating that the settlement arrangement would prevent Alpha from being “embroiled in time consuming, expensive, and distracting litigation over whether West Virginia’s substitution demand violated the automatic stay,” and “best preserve[d] the value of the Debtors’ bankruptcy estates, maximize the return to creditors, help preserve jobs, and give the Debtors the opportunity to reorganize their businesses affairs.”)

<sup>117</sup> Voluntary Petition for Alpha Natural Resources, Inc. at 1, 4-8, *In re: Alpha Natural Res., Inc.*, No. 15-33896 (Bankr. E.D. Va. Aug. 3, 2015).

<sup>118</sup> Steven Mufson, *Cleanup Obligation is Core to Plan for Coal Giant Alpha to Exit Bankruptcy*, Wash. Post, July 8, 2016, available at [https://www.washingtonpost.com/business/economy/cleanup-obligation-is-core-to-plan-for-coal-giant-alpha-to-exit-bankruptcy/2016/07/08/29cc10be-4491-11e6-bc99-7d269f8719b1\\_story.html?utm\\_term=.37b0cfe70996](https://www.washingtonpost.com/business/economy/cleanup-obligation-is-core-to-plan-for-coal-giant-alpha-to-exit-bankruptcy/2016/07/08/29cc10be-4491-11e6-bc99-7d269f8719b1_story.html?utm_term=.37b0cfe70996).

<sup>119</sup> Order Concerning Reclamation Bonding of the Debtor’s Surface Coal Mining Operations in West Virginia at 7, *In re Alpha Natural Res.*, No. 15-33896 (Bankr. E.D. Va. Dec. 22, 2015).

<sup>120</sup> *Id.* at 3, 7-8.

<sup>121</sup> Stipulation and Order Concerning Debtor’s Reclamation Bonding of Their Surface Coal Mining Operations in Wyoming at 2-3,5, *In re Alpha Natural Res.*, No. 15-33896 (Bankr. E.D. Va. Oct. 8, 2015).

<sup>122</sup> *Id.* at 6-7.

<sup>123</sup> Mufson, *supra* note 110.

<sup>124</sup> *Id.*

<sup>125</sup> *Id.*

<sup>126</sup> *Id.*

loses value with the decline in price of the commodity.<sup>127</sup> The agreed upon restructuring plan indicates a realization that self-bonding is not an effective means of financial assurance.

Arch and its wholly owned domestic subsidiaries filed voluntary petitions for relief under Chapter 11 of the Bankruptcy Code in the Eastern District of Missouri.<sup>128</sup> The Court approved Wyoming taking a superpriority in \$75 million and approximately \$17 million in third-party bonding obligations in lieu of the \$485.5 million in outstanding reclamation obligations.<sup>129</sup> Upon emerging from bankruptcy, Arch has arranged to have all of its self-bonds in Wyoming replaced with commercial surety bonds.<sup>130</sup>

Subsequently, Peabody Energy Corporation, the world's largest coal company, along with a majority of its affiliated entities (154 affiliated companies, except for its Australian operations) filed for Chapter 11 bankruptcy on April 13, 2016 in the Eastern District of Missouri.<sup>131</sup> Peabody is estimated to have more than \$1.14 billion in self-bonding obligations in just four states.<sup>132</sup> Peabody obtained consent from its post-petition lenders to provide up to \$200 million in superpriority collateral to those states that utilized self-bonding.<sup>133</sup> Peabody reached agreements with Wyoming for \$127 million of the approximately \$726.8 million in self-bonds<sup>134</sup>, New Mexico for \$31.6 million of the approximately \$181 million in self-bonds,<sup>135</sup> Indiana for \$17.9 million of the approximately \$145.2 million in self-bonds,<sup>136</sup> and Illinois for \$12.8 million of the approximately \$92.2 million in self-bonds<sup>137</sup> if Peabody is unable to engage in reclamation

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<sup>127</sup> JAYNI FOLEY HEIN ET AL., INSTITUTE FOR POLICY INTEGRITY, SELF-BONDING IN AN ERA OF COAL BANKRUPTCY 6 (2016), *available at* [http://policyintegrity.org/files/publications/Coal\\_Self-Bonding\\_Report.pdf](http://policyintegrity.org/files/publications/Coal_Self-Bonding_Report.pdf).

<sup>128</sup> In re Arch Coal, Inc., No. 16-40120 (Bankr. E.D. Mo. January 11, 2016).

<sup>129</sup> Stipulation and Order Concerning Debtors' Reclamation Bonding of their Surface Coal Minin Operations in Wyoming, In re Arch Coal, Inc., No. 16-40120-705 (Bankr. E.D. Mo. Feb. 29, 2016) (Docket No. 432).

<sup>130</sup> *Id.* at 5.

<sup>131</sup> Voluntary Petition for Peabody America at 1-8, In re Peabody Energy Corp., No. 16-42529, (Bankr. E.D. Mo. Apr. 13, 2016).

<sup>132</sup> Debtors' (I) Reply in Support of Motions of the Debtors and Debtors in Possession, Pursuant to Bankruptcy Rule 9019, for Entry of Stipulations and Orders Concerning Reclamation Bonding of Their Surface Coal Mining Operations in Wyoming, New Mexico and Indiana; and (II) Objection to Motion of Fernandez Company, Ltd. for an Order Extending the Deadline to File Objections to the Motion of the Debtors in Possession, Pursuant to Bankruptcy Rule 9019, for Entry of Stipulation and Order Concerning Reclamation Bonding of Their Surface Coal Mining Operations in New Mexico and to Set for September 15, 2016 Omnibus Hearing at 25, In re Peabody Energy Corp., No. 16-42529 (Bankr. E.D. Mo. Aug. 15, 2016).

<sup>133</sup> *Id.* at 25-26.

<sup>134</sup> Motion of the Debtors and Debtors in Possession, Pursuant to Bankruptcy Rule 9019, for Entry of Stipulation and Order Concerning Reclamation Bonding of Their Surface Coal Mining Operations in Wyoming at 8-13, In re Peabody Energy Corp., No. 16-42529 (Bankr. E.D. Mo. July 26, 2016).

<sup>135</sup> Motion of the Debtors and Debtors in Possession, Pursuant to Bankruptcy Rule 9019, for Entry of Stipulation and Order Concerning Reclamation Bonding of Their Surface Coal Mining Operations in New Mexico at 7, 12-13, In re Peabody Energy Corp., No. 16-42529 (Bankr. E.D. Mo. July 26, 2016).

<sup>136</sup> Motion of the Debtors and Debtors in Possession, Pursuant to Bankruptcy Rule 9019, for Entry of Stipulation and Order Concerning Reclamation Bonding of Their Surface Coal Mining Operations in Indiana at 7-8, 13-14, In re Peabody Energy Corp., No. 16-42529 (Bankr. E.D. Mo. July 26, 2016).

<sup>137</sup> Motion of the Debtors and Debtors in Possession, Pursuant to Bankruptcy Rule 9019, for Entry of Stipulation and Order Concerning Reclamation Bonding of their Coal Mining Operations in Illinois at 7, 13-14, In re Peabody Energy Corp., No. 16-42529 (Bankr. E.D. Mo. Aug. 22, 2016).

efforts in these states.<sup>138</sup> Thus, Peabody is providing collateral assurance, either letters of credit, third-party commercial surety bonds, or cash deposits, to cover only a fraction of their self-bonded obligations at the date of filing. In structuring their settlement, Peabody referenced and relied upon the settlements of Arch and Apha before them.

In light of the extent of self-bonding, coal companies have been able to avoid the full extent of their reclamation obligations while still being allowed to operate. States and the federal government have been forced to accept this since the alternative of total liquidation would mean even less reclamation funds being available. If companies were required to replace all of their self-bonded obligations immediately with collateral assurance through surety bonds, letters of credit, cash deposits, or the like, then they would surely be forced into immediate insolvency. The resulting liquidation would not only leave mined properties unreclaimed, but also cause the loss of jobs and create a ripple affect through the parent companies holdings in multiple states.

The future of self-bonding in the coal industry is in question. At the time this article was written, OSMRE released a “Policy Advisory” regarding financial assurance practices in the coal industry,<sup>139</sup> OSMRE initiated the rulemaking process to strengthen regulations on self-bonding,<sup>140</sup> and a new bill was introduced by Senator Maria Cantwell, The Coal Cleanup Taxpayer Protection Act, that would eliminate the use of self-bonds in surface mining.<sup>141</sup>

The fact that private industry is hesitant to involve itself as a surety for a particular activity, such as surface mining, due to the potential long-term environmental costs, necessitates a conversation over the efficacies of the activity itself. One cannot criticize the use of coal and enjoy the electricity, products, and jobs it provides. Although “coal keeps the lights on,” it should not come at the continued unabated costs to society. Nor should these costs be falsely justified by those who seek personal pecuniary gain with the intention of passing along those same costs to taxpayers. A balance can exist to ensure environmental accountability and private enterprise, but this equilibrium cannot be if self-bonding is permitted to play any role.

#### **IV. Oil and Gas**

The growing accessibility of domestic oil and gas reserves along with international concerns has generated increased interest in domestic energy production. Natural gas is currently looked at as a bridge between traditional energy production derived from coal and that of greener methods of energy production. Environmental regulations favor the use of such blue energy when compared to those traditional means. Hydraulic fracturing coupled with advancements in horizontal drilling technology have expanded the available reserves in the United States. The costs of oil and gas have decreased rapidly in light of proven domestic reserves creating opportunities, but also decreasing margins for operators.

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<sup>138</sup> Tracy Rucinski and Jim Christie, *Peabody Gets US Court Approval for Clean-Up Deals, Executive Bonuses*, Reuters, Aug. 17, 2016, available at <http://www.businessinsider.com/r-peabody-gets-us-court-approval-for-clean-up-deals-executive-bonuses-2016-8>.

<sup>139</sup> Joseph Pizarchik, Office of Surface Mining Reclamation and Enforcement, OSMRE Policy Advisory: Self-Bonding, 1-6 (2016), available at <https://www.osmre.gov/resources/bonds/DirPolicyAdvisory-SelfBond.pdf>.

<sup>140</sup> *Id.* at 2-6.

<sup>141</sup> The Coal Cleanup Taxpayer Protection Act, S. 3066, 114th Cong. § 2 (2016).

Domestic production from federal onshore oil and gas operations account for eleven percent of the United State's natural gas supply and seven percent of its current oil supply.<sup>142</sup> One group estimates that there are at least 1.7 million active oil and gas wells currently in the United States as of August 2015.<sup>143</sup> The United States Energy Information Administration (EIA) estimates that for 2015, 33% of the United States' electricity usage was generated from natural gas and 33% from coal.<sup>144</sup> This is an increase from 10% in the late 1980s.<sup>145</sup> “For decades, coal has been the dominant energy source for generating electricity in the United States.”<sup>146</sup> The EIA estimates “that 2016 will be the first year that natural gas-fired generation exceeds coal generation in the United States.”<sup>147</sup> Although the use of oil has decreased slightly over the last ten years, it still comprises 35% of our general energy consumption and the EIA projects that it will continue to be a major share of our energy consumption until 2040.<sup>148</sup>

Reclamation activities for oil and gas have thus far proven less extensive than that required of surface mining. Most of these efforts are limited to plugging a well to prevent contamination of water reserves, removal of surface debris left from the mining activities, and possibly recontouring the land if needed. Operating a well is comparatively less intrusive due to its limited affect upon the surface. However, recent allegations that certain fracking activities may be the cause of earthquakes potentially increases the degree of invasiveness.<sup>149</sup> Most of these concerns surround the affect of drilling activities on drinking water. In a June 2015 the EPA issued a draft assessment of hydraulic fracking’s affect upon drinking water resources.<sup>150</sup> In this report the EPA identified five aspects of hydraulic fracturing that could potentially contaminate drinking water sources: acquiring water for fracturing fluid, mixing of fracturing fluid at the well pad, injecting the fluid into the well to induce fracturing, the return of the fracturing fluid and produced water (collectively referred to as “produced water”) to the surface, and the treatment and disposal of wastewater including produced water by the operations.<sup>151</sup> The EPA concluded that it “did not find evidence that these mechanisms have led to widespread, systemic impacts on

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<sup>142</sup> U.S. Department of Interior, Bureau of Land Management, *BLM Releases Statistics on Oil and Gas Activity on Federal, Indian Lands*, Apr. 11, 2016,

[https://www.blm.gov/wo/st/en/info/newsroom/2016/april/nr\\_04\\_11\\_2016.html](https://www.blm.gov/wo/st/en/info/newsroom/2016/april/nr_04_11_2016.html).

<sup>143</sup> Matt Kelso, FracTracker Alliance, *1.7 Million Wells in the U.S. - A 2015 Update*, Aug. 3, 2015,

<https://www.fracktracker.org/2015/08/1-7-million-wells/>.

<sup>144</sup> United States Energy Institute Administration, *What Is US Electricity Generation by Energy Source*, Apr. 1, 2016, <https://www.eia.gov/tools/faqs/faq.cfm?id=427&t=3>.

<sup>145</sup> United States Energy Information Administration, *Natural Gas Expected to Surpass Coal in Mix of Fuel Used for U.S. Power Generation in 2016*, Mar. 16, 2016, <http://www.eia.gov/todayinenergy/detail.php?id=25392>.

<sup>146</sup> *Id.*

<sup>147</sup> *Id.*

<sup>148</sup> United States Energy Information Administration, *Oil: Crude and Petroleum Products: Explained Use of Oil*, Feb. 2, 2016, [http://www.eia.gov/energyexplained/index.cfm?page=oil\\_use](http://www.eia.gov/energyexplained/index.cfm?page=oil_use).

<sup>149</sup> U.S. Env'tl. Prot. Agency, *Hydraulic Fracturing for Oil and Gas: Impacts from the Hydraulic Fracturing Water Cycle on Drinking Water Resources in the United States* 34 (2016), *available at* <https://cfpub.epa.gov/ncea/hfstudy/recordisplay.cfm?deid=332990>.

<sup>150</sup> U.S. ENVTL. PROT. AGENCY, *ASSESSMENT OF THE POTENTIAL IMPACTS OF HYDRAULIC FRACTURING FOR OIL AND GAS ON DRINKING WATER RESOURCES, EXTERNAL REVIEW DRAFT* (2015), *available at* <https://cfpub.epa.gov/ncea/hfstudy/recordisplay.cfm?deid=244651>

<sup>151</sup> *Id.* at ES-6.

drinking water resources in the United States.”<sup>152</sup> A more traditional form of financial assurance is possible since harm from these known or more certain risks of fracturing operations are more easily determined. However, some risks are not as quantifiable, these “uncertain risks” include the potential upward migration of fracturing fluids to contaminate drinking water, the movement of methane or sediments to contaminate groundwater, and the exacerbation of seismic activity.”<sup>153</sup> Subsequently, it has been recommended that traditional assurance mechanisms may be suited for the known circumstances that can cause adverse environmental impacts and alternative forms such as insurance for the more uncertain or less foreseeable impacts.<sup>154</sup> This distinction of certain and uncertain risks can be extended to multiple activities that invoke the environmental financial assurance field.

### A. Regulating Oil and Gas

The regulations concerning oil and gas production from drilled wells have been described as a “patchwork.”<sup>155</sup> Onshore drilling operations on federal land are regulated by Bureau of Land Management (“BLM”) pursuant to the Federal Land Policy Management Act (“FLPMA”).<sup>156</sup> However, individual states autonomously and separately regulate drilling activities within their borders. Subsequently, financial assurance mechanisms and amounts for assurance differ from state to state. It is worth noting that financial assurance is also required as it relates to other facets of oil and gas production beyond that of traditional onshore drilling operations.<sup>157</sup> Given the focus of this article, we will look at the use of financial assurance mechanisms, specifically the use of self-bonding for onshore drilling operations on federal lands as controlled by the BLM and its use on nonfederal lands as regulated by the individual states.

Since Congress passed The Mineral Leasing Act of 1920, the federal government has required oil and gas producers to post some form of financial assurance before a well is drilled on federal land.<sup>158</sup> Financial assurance (i.e. bond coverage) is required before the BLM will approve any lease for development. In other words, the BLM will not grant an Application for Permit to Drill (“APD”) unless approved financial assurance is presented.<sup>159</sup> These bonds are required “to ensure compliance with the act, including complete and timely plugging of the well(s), reclamation of the lease area(s), and the

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<sup>152</sup> *Id.*

<sup>153</sup> W. Blaine Early III, *Bond What You Know and Insure What You Don't: A Comment on A Market Approach to Regulating the Energy Revolution*, 45 *Envtl. L. Rep. News & Analysis* 10756, 10756 (2015)

<sup>154</sup> *Id.* at 10759.

<sup>155</sup> *Id.* at 10758.

<sup>156</sup> See 43 U.S.C. § 1732(b) (2012) (allowing the Secretary of the Interior to manage the use of federal lands through permits, leases, and other available methods).

<sup>157</sup> Financial assurances that relate to the production of oil and gas generally include offshore exploration regulated by the Oil Pollution Act (“OPA”), vessels carrying oil or hazardous substances regulated by OPA and the Comprehensive Environmental Response, Compensation, and Liability Act (“CERCLA”), and as it relates to hydraulic fracturing and shale gas production, the Safe Drinking Water Act of 1974 which regulates underground injection of fluids associated shale gas, Clean Water Act (“CWA”) for surface discharges from shale gas production, and the Clean Air Act (“CAA”) for emissions from equipment and processing equipment.

<sup>158</sup> The Mineral Leasing Act of 1920, 30 U.S.C. § 226 (2012).

<sup>159</sup> 30 U.S.C. § 226(g).

restoration of any lands or surface waters adversely affected by lease operations after the abandonment or cessation of oil and gas operations on the lease(s)[.]”<sup>160</sup>

The BLM will allow the lessee to use a personal bond or surety bond to obtain a lease to drill on federal lands.<sup>161</sup> Surety bonds that utilize a third-party insurer can be a costlier alternative to a personal bond.<sup>162</sup> The premiums are often dictated by the producer’s past record. Personal bonds are guarantees in the form of a federally insured certificate of deposit, or cashier’s check, or certified check, a negotiable treasury security of the United States or federally insured letters of credit, all to be paid to the Secretary of the Interior in case of default.<sup>163</sup>

There are multiple ways to comply with the minimum bonding requirements required for leased federal land drilling operations. The lessee or owner of the operation rights may post a lease bond for the operation of a singular well lease. The minimum bond is \$10,000.<sup>164</sup> In addition, an entity may put up a blanket bond to cover all of their operations within one state or nationwide.<sup>165</sup> This amount may not be less than \$25,000 for one state and \$150,000 nationwide.<sup>166</sup> The BLM also permits what is called a unit operator’s bond.<sup>167</sup> This bond is similar to a bond for an individual well but is committed to an approved unit agreement.<sup>168</sup> These bond amounts have not been increased since the 1980s.<sup>169</sup>

The BLM does have discretion to require an increase of any bond amount when the operator may pose a risk potentially due to “a history of previous violations, a notice from the Service that there are uncollected royalties due, or the total cost of plugging existing wells and reclaiming lands exceeds the present bond amount based on the estimates determined by the authorized officer.”<sup>170</sup> However, an increased bond should not exceed the total costs of remediating the necessitating risk.<sup>171</sup>

Before the APD is approved and the operator is permitted to begin operations, the BLM reviews the operators proposed plan, conducts a personal site inspection, and prepares an environmental analysis pursuant to NEPA.<sup>172</sup> The BLM also requires that the operator follow certain steps prior to drilling.<sup>173</sup> This includes conducting the proposed cementing and casing programs, ensuring wellbore integrity by centering the casing in the drilled hole prior to cementing, waiting until all the cement for all casing strings achieves 500 pounds per square inch compressive strength at the casing shoe, and conducting other

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<sup>160</sup> 43 CFR 3104.1(a) (2016).

<sup>161</sup> 43 CFR 3104.1.

<sup>162</sup> The third-party insurer must be a qualified surety as approved by the Department of the Treasury. 43 CFR 3104.1(b).

<sup>163</sup> 43 CFR 3104.1(c).

<sup>164</sup> 43 CFR 3104.2.

<sup>165</sup> 43 CFR 3104.3.

<sup>166</sup> *Id.*

<sup>167</sup> 43 CFR 3104.4.

<sup>168</sup> *Id.*

<sup>169</sup> 43 CFR 3104.2, 3104.3.

<sup>170</sup> 43 CFR 3104.5.

<sup>171</sup> *Id.*

<sup>172</sup> Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands, 80 Fed. Reg. 16,135, 16,135 (Mar. 26, 2015).

<sup>173</sup> *Id.* at 16,136.

pressure tests at the casing shoe to ensure the integrity of the casing.<sup>174</sup> These steps are followed to ensure the protection of usable water zones.<sup>175</sup> Additionally, the BLM conducts environmental and technical post-approval inspections.<sup>176</sup> The technical inspections of the drilling operations include witnessing the running and cementing of the casing, witnessing the testing of the blowout potential equipment, and detailed drilling rig inspections.<sup>177</sup> The environmental inspection primarily focuses on the surface area portion of the drilling permit and includes checking out the access road, the well pad, and the pits.<sup>178</sup>

The BLM continues to inspect the well until it has been plugged and abandoned, along with the surface rehabilitated.<sup>179</sup> Once a well has reached the end of its life, it is plugged and abandoned to “prevent oil and gas from leaking to the surface or contaminating water bearing zones or other mineral zones.”<sup>180</sup> This process requires the approval of an operator-submitted plan for plugging and the BLM’s inspection of the act of plugging along with the surface restoration.<sup>181</sup> The goal of surface of restoration “is to remove obvious visual evidence of the pad and to promote the long-term stability of the site and vegetation.”<sup>182</sup> The BLM actually requires that reclamation begin prior to drilling of the well.<sup>183</sup> The BLM requires that a reclamation plan be part of the surface use plan.<sup>184</sup> Additionally, the BLM must approve this plan and also mandates that partial reclamation even take place while the operator is using the well.<sup>185</sup> The BLM includes as part of their best management practices that the operator undergo partial reclamation in reclaiming any disturbed land that is not needed in active operations.<sup>186</sup> The BLM’s final objective for reclamation is the restoration of the ecosystem, which includes restoration of the native vegetation community, hydrology, and wildlife habitats.<sup>187</sup> The final abandonment notice is issued once a final inspection reveals satisfactory restoration.<sup>188</sup>

The costs for reclaiming an oil or natural gas well vary greatly. One energy industry website put the cost for plugging an oil or natural gas well at anywhere from \$569 to \$527,829 in the State of Wyoming over a 17-year period.<sup>189</sup> One of the biggest factors in determining the cost for plugging a well is the depth of the well.<sup>190</sup> Some commentators

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<sup>174</sup> *Id.*

<sup>175</sup> *Id.*

<sup>176</sup> *Id.*

<sup>177</sup> *Id.*

<sup>178</sup> *Id.*

<sup>179</sup> *Id.*

<sup>180</sup> *Id.*

<sup>181</sup> *Id.*

<sup>182</sup> *Id.*

<sup>183</sup> Department of Interior, Bureau of Land Management, Phase V: Oil & Gas Reclamation, [http://www.blm.gov/wo/st/en/prog/energy/oil\\_and\\_gas/leasing\\_of\\_onshore/og\\_reclamation.html](http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/leasing_of_onshore/og_reclamation.html) (last visited Mar. 21, 2017)

<sup>184</sup> *Id.*

<sup>185</sup> *Id.*

<sup>186</sup> *Id.*

<sup>187</sup> *Id.*

<sup>181</sup> Bureau of Land Management, Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development: The Gold Book 49 (4th ed. 2007).

<sup>189</sup> Inside Energy, The Rising Cost of Cleaning Up After Oil and Gas, <http://insideenergy.org/2015/10/01/the-rising-cost-of-cleaning-up-after-oil-and-gas> (Oct 1, 2015).

<sup>190</sup> *Id.*

have determined that the average cost for full reclamation of an oil or natural gas well during this time was roughly \$27,000 per well or \$10 per foot of well depth.<sup>191</sup> These same commentators also found there is a significant variance depending on how many well sites were at a location as well.<sup>192</sup> Thus, the concentration of wells at a given location along with the depth of the well can affect the cost of reclamation.

The costs associated with oil and gas exploration have also been questioned in light of newer extraction methods. Hydraulic fracturing and horizontal drilling have allowed for the production of shale oil reserves in conjunction with increasing production efficiency. Hydraulic fracturing has enabled operators to extract more oil and gas from traditional wells as well as develop more untraditional plays. Many of these new plays require deeper drilling depths and cover larger subsurface horizontal areas as was previously covered. This has prompted an ongoing conversation over the increased environmental risks associated with this technology beyond traditional oil and gas extraction techniques. The BLM recently finalized its rule regarding hydraulic fracturing.<sup>193</sup>

In issuing its final rule, the BLM addressed the reason why it did not increase the bond amounts beyond the amounts discussed above for traditional extraction methods. The BLM cited section 3104.5(b) as authorizing them to adjust the bond amounts according to the level of risk posed by the operation.<sup>194</sup> Thus, the BLM reasoned they already have authority to set higher bond rates if the situation requires it.<sup>195</sup> They went on to explain that a determination of the amount of the bond is done on a “case-by-case basis[.]”<sup>196</sup>

Unlike coal, oil and natural gas is more regulated on a state-by-state basis. There is no national legislation that regulates the oil and natural gas wells despite some commentators arguing that the federal government could do so under the commerce clause.<sup>197</sup> Thus, since the federal government does not regulate oil and natural gas wells except for those on federal lands or off-shore, individual states have autonomous responsibility for regulating private operations within their borders.

## 1. Oklahoma

Before an operator may drill a well for oil and gas exploration or use a well for injection or disposal, they must demonstrate financial ability to comply with Oklahoma’s rules for plugging, closure, and removal of equipment and trash from the site.<sup>198</sup> Oklahoma proscribes two categories of financial assurance.<sup>199</sup> The first category allows an operator

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<sup>191</sup> Matt Anderson et al., Reclamation Costs and Regulation of Oil and Gas Development with Application to Wyoming, *Western Econ. Forum* 40, 42 (2009), <http://ageconsearch.umn.edu/bitstream/92846/2/0801005.pdf>.

<sup>192</sup> *Id.* at 43.

<sup>193</sup> 43 C.F.R. 3162.3-3 (year).

<sup>194</sup> Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands, 80 Fed. Reg. 16,135, 16,181 (Mar. 26, 2015) (to be codified at 43 C.F.R. pt 3160).

<sup>195</sup> *Id.*

<sup>196</sup> *Id.*

<sup>197</sup> William Brady, Hydraulic Fracturing Regulation in the United States: The Laissez-Faire Approach of the Federal Government and Varying State Regulations, at 3 (2012), *available at* <http://www.law.du.edu/documents/faculty-highlights/Intersol-2012-HydroFracking.pdf>.

<sup>198</sup> Okla. Stat. Ann. tit. 52, § 318.1 (West year).

<sup>199</sup> § 318.1(A).

to self-bond by delivering a financial statement listing its assets and liabilities along with a release that their information could be verified, but such verification is not mandatory.<sup>200</sup> The operator only must demonstrate that their net worth is at least \$50,000.<sup>201</sup> The second category of assurance includes irrevocable commercial letters of credit, cash, cashier's checks, certificate of deposits, bank joint custody receipt, or other negotiable instrument, or a blanket surety bond in the amount of \$25,000.<sup>202</sup> The Director of the Oil and Gas Conservation Division also reserves the right to increase the amount required based upon the operator's past performance.<sup>203</sup> If an operator can demonstrate that their liabilities statewide is less than \$25,000, then they may be permitted to post a lesser sum via any mechanism in category two.

## 2. West Virginia

Before an operator may drill an oil or natural gas well in the State of West Virginia, the State of West Virginia requires that the operator obtain a permit.<sup>204</sup> The application for a permit must be accompanied with a bond.<sup>205</sup> West Virginia requires a bond for each well that is drilled in the amount of \$5,000.<sup>206</sup> West Virginia also allows for an operator to submit a blanket bond for numerous oil and gas wells within the state's boundaries in the amount of \$50,000.<sup>207</sup> West Virginia allows for the bond to be "surety bonding, collateral bonding (including cash and securities) letters of credit, establishment of an escrow account, self-bonding" or some combination of the listed methods.<sup>208</sup> For collateral bonding, the operator uses the following: "cash, or collateral securities or certificates as follows: Bonds of the United States or its possessions, of the federal land bank, or the homeowners' loan corporation; full faith and credit general obligation bonds of the State of West Virginia, or other states, and of any county, district or municipality of the State of West Virginia or other states; or certificates of deposit in a bank in this state, which certificates shall be in favor of the division."<sup>209</sup> The value of the securities or cash must be of greater value or at least equal to the amount of the bond.<sup>210</sup>

## 3. Texas

The main agency within the State of Texas that regulates oil and natural gas well permits is the Railroad Commission of Texas. In order for an operator to obtain a permit, they must fill out an application for a permit online.<sup>211</sup> The fee that must be filed with the

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<sup>200</sup> § 318.1(A)(1).

<sup>201</sup> *Id.*

<sup>202</sup> § 318.1(A)(2).

<sup>203</sup> *Id.* (mentioning the Director will not only look at the operator's past performance but also any insiders or affiliates of the company as well.).

<sup>204</sup> W. Va. Code § 22-6-6(a).

<sup>205</sup> § 22-6-6(b).

<sup>206</sup> § 22-6-26(b).

<sup>207</sup> § 22-6-26(c).

<sup>208</sup> § 22-6-26(d).

<sup>209</sup> *Id.*

<sup>210</sup> *Id.*

<sup>211</sup> 16 Tex. Admin. Code § 3.5(a) (year); Railroad Commission of Texas, Drilling Permits (W-1): Online Filing User Guide 1, 1, *available at* <http://www.rrc.state.tx.us/media/20067/dpmanual.pdf> (Feb. 2016).

application for a new oil or natural gas permit is based on the vertical drilling depth of the well.<sup>212</sup> The application fee varies depending on the depth of the well ranging from \$200 for a well less than 2,000 feet in depth to \$300 for a well with a drilling depth greater than 9,000 feet.<sup>213</sup> In terms of bonding, Texas requires that each operator of an oil or natural gas well also file an individual performance bond for each well, a blanket performance bond for all wells in the state, or a letter of credit in the same amount of the individual performance bond or blanket performance bond.<sup>214</sup> The individual performance bond must be in the amount of \$2 per foot of well depth for each well the entity operates.<sup>215</sup> Texas requires that the blanket performance bond amount be at least \$25,000 if operating ten wells or less, \$50,000 if operating between 10 and 100 wells, and \$250,000 if operating more than 100 wells.<sup>216</sup>

#### **4. Pennsylvania**

Before an entity can drill in the Commonwealth of Pennsylvania, one must first obtain a permit to do so.<sup>217</sup> In order for an entity to apply for a permit it must furnish the necessary forms with the Department of Environmental Protection.<sup>218</sup> In addition to filing the requisite forms, Pennsylvania requires that the operator of a non-plugged well must file a bond for the well.<sup>219</sup> Pennsylvania accepts two forms of bonds: a surety bond or a collateral bond.<sup>220</sup> The bond requirements in Pennsylvania are \$2500 for a single well or \$25,000 for a blanket bond covering all oil or natural gas wells in the state.<sup>221</sup>

#### **5. North Dakota**

North Dakota like most states also requires than an operator obtain a permit before drilling an oil or natural gas well within the state.<sup>222</sup> Additionally, North Dakota also requires that the operator of such a well also file a bond.<sup>223</sup> This bond for an individual well must be at least \$50,000 although for wells less than 2,000 feet the state may approve less for a bond.<sup>224</sup> For a blanket bond, North Dakota requires the bond amount to be \$100,000 to cover up to six wells within the state.<sup>225</sup> If an operator would like to operate more than six wells, the operator must either submit an individual bond for each subsequent well, submit another blanket bond for another six wells, or decrease the number of wells

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<sup>212</sup> § 3.5(f); Railroad Commission of Texas, *supra* note 204, at 1.

<sup>213</sup> § 3.78(b); Railroad Commission of Texas, Oil & Gas Fee Payments and Surcharges, <http://www.rrc.texas.gov/oil-gas/applications-and-permits/fees-surcharges/> (last updated Aug. 15, 2016).

<sup>214</sup> § 3.78(d).

<sup>215</sup> § 3.78(g)(1)(A).

<sup>216</sup> § 3.78(g)(1)(B).

<sup>217</sup> 78 Pa. Cons. Stat. § 11.

<sup>218</sup> § 15.

<sup>219</sup> § 302.

<sup>220</sup> § 303(a).

<sup>221</sup> § 303(e).

<sup>222</sup> N.D. Cent. Code § 38-08-05 (2016).

<sup>223</sup> § 38-08.1-03.1.

<sup>224</sup> § 43-02-03-15(2).

<sup>225</sup> *Id.*

they operate to six or less.<sup>226</sup> North Dakota requires that the bond be a surety or cash bond although they may approve an alternative form of security after a notice and hearing.<sup>227</sup>

## 6. Virginia

Virginia also requires that in order for a person to commence well operations in the Commonwealth of Virginia for oil or natural gas operations, they must first obtain a permit.<sup>228</sup> Furthermore, an operator must also display financial security to the commonwealth in the form of a surety bond in order to obtain this permit.<sup>229</sup> The amount of the bond must be no less than \$10,000 for a well and \$2,000 per disturbed acre of land rounded to the nearest tenth of an acre.<sup>230</sup> The amount of the bond shall be sufficient enough to cover the costs for plugging the well and restoring the site.<sup>231</sup> The Director will determine the amount of the bond.<sup>232</sup> The Director also has the option of requiring a blanket bond in lieu of a separate bond for each individual well.<sup>233</sup> The amount of the blanket bond will depend on the number of wells. For one to fifteen wells, the blanket bond shall be \$25,000.<sup>234</sup> For sixteen to thirty wells, the blanket bond shall be \$50,000.<sup>235</sup> For thirty-one to fifty wells, the blanket bond shall be \$75,000 and for more than fifty wells the blanket bond shall be \$100,000.<sup>236</sup>

## 7. Kentucky

Kentucky requires that an operator obtain a permit before drilling a new oil or natural gas well.<sup>237</sup> This includes when an operator wants to reopen an old oil or natural gas well.<sup>238</sup> The first step the operator must undertake is to file an application with the Division of Oil and Gas.<sup>239</sup> Additionally, operators in Kentucky must also submit a bond within the commonwealth.<sup>240</sup> The bond amount varies depending on the depth of the well.<sup>241</sup> A well of less than 500 feet only requires a bond of \$500; whereas, a well of greater than 5,500 feet but less than 6,000 feet requires a bond of \$8,000.<sup>242</sup> If the well is greater than 6,001 feet, it is considered a deep well and the bond amount must be at a minimum of \$25,000 for a vertical deep well.<sup>243</sup> For a horizontal deep well, the minimum amount of the bond must be \$40,000 and can be greater if the commission thinks it should

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<sup>226</sup> *Id.*

<sup>227</sup> § 43-02-03-15(3).

<sup>228</sup> Va. Code Ann. § 45.1-361.29(A).

<sup>229</sup> § 45.1-361.31(A).

<sup>230</sup> *Id.*

<sup>231</sup> *Id.*

<sup>232</sup> *See id.* (mentioning that the "permit applicants shall give bond with surety acceptable to the Director").

<sup>233</sup> § 45.1-361.31(B).

<sup>234</sup> *Id.*

<sup>235</sup> *Id.*

<sup>236</sup> *Id.*

<sup>237</sup> Ky. Rev. Stat. Ann. § 353.570 (West 2016).

<sup>238</sup> *Id.*

<sup>239</sup> § 353.590(1).

<sup>240</sup> § 353.590(7).

<sup>241</sup> *See id.* (listing the varying bond amounts based on the depth of the well).

<sup>242</sup> *Id.*

<sup>243</sup> *See* § 353.590(7)-(8) (calling wells less than 6,000 feet shallow wells).

be such.<sup>244</sup> An operator of shallow wells may file a blanket bond to cover all of their shallow wells within the Commonwealth of Kentucky.<sup>245</sup> The amount of the blanket bond depends on the number of shallow wells an operator owns within the commonwealth.<sup>246</sup> For one to twenty-five wells, the amount is \$10,000; whereas, for more than 500 wells, the amount is \$100,000.<sup>247</sup> The operator of deep wells may also file a blanket bond in the Commonwealth of Kentucky that covers all of their oil and natural gas wells.<sup>248</sup> For one to ten deep vertical wells, the blanket bond must be in the amount of \$200,000, and for one to ten horizontal deep wells, it must be in the amount of \$320,000.<sup>249</sup>

## 8. Wyoming

Wyoming like other states requires that an operator apply for a permit before commencing oil or natural gas operations.<sup>250</sup> The State of Wyoming also requires that an operator file a surety bond with the state as well.<sup>251</sup> The surety bond for an individual well should be \$10 per foot of well depth although it should be "adjusted every three years based on the Wyoming consumer price index or actual plugging costs."<sup>252</sup> In the alternative, the operator may also file a blanket bond for \$100,000 that would cover all wells within the state of Wyoming regardless of depth.<sup>253</sup>

The low cost of the bonds required for environmental reclamation via traditional oil and gas operations do not invoke a need for an operator to pledge their company's security to secure a bond. The practice of self-bonding as utilized in the surface coal industry is not necessary as it relates to Federal onshore operations and in most states. However, the rather insignificant cost of the bonds themselves raises concerns of adequate environmental reclamation. If the purpose of these bonds is to ensure compliance and, if necessary, cover the costs of reclamation should an entity fail to do so, then we must make sure such amounts are sufficient to cover all the costs.

The BLM and many other states have not increased the financial assurance amounts required to operate a well since the 1960s.<sup>254</sup> In light of inflation, this alone may be evidence that the current minimum bond requirements may not be enough to fully cover the costs of well reclamation. It is undisputed that the costs of reclamation for a well is far less costly than that of a surface coal mine. The exact cost of reclamation may be dependent upon the unique features including depth and concentration that will be difficult to capture without looking at each operation individually.

The argument that current bond amounts are inefficient is magnified by the use of blanket bonds. If an operator has a large number of wells, instead of bonding each individual well, they have the option of utilizing a blanket bond to cover all of the

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<sup>244</sup> § 353.590(9).

<sup>245</sup> § 353.590(12)(a).

<sup>246</sup> *Id.*

<sup>247</sup> *Id.*

<sup>248</sup> § 353.590(17).

<sup>249</sup> *Id.*

<sup>250</sup> 0-5-5 Wyo. Code R. § 1.

<sup>251</sup> § 4(a).

<sup>252</sup> § 4(b)(i)(A).

<sup>253</sup> § 4(b)(i)(B).

<sup>254</sup> *Id.*

operations in a state or on federal land. The greater the number of wells that are covered by the fixed blanket bond amount the less money that is available to cover the reclamation costs for each individual well in operation.

The recent flood of bankruptcies in the coal industry should prompt a review of the effectiveness of current financial assurance mechanisms in the oil and gas industry. This is especially pertinent given the technological advances that have increased the feasibility of unlocking certain domestic energy reserves and the falling price of oil and gas because of such accessibility. Couple this with the debt load of domestic operators along with recent concerns regarding the potential environmental consequences of hydraulic fracturing and we see the potential that environmental reclamation could be in jeopardy.

## **Conclusion**

The law seeks to ensure environmental accountability through the use of financial assurance. As this article illustrates, many traditional assurance mechanisms fall short of this mandate by lacking the ability to provide for effective environmental reclamation. Recent events in the coal industry have demonstrated the negative impact of self-bonding. Despite the systemic failure of self-bonding, it is still permitted and currently utilized by major coal companies today. While other traditional assurance mechanisms may fare better should a business become insolvent, many are not available because of the long-term costs associated with environmental reclamation. Environmental assurance trusts offer the ability to cover these long-term costs and be a more appealing financial option for businesses. Thus, it is timely for states and the federal government to reevaluate the relationship of environmental protection through financial assurance mechanisms and that of business.