The Economic Rationality of EPA's Proposed Financial Responsibility Requirements under CERCLA 108(b) for Hardrock Mining Industry Facilities: Comments on EPA's Regulatory Impact Analysis

Prepared
for
Earthworks

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July 11, 2017

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Summary

The analysis found in the attached comments supports the following conclusions about EPA's Regulatory Impact Analysis (RIA) of requiring mineral companies to obtain third-party assurances to cover those mineral companies' full CERCLA financial responsibilities.

1. **EPA's RIA focuses on a comparison of costs rather than on a comparison of costs and benefits. This leads to a major distortion in how the RIA frames the objectives of the proposed regulations. This framing of the Regulatory Impact Analysis is built on several serious economic errors which we summarize below.**

2. The RIA's analytical structure can be outline in the following manner.[1]

    a. The RIA presents the objective of the regulations as an effort to reduce the costs to the federal government associated with mineral firms defaulting on their CERCLA financial responsibilities.
    b. The "benefit" of the proposed regulations then becomes the costs avoided by the federal government.
    c. The "costs" associated with the proposed regulations are the costs that mineral firms face to obtain third-party financial assurances for their CERCLA financial responsibilities.
    d. The "economic rationality" of the proposed regulations is then analyzed by comparing those two costs: The costs the federal government avoids versus the costs that are imposed on mineral firms to obtain third-party financial assurances.
    e. That comparison suggests the costs to mineral firms will be over four times the cost savings to the federal government in present value terms and therefore the regulations are not cost-effective. As will discussed below this is a false conclusion based on economic error.

3. The objective of the regulations is <u>not</u> to save the government money. It is to correct a serious market failure that distorts the incentive structure faced by mineral firms that, in turn, causes significant environmental damage and threatens human health. For example, in the case of Summitville mine waste containment failure, had these rules been in place, they would have benefited the public not just by requiring a sufficient cleanup bond so that taxpayers did not

[1] Exhibit 3-1, Conceptual Schematic of Analytic Steps, p. 3-2.

have to foot the $250 million (and counting) cleanup bill, but also, more importantly, by simultaneously providing the mining company and its financial backers sufficient financial incentive to prevent the disaster from occurring in the first place

4. EPA's RIA is structured in a way that obscures the objectives of the regulations and, therefore, the benefits of the regulations. It analyzes the costs associated with the regulations for the first six chapters before it discusses the benefits.

    a. The very character of the benefits and costs in this case encourages this focus on the costs imposed on mineral firms because those costs are ultimately based on market prices established in a competitive market, namely the charges that private financial assurance firms would charge the mineral firms to obtain third-party financial assurances. This makes it relatively straightforward to quantify those costs in monetary terms

    b. The benefits, on the other hand, are improvements in the economic incentives faced by mineral firms and improved transparency about the environmental liabilities associated with different mineral firms. These improvements in the operation of the American economy are expected to reduce the amount of hazardous wastes produced and the length of time that environmental and human health are threatened by those hazardous wastes. Quantifying these benefits in monetary terms is very difficult. The RIA "Summary of Social Benefits and Costs (Exhibit ES-5) shows no quantified benefits.

    c. This is often the case in economic analysis dealing with environmental quality. When this asymmetry in the ability to quantify costs and benefits in monetary terms is recognized, it should be a signal that greater effort is needed to make sure that the impact analysis is not biased by emphasizing the costs and/or benefits that can be expressed in monetary terms. EPA's RIA failed to do this. It focuses almost all of its attention on costs that can be quantified in monetary terms and very little attention on the actual benefits of the proposed regulations.

5. The EPA RIA does not recognize that a comparison of the costs avoided and costs imposed by a regulation can be a measure of cost-effectiveness only if those two costs are associated with the attainment of the same outcome, i.e. only if the benefits are identical with and without the regulation. That is not the case in the comparison of costs in the EPA RIA.

    a. Under the proposed regulations (Option 1), the requirement that all mineral firms with CERCLA financial responsibilities obtain third-party financial assurance leads to the following benefits:

   i. Financial resources are assured to be available to carry out removal and remediation of mineral firms' hazardous wastes in any year in which a mineral firm defaults on its financial responsibility. As a result, the removal and remediation of hazardous wastes can be carried out in a timely manner.

   ii. Because of the internalization of the previous external costs, the incentives faced by the mineral firms encourages efforts to reduce the environmental costs associated with their operations and the reduction in hazardous wastes as their operations proceed rather than all remediation being delayed until operations shut down possibly decades in the future.

   iii. In addition, the financial assurance firms will pressure mineral firms to adopt measures that reduce the magnitude of the firm's CERCLA responsibilities and the risk of default on those responsibilities. I.e. private firms and market interests will assist in accomplishing CERCLA objectives.

b. On the other hand, under the status quo, none of the above CERCLA objectives will be attained.

   i. Under the existing regulations, although mineral firms have the obligation to maintain a financial reserve to fund their CERCLA financial responsibilities, if they fail to do so, EPA "inherits" that responsibility.

   ii. However, EPA does not have the budget to actually expend funds to remove and remediate the hazardous wastes created by a defaulting mineral firm. For that reason, EPA pursues only the highest priority hazardous waste problems, those with the greatest threat to human and environmental health. Treatment of other abandoned CERCLA hazardous waste problems are postponed. As a result, those hazardous wastes are not removed and remediated at the end of the mineral operation. The polluted site remains and may spread because of lack of treatment. EPA's CERCLA objectives are <u>not</u> met: the incentive system for mineral firms is not improved, the hazardous wastes are not removed or remediated at the end of operations, and the environmental liabilities of mineral firms are not clarified.

c. In this setting, the benefits associate with propose regulations and the benefits associated with continuing the status quo are not the same and the comparison of costs is not a measure of cost-effectiveness. For that reason, the EPA RIA focus on the cost avoided by the federal government and the costs to mineral firms to obtain third-party assurances, fails to correctly analyze the regulatory impacts.

6. In order for the comparison of the costs avoided by EPA and the costs imposed on mineral firms with CERCLA financial responsibilities to provide useful information on the economic rationality of the proposed regulations, the costs faced by EPA have to be the costs EPA would have to incur to assure that its CERCLA objectives were realized. That is, the relevant EPA avoided costs would be, at a *minimum*, the costs EPA would have to incur to assure that the financial resources would be available for removal and remediation of hazardous waste whenever a mineral firm with CERCLA financial responsibilities might cease operation and default on those responsibilities.

   That would require EPA to purchase assurances from private financial assurance firms covering each mineral firm with CERCLA financial responsibilities. Since the financial risks of business failure associated with any given mineral firm would be approximately the same whether EPA or the mineral firm itself purchases the financial assurances, the costs of those assurances are likely to be similar. That is, to obtain the same objective, EPA would have to incur similar costs, namely the costs that the RIA has estimated would be incurred by mineral firms purchasing third-party financial assurances.

   a. That is the *minimum* cost because it accomplishes only part of the objectives of the proposed regulations: the timely removal and remediation of the hazardous wastes. EPA purchasing the financial assurances to cover mineral firms' CERCLA responsibilities would not change the incentives facing the mineral firms to reduce their hazardous waste production and remove and remediate that waste as their mineral production proceeds so that not as much hazardous waste accumulates.

   b. Because under a continuation of the status quo EPA remains the "default remediator," the costs associated with the hazardous wastes are not shifted to the firms who are creating those hazardous wastes.

   c. It is not clear what economic justification could be provided for EPA and taxpayers assuming the financial responsibilities of private, for-profit, business operations.

7. One of the reasons that the EPA RIA fails to recognize that the cost to EPA of carrying out its mandate in the current setting is the RIA does not recognize a fundamental characteristic of the mineral industry's production of hazardous wastes. That is that the hazardous wastes tend to accumulate over many years, even several decades. That means that a mineral firm accumulates a financial liability that it carries for a long period of time. Much of that liability is realized only at the end of active operation of the mine or ore processing facility when the

firm's cash flow is declining to zero but the costs of removal and remediation have come due.

This is a high risk setting where default on financial obligations is likely. EPA, residents in the local area, and American citizens face the risk of significant hazardous wastes accumulating and polluting land, air, and water indefinitely into the future. An implicit "promise" to accumulate financial resources so that removal and remediation can be carried out at a distant future date is not a reasonable economic arrangement. Promises to pay an obligation in the future are usually backed up by financial assurances of one type or another, e.g. collateral being provided to assure the repayment of a loan. That is, the business-like way of handling such future risks is providing financial assurances throughout the time period when the financial liability exists.

a. Continuing the status quo does not require that mineral firms provide reliable financial assurances to support this cumulative liability.

b. This leaves EPA and the accomplishment of its CERCLA responsibilities at risk of failure.

c. The proposed regulations would cure this irresponsible situation for both EPA and the mineral firms.

d. If EPA is expected to securely provide the removal and remediation that was the responsibility of defaulting mineral firms, there would be additional business-like costs to EAP and the federal government associated with EPA securing the necessary financial assurances (e.g. insurance) to fulfill that obligation. The RIA did not include those additional EPA costs when it estimated the costs that the federal government would avoid if the proposed regulations were adopted.

8. EPA's proposed regulations involve more that the proposed requirement that mineral firms with CERCLA financial responsibilities obtain third-party financial assurances. Other parts of the proposed regulations offer mineral firms a way of substantially reducing their need to obtaining such financial assurances by entering into other legally-binding arrangements that reduce their financial responsibilities by agreeing to reduce the volume of hazardous wastes and the time period those wastes go untreated. EPA proposes reducing the CERCLA financial responsibilities of mineral firms dollar for dollar for reductions in the volume and time duration of the firm's hazardous wastes. This would reduce the costs of the third-party financial assurances to the mineral firms. EPA has already implemented these arrangements, reducing substantially the estimated CERCLA financial responsibilities of mineral firms. The RIA, however, does not estimate the range of further reductions in these costs possible under these other provisions of the proposed regulations.

9. EPA's RIA does not estimate the additional costs to mineral firms and EPA's avoided costs in the same way even though both are tied to the probability of mineral firms failing to fulfill their CERCLA financial responsibilities. This asymmetric treatment of the risks of mineral firms defaulting on their financial responsibilities tends to reduce the estimated costs avoided by EPA while increasing the estimated costs imposed on mineral firms to obtain financial assurances.

10. EPA's Option 2 that would allow some mineral firms to self-insure their CERCLA financial responsibilities is not consistent with the objectives and benefits sought by the proposed regulations. Option 2 represents an incomplete internalization of mineral firms' external environmental cost that Is not economically justified.

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1. *Introduction: The Context*

The Comprehensive Environmental Response, Compensation, and Liability Act (popularly known as the *Superfund* law, herein referred to as CERCLA), was passed in 1980. It made the cleanup of hazardous waste associated with hardrock mining the responsibility of the mineral company that created that waste and required new and existing firms to monitor their creation of hazardous wastes and plan and provide for the removal, repair, and remediation of the hazardous waste that their ongoing operations created.

Although CERCLA made firms creating hazardous wastes (the *responsible parties*) liable for the financial responsibility of the cleanup, if the responsible party defaulted on that obligation, the federal government and general public inherited that financial and environmental liability. CERCLA section 108(b) authorized EPA to require the owners and operators of facilities that produce hazardous wastes to demonstrate financial responsibility through the purchase of a variety of financial assurance instruments or EPA-approved self-insurance. EPA, however, until recently did not take any action under that CERCLA authorization to reduce the risk to the federal government and taxpayers of having to pay the costs of removing, repairing, or rehabilitating hazardous waste sites. EPA's current proposed regulations, the preferred Option 1, would require that all metal mining and ore processing facilities obtain financial assurances from third-party firms that would guarantee that money would be available to cover those mineral companies' CERCLA financial responsibilities for cleanup of their hazardous wastes.

These comments critically review the Regulatory Impact Analysis (RIA)[2] that EPA developed in support of its proposed CERCLA 108(b) regulations. Citations in the main body of the text and footnotes that only include page or exhibit numbers, refer to that RIA.

2. *The EPA Regulatory Impact Analysis Significantly Understates the Benefits of the Proposed Regulations by Incorrectly Assuming That the Objective and Benefits of the Proposed Regulations Are to Reduce Federal Costs.*

[2] Regulatory Impact Analysis of Financial Responsibility Requirements under CERCLA 108(b) for Classes of Facilities in the Hardrock Mining Industry Proposed Rule, December 1, 2016, U.S. Environmental Protection Agency, Office of Land and Emergency Management.

The design of the EPA RIA tends to provide a misleading statement of the purpose of the proposed regulations, effectively diverting attention away from the actual benefits of the proposed regulations. The focus for the first six chapters (61 pages) of the RIA was on the *costs* imposed on regulated mineral firms by the proposed regulations and the cost savings to the government as a result of this cost shift from the government to the regulated mineral firms. It is only in Chapter 7 that the purposes and benefits of the proposed regulations are discussed.

The RIA provides a conceptual schematic of the analytical steps EPA took to analyze the economic rationality of the proposed regulations. (Exhibits ES-1 and 3-1) The conclusion of that schematic is the estimation of both the Total Industry Costs the regulations impose on regulated mineral firms and the Total Government Costs that the proposed regulations would allow the government to avoid. The government costs are tied to the way "the government is burdened with CERCLA costs if a responsible party defaults." (p. 3-4). Under the proposed regulation (Option 1) all CERCLA mineral firms would be required to obtain third-part financial assurances to cover their CERCLA financial responsibilities. In that setting, the financial assurance firms would guarantee the firm's funds for removal and remediation of the hazardous wastes the firm created. As a result, "[u]nder Option 1, there are no government costs." (p. 3-4)

In the RIA EPA estimates that CERCLA regulated mineral firms are responsible for approximately $7.1 billion in removal and remediation costs associated with their hazardous wastes. The annual cost for those mineral firms to obtain third-party financial assurances for those future removal and remediation costs was estimated by EPA to be $171 million (Option 1). The cost savings to the federal government from the transfer of responsibility for these costs to the regulated mineral firms was estimated to be $527 million in present value terms across the whole 34-year study period. If the annualized $171 million is expressed in present value terms (34 years, 7 percent discount rate), the total cost to mineral firms of the required third-party assurances would be $2,198 million. That is, the cost imposed on mineral firms by the regulations would be 4.2 times the cost savings to the federal government due to the regulations. ***If*** the RIA conceptual schematic of its analytical steps (Exhibit 3-1) is intended to be a cost-effectiveness test of the proposed regulations, it suggests that the proposed regulations are not cost-effective. That, as we will explain below, would be an erroneous conclusion.

3. Focusing on the Objectives and Benefits of the Proposed Regulations as Well As the Costs Is Necessary for an Accurate Regulatory Impact Analysis

The primary objective of the proposed regulations is *not* to save the federal government some money although it will also do that. The objective is much broader than that, namely to improve the functioning of the American economy: "…develop regulations that require classes of facilities to establish and maintain evidence of financial responsibility consistent with the degree and duration of risk associated with the production, transportation, treatment, storage, or disposal of hazardous substances."

The overall objective of CERCLA and its Section 108(b) is to extend normal business-like behavior to an area of the economy where, previously, important economic costs were ignored, resulting in unnecessary resource waste. One of the principles of a market economy is that economic actors are held responsible for the economic costs they cause. EPA's proposed regulations seek to simultaneously improve economic incentives while also contributing to economic equity by holding cost-causers responsible for their own costs. Any other arrangement would assure that economic irresponsibility would be encouraged, other economic actors would be unnecessarily burdened by costs they did not cause, overall costs in the economy would be unnecessarily high, and the economy would be less productive.

However, the RIA saves a detailed discussion of the benefits of the proposed regulations for the next to last chapter of the RIA. In that sense, the purpose of the regulations is obscured until after the costs associated with the regulations, especially those faced by the mineral companies, are laid out in considerable detail. One result of this over-estimate of costs is that the proposed regulations appear to be primarily aimed at saving the federal government money. This encourages a comparison of the money the government saves with the costs that mining companies have to incur to obtain the third-party assurances for their financial responsibilities. That is <u>not</u> a comparison of benefits and costs <u>nor</u> is it a cost-effectiveness test. It is an economic error in the framing of the issues.

4. *The Important Benefits of the Proposed Requirement that Mineral Companies Obtain Third-Party Assurances for Their CERCLA Financial Responsibilities That Are Largely Ignored in EPA's RIA*

EPA discusses the projected benefits of the proposed regulations in Chapter 7 of the RIA. It provides a review of the economics literature supporting those expected benefits. The comments below are offered in support of EPA's conclusions about the expected benefits.

   a. <u>Reductions in environmental damage and the costs of meeting environmental objectives.</u>

As mineral companies plan the development of their projects, they have to look forward, making sure that they are not increasing their future costs by, for instance, placing waste rock or tailings where they may block later mining, forcing the movement of waste materials more than once. Carless initial mining can increase future mining costs and reduce profitability and shorten the economic life of the mine.

The same can be said about the future costs of required removal and remediation of the hazardous waste associated with mineral production and processing sites. If that costly required future activity at the mineral production site is not integrated into the initial planning, repair and remediation may be much more costly than necessary. This applies across the life of the mine. If the mineral company knows that it will be responsible for the cleanup and that the cost of its third-party financial assurances will depend on how well it controls its hazardous waste, the mineral firm can design the operation so that those repair and remediation costs will not be as high. It can also integrate some of the repair and remediation into the ongoing operation of the mine so that not as much damage accumulates over the active life of the production facility and the costs associated with the cleanup at the end of the mineral facility's life is lower.

EPA recognizes this in its proposed rule and in its modeling of the size of the financial responsibilities mineral companies will face. For instance, the proposed rule allows owners and operators to reduce their CERCLA financial responsibilities by demonstrating that they have existing plans backed by enforceable documents (e.g., bonded reclamation plans) that will reduce the CERCLA financial responsibility for their sites. Consistent with the proposed rule's structure, EPA applied substantial reductions to the maximum financial responsibility amounts it calculated for mineral firms with legally enforceable remediation plans or financial assurances in place.[3]

In the RIA, EPA points out that many of the facilities potentially regulated by the proposed rule have already taken steps to significantly reduce their CERCLA financial responsibilities.:

> "Many [potentially regulated] facilities have developed reclamation and closure plans that include CERCLA response-like tasks or practices that reduce the risk of hazardous releases under existing state, federal, tribal, and local regulatory regimes. In some cases, facilities have also backed the implementation of those tasks through financial assurance. Under the proposed rule, facilities will receive a 100 percent reduction for applicable cost components if they: 1) demonstrate that they have planned and acquired sufficient financial assurance for tasks that would create post-closure conditions that meet EPA's performance standards; and 2) demonstrate that those future controls are enforceable against them through federal, state, tribal, or local agencies."[4]

EPA analyzed a sample of 49 mineral firms that would be regulated by the proposed rules to understand what steps those mineral firms had already taken that would qualify for reductions in their CERCLA financial responsibilities. Initially ignoring those financial responsibility assurances that were already in place, EPA estimated that this group of mineral firms would have an aggregate CERCLA financial responsibility of $11.2 billion.[5] After studying the assurances these mineral firms had already put in place and making appropriate reductions in those financial responsibilities because of legally binding, hazardous waste reduction steps, EPA's estimated financial responsibilities for these 49

[3] Appendix B.
[4] Pp. B-5 and B-6.
[5] Exhibit B-7.

mineral firms declined to $2.9 billion, a 74 percent reduction from the initial estimated financial responsibility.[6] That is, those mineral firms in the EPA sample, because they had already put financial and legal assurances in place, would have been able to eliminated almost three-quarters of their CERCLA financial responsibilities or $8.3 billion[7].

The reductions in CERCLA financial responsibilities for mineral firms that had already provided financial and legal assurances that they would meet their responsibilities allowed EPA to identify the *incremental* costs that mineral firms would face as a result of having to obtain third-party assurances for only the part of their responsibilities for which they had not yet provided assurances. But these significant reductions in CERCLA financial responsibilities demonstrate that mineral firms can and do respond to regulations holding them liable for their environmental damage by changing their behavior in ways that ultimately reduce the environmental costs associated with their mineral extraction.

Incentives matter. If economic actors are not held responsible for some of the important costs associated with their operations, they will tend to ignore those costs and overall costs in the economy will be higher and the productivity of the economy lower. More is required than nominally holding business firms responsible for their costs. The regulatory arrangements have to impose higher costs on firms when their environmental damage is higher and reward firms with lower environmental liabilities when the mineral firms reduce their environmental damage. Establishing a firm's CERCLA financial responsibilities in a way that takes into account the firm's enforceable plans to reduce impacts and the firm's arrangements for secure financial assurances for future environmental cleanup provides business-like incentives for firms to reduce their environmental footprints. Involving financial assurance firms in this allows other segments of the economy to help craft those incentives and monitor firm performance.

The result will be smaller volumes of hazardous wastes that are removed and remediated in a shorter period of time, reducing the overall exposure of people and the natural environment to those hazardous wastes.

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[6] Exhibit B-8

[7] Exhibit 5-4. Those engineering estimates of the new, reduced, CERCLA financial responsibilities also had to be adjusted for natural resource damages, health assessments, and regional differences in costs. This raised EPA's estimate of the financial responsibilities associated with this sample of mineral firms to $4.97 billion. When EPA scaled its 49-firm sample of potentially regulated mineral firms to its full projected sample of 221 mineral firms that would be subject to the regulations, the total estimated aggregate CERCLA financial responsibility was $7.064 billion. If the same adjustments had been made in EPA's initial estimate of those firms CERCLA financial responsibilities, assuming that no assurances had already been put in place, the adjusted financial responsibilities would have been $27.3 billion instead of $11.2 billion and the reduction in CERCLA financial responsibilities because of the assurances those mineral firms had already put in place would have been $20.2 billion, 74 percent of the $27.3 billion. Actions taken by mineral firms in response to regulatory pressures and incentives can have a dramatic impact on environmental costs that would otherwise accumulate until the time of mine closure.

b. Improving the Financial Information for Investors and the Operation of Financial Markets

When firms are allowed to informally "self-insure" their future environmental liabilities by nominally using part of their current net worth as "security," it is hard for investors to evaluate exactly what the size of that environmental liability actually is and how likely it is that in the future those environmental liabilities might threaten the firm's financial viability. Such informal "self-insurance" is unlikely to appear on the firm's balance sheet. Instead it is likely to appear, if at all, in one of many footnotes associated with the balance sheet.

This makes it difficult for financial analysts to evaluate the size of the environmental liability and the potential impact it might have on the mineral firm's future profitability and viability. This can add considerable uncertainty about the firm's actual profitability and value and affect the firm's cost of capital. Having a more formal statement of exactly what the size and time profile of that environmental liability is increases transparency. Having the firm lay out exactly what financial arrangements it has made to meet those future environment liabilities and having those assurances effectively audited by a financial assurances firm allows investors and analysts to evaluate the risk of those liabilities to the firm's future.

Well-functioning markets rely of good information. Absent clear information on a firm's environmental liabilities may burden firms in industries with known substantial environmental liabilities regardless of how well a particular firm may have managed those liabilities and planned to meet them while remaining profitable. On the other hand, other firms with substantial but not well known environmental liabilities that have taken few steps to meet those future financial challenges may be presenting a very inaccurate picture of their future financial viability. Having financial assurance companies guaranteeing environmental liabilities and, in the process, monitoring those firms' capital planning can provide investors with more confidence while also providing an incentive to those firms to manage their environmental damage so that their environmental liabilities and overall costs can be reduced. EPA's proposal also offers mineral companies the opportunity to reduce their CERCLA financial responsibilities by entering into contractual agreements to invest in reducing hazardous emissions and adopt assurance arrangements the meet EPA's standards for third-party independence.

5. *EPA Is Not the Default Remediator for Mineral Firms with CERCLA Financial Responsibilities. Mineral Firm Default Means Hazardous Wastes Go Untreated*

Under CERCLA the federal government nominally inherits the removal and mitigation obligations of mining companies that default on their CERCLA financial responsibilities. Whether the federal government will actually do this will depend on whether funds are appropriated by Congress to support EPA to take on this responsibility. In a period of concern over the federal deficit and efforts to reduce federal spending in order to cut that federal deficit, it cannot be casually assumed that the federal government would carry out all defaulting individual firms' CERCLA hazardous removal and mitigation responsibilities. One cannot assume that the federal government has zero cost of capital and does not face costs associated with the uncertain availability of the funds to finance the risk of mineral company defaults on their large, $7.1 billion, CERCLA financial liabilities.

EPA has been explicit about this:

> "If a site owner or operator defaults on its Superfund obligations under the baseline, EPA typically assumes responsibility for cleanup. Due to budget constraints, however, the Agency does not usually initiate remediation of the site immediately upon taking on this responsibility. EPA instead places the site in a queue of remediation projects ranked according to the risk they pose to human health and the environment. A site may remain in this queue for an extended period of time. During this time, contamination from the site may damage the local environment. Moreover, in some cases, the spatial extent of contamination may spread, causing more damage and increasing the costs of the eventual cleanup." (p. 7-15)

This makes clear that, in general, default by a mineral firm on its CERCLA financial responsibilities does not mean that the financial cost of the environmental repair and remediation simply shifts back to EPA which then does what the mineral firm was supposed to have done. Instead, it is the general public, especially those living near the hazardous wastes at the mineral extraction or processing sites, that suffers the consequences of the polluted land, water, and air for an unknown length of time. The hazardous wastes remain and may get worse, making the cost of cleanup larger, because repair and mitigation are not carried out.

A mineral firm's default on its CERCLA financial responsibilities does not just shift a dollar cost onto the federal government. Instead it blocks the removal and remediation of hazardous wastes until some indefinite point in the future. The intent of the law, to shift the responsibility for these costs to the mineral firms and assure the timely removal and remediation of those hazardous wastes is effectively frustrated.

The RIA, by using the expected value of mineral firms' defaults on their CERCLA financial responsibilities as a measure of the benefits of shifting full responsibility for those financial responsibilities to the mineral firms themselves is mischaracterizing the benefits of the proposed regulations and mischaracterizing the role that EPA is actually playing when mineral firms with CERCLA financial responsibilities default. EPA is effectively depicted as an organization with access to an imagined federal government's almost infinitely deep pockets. If that were true, it might be reasonable to dismiss the concerns about EPA actually being able to remove, repair, and remediate the hazardous waste sites when mineral firms default. In that setting, if we ignore the major objective of the proposed regulations, the creation of a rational economic incentive systems, the money to cover the failed firm's CERCLA financial responsibility would be readily available and the planned environmental remediation would be carried out on schedule. The "cost to the federal government" could be imagined to be a relatively insignificant amount of money. But that is not the reality in which EPA operates. The costs associated with mineral firm defaults on their CERCLA financial obligations include the costs of the continued pollution associated with the hazardous wastes indefinitely into the future and the disruption of EPA operations as large environmental liabilities demand its attention and prevents it from carrying out its obligations under CERCLA.

But if the objectives of the proposed regulations are to create an incentive system that encourages mineral firms to minimize their environmental damage and to assure that the remediation of the mineral firms' hazardous waste sites takes place before or immediately after mining and ore processing cease, then allowing the CERCLA financial responsibilities to shift back to EPA is not an acceptable outcome. It does not meet the intended objectives. As will be discussed below, the cost to U.S. citizens (through the federal government) of the default of a mineral company on its CERCLA financial responsibilities is higher than the dollar amount of financial responsibility on which the mineral firm has defaulted.

6. *EPA's RIA Ignores the Basic Requirements for Accurate Cost-Effectiveness Analysis*

A comparison of the costs associated with several different ways of reaching the same objective can be useful in identifying the most economical way to proceed. When the objective or benefit that is being pursued is the same, a comparison of the net benefits associated with each approach amounts to simply comparing the costs because the benefits are identical.

But in the analysis of the economic rationality of the proposed regulations that would require all regulated mineral firms to obtain third-party financial assurances for their CERCLA financial responsibilities, the costs of those financial assurances cannot be compared to the cost savings to the federal government that result from that shift in financial responsibility to the mineral firms because those two different sets of costs accomplish quite different objectives.

The status quo where EPA is nominally the default remediator for all mineral firms with CERCLA financial responsibilities that default on those responsibilities is the source of the estimated cost savings to the federal government. But the situation without this shift in cost responsibility is <u>not</u> the same as the situation with the shift of that cost responsibility from the federal government to the mineral firms. Most directly, there will be few or no defaults on CERCLA financial responsibilities because of the financial assurances required under the proposed regulations. As a result, the hazardous wastes are removed and the site remediated at the time the mineral firm ceases production. In addition, if that cost responsibility is effectively shifted to the mineral firms by requiring them to obtain third-party financial assurances for their CERCLA financial responsibilities, as discussed above, the set of incentives faced by the mineral firms changes significantly encouraging lower volumes of hazardous waste production and more timely removal and remediation. In addition, the information available to investors about mineral firms with CERCLA financial responsibilities will make those firms' environmental liabilities clearer, enhancing the information available to investors and improving capital markets. None of these benefits are associated with the status quo where an underfunded EPA cannot carry out the environmental responsibilities of the mineral firms that default on their CERCLA financial responsibilities. The cost savings to the federal government may appear low, but that is because the objectives of CERCLA are not being pursued or accomplished.

It is an economic error to compare the cost of CERCLA mineral firms obtaining third-party assurances for their financial responsibilities to the cost savings to the federal government associated with the shift in these cost responsibilities to the mineral firms. That comparison provides no economic information.

7. The EPA RIA Ignores the Risks and Additional Costs Associated with the Cumulative Environmental Liabilities Associated with Hardrock Mining and Ore Processing

Characteristics of mineral extraction and processing create long-run environmental liabilities that put people and government agencies at risk of incurring disruptively high future costs. Usually it is not possible to completely repair or mitigate environmental damage as the extraction and processing of minerals proceeds. If mineral firms could repair or mitigate environmental damage hour-by-hour or day-by-day, the mineral firms could pay for the damage being done as it was being done, just as it pays its workers as they work and pays for energy and other consumables used in their production processes as they are purchased and used. In that setting, the risk of the defaulting on substantial accumulated environmental costs would be small.

But usually much of the environmental repair and mitigation can take place only after mineral extraction and processing have stopped, which could be decades into the future. This accumulation of damages over time and the delay well into the future of acting to repair and mitigate that damage creates substantial risk that when it is time to begin the repair and mitigation work, the financial resources to fund that work will not be available and the environmental damage will not be repaired or mitigated. That risk of future failure to return the natural landscapes to an agreed upon condition after mineral extraction and processing cease adds a dimension to the costs that requires special treatment, typically the posting of a bond, the provision of collateral, the creation of a trust account, etc. That is, various forms of secure capital set-asides that assure that the financial resources necessary for the repair and mitigation are available when they are needed has to be arranged long before they are needed.

This need for protection against a large future risk that could force a mineral firm out of business or block a government agency from carrying out its missions or permanently damage the well-being of households creates the need to incur an additional set of costs to “insure” against such an unmanageable future financial and/or environmental shock. Note that these are costs *in addition to* the large future cost that is judged to be unmanageable and therefore requires insurance protection. It is that need for insurance protection that adds an incremental cost.

One conceptual alternative to the proposed regulations that require all mineral firms with CERCLA financial responsibilities to obtain third-party financial assurances, would be for EPA to seek to purchase insurance of its own against the potential default of mineral firms on their financial responsibilities. That would assure that the financial resources would be available to remove and remediate the hazardous wastes in a timely fashion after a mineral firm shut down. This would be more similar to mineral firms with CERCLA financial responsibilities obtaining financial assurances from third-party financial assurance firms. Obtaining insurance against the default by each mineral firm with a CERCLA financial responsibility for all the years the firm operated would likely be quite expensive for EPA. Yet that is what would be required to make the status quo outcome somewhat similar to the outcome of the proposed regulations so that a legitimate comparison could be made of the costs associated with the two scenarios.

It should be noted that the sort of analysis that would be required to determine what it would cost EPA to purchase assurances against mineral company defaults on CERCLA responsibilities would be similar to the analysis that the RIA did of what it would cost each mineral firm with CERCLA financial responsibilities to purchase such financial assurances. The financial stability and credit/bond rating as well as the size and time profile of the CERCLA financial responsibility of each mineral firm would have to be analyzed. Tradeoffs between EPA putting up capital set-asides versus making very large annual insurance payments would have to be analyzed. Given that it would be the same set of firms with the same set of financial characteristics, the cost of EPA obtaining that sort of insurance might be quite similar to the sum of the costs of the individual mineral firms obtaining their financial assurances. That is, the cost difference between the two ways of obtaining assurances that financial resources would be available to support the removal of the hazardous wastes and remediation of the sites could be quite small.

But, although EPA purchasing insurance against mineral firm default might assure that the removal and mitigation took place in a timely manner, other objectives/benefits of the proposed regulations would not be attained, i.e. changing the incentives faced by mineral firms so that they sought to minimize hazardous waste volumes and the length of time those wastes were in contact with the environment. Also, the improvements in capital markets because of better information about environmental liabilities would not take place. For that reason, the comparison of costs even in this hypothetical scenario would not be sufficient in evaluating whether there were net benefits associated with the proposed regulations. The value of the expected benefits would also have to be incorporated into the analysis.

8. The RIA Does Not Estimate the Government's Avoided Costs and the Mineral Firms' Cost of Obtaining Third-Party Assurances in a Similar Fashion with the Result That the Avoided Government Costs Are Understated and the Mineral Firms' Assurance Costs Are Overstated.

EPA does not measure the cost savings to the government in the same way as it measures the incremental costs to mineral firms of obtaining third-party assurances for their CERCLA financial responsibilities. For the potential government losses due to mineral firm defaults, EPA used the exit rate of *mining* companies as a group and assumed the equivalent of a levelized annual loss across the 34 years. For the costs to each firm of a third-party assurance, the focus was not on *mining* companies but on all types of companies grouped by their bond ratings, regardless of industry. A detailed time pattern of financial responsibilities was developed for each mineral firm, adjusting for expanding environmental footprints and inflation. The default rate used for mineral firms in costing out the price of third-party assurances was higher than the default rate used in calculation the cost to government of the defaults: 11 percent versus.7.5 percent.[8] In calculating the cost of third-party assurances, for more than a third of the mineral companies the risk of default was 10 to 20 percent and for about ten percent of firms the default rate was over 40 percent. In calculating the costs of assurances, the mining companies were assumed to be much more likely to fail than was assumed in calculating the cost of defaults to the federal government.

9. EPA's Option 2 That Would Allow Some Mineral Firms to Self-Insure Their CERCLA Financial Responsibilities Is Not Consistent with the Objectives and Benefits Sought by the Proposed Regulations. Option 2 Represents an Incomplete Internalization of Mineral Firms' External Environmental Cost That Is Not Economically Justified.

Although EPA's "preferred" regulations would require *all* mineral firms with CERCLA financial responsibilities to obtain third-party financial assurances (Option 1), EPA is also "co-proposing" Option 2 that would allow firms that pass a financial test *and* demonstrate a reliable corporate guarantee to continue to self-insure their CERCLA financial responsibilities (p. 1-5) The RIA estimates that $2.1 billion in financial responsibilities would be self-insured under Option 2. That would be 30 percent of the total estimated CERCLA financial responsibilities for all mineral firms subject to the proposed regulations. (Exhibit 5-6) Allowing those mineral firms with high credit ratings

[8] Exhibit 5-3 provides the distribution of mineral firms by bond rating and footnote 53 on page 5-2 provides the default risks associated with each bond rating group. The average of the high and low default rates for each group was used and these were weighted by the percentage distribution of firms by bond rating.

to self-insure would save those firms $60 million per year in avoided third-party assurance costs. That represents a 35 percent reduction in the cost of the required financial assurances. (Exhibit 5-5)

The RIA estimates that the likelihood of firms that pass the two proposed financial tests defaulting on their CERCLA financial responsibilities to be very low.[9] Because the RIA incorrectly assumes that the objective of the proposed regulations is to reduce the cost to the federal government of picking up the financial responsibilities of defaulting mineral firms, the RIA justifies allowing about a third of the CERCLA financial responsibilities to continue to self-insure based on the very low additional cost to the federal government of doing so. Because of the estimated low probability of default of these firms with high credit ratings, the burden on the federal government is relatively low, $16 million out of a total estimated federal government burden of $527 million, i.e. 3 percent of the total. (Exhibit 5-6)

It is important to note that the mineral firms with high credit ratings will face lower costs to obtain third-party financial assurances because they have a lower risk of defaulting. In that way, the regulations proposed by EPA lead to a market reward to mineral firms with the highest credit ratings and a market penalty to firms with low credit ratings.

Given that the objectives of the proposed regulations is <u>not</u> to save the federal government money but to improve the incentives faced by mineral firms so that they seek to reduce the volume of their hazardous wastes and the time duration the environment is exposed to those wastes, it is not clear what the economic logic is of allowing a significant amount of the CERCLA financial responsibilities to continue to be backed up by American taxpayers through EPA. The CERCLA objective is to fully shift responsibility for these environmental costs to the firms that create them. The justification of doing that for only two-thirds of those CERCLA financial responsibilities is not clear. If the choice between Option 1 and Option 2 is evaluated in terms of the objectives of these regulations rather than in terms of saving the federal government some money, only Option 1 serves those CERCLA objectives.

[9] Exhibit 5-6. While all mineral firms with CERCLA financial responsibilities would have an average failure rate of 7.5 percent, mineral firms passing the two tests would have a failure rate of only 0.7 percent.