

**ENVIRONMENTAL PROTECTION AGENCY****40 CFR Part 320**

[EPA-HQ-SFUND-2015-0781; FRL-9971-50-OLEM]

RIN 2050-AG61

**Financial Responsibility Requirements Under CERCLA Section 108(b) for Classes of Facilities in the Hardrock Mining Industry****AGENCY:** Environmental Protection Agency (EPA).**ACTION:** Final action.

**SUMMARY:** The Environmental Protection Agency (EPA or Agency) is announcing its decision to not issue final regulations on its proposed regulations for financial responsibility requirements applicable to hardrock mining facilities that were published on January 11, 2017.

This decision is based on the record for this rulemaking. This final rulemaking is the Agency's final action on the proposed rule.

**DATES:** This final action is effective on March 23, 2018.

**ADDRESSES:** EPA has established a docket for this action under Docket ID No. EPA-HQ-SFUND-2015-0781. All documents in the docket are listed on the <https://www.regulations.gov> website. Although listed in the index, some information is not publicly available, *e.g.*, Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy form. Publicly available docket materials are available electronically through <https://www.regulations.gov>.

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**I. Executive Summary****A. Overview**

EPA is announcing its decision on its proposed regulations for financial responsibility requirements applicable to hardrock mining facilities that were published on January 11, 2017. EPA has decided not to issue final regulations because the Agency has determined that final regulations are not appropriate. This decision is based on EPA's interpretation of the statute and analysis of its record developed for this rulemaking. EPA has analyzed the need for financial responsibility based on risk of taxpayer funded cleanups at hardrock mining facilities operating under modern management practices and modern environmental regulations, *i.e.*, the type of facilities to which financial responsibility regulations would apply. That risk is identified by examining the management of hazardous substances at such facilities, as well as by examining federal and state regulatory controls on that management and federal and state financial responsibility requirements. With that focus, the record demonstrates that, in the context of CERCLA section 108(b), the degree and duration of risk associated with the modern production, transportation, treatment, storage or disposal of hazardous substances by the hardrock mining industry does not present a level of risk of taxpayer funded response actions that warrant imposition of financial responsibility requirements for this sector. This determination reflects EPA's interpretation of the statute, EPA's evaluation of the record for the proposed rule, and the public comment received by EPA.

The decision not to issue final regulations will address the concerns of those federal and state regulators and members of the regulated community who commented that the proposed requirements were unnecessary and would, therefore, impose an undue burden on the regulated community. This decision will provide assurance to state regulators who were concerned that the proposed requirements would be disruptive of state mining programs. This decision also will address the information provided by the insurance industry regarding the lack of availability of financial instruments that meet the requirements of section 108(c)(2). This decision is based on the record for this rulemaking, and does not affect the process for site-specific risk determinations, or determinations of the need for a particular CERCLA response, at individual sites, nor does this decision affect EPA's authority to take appropriate CERCLA response actions. Decisions on risk under other environmental statutes would continue under those statutes. This final rulemaking is the Agency's final action on the proposed rule.

#### B. Purpose of the Regulatory Action

Section 108(b) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as Superfund, directs EPA to 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 statute further requires that the level of financial responsibility be established to protect against the level of risk the President, in his discretion, believes is appropriate, based on factors including the payment experience of the Fund. The President's authority under this section for non-transportation-related facilities has been delegated to the EPA Administrator.<sup>1</sup>

In a **Federal Register** notice dated July 28, 2009,<sup>2</sup> EPA identified the classes of facilities within hardrock mining<sup>3</sup> as

<sup>1</sup> See E.O. 12580, 52 FR 2923 (January 23, 1987).

<sup>2</sup> Identification of Priority Classes of Facilities for Development of CERCLA Section 108(b) Financial Responsibility Requirements, 74 FR 37213, July 28, 2009.

<sup>3</sup> For purposes of this final rulemaking, EPA includes within the term "hardrock mining" the facilities included in the definition of that term developed for purposes of the *Priority Notice*, that is, facilities that extract, beneficiate, or process metals (e.g., copper, gold, iron, lead, magnesium, molybdenum, silver, uranium, and zinc), and non-metallic non-fuel minerals (e.g., asbestos, gypsum, phosphate rock, and sulfur).

the classes for which it would first develop financial responsibility requirements based on consideration of many factors, including factors unrelated to modern facilities, such as legacy contamination, and factors not demonstrating risk, in and of themselves, such as Toxic Release Inventory (TRI) reports under Superfund Amendments and Reauthorization Act of 1986 (SARA) section 313.

On January 11, 2017, the Agency published proposed financial responsibility requirements applicable to hardrock mining facilities.<sup>4</sup> The proposal identified two goals for section 108(b) regulations—the goal of providing funds to address CERCLA liabilities at sites, and the goal of creating incentives for sound practices that will minimize the likelihood of need for a future CERCLA response. As discussed below, EPA now believes that these goals have been met for the hardrock mining classes of facilities.

The proposal identified for public comment a range of options and supporting information, as described in the proposed rule preamble.<sup>5</sup> The proposed rule set forth, in proposed 40 CFR part 320, subparts A through C, requirements for a comprehensive financial responsibility program under section 108(b) that would be applicable to hardrock mining facilities as well as to future industry sectors for which requirements under section 108(b) are later developed. In addition, the proposed rule set forth, in proposed part 320, subpart H, requirements specifically applicable to hardrock mining facilities.

EPA provided information and analysis demonstrating releases and potential releases of hazardous substances at hardrock mining facilities. EPA also discussed the relationship of section 108(b) to other federal law and to state law.<sup>6</sup> However, despite making a commitment to do so in the notice entitled "Identification of Priority Classes of Facilities for Development of CERCLA Section 108(b) Financial Responsibility Requirements" (2009 Priority Notice), published on July 28, 2009, in the development of the proposed rule the Agency did not consider other federal and state programs when determining the need

<sup>4</sup> Financial Responsibility Requirements Under CERCLA Section 108(b) for Classes of Facilities in the Hardrock Mining Industry, 82 FR 3388, January 11, 2017.

<sup>5</sup> See 82 FR 3388, January 11, 2017.

<sup>6</sup> 82 FR 3402–03 (concluding that section 108(b) applies even when a facility is subject to financial responsibility requirements under federal law).

for section 108(b) regulations.<sup>7</sup> Instead, the proposed rule would have considered other programs only after financial responsibility requirements are imposed, as a means to reduce such requirements. EPA now believes that it is appropriate to consider such programs at the outset, when evaluating both the degree and duration of risk associated with the production, transportation, treatment, storage, or disposal of hazardous substances as well as when evaluating the risk of taxpayer financed response costs.

EPA's final action on the proposed rule is a decision not to promulgate it.<sup>8</sup> As explained below, EPA has reconsidered whether the rulemaking record supports the proposed rule in light of the Agency's interpretation of the statute, the Agency's evaluation of the record, and the information and data received through public comment. As a result of this reconsideration, EPA has determined that the rulemaking record it assembled does not support imposing financial responsibility requirements under section 108(b) on current hardrock mining operations. This determination is based on information in the record on the degree and duration of risk posed by modern production, transportation, treatment, storage or disposal of hazardous substances at mining sites operating under modern regulations that demonstrates that financial responsibility requirements are not necessary to address the risk of taxpayer financed response actions at hardrock mines. EPA has reconsidered its assessment of the risks posed by hardrock mining operations presented in the proposed rule, and determined that that assessment did not adequately consider the degree to which existing federal and state regulatory programs and improved mining practices at modern mines reduce the risk that there would be unfunded response liabilities at currently operating mines. Furthermore, EPA notes that even under the analysis in the proposed rule, the

<sup>7</sup> 74 FR 37219 and n. 50.

<sup>8</sup> EPA has made editorial changes to this document from the prepublication version, including replacing various references to the action being a "final rule," in accordance with the Office of the Federal Register's (OFR) interpretations of its implementing regulations (1 CFR 5.9 and parts 21 and 22), the **Federal Register** Act (44 U.S.C. chapter 15) and Document Drafting Handbook. OFR regulations, however, expressly disclaim a legal effect from these publication requirements. "In prescribing regulations governing headings, preambles, effective dates, authority citations, and similar matters of form, the Administrative Committee does not intend to affect the validity of any document that is filed and published under law." 1 CFR 5.1(c). Accordingly, these editorial changes do not affect the legal status of the action as a final regulation under CERCLA.

projected level of risk of EPA-funded response actions was relatively low (\$15 to \$15.5 million per year), and was significantly less than the projected cost to industry of providing the additional financial responsibility that would have been required by the proposed rule (\$111–\$171 million per year).

The Agency's decision that a section 108(b) rule for the hardrock mining industry is not appropriate relies on the record developed for this rulemaking as well as information submitted by commenters on three key points, which in combination demonstrate significantly reduced risk at current hardrock mining operations: (1) The reduction in risks due to the requirements of existing federal and state mining programs and voluntary protective practices of current hardrock mining owners and operators, (2) the reduced costs to the taxpayer resulting from effective hardrock mining programs, enforcement actions, and owner or operator responses, including financial assurance requirements pursuant to these other programs, and (3) the resulting reduction in the risk of the need for federally financed response actions at hardrock mines. The record thus evaluated also supports EPA's determination that federal and state regulation and practices at modern facilities reduce the risks posed by operating facilities and, therefore, the imposition of section 108(b) financial responsibility requirements is not appropriate.

This determination also addresses concerns regarding disruption and duplication of state and federal financial responsibility requirements, the difficulty in tailoring financial responsibility to a specific level of risk, as well as concerns raised by the financial industry regarding challenges in providing financial instruments that meet the requirements of the statute and the proposed rule. As discussed below, the proposed rule created the potential for the preemption of state financial responsibility requirements. In addition, EPA acknowledges that the formula through which EPA had proposed to determine the level of financial assurance relied on information unrelated to risks of taxpayer financed costs posed by the current facilities to which the proposed rule would apply. Finally, as discussed below, members of the financial industry commented that section 108(c)(2), which allows direct claims against a guarantor providing evidence of financial responsibility, is at odds with relevant commercial law and practice and would significantly deter the financial industry from providing such instruments and services.

This final rulemaking does not affect, limit, or restrict EPA's authority to take a response action or enforcement action under CERCLA at any individual hardrock mining facility, including the currently operating facilities described elsewhere in this final rulemaking and in the Technical Support Document for this final rulemaking,<sup>9</sup> and to include requirements for financial responsibility as part of such response action. The set of facts in the rulemaking record related to the individual facilities discussed in this final rulemaking support the Agency's decision not to issue financial responsibility requirements under section 108(b) for currently operating hardrock mining facilities as a class, but a different set of facts could demonstrate a need for a CERCLA response at those sites. This final rulemaking also does not affect the Agency's authority under other authorities that may apply at hardrock mining facilities, such as the Clean Water Act (CWA), the Resource Conservation and Recovery Act (RCRA), the Clean Air Act (CAA), and the National Environmental Policy Act (NEPA).

#### *C. Summary of the Major Provisions of the Regulatory Action*

EPA is not requiring evidence of financial responsibility under section 108(b) at hardrock mining facilities in this action. Thus, there are no regulatory provisions associated with this final action.

#### *D. Costs and Benefits of the Regulatory Action*

The Regulatory Impact Analysis for the proposed rule demonstrated that the projected level of taxpayer liability that would have been avoided by the proposed rule was relatively small, and that the costs of meeting the proposed financial responsibility requirements were an order of magnitude greater than the costs avoided by the federal government as a result of such requirements. EPA is not requiring evidence of financial responsibility under section 108(b) at hardrock mining facilities in this action. EPA therefore has not conducted a Regulatory Impact Analysis for this action.

#### **II. Authority**

This final rulemaking is issued under the authority of sections 101, 104, 108 and 115 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. 9601, 9604,

9608 and 9615, and Executive Order 12580, 52 FR 2923, 3 CFR, 1987 Comp., p. 193.

#### **III. Background Information**

##### *A. Overview of Section 108(b) and Other CERCLA Provisions*

CERCLA, as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), establishes a comprehensive environmental response and cleanup program. Generally, CERCLA authorizes EPA<sup>10</sup> to undertake removal or remedial actions in response to any release or threatened release into the environment of “hazardous substances” or, in some circumstances, any other “pollutant or contaminant.” As defined in CERCLA section 101, removal actions include actions to “prevent, minimize, or mitigate damage to the public health or welfare or to the environment,” and remedial actions are “actions consistent with [a] permanent remedy[.]” Remedial and removal actions are jointly referred to as “response actions.” CERCLA section 111 authorizes the use of the Superfund Trust Fund (the Fund) established under title 26, United States Code, including financing response actions undertaken by EPA. In addition, CERCLA section 106 gives EPA<sup>11</sup> authority to compel action by liable parties in response to a release or threatened release of a hazardous substance that may pose an “imminent and substantial endangerment” to public health or welfare or the environment.

CERCLA section 107 imposes liability for response costs on a variety of parties, including certain past owners and operators, current owners and operators, and certain transporters of hazardous substances. Such parties are liable for any costs of removal or remedial action incurred by the federal government, so long as the costs incurred are “not inconsistent with the national contingency plan,” (NCP).<sup>12</sup> Section 107 also imposes liability for natural resource damages and health assessment costs.<sup>13</sup> As has been the case since

<sup>10</sup> Although Congress conferred the authority for administering CERCLA on the President, most of that authority has since been delegated to EPA. See Exec. Order No. 12580, 52 FR 2923 (Jan. 23, 1987). The executive order also delegates to other federal agencies specified CERCLA response authorities at certain facilities under their “jurisdiction, custody or control.” This can include CERCLA authorities at mines located on federal lands under the jurisdiction of BLM and the Forest Service.

<sup>11</sup> CERCLA sections 106 and 122 authority is also delegated to other federal agencies in certain circumstances. See Exec. Order No. 13016, 61 FR 45871 (Aug. 28, 1996).

<sup>12</sup> See CERCLA section 107 (a)(4)(A).

<sup>13</sup> See CERCLA section 107 (a)(4)(C)–(D).

<sup>9</sup> See: EPA, “CERCLA Section 108(b) Hardrock Mining Final Rule Technical Support Document,” December 1, 2017.

CERCLA's enactment, these provisions of CERCLA are available according to their terms, to the federal government and other parties, regardless of whether an owner or operator has provided evidence of financial responsibility under section 108(b).

In accordance with CERCLA, in 1990 EPA issued the current version of the NCP.<sup>14</sup> These regulations provide the organizational structure and procedures for preparing for, and responding to, discharges of oil and releases of hazardous substances, pollutants, and contaminants. The NCP is codified at 40 CFR part 300. Among other provisions, the NCP provides procedures for hazardous substance response including site evaluation, removal actions, remedial investigation/feasibility studies (RI/FS), remedy selection, remedial design/remedial action (RD/RA), and operation and maintenance.<sup>15</sup> The NCP also designates federal, state, and tribal trustees for natural resource damages, and identifies their responsibilities under the NCP.<sup>16</sup> Under the NCP, EPA undertakes response actions that address or prevent risk to human health and the environment from the release of hazardous substances, pollutants or contaminants. A determination whether a release of hazardous substances, pollutants or contaminants presents a risk to be addressed under other sections of CERCLA or under other law is a separate determination from whether under section 108(b) risk associated with the management of hazardous substances at current hardrock mining operations warrants imposition of financial responsibility requirements. Nothing in this final action restricts EPA's other authorities. The Agency's decision not to issue final regulations under section 108(b) applicable to hardrock mining facilities does not change or substitute for EPA's procedures for site-specific evaluations of risk, and for determining the need for response, in accordance with the NCP.

Section 108(b) establishes an authority to require owners and operators of classes of facilities to establish and maintain evidence of financial responsibility. Section 108(b)(1) directs EPA to develop regulations requiring owners and operators of facilities (in addition to those under Subtitle C of the Solid Waste Disposal Act and other federal law) to establish evidence of financial responsibility "consistent with the degree and duration of risk associated

with the production, transportation, treatment, storage, or disposal of hazardous substances." In turn, section 108(b)(2) directs that the level of financial responsibility shall be initially established, and, when necessary, adjusted to protect against the level of risk that EPA in its discretion believes is appropriate based on the payment experience of the Fund, commercial insurers, courts settlements and judgments, and voluntary claims satisfaction. Section 108(b)(2) does not, however, preclude EPA from considering other factors in addition. The statute prohibited promulgation of such regulations before December 1985.

In addition, section 108(b)(1) provides for publication within three years of the date of enactment of CERCLA of a "priority notice" identifying the classes of facilities for which EPA would first develop financial responsibility requirements. It also directs that priority in the development of requirements shall be accorded to those classes of facilities, owners, and operators that present the highest level of risk of injury.

#### B. History of This Rulemaking

In November 2003, EPA initiated a study of the Superfund program, commonly referred to as the "120 Day Study."<sup>17</sup> This "120 Day Study" resulted in more than 100 recommendations. In 2005, EPA initiated an Action Plan for implementing the recommendations of the 120-Day Study of the Superfund Program. Under that plan, EPA conducted an analysis to determine whether action under section 108(b) was appropriate (Recommendation 12). This analysis resulted in two detailed studies specifically designed to help identify classes of facilities for priority consideration under section 108(b), carried out from 2006 through 2008. The report of these studies, labeled "draft" and dated February 2009, are titled: "CERCLA 108(b) Financial Responsibility, Phase 1: Preliminary Analysis" (hereinafter Phase 1 Report) and "CERCLA 108(b) Financial Responsibility, Phase 2 Preliminary Analysis" (hereinafter Phase 2 Report).<sup>18</sup> Another analysis,<sup>19</sup> referred to as the 40 TSD Study, also recommended by the 120-Day Study

(Recommendations 10 and 11), on the sufficiency of financial assurance requirements imposed on hazardous waste treatment, storage, and disposal (TSD) facilities regulated under RCRA also provides relevant information.

In the Phase 1 and Phase 2 analyses, EPA interpreted the financial responsibility requirements of section 108(b) to apply to currently operating facilities and current or future risks. Accordingly, in the analyses performed from 2006 through 2008, the Agency attempted to exclude historic practices and legacy contamination resulting from such practices by using 1990 as a date to distinguish between modern and legacy practices. The Agency stated that it used 1990 because by that date most of the regulations under RCRA relating to management of hazardous waste had been promulgated. This approach was consistent with the 40 TSD study, which excluded facilities proposed to the National Priorities List (NPL) before 1990 to exclude facilities with legacy contamination that predated the RCRA hazardous waste regulatory program. However, because EPA determined in 1986 under section 3001(b)(3)(C) of RCRA that solid waste from the extraction and beneficiation of ores and minerals do not present sufficient risk to warrant regulation under subtitle C of RCRA,<sup>20</sup> 1990 is not a precise date for the advent of modern regulation of mining. As discussed below, commenters noted that state and federal mining regulations developed over a period of time. For mining regulated under state law, commenters suggest the mid-1990s represent the advent of modern mining regulation.<sup>21</sup>

In 2009, the Agency changed its interpretation of the statute. A July 2, 2009, memorandum attached to the Phase 1 and Phase 2 reports states that EPA decided that the reports were deficient because they excluded sites listed on the NPL before 1990. Accordingly, EPA did not finalize the reports and did not proceed to an analysis of the federal and state regulatory requirements and the modern practices of any specific industry sector.<sup>22</sup> Instead, in a **Federal Register** notice dated July 28, 2009,<sup>23</sup> EPA identified certain classes of facilities within the hardrock mining sector as the classes for which it would first develop financial responsibility requirements.

<sup>17</sup> See *Superfund: Building on the Past, Looking to the Future* (Washington DC: April 22, 2004), EPA-HQ-SFUND-2015-0781-0501.

<sup>18</sup> EPA-HQ-SFUND-2009-0265-0019 and EPA-HQ-SFUND-2009-0265-0020.

<sup>19</sup> See "Analysis of 40 Potential TSDs: Potential RCRA Treatment, Storage, and Disposal Facilities Proposed to the Superfund National Priority List after 1990," Office of Solid Waste, January 19, 2007.

<sup>20</sup> 51 FR 24496 (July 3, 1986).

<sup>21</sup> State mining laws are discussed below.

<sup>22</sup> EPA-HQ-SFUND-2009-0265-0019 and EPA-HQ-SFUND-20265-0020.

<sup>23</sup> Identification of Priority Classes of Facilities for Development of CERCLA Section 108(b) Financial Responsibility Requirements, 74 FR 37213, July 28, 2009.

<sup>14</sup> See 55 FR 8666, March 8, 1990.

<sup>15</sup> See 40 CFR part 300, subpart E.

<sup>16</sup> See 40 CFR part 300, subpart G.

EPA based that identification on consideration of many factors, including factors unrelated to risk posed by the production, transportation, treatment, storage, and disposal of hazardous substances at facilities that would be regulated under the proposed rule, such as legacy contamination, and non-risk based information, such as Toxic Release Inventory reports under SARA section 313. This notice represented a substantial departure from previous EPA interpretation of the statute to exclude legacy activities when determining the need for financial responsibility requirements under section 108(b).<sup>24</sup>

In the 2009 Priority Notice, EPA identified hardrock mining facilities as a priority without considering the impacts of modern federal and state regulations. Instead, EPA stated: “EPA will carefully examine specific activities, processes, and/or metals and minerals in order to determine what proposed financial responsibility requirements may be appropriate. As part of this process, EPA will conduct a close examination and review of existing Federal and State authorities, policies, and practices that currently focus on hardrock mining activities.”<sup>25</sup>

On January 11, 2017, the Agency published proposed financial responsibility requirements applicable to hardrock mining facilities.<sup>26</sup> The proposed rule adopted two goals for section 108(b) regulations—to provide funds to address CERCLA liabilities at sites, and to create incentives for sound practices that will minimize the likelihood of need for a future CERCLA response.

The proposal identified for public comment a range of options and supporting information, as described in the proposed rule preamble. The proposed rule set forth, in proposed part 320, subparts A through C, requirements for a comprehensive financial responsibility program under section 108(b) that would be applicable to hardrock mining facilities, as well as to future industry sectors for which requirements under section 108(b) are later developed. In addition, the proposed rule set forth, in proposed part 320, subpart H, requirements specifically applicable to hardrock mining facilities.

The proposed rule provided information and analyses on releases and potential releases of hazardous

substances at hardrock mining facilities. The proposed rule identified several classes of hardrock mining facilities that were excluded from the financial responsibility requirements because they involved a lower risk, and sought comment on whether additional classes should be excluded from the scope of a final rule.<sup>27</sup> The proposed rule also discussed the relationship of section 108(b) to other federal law and to state law.<sup>28</sup> However, contrary to the commitment made in the 2009 Priority Notice, the proposed rule did not consider reductions in risk as a result of such laws when determining the need for financial responsibility requirements. Instead, the proposed rule would have established such requirements at a level based on the activities already covered by reclamation bonds as well as the cost of cleaning up historic mining sites and then, based on information provided by the facility, would have allowed reductions in the amount of financial responsibility,<sup>29</sup> or release from the requirement for financial responsibility entirely.<sup>30</sup>

EPA received over 11,000 public comment submissions on the proposed rule. Other federal agencies, state agencies, and industry representatives overwhelmingly opposed financial responsibility requirements under section 108(b) for the hardrock mining industry. Environmental groups urged adoption of the proposed rule. EPA also received a large number of identical comments from individuals through multiple letter-writing campaigns, advocating both for and against adoption of the rule. Among other concerns, commenters objecting to the proposed rule expressed the view that the Agency’s assessment of the information relating to risks posed by hardrock mining operations as presented in the proposed rule was deficient because the Agency: (1) Relied on inappropriate evidence, such as data that did not demonstrate risk, and evidence not relevant to the facilities to be regulated under the rule; and (2) failed to consider relevant evidence, such as the role of federal and state mining programs and voluntary protective mining practices in reducing

risks at current<sup>31</sup> hardrock mining operations, and the reduced costs to the taxpayer resulting from effective hardrock mining programs, including existing financial responsibility requirements, and owner or operator responses.

EPA has considerable discretion under the statute and, as explained below, has reconsidered whether the rulemaking record supports the proposed rule in light of EPA’s interpretation of the statute, review of the record, and the information and data received through public comment. As a result, EPA has determined that the assessment of the information relating to risks posed by hardrock mining operations as presented in the proposed rule was not supported by the record. This reassessment relies on the information in the record on three key points: (1) The reduction in risks due to the requirements of existing federal and state mining programs and protective practices of current hardrock mining owners and operators, (2) the reduced costs to the taxpayer resulting from effective hardrock mining programs, including existing financial responsibility requirements, and owner or operator responses, and (3) the resulting reduction in the risk of the need for federally financed response actions at hardrock mines.

#### C. Recent Litigation Under Section 108(b)

On March 11, 2008, Sierra Club, Great Basin Resource Watch, Amigos Bravos, and Idaho Conservation League filed a suit against then EPA Administrator Steven Johnson and then Secretary of the U.S. Department of Transportation Mary E. Peters, in the U.S. District Court for the Northern District of California. *Sierra Club, et al. v. Johnson*, No. 08-01409 (N.D. Cal.). On February 25, 2009, that court ordered EPA to publish the Priority Notice required by section 108(b)(1) later that year. The court later dismissed the remaining claims.<sup>32</sup>

EPA continued to work on a proposed rule for the next several years. However, developing a regulation that meets the statutory requirements presented a significant challenge.<sup>33</sup> Dissatisfied with the pace of EPA’s progress, in August 2014, the Idaho Conservation League, Earthworks, Sierra Club, Amigos Bravos,

<sup>24</sup> Compare EPA’s Phase I and Phase II reports (EPA-HQ-SFUND-2009-0265-0019 and EPA-HQ-SFUND-0265-0020) to 74 FR 37213.

<sup>25</sup> 74 FR 37219.

<sup>26</sup> 82 FR 3388 (January 11, 2017).

<sup>27</sup> 82 FR 3456–59; Hoffman Memo, “Mining Classes Not Included in Identified Classes of Hardrock Mining,” June 2009. See 82 FR 3455 n. 145. See exclusions from the rule at proposed 40 CFR 320.60(a)(2). EPA solicited comments on whether to identify additional exclusions based on a finding of minimal risk, citing iron ore, phosphates and uranium mines as examples. 82 FR 3456.

<sup>28</sup> 82 FR 3402–03.

<sup>29</sup> Proposed 40 CFR 320.63.

<sup>30</sup> Proposed 40 CFR 320.27.

<sup>31</sup> A discussion of which mining operations are considered “current” or “modern” can be found in section IV.D.1. of this final rulemaking.

<sup>32</sup> See *Sierra Club v. Johnson*, 2009 U.S. Dist. LEXIS 68436 (N.D. Cal. Aug. 5, 2009).

<sup>33</sup> See the discussion regarding instrument availability in section IV., and the discussions in section VII of some of the obstacles to developing a rule under section 108(b).

Great Basin Resource Watch, and Communities for a Better Environment filed a new lawsuit in the U.S. Court of Appeals for the District of Columbia Circuit, seeking a writ of mandamus requiring issuance of section 108(b) financial responsibility rules for the hardrock mining industry and for three other industries—chemical manufacturing; petroleum and coal products manufacturing; and electric power generation, transmission, and distribution.<sup>34</sup> Companies and organizations representing business interests in the hardrock mining and other sectors also sought to intervene in the case.

Following oral argument, the court issued an Order in May 2015 requiring the parties to submit, among other things, supplemental submissions addressing a schedule for further administrative proceedings under section 108(b). The Court's May 19, 2015 Order encouraged the parties to confer regarding a schedule and, if possible, to submit a jointly agreed upon proposal. Petitioners and EPA agreed to a schedule calling for the Agency to sign for publication in the **Federal Register** a proposed rule for the hardrock mining industry by December 1, 2016, and a notice of its final action on the proposal by December 1, 2017. The parties submitted this schedule to the court, and on January 29, 2016, the court granted the parties' joint motion and issued an order that mirrored the submitted schedule in substance.<sup>35</sup> With this action the Agency has now satisfied both of these obligations.

#### D. Hardrock Mining Priority Notice

As described above, section 108(b)(1) requires the President to identify those classes of facilities for which requirements will be first developed and to publish notice of such identification in the **Federal Register**. On July 28, 2009, EPA issued a "Priority Notice" entitled "Identification of Priority Classes of Facilities for Development of Section 108(b) Financial Responsibility Requirements."<sup>36</sup> In the 2009 Priority Notice, EPA explained how it then chose to evaluate indicators of risk and its related effects, to inform its decision on the classes of facilities for which it would first develop requirements.<sup>37</sup> The 2009 Priority Notice pointed to eight factors that EPA considered,<sup>38</sup> and

<sup>34</sup> In re: Idaho Conservation League, et al., No. 14-1149.

<sup>35</sup> In re Idaho Conservation League, 811 F.3d 502.

<sup>36</sup> See 74 FR 37213 (July 28, 2009).

<sup>37</sup> See *Id.* at 37214.

<sup>38</sup> These eight factors were: (1) Annual amounts of hazardous substances released to the environment; (2) the number of facilities in active

stated that its review of those factors and the associated information in the docket led the Agency to conclude that hardrock mining facilities present the type of risk that, in light of its evaluation, justified them being the first for which EPA would develop section 108(b) requirements.<sup>39</sup> The 2009 Priority Notice satisfied the notice requirement in section 108(b)(1).

#### E. Hardrock Mining Proposed Rule

On January 11, 2017, EPA proposed requirements in a new 40 CFR part 320 that owners and operators of hardrock mining facilities subject to the rule demonstrate and maintain financial responsibility as specified in the proposed rule.

The proposed rule identified two goals for section 108(b) regulations—the goal of providing funds to address CERCLA liabilities at sites, and the goal of creating incentives for sound practices that will minimize the likelihood of need for a future CERCLA response. The proposed rule explained that first, when releases of hazardous substances occur, or when a threat of release of hazardous substances must be averted, a Superfund response action may be necessary. Therefore, the costs of such response actions can fall to the taxpayer if parties responsible for the release or potential release of hazardous substances are unable to assume the costs.<sup>40</sup> Second, the likelihood of a CERCLA response action being needed, as well as the costs of such a response action, are likely to be higher where protective management practices were not utilized during facility operations.<sup>41</sup>

The proposed rule discussed information assembled by EPA in the record for the action, which, as discussed below, included information on legacy practices and legacy contamination, as well as information not related to risk. Based on that record, EPA had proposed to presume that hardrock mining facilities as a class

operation and production; (3) the physical size of the operation; (4) the extent of environmental contamination; (5) the number of sites on the CERCLA site inventory (including both NPL sites and non-NPL sites); (6) government expenditures; (7) projected cleanup expenditures; and (8) corporate structure and bankruptcy potential (74 FR 37214, July 28, 2009).

<sup>39</sup> *Id.*

<sup>40</sup> The proposed rule discussion acknowledged the existence of federal and state financial responsibility requirements but took the position that they do not duplicate CERCLA financial responsibility requirements. 83 FR 3402. For example, the proposed rule claimed that state regulations include but are not limited to hazardous substance releases. 83 FR 3403.

<sup>41</sup> As discussed below, the Agency now believes that protective management practices must be considered when determining the need for financial responsibility requirements.

present the type of risks that section 108(b) addresses. The proposed rule then proceeded to establish a methodology to determine a level of financial responsibility in accordance with a proposed formula. The formula then allowed adjustments to the level of those requirements if a facility could demonstrate site specific conditions that rebut the presumption that the hardrock mining facilities that would be regulated under the rule pose a risk.<sup>42</sup>

EPA proposed limiting the applicability of the rule to owners and operators of facilities that are authorized to operate or should be authorized to operate on the effective date of the rule (hereinafter referred to as "current hardrock mining operations").<sup>43</sup> EPA explained its interpretation of the statute on this issue.<sup>44</sup> The proposed rule also relied, in part, on the grounds that these owners and operators are more likely to further the regulatory goals of section 108(b) requirements than are owners and operators of facilities that are closed or abandoned. EPA also proposed limiting the applicability of the rule to current hardrock mining operations because those facilities are readily identifiable and, since they are ongoing concerns, they are more likely to be able to obtain the kind of financial responsibility necessary under the regulation.<sup>45</sup> EPA continues to believe that this focus upon current hardrock mining operations is appropriate.

## IV. Statutory and Record Support for This Final Rulemaking

### A. Statutory Interpretation

Section 108(b) provides EPA only general instructions in paragraphs (b)(1) and (b)(2), on how to determine what financial responsibility requirements to impose for a particular class of facility. Section 108(b)(1) directs EPA to develop regulations requiring owners and operators of facilities to establish evidence of financial responsibility "consistent with the degree and duration of risk associated with the production, transportation, treatment, storage, or disposal of hazardous substances. Section 108(b)(2) directs that the level of financial responsibility shall be initially established, and, when necessary, adjusted to protect against the level of risk that EPA in its discretion believes is appropriate based on the payment experience of the Fund, commercial insurers, courts settlements

<sup>42</sup> See proposed 40 CFR 320.63.

<sup>43</sup> See proposed 40 CFR 320.2.

<sup>44</sup> 82 FR 3404–05.

<sup>45</sup> The proposed rule also excluded 55 specific substances (see footnote 25 *infra*).

and judgments, and voluntary claims satisfaction. Section 108(b)(2) does not indicate that this list of factors is exclusive. Read together, it is clear that the statutory language on determining the degree and duration of risk presented by a class, and in setting the level of financial responsibility as it determines is appropriate, confers a significant amount of discretion upon the Agency. EPA discusses these key phrases in turn below.

Section 108(b)(1) directs EPA to develop regulations requiring owners and operators of classes of facilities that EPA identifies, to establish evidence of financial responsibility “consistent with the degree and duration of risk associated with the production, transportation, treatment, storage, or disposal of hazardous substances.” Thus, the statute indicates that EPA is to evaluate risk from a selected class. However, EPA does not interpret this direction to require a precise calculation of risk associated with the selected classes of facilities. Standard dictionary definitions of the term “consistent” include merely “being in agreement” or “compatible.”<sup>46</sup> Moreover, section 108(b) requirements are necessarily imposed in the absence of any response action, although it is through such response actions that the precise level of risk associated with a particular site is ascertained. The statute thus confers upon EPA wide latitude to determine, for purposes of a section 108(b) rulemaking proceeding, what the degree and duration of risk presented by the identified class is. Section 108(b)(2) in turn directs that the level of financial responsibility shall be initially established, and, when necessary, adjusted to protect against the level of risk that EPA in its discretion believes is appropriate based on the payment experience of the Fund, commercial insurers, courts settlements and judgments, and voluntary claims satisfaction. This statutory direction does not specify a particular methodology for the evaluation, indicating simply that the level of financial responsibility be established to protect against the level of risk that EPA “in [its] discretion believes is appropriate.” Thus, this decision is committed to the discretion of the Administrator. While the statute does provide a list of information sources in section 108(b)(2) on which EPA is to base its decision—the payment experience of the Superfund, courts settlements and judgments, and voluntary claims satisfaction—that list

is not exclusive, nor does the statute specify how the information from these sources is to be used, for example, by indicating how the categories are to be weighted relative to one another. As discussed elsewhere in this final rulemaking and in the Technical Support Document, the record and comments received by EPA, provide details about the payment history of the Fund, experience with enforcement actions and court settlements resulting in operational changes, and voluntary actions by companies to reduce risks at specific sites that were used by the Administrator in his judgement to evaluate the risks from current hardrock mining operations. EPA has, therefore, taken multiple considerations into account, including information in these categories which, taken together, inform the exercise of its statutory discretion.

Among the types of information the statute authorizes EPA to consider are the existence of federal and state regulations and financial responsibility requirements. Section 108(b)(1) directs EPA to promulgate financial responsibility requirements “for facilities in addition to those under subtitle C of the Solid Waste Disposal Act and other Federal law.” According to the 1980 Senate Report on legislation that was later enacted as CERCLA, Congress felt it was appropriate for EPA to examine those additional requirements when evaluating the degree and duration of risk:

The bill requires also that facilities maintain evidence of financial responsibility consistent with the degree and duration of risks associated with the production, transportation, treatment, storage, and disposal of hazardous substances. These requirements are in addition to the financial responsibility requirements promulgated under the authority of section 3004(6) of the Solid Waste Disposal Act. It is not the intention of the Committee that operators of facilities covered by section 3004(6) of that Act be subject to two financial responsibility requirements for the same dangers.<sup>47</sup>

While the report language addresses section 3004(6) of RCRA specifically, EPA believes that it is consistent with Congressional intent for EPA to consider other potentially duplicative Federal financial responsibility requirements when examining the “degree and duration of risk” or the “level of risk” when determining whether and what financial responsibility requirements are appropriate. EPA also believes that it is consistent with Congressional intent for EPA to consider state laws before imposing federal financial responsibility requirements on facilities.

Consideration of state laws before

developing financial responsibility regulations is consistent with section 114(d) of CERCLA, which prevents states from imposing financial responsibility requirements for liability for releases of the same hazardous substances *after* a facility is regulated under section 108 of CERCLA. Just as Congress clearly intended to prevent states from imposing duplicative financial assurance requirements after EPA had acted to impose such requirements under Section 108, EPA believes it reasonable to also conclude that Congress did not mean for EPA to disrupt existing state programs that are already successfully regulating industrial operations to minimize risk, including the risk of taxpayer liability for response actions under CERCLA, and that specifically include appropriate financial assurance requirements under State law. Both reviews (of state and other Federal programs) help to identify whether and at what level there is current risk that is appropriate to address under section 108 of CERCLA.

EPA also believes that, when evaluating whether and at what level it is appropriate to require evidence of financial responsibility, EPA should examine information from hardrock mining facilities operating under modern conditions. These modern conditions include state and federal regulatory requirements and financial responsibility requirements that currently apply to operating facilities.

This reading of section 108(b) is consistent with statements in the legislative history of the statute. The 1980 Senate Report states that the legislative language that became section 108(b) “requires those engaged in businesses involving hazardous substances to maintain evidence of financial responsibility commensurate with the risk which they present.”<sup>48</sup> This reading of section 108(b) is also supported by testimony given by EPA before Congress during consideration of legislation that led to CERCLA. In 1979, Thomas C. Jorling, the EPA Assistant Administrator for Water and Waste Management, testified before a Senate subcommittee that new financial responsibility requirements in a hazardous substance liability law would be important to increase “standards of care” with respect to management of such substances. Mr. Jorling testified that this goal is not “relevant” to sites where “it is already too late; emergency assistance and containment are

<sup>46</sup> 301 Webster's II New Riverside University Dictionary (1988).

<sup>47</sup> S. Rept. 96-848 (2d Sess, 96th Cong.), at 92.

<sup>48</sup> S. Rept. 96-848 (2d Sess, 96th Cong.), at 92.

required.”<sup>49</sup> EPA notes that nothing in Mr. Jorling’s testimony suggests that there are not other potential mechanisms, such as successful regulatory programs under state and other Federal laws, that can ensure appropriate “standards of care.”

This statutory interpretation was also reflected in the proposed rule. The proposed rule would have applied to currently operating facilities.<sup>50</sup> As explained in the preamble to the proposal, EPA sought to document the extent to which hardrock mining facilities as a class continued to present risk associated with hazardous substance management.<sup>51</sup> Moreover, this direction to identify requirements “consistent with” the risks found also led EPA to recognize that imposition of financial responsibility requirements under section 108(b) would not be necessary for facilities that present minimal current risks<sup>52</sup> and to seek comment on whether other classes of facilities should be excluded.<sup>53</sup>

Despite its focus on currently operating facilities, the proposed rule relied on a record of releases of hazardous substances from facilities and payments to respond to such releases that does not present the same risk profile as the modern facilities to which the rule would apply.<sup>54</sup> As a result, EPA has determined that the analysis of risk presented in the proposed rule is inconsistent with the scope of the proposed rule and EPA’s intended approach under the statute.

The final rulemaking does not seek to rely on historical practices, many of which would be illegal under current environmental laws and regulations,<sup>55</sup> to identify the degree and duration of risk posed by the facilities that would be subject to financial responsibility requirements. Instead, in this final rulemaking EPA has considered modern federal and state regulation of hazardous substance production, transportation, treatment, storage, or disposal at hardrock mining facilities. As discussed

below, the record does not document significant risks associated with such facilities. Further, this final rulemaking does not rely on the cost of responding to historic mining activities and instead reflects the reduction in the risk of federally financed response actions at modern hardrock mining facilities that result from modern practices and modern regulation. With a few exceptions, discussed below, EPA has made minimal expenditures for modern hardrock mining operations. In addition, EPA engaged in significant discussions with, and received significant comments from, commercial insurers and other financial instrument providers. These providers have submitted information indicating that the availability of financial responsibility instruments would likely be limited for regulated entities, should EPA require companies to obtain them. Thus, to the extent that risks remain at current hardrock mining operations, the information provided by commenters has further convinced EPA that it is not appropriate to establish financial responsibility requirements on this class of facilities.

Nor does EPA believe that issuing final financial responsibility requirements is necessary to achieve the stated goals of the proposed section 108(b) rules for hardrock mining, namely, the goal to increase the likelihood that regulated entities will provide funds necessary to address CERCLA liabilities if and when they arise, and the goal to create an incentive for sound practices. EPA’s economic analysis showing that the proposed rule would avoid governmental costs of only \$15–\$15.5 million a year supports this conclusion. Based on these estimates, commenters objected that the projected annualized costs to industry (\$111–\$171 million) are an order of magnitude higher than the avoided costs to the government (\$15–\$15.5 million) sought by the rule. Further, given the fact that federal and state laws, including potential liability under CERCLA, have already created an incentive for sound practices, promulgating financial responsibility regulations for hardrock mining facilities under section 108(b) also is not necessary to advance that goal.

This final rulemaking is based on the record assembled for this action. This decision does not substitute for any site-specific determinations of risk made in the context of individual CERCLA site responses. Those decisions will continue to be made in accordance with preexisting procedures. EPA has reached these conclusions on the record

for this rulemaking, including public comments.

The major concerns raised by commenters are described below in Sections C and D. Section E below, and the Technical Support Document for this final rulemaking, discuss case examples in EPA’s record that correspond to these major concerns. It should be noted that much of the public comment received on the proposed rule addressed specific provisions of the proposal. Because EPA has decided not to issue regulatory text under section 108(b) for hardrock mining facilities, or the general provisions in proposed subparts A through C, comments on specific regulatory provisions are outside the scope of this final rulemaking.

#### *B. Evaluation of the Administrative Record*

EPA has reevaluated the administrative record for this rulemaking regarding risk at current hardrock mining operations in light of its interpretation of the statute discussed above, and has determined that that record does not support the proposed rule and supports, instead, a final Agency action of no rule. This determination is based on an evaluation of the three primary reports that the proposed rule relied on to identify risk to be addressed by section 108(b): Evidence of CERCLA Hazardous Substances and Potential Exposures at Section 108(b) Mining and Mineral Processing Sites (hereinafter referred to as the “Evidence Report”); Releases from Hardrock Mining Facilities (hereinafter referred to as the “Releases Report”); and Comprehensive Report: An Overview of Practices at Hardrock Mining and Mineral Processing Facilities and Related Releases of CERCLA Hazardous Substances (hereinafter referred to as the “Practices Report”).<sup>56</sup> This determination also is based on EPA’s consideration of the reduction of risk as a result of federal and state regulatory and financial assurance requirements. Finally, this determination is based on the record of payments from the Superfund Trust Fund to address hazardous substance releases from modern mining facilities.

<sup>49</sup> See Statement of Thomas C. Jorling, Assistant Administrator for Water and Waste Management, USEPA regarding S.1341/S.1480 (Sen. Comm. on Env’t and Public Works, Subcommittees on Resource Protection and Environmental Pollution, June 20, 1979).

<sup>50</sup> See proposed 40 CFR 320.2 and 82 FR 3404–05.

<sup>51</sup> See 82 FR 3470–80.

<sup>52</sup> See exclusions from the rule at proposed 40 CFR 320.60(a)(2), as well as the opportunity to obtain a release from financial responsibility requirements at proposed 40 CFR 320.27. Both were proposed based on an evaluation of the level of risk posed by the facilities. 82 FR 3455–59.

<sup>53</sup> 82 FR 3456.

<sup>54</sup> 82 FR 3460–61.

<sup>55</sup> See, for example, Clean Water Act effluent limitations applicable to mining, discussed below.

<sup>56</sup> See Releases from Hardrock Mining Facilities, EPA–HQ–SFUND–2015–0781–0497; Comprehensive Report: An Overview of Practices at Hardrock Mining and Mineral Processing Facilities and Related Releases of CERCLA Hazardous Substances, EPA–HQ–SFUND–2015–0781–0144; and Evidence of CERCLA Hazardous Substances and Potential Exposures at Section 108(b) Mining and Mineral Processing Sites, EPA–HQ–SFUND–2015–0781–0505.

## 1. Reports on Risks Posed by Hardrock Mining Facilities

### Evidence Report

As described in the preamble to the proposed rule, the Evidence Report documents EPA's preliminary efforts from 2009–2012 to examine CERCLA site-specific documents for estimated exposures of human and ecological receptors to CERCLA hazardous substances from mining and mineral processing sites cleaned up under Superfund in the past. This report also collected available information on potential exposures of human and ecological receptors to CERCLA hazardous substances from mining and mineral processing sites that were operational in 2009 (the most current available data at the time the evaluation took place). The proposed rule relied on the following conclusions from the Evidence Report:

Overall, the compiled information demonstrates that sites requiring cleanup under Superfund in the past, and sites operational in 2009 share characteristics related to the potential release of CERCLA hazardous substances and the exposure of human and ecological receptors, and illustrated the applicability of EPA's CERCLA experience to evaluating currently operating mines and processors.<sup>57</sup>

Upon review, EPA has now determined that those conclusions are not supported by the information provided in the Evidence Report. Further, these conclusions are not a primary factor in determining the “degree and duration of risk” presented by currently operating mines under modern environmental regulations. As a result, the Evidence Report does not support a rulemaking under section 108(b).

First, the Evidence Report compares releases of hazardous substances at 24 facilities on the NPL that continued to operate after 1980 (called post-1980 historical sites) to facilities operating in 2009. It does not specify whether or not 1980 can be considered a date by which mining facilities could be considered modern facilities subject to modern regulations. The report does not identify or consider whether the releases from the historical sites were due to pre-1980 activities and practices or whether the releases were caused by practices that are no longer typical of current mines. Instead, the report conflates risks posed by the historical facilities to risks posed by the 2009 facilities by comparing mining practices and contaminants of concern released at the facilities.

When comparing mining practices, the report does not take into account the

fact that by 2009, practices at mining facilities were already heavily regulated. For example, the effluent limitation for processes that use cyanide to extract gold or silver is zero discharge.<sup>58</sup>

When comparing contaminants of concern, the Evidence Report identifies contaminants of concern at the historic sites through CERCLA response action documentation.<sup>59</sup> In contrast, at the 2009 operating sites, contaminants of concern are identified through reports of TRI releases and through discharge monitoring reports submitted pursuant to Clean Water Act permits.<sup>60</sup> The report fails to acknowledge that the evidence presented regarding releases of hazardous substances from facilities operating in 2009 is not evidence of risk. “TRI data do not reveal whether or to what degree the public is exposed to listed chemicals.”<sup>61</sup> Further, releases reported under Clean Water Act permits are regulated releases. The fact that the same hazardous substances may be present at historic modern hardrock mining facilities is simply a consequence of the type of ores and processes used at hardrock mines. The mere presence of hazardous substances is not equivalent to risk. Similarly, the existence of common environmental receptors at historic and modern mines is not determinative of risk. The presence of a receptor does not indicate that there are releases of hazardous substances at levels that cause risk. Rather, the primary determinant of risk is how current operations at the mine are conducted, including the current regulatory regime under which they operate. As documented in this final action, it is in this respect that most of the historic examples discussed in the proposed rule differ from the modern mines that would actually be subject to its requirements.

Finally, the Evidence Report admits that the releases identified as a cause of past fund expenditures are now regulated under the Clean Air Act and RCRA.<sup>62</sup>

As a result of these limitations, the Evidence Report fails to identify substantial risks associated with modern hardrock mining facilities and therefore does not support a rule that would impose financial responsibility requirements on the current hardrock mining sector.

<sup>57</sup> 82 FR 3475.

<sup>58</sup> See 40 CFR 440.100(d).

<sup>59</sup> Evidence Report, at 9.

<sup>60</sup> Evidence Report, at 17.

<sup>61</sup> See [https://www.epa.gov/sites/production/files/2015-06/documents/factors\\_to\\_consider\\_6.15.15\\_final.pdf](https://www.epa.gov/sites/production/files/2015-06/documents/factors_to_consider_6.15.15_final.pdf).

<sup>62</sup> Evidence Report, at 55–56.

## Releases Report and Practices Report

Implicitly recognizing the limitations of the Evidence Report, as well as the inability to rely on reports that are decades old,<sup>63</sup> EPA developed two additional reports to attempt to provide record support for a rule under section 108(b), the Releases Report and the Practices Report.

The Releases Report was intended to “substantiate the ongoing existence of environmental risk from releases to the environment from hardrock mining and mineral processing operations in spite of improved regulation of and practices instituted by the hardrock mining and mineral processing industry.”<sup>64</sup> It purports to document releases from facilities “that had no previous significant legacy mining issues.”<sup>65</sup>

The report lists sites that required CERCLA, CERCLA-like, and potential CERCLA actions, and describes the release and response narratively. However, the limitations of this report prevent it from supporting a determination that requirements under section 108(b) for hardrock mining facilities are appropriate. As discussed in section E, below, and in the Technical Support Document for this final rulemaking,<sup>66</sup> the Releases Report included facilities with significant mining activity that pre-dated modern regulation, creating legacy contamination. The report also fails to address whether or not the releases resulted in the expenditure of federal dollars or appropriately distinguish releases that predate modern regulation and are now prohibited by law or otherwise regulated.

The Practices Report purports to present information on the potential for future releases at operating hardrock mining facilities.<sup>67</sup> However, the Practices Report acknowledges that it cannot be used to draw conclusions about future releases, stating that: “Many sites and facilities within the non-operating and currently operating samples have been active for a century or longer. When a post-1980 release occurred at these facilities, it was difficult to determine if the equipment or practice responsible for the release was newly constructed or part of the site’s past operations.”<sup>68</sup> The Practices Report acknowledges that “a number of

<sup>63</sup> See the 1992 and 1997 reports cited at 82 FR 3475.

<sup>64</sup> Releases Report, at 1.

<sup>65</sup> 82 FR 3471.

<sup>66</sup> See: EPA, CERCLA Section 108(b) Hardrock Mining Final Rule: Technical Support Document, December 1, 2017.

<sup>67</sup> Practices Report, at 1.

<sup>68</sup> *Id.*, at 5.

factors limited the inferences that can be drawn from data about releases at currently operating facilities.”<sup>69</sup>

Both reports also lack important information on whether or not the releases resulted in the expenditure of federal dollars or whether the releases identified are now prohibited by law or otherwise regulated. As noted in section E, below, and the Technical Support Document for this final rulemaking, many of the releases discussed in those reports are being addressed by the responsible parties.

Despite the limitations of the Releases Report and the Practices Report, the proposed rule claimed that they validated the conclusions of earlier reports stating that: “EPA believes the results of this relatively recent effort to further document the state of current mining practices substantiates the findings from the other documents described herein [the Evidence Report and the reports from 1992 and 1997] and further reinforces the Agency’s belief that currently operating hardrock mining and mineral processing facilities subject to this proposal continue to present risks of release of hazardous substances.”<sup>70</sup>

As discussed above, upon reexamination, EPA now believes that none of these reports provide an appropriate basis for identification of the risk of hazardous substance releases at the facilities that would be regulated under the proposed rule or the risk of federally financed response actions at such facilities. Additional relevant information on many of the sites discussed in these reports which helped inform EPA’s conclusions in this final rulemaking is documented in section IV.E below and in the Technical Support Document.

## 2. Federal and State Regulatory Requirements

EPA has determined that modern regulation of hardrock mining facilities, among other factors, reduces the risk of federally financed response actions to a low level such that no additional financial responsibility requirements for this industry are appropriate. This section summarizes the regulations that support that determination.

### a. Federal Environmental Statutes

The proposed rule proposed to regulate facilities that engage in the extraction, beneficiation, and processing of metals, (e.g., copper, gold, iron, lead, magnesium, molybdenum, silver, uranium, and zinc) and non-metallic,

non-fuel minerals (e.g., asbestos, phosphate rock, and sulfur), other than placer mining, exploration only activities, and mines and processors disturbing less than five acres.<sup>71</sup> This scope includes mines, processors, and smelters.

While much mining and beneficiation is exempt from RCRA,<sup>72</sup> these activities are regulated under the Clean Water Act and the Clean Air Act. In addition, some waste material from covered mineral processing facilities is regulated under RCRA. Finally, permissions to mine on federal land are subject to review under the National Environmental Policy Act and may require the preparation of an Environmental Impact Statement.

### Clean Water Act

The Clean Water Act (CWA) prohibits discharges to waters of the United States, unless in compliance with another portion of the Act.<sup>73</sup> Principal among those other provisions is the permitting program established under section 402 of the Act, the National Pollution Discharge Elimination System (NPDES).<sup>74</sup> Existing dischargers of toxic and nonconventional pollutants are required to install best available control technology that is economically achievable.<sup>75</sup> New dischargers must meet new source performance standards, based on the best available demonstrated control technology. If these technology-based standards do not fully protect water quality, then a facility must adopt additional controls to meet applicable water quality standards (water quality-based effluent limitations).<sup>76</sup>

Technology-based effluent limitations for hardrock mining are found at 40 CFR part 440. The Ore Mining and Dressing Effluent Guidelines apply to facilities in twelve subcategories as follows:

Iron Ore  
Aluminum Ore  
Uranium, Radium and Vanadium Ores  
Mercury Ore  
Titanium Ore  
Tungsten Ore  
Nickel Ore  
Vanadium Ore (Mined Alone and Not as a Byproduct)  
Antimony Ore  
Copper, Lead, Zinc, Gold, Silver, and Molybdenum Ores  
Platinum Ores  
Gold Placer Mining

The Background Document for the proposed financial responsibility

formula states: “Nearly three-quarters of the 354 currently operating facilities report mining five commodities (gold, iron, copper, phosphate, and uranium), with gold mines alone making up nearly half of the universe.”<sup>77</sup> Accordingly, subpart J, the Copper, Lead, Zinc, Gold, Silver, and Molybdenum Ores Subcategory, is of particular relevance. Last amended in 1982 (effective January 1983), this subpart applies to:

(1) Mines that produce copper, lead, zinc, gold, silver, or molybdenum bearing ores, or any combination of these ores from open-pit or underground operations other than placer deposits;

(2) Mills that use the froth-flotation process alone or in conjunction with other processes, for the beneficiation of copper, lead, zinc, gold, silver, or molybdenum ores, or any combination of these ores;

(3) Mines and mills that use dump, heap, in-situ leach, or vat-leach processes to extract copper from ores or ore waste materials; and

(4) Mills that use the cyanidation process to extract gold or silver.<sup>78</sup>

Under this subpart, the following activities must meet an effluent limitation of zero discharge:

(1) Mine areas and mills processes and areas that use dump, heap, in situ leach or vat-leach processes to extract copper from ores or ore waste materials (40 CFR 440.103(c)); and

(2) Mills that use the cyanidation process to extract gold or silver (40 CFR 440.103(d)).

In addition, drainage from all mines in this subcategory and discharges from mills in this category that use a froth-flotation process must meet limitations for copper, zinc, lead, mercury, and cadmium.

Discharges to water from mineral mining and processing facilities are regulated under 40 CFR part 436. Last amended in 1979, these regulations require best practicable control technology for wastewater discharges from mine drainage, mineral processing operations and stormwater runoff. This part includes subpart R, which applies to the mining and the processing of phosphate bearing rock, ore or earth for the phosphate content. These regulations regulate the pH of discharges from phosphate mines and limit discharges of total suspended solids from such mines to a daily maximum concentration of 60 mg/l.

The Clean Water Act regulates discharges of pollutants from smelters under 40 CFR part 421 (Nonferrous Metals Manufacturing Category). Last

<sup>71</sup> See Proposed 40 CFR 320.60.

<sup>72</sup> See 51 FR 24496.

<sup>73</sup> 33 U.S.C. 1311.

<sup>74</sup> 33 U.S.C. 1342.

<sup>75</sup> 33 U.S.C. 1311.

<sup>76</sup> 33 U.S.C. 1311(b)(1)(C).

<sup>77</sup> EPA-HQ-2015-0781-0500 at 3-11.

<sup>78</sup> 40 CFR 440.100.

amended in 1984, these regulations limit pH and the concentration of metals in discharges.

#### Clean Air Act

The Clean Air Act regulates air emissions from industrial processes like mining and mineral processing. These include National Emissions Standards for Hazardous Air Pollutants (NESHAPs) as well as New Source Performance Standards (NSPS).

The 2011 NESHAP for gold ore processing and production facilities controls mercury air emissions from these facilities. 40 CFR part 63, subpart EEEEEEE.

On June 12, 2002, EPA promulgated final air toxics standards for the Primary Copper Smelting major sources 40 CFR part 63, subpart QQQ. These regulations control emissions of arsenic, beryllium, cadmium, chromium, lead, manganese and nickel. On June 4, 1999, EPA promulgated a NESHAP for primary lead smelting (40 CFR part 63, subpart TTT) that controls emissions of lead. In 2007, EPA promulgated a NESHAP for zinc, cadmium and beryllium smelters (40 CFR part 63, subpart GGGGGG), and those regulations established a particulate matter standard. Under section 111 of the CAA, New Source Performance Standards (NSPS) applicable to metallic mineral-processing plants have been established (40 CFR part 60, subpart LL control emissions of particulate matter). EPA's 1976 NSPS for primary lead smelting (40 CFR part 60, subpart R) controls emissions of particulate matter.

#### RCRA

While most hardrock mining and beneficiation waste is exempt from RCRA subtitle C,<sup>79</sup> mineral processing waste (other than twenty “special wastes”) are not.<sup>80</sup> Thus, mineral processing facilities may be regulated under RCRA Subtitle C. The management of hazardous wastes is generally subject to strict minimum technology requirements.<sup>81</sup> Land disposal of hazardous wastes is prohibited unless treatment standards are met.<sup>82</sup>

#### National Environmental Policy Act

The National Environmental Policy Act (NEPA) requires an environmental review of major federal actions significantly affecting the quality of the human environment.<sup>83</sup> Major federal

actions include the issuance of federal permits or permission to use federal lands.<sup>84</sup> Mining activities on federal lands are generally subject to NEPA. Accordingly, the potential environmental impacts of those activities are considered and publicly disclosed before they occur. These reviews include consideration of impacts to surface water, ground water, air, soils, ecosystems, wetlands, endangered species, and flood plains.

#### b. Federal Land Management Laws

The Bureau of Land Management (BLM) and the Forest Service (herein referred to at the Federal Land Management Agencies (FLMAs), have both promulgated regulations that apply to hardrock mining operations on land they manage.

BLM has promulgated regulations under the Federal Land Policy and Management Act (43 U.S.C. 1701 *et seq.*) that apply to hardrock mining operations on BLM land. These regulations include a requirement to develop a plan for reclamation of disturbed areas and a financial guarantee sufficient to fund completion of the reclamation plan.<sup>85</sup>

In order to obtain a permit to mine on public lands, the operator must submit a plan of operations that includes plans for water management, rock characterization and handling, spill contingency, and reclamation.<sup>86</sup> The plan of operations for the mine cannot be approved until thirty days after a final environmental impact statement has been prepared and filed with EPA.<sup>87</sup> The required reclamation plan must detail stabilization of land disturbed for mining, reclaiming and reshaping the land, wildlife rehabilitation, controlling potentially hazardous materials, and post-closure management.<sup>88</sup>

Like BLM, the Forest Service also requires a plan of operation that includes a plan for reclamation of mining disturbances on Forest Service lands.<sup>89</sup> The requirements for environmental protection are set forth in 36 CFR 228.8 and include compliance with all air quality, water quality, and solid waste standards; protection of scenic values; and reclamation to control erosion and water runoff, isolate, remove or control toxic materials, reshape and revegetate disturbed areas, and rehabilitate fisheries and wildlife habitat. The Forest

Service requires a bond to cover the cost of stabilizing, rehabilitating, and reclaiming the area of operations.<sup>90</sup> Like a BLM plan of operations, approval of a Forest Service plan of operations also is subject to NEPA.

The Forest Service regulations allow the Forest Service to require a modification to the Plan of Operations and reclamation plan (36 CFR 228.4(e)) and adjust the bond to cover the modified plan (36 CFR 228.13(c)).

EPA's conclusion that BLM and Forest Service regulations address risks at hardrock mining facilities is further supported by the comments submitted by these agencies, discussed below.

#### c. Other Existing Regulatory Requirements

The proposed rule stated that addressing CERCLA liabilities is different from the mine reclamation bonding requirements required by BLM, the Forest Service, or state requirements that seek to ensure compliance with technical engineering requirements imposed through a permit, or to ensure proper closure or reclamation of an operating mine.<sup>91</sup> This discussion in the proposed rule was intended to highlight legal distinctions between the section 108(b) requirements and the requirements of other federal and state programs. However, even when developing the proposed rule, EPA acknowledged the overlap between the risks to be addressed by section 108(b) and existing federal and state regulations. EPA now recognizes that the existence of these other programs, whatever legal differences there may be in their intent and implementation, are critical to understanding “the degree and duration of risk associated with the production, transportation, treatment, storage, or disposal of hazardous substances” as well as the risk to taxpayers of being required to fund response activities under CERCLA, which are the primary factors relevant to EPA's determination of the need for and appropriate level of financial responsibility requirements under section 108(b).

For example, 16 of the 27 sites discussed in the Releases Report are called “CERCLA-like” releases. Thus, according to the Releases Report, these sites present the same type of risk that is to be addressed under section 108(b). However, as discussed below and in the Technical Support Document for this final rulemaking, we have documented no expenditure of funds by EPA for those “CERCLA-like” releases, which,

<sup>79</sup> 51 FR 24496 (July 3, 1986).

<sup>80</sup> See the list at <https://www.epa.gov/hw/special-wastes#mining>.

<sup>81</sup> 42 U.S.C. 6924(o).

<sup>82</sup> 42 U.S.C. 6924(d)–(g).

<sup>83</sup> 42 U.S.C. 4332.

<sup>84</sup> 40 CFR 1508.18.

<sup>85</sup> 43 CFR part 3800, subpart 3809.

<sup>86</sup> 43 CFR 3809.1–6.

<sup>87</sup> 43 CFR 3809.1–6.

<sup>88</sup> 43 CFR 3809.1–3(d).

<sup>89</sup> 36 CFR part 228.

<sup>90</sup> 36 CFR 228.13.

<sup>91</sup> 82 FR 3403.

as is explained in the Releases Report, are being addressed under other state and Federal programs, demonstrating that modern regulation adequately addresses the risk of Fund financed response action posed by these sites.<sup>92</sup>

Even the methodology used in the proposed rule to develop the proposed financial responsibility requirements shows that the actual physical risks addressed by modern regulations are essentially the same as the risks to be addressed by section 108(b). The Background Document for the financial responsibility formula demonstrates that the costs of existing federal and state reclamation and closure requirements were used to develop costs for the categories of response activities that are the building blocks of financial responsibility requirements under the proposed rule.<sup>93</sup> Thus, the proposed financial responsibility requirements largely address the same risks that are addressed by existing regulatory requirements.

This conclusion is further supported by comments submitted by the Forest Service, and a number of states opposing the proposed rule. The Forest Service demonstrated in their comments how their regulations address the same physical risks that are captured in the response categories that are the building blocks of the proposed section 108(b) financial responsibility formula.<sup>94</sup> The states of Alaska, Nevada, New Mexico, and South Dakota each provided a similar analysis for their state, and the Interstate Mining Compact Commission provided analyses for Arizona, South Dakota, and Utah.<sup>95</sup> The National Mining Association (NMA) also compiled similar information for 15 states.<sup>96</sup>

In conclusion, EPA is convinced by the arguments made by state and Federal commenters that the risks

<sup>92</sup> The limited number of sites referenced in the Releases Report for which there were CERCLA actions and EPA expenditures are discussed below.

<sup>93</sup> See CERCLA 108(b) Financial Responsibility Formula For Hardrock Mining Facilities, Background Document, Sept. 19, 2016 (EPA-HQ-2015-0781-0500), at 2-17, Table 2.2. See also 82 FR 3462 (“EPA found that such engineering cost data was readily available from cost estimates developed for state and Federal mining reclamation and closure plans, and associated documents.”).

<sup>94</sup> See comment from the Forest Service, EPA-HQ-SFUND-2015-0781-2400, at page 2.

<sup>95</sup> Alaska (Attachment 5/Attachment D to EPA-HQ-SFUND-2015-0781-2785); Nevada (Appendix to EPA-HQ-SFUND-2015-0781-2651); New Mexico (Attachment A at p. 17 of EPA-HQ-SFUND-2015-0781-2676); South Dakota (Attachment to EPA-HQ-SFUND-2015-0781-2419); IMCC (showing results for Arizona, South Dakota, and Utah at EPA-HQ-SFUND-2015-0781-2758 & EPA-HQ-SFUND-2015-0781-2757).

<sup>96</sup> EPA-HQ-SFUND-2015-0781-2794 at Appendix A.

sought to be addressed by the proposed rule are already addressed by existing state and Federal programs. The proposed rule would have considered the risk reduction of existing regulations only as a means to reduce the amount of otherwise required financial responsibility and sought comment on several aspects of this approach. EPA is now convinced that those regulations obviate the need for additional financial responsibility requirements under section 108(b) on the hardrock mining sector. As stated by the Forest Service:

[T]he fact that EPA refers to existing regulations as a rationalization for building the requirements of a particular reduction [in financial responsibility] serves to underline that these existing regulations serve the purpose that EPA hopes is served by the proposed rule: To reduce the risk of a release of a hazardous or toxic substance. Therefore, the specific requirements in the reductions are unnecessary, because other programs with more site-specific presence than EPA has, are already requiring these actions, using site-specific conditions as criteria for design of the mitigations in question. Thus, the outcome is that EPA is attempting to regulate that which is already regulated.<sup>97</sup>

### 3. Risk of Payments From the Fund

According to the preamble of the proposed rule, EPA estimated that the historical costs of responding to releases from 243 hardrock mining and minerals processing facilities totaled \$12.9 billion, of which approximately \$4 billion was paid for through EPA’s Superfund program. EPA relied on this estimate to conclude that: “Such significant cleanup costs may be considered as an indication of the relative risks present at these sites, and the potential magnitude of environmental liabilities associated with this industry overall.”<sup>98</sup>

As discussed above, EPA has now determined that as a result of modern regulations, the degree and duration of risk associated with the modern production, transportation, treatment, storage or disposal of hazardous substances by the hardrock mining industry does not present a level of risk of taxpayer funded response actions that warrant imposition of financial responsibility requirements for this sector.

EPA acknowledges that the Agency has incurred response costs at mining sites. However, as many commenters have noted, the vast majority of those costs have been to address legacy practices. EPA also acknowledges that there are a handful of examples of sites

<sup>97</sup> See comment EPA-HQ-SFUND-2015-0781-2400, at page 11.

<sup>98</sup> 82 FR 3479.

where EPA has incurred response costs, notwithstanding regulation under the Clean Water Act, or other state and federal law. However, the Agency does not believe that these few examples are an appropriate basis for regulation under CERCLA section 108(b).

The record for the proposed rule includes background information on response costs, expenditures, and settlements at 185 NPL sites and 134 non-NPL sites to inform the proposed financial responsibility formula.<sup>99</sup> To develop this information, EPA collected and reviewed data available in the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), the Integrated Financial Management System (IFMS), and the Office of Enforcement and Compliance Assurance (OECA) settlements database, as well as a 2004 report of the EPA Inspector General, and a 2010 report from the Government Accountability Office.<sup>100</sup> As part of this analysis, EPA combined data from CERCLIS and IFMS into a Microsoft Access file to summarize Fund expenditures incurred at each hardrock mining facility for which EPA had data (as of 2011).<sup>101</sup> A link to an FTP site containing these files was provided in the docket.<sup>102</sup>

While the purpose of this data collection was to support the development of the financial responsibility formula, it also can be used to examine Fund expenditures at specific sites. For example, the results of a query of the Microsoft Access file on site expenditures results in a table that has data for only eight of the 27 sites identified in the Releases Report.<sup>103</sup> The

<sup>99</sup> CERCLA 108(b) Financial Responsibility Formula For Hardrock Mining Facilities, Background Document, Sept. 19, 2016 (EPA-HQ-2015-0781-0500), at sections 2.1 and 2.2, and Appendix B. The formula also includes estimated costs for natural resources damages and public health assessments. However, both are a function of a release that requires a response action. In the formula, health assessment costs are simply a fixed cost of \$550,000 and the natural resource damages are assumed based on a percentage of the response costs. Id. at section 5 and page 6-2.

<sup>100</sup> Id. at 2-1. EPA was able to obtain cost information for 319 hardrock mining facilities.

<sup>101</sup> Id. at 2-2. If EPA itself had incurred expenditures at a hardrock mining facility, those expenditures would have been included in the data pulled from these databases.

<sup>102</sup> It also is available here: <ftp://newftp.epa.gov/CERCLA108B>.

<sup>103</sup> See the site expenditure table from the D Site Exp.accdB file on the FTP site. These sites are Barite Hill, a gold and silver mine in South Carolina (\$6.3 million), Brewster Gold, a gold and silver mine in South Carolina (\$12.3 million), Cimarron Mine, a gold mine in New Mexico (\$3.5 million), Formosa Mine, a copper and zinc mine in Oregon (\$3.1 million), Gilt Edge mine, a gold and silver mine in South Dakota (\$75 million), Grouse Creek mine, a

Continued

discussion of why the releases at these sites do not support the proposed rule is discussed in the Technical Support Document accompanying this final rulemaking.<sup>104</sup> Of the eight, seven are gold or gold and silver mines. Of the seven, six were operational after the effective date of Clean Water Act effluent limitations applicable to cyanide heap leach mining processes. Thus, regulation does not always prevent releases. In fact, the release at the Summitville Mine in Colorado was significant and the response was very costly. As discussed in the Technical Support Document accompanying this final rulemaking, the costs of response at that site included costs of addressing acid mine drainage from legacy (since 1890) operations, unrelated to the releases from cyanide heap leach process. Further, Colorado has since changed its regulation to prevent a repeat of the releases that occurred from the heap leach process at Summitville. Thus, Summitville mine is not an example of current risk. However, it also is important to understand that, according to a 1996 retrospective review of Summitville prepared by an EPA Region 8 employee and the Colorado Department of Natural Resources, the Colorado-issued Clean Water Act permit, which assumed no discharge from the heap leach process, was based on an erroneous water balance calculation for the site. The permit assumed that evaporation would be greater than precipitation.<sup>105</sup> EPA's financial responsibility formula similarly relies on water balance data,

gold mine in Idaho (\$314,000), Silver Mountain, a gold and silver mine in Washington (\$1.4 million), and Summitville, a gold and silver mine in Colorado (\$226 million). These numbers are presented in nominal dollars and are current as of 2011. The Microsoft Access file on settlements available at the same FTP site shows past cost settlements totaling \$12.7 million at Gilt Edge, response work and past cost settlements totaling over \$9 million at Grouse Creek, and past cost and future cost settlements at Summitville totaling approximately \$49 million. See the settlements table from the *cerclis\_historical\_sites\_41612.accdb* file on the FTP site.

<sup>104</sup> The Technical Support Document addresses all but two of the eight sites discussed in the Releases Report for which there is a record of Fund expenditures. Silver Mountain is a gold and silver mine that operated beginning in 1928 and that used a cyanide heap leach process before the promulgation of strict Clean Water Act regulations for those processes. See Releases Report, at 7. Grouse Creek was operated by Hecla Mining Company and the Microsoft Access files on the FTP site show only \$314,000 in EPA expenditures and a greater amount in cost recoveries. Thus, these sites are not evidence of risk of Fund-financed response actions at currently operating sites.

<sup>105</sup> The Mining History and Environmental Clean-up at the Summitville Mine. Colorado Geological Society Open File Report 96-4. Available at <http://2fdpn7hy0ht206jws2e9og41.wengine.netcdn.com/wp-content/uploads/2013/08/38.pdf>.

and could be subject to the same type of error, demonstrating that neither regulation nor financial responsibility requirements are infallible.<sup>106</sup>

Issues with the financial responsibility formula in the proposed rule are also discussed in January 19, 2017 comments submitted by the Small Business Administration (SBA) Office of Advocacy. SBA used data in the record to compare the results of the proposed financial responsibility formula against actual site costs at six mining sites. The formula both underestimated, and in some cases greatly overestimated the costs of response. For example, at one mine the actual costs to address an open pit were \$77,000, while the formula would have required financial responsibility in the amount of \$197,900,000 for this response activity.<sup>107</sup> At another site, the formula would have required evidence of financial responsibility to cover interim operation and maintenance at a level of \$69 million while the actual costs reported by the site operator who is paying for the response action pursuant to its reclamation plan were over \$96 million.<sup>108</sup> EPA acknowledges that any formula with limited site specific information is necessarily a very imprecise means of determining potential response costs, and may significantly over or underestimate actual costs, as documented in the SBA comments. As noted by several commenters, financial assurance amounts established by state and other Federal regulatory programs are usually informed by site-specific assessments by on-the-ground regulators and are thus likely to better reflect actual response costs.

The conclusion that modern regulation has greatly reduced the risk of taxpayer financed response actions also is supported by the experience of other federal agencies. For example, in letters sent to Senator Murkowski, BLM and the Forest Service stated that no modern mines permitted since 1990 by either BLM or the Forest Service have been added to the NPL. When asked how many mining plans of operation BLM and Forest Service have approved since 1990, and how many of the corresponding sites have been placed on the NPL, BLM responded that it had approved 659 plans since 1990 and none had been added to the NPL and the Forest Service reported approval of

<sup>106</sup> EPA-HQ-2015-0781-0500, at section 3.4.

<sup>107</sup> EPA-HQ-SFUND-2015-0781-1406, at 18.

<sup>108</sup> Id. (discussing Hycroft Resources, an active gold mine in Nevada). See also discussions of Hycroft in the Background Document for the financial capability formula. EPA-HQ-SFUND-2015-0781-0500.

2,685 plans since 1990 with no sites being placed on the NPL.<sup>109</sup> These data support a conclusion that federal financial responsibility programs (and related mining engineering and permitting requirements) have been effective at lowering risk, reducing taxpayer liability, and contrasts strongly with the historical record involving legacy mines.

States have had similar experience with their own programs. The state of Nevada, which has roughly one fourth of hardrock mines in the potentially regulated universe of mines developed by EPA for purposes of analysis in the proposed rule, has not had a case involving taxpayer funded response action since 1991, when the state's new rules were put in place.<sup>110</sup>

EPA considered these examples of the limited payment experience of the Fund, as well as the record relating to payments covered by federal and state financial responsibility instruments required under other federal and state law, and payments made pursuant to settlements and voluntary response actions<sup>111</sup> to further support EPA's determination that the degree and duration of risk associated with the modern production, transportation, treatment, storage or disposal of hazardous substances by the hardrock mining industry does not present a level of risk of taxpayer funded response actions that warrant imposition of financial responsibility requirements for this sector.

### C. Comments Supporting a Final Rulemaking

EPA received many comments on the proposed rule that expressed support for promulgation of financial responsibility requirements under section 108(b). Sixty comments from individual private citizens encouraged EPA to issue final requirements, as did four mass mailing letter campaigns sponsored by the Idaho Conservation League, Water Legacy, Friends of the Boundary Waters Wilderness, and Earthworks. The main comment in support of the rule came

<sup>109</sup> Letter dated June 21, 2011 from BLM Director Robert Abbey to Senator Lisa Murkowski, dated June 21, 2011; Letter dated July 20, 2011 from USDA Secretary Thomas Vilsack to Senator Lisa Murkowski, dated July 20, 2011. The letters were written in response to several questions posed by Senator Murkowski relating to hardrock mining programs on BLM and Forest Service lands.

<sup>110</sup> Nevada comments, at Appendix 3 (EPA-HQ-SFUND-2015-0781-2651).

<sup>111</sup> EPA considers this information to be encompassed by the categories of information set forth in section 108(b)(2) ("payment experience of the Fund, commercial insurers, courts settlements and judgments, and voluntary claims satisfaction").

from Earthworks, representing 35 different environmental groups.<sup>112</sup>

Earthworks, et al. commented that CERCLA financial assurance regulations are necessary to ensure enough funds are available to complete cleanup actions without shifting the burden to the general public. They also stated in their comments that the proposed regulations did not duplicate existing state rules, which they argued do not cover pipeline spills, tailings spills, tailings impoundment failures and other releases of hazardous materials which commonly occur at hardrock mines, and can result in substantial liabilities.<sup>113</sup> In a separate comment on the proposed rule, the Idaho Conservation League stated that the state of Idaho's financial assurance requirements do not authorize bonding for groundwater contamination and water treatment in perpetuity and that a section 108(b) rule is necessary to close that gap.<sup>114</sup>

In their comments on the proposed rule, Earthworks stated that: "Strong CERCLA 108(b) regulations are necessary to protect taxpayers from incurring the cost of mine clean-up, and to ensure that clean-up of hazardous materials at mine sites occur in a timely manner." To support their conclusion, they specifically mentioned a 2005 report by the Government Accountability Office (GAO) that concluded that EPA should "fully use its existing authorities to better ensure that those businesses that cause pollution also pay to have their contaminated sites cleaned up."<sup>115</sup> They also pointed to a 2004 report by EPA's Office of Inspector General (IG)

<sup>112</sup> Earthworks submitted comments on the proposed rule representing: Inform, Western Organization Resource Councils, Minnesota Center for Environmental Advocacy, Upper Peninsula Environmental Coalition, Natural Resources Council of Maine, Montana Environmental Information Center, Greater Yellowstone Coalition, Conservation Law Foundation, Northeastern Minnesotans for Wilderness, Friends of The Boundary Waters Wilderness, Northern Alaska Environmental Center, Save Our Sky Blue Waters, Gila Resources Information Project, Brooks Range Council, The Lands Council, Campaign to Save the Boundary Waters, Friends of The Clearwater, Rock Creek Alliance, Save Our Cabinets, Patagonia Area Resources Council, Friends of the Kalmiopsis, Clean Water Alliance, Water Legacy, Park County Environmental Council, Great Basin Resource Watch, Wisconsin Resources Protection Council, Rivers Without Borders, Spokane Riverkeepers, Western Watersheds Project, Okanagan Highlands Alliance, Boise Chapter Great Old Broads for Wilderness, Copper Country Alliance, Nunamta Aulukestai, and Idaho Conservation League.

<sup>113</sup> See comment from Earthworks, et al., EPA-HQ-SFUND-2015-0781-2739, at page 2.

<sup>114</sup> See comment from Idaho Conservation League, EPA-HQ-SFUND-2015-0781-2700, at page 1.

<sup>115</sup> Earthworks, et al., EPA-HQ-SFUND-2015-0781-2739, page 5.

that identified 29 specific sites where, according to the IG, cleanup work was delayed or scaled back in ways harmful to human health and the environment because of funding shortfalls.<sup>116</sup> In addition to this report, Earthworks identified in their comments other examples of cleanup efforts at mines that they stated remain uncompleted due to insufficient funds being available, or that took an inordinate amount of time to complete, exposing the public to dangerous substances. As discussed in the specific case studies and the accompanying Technical Support Document, a number of the examples cited by the IG and Earthworks are not representative of the risk posed by currently operating hardrock mining facilities.

EPA appreciates Earthworks' concern that insufficient funds leads to incomplete or slow cleanup and restoration of mine sites. Earthworks acknowledges that the universe of entities that EPA proposed to regulate under the proposed rule excluded mines that are no longer operating. They recommended that the universe be expanded to cover mine operations that are no longer active but still retain a responsible party. They state that, "Many past hardrock mining facilities are already and/or will be the site of CERCLA liabilities and necessary response actions. The CERCLA 108(b) regulations should apply to these operations."<sup>117</sup> EPA disagrees with this comment, and notes that the Agency has determined the goals of a section 108(b) rule as described in the proposal have already been satisfied.

Earthworks also commented that "CERCLA 108(b) regulations are essential because they address risks and liabilities that aren't addressed in most other State or federal land management financial assurance programs, including spills, accidental releases, and tailings failures."<sup>118</sup> To support this conclusion, they point to several instances in ongoing mining operations where there are impacts to natural resources and/or groundwater due to ongoing mining operations which other federal or state rules fail to regulate. Earthworks also submitted comment claiming the need for financial responsibility for long-term water treatment. EPA recognizes that some historical mining operations have resulted in the need for long-term water treatment.<sup>119</sup> However, modern regulation of both process discharges and runoff, as well as reclamation

requirements to control sources of contamination, significantly address those risks. Additionally, as discussed above, while EPA acknowledges that the risk of a release is never totally eliminated by the requirements of other programs, this residual risk is to be evaluated in light of EPA's discretion under the statute on whether to set section 108(b) requirements, and in light of the other information in the record for this action discussed elsewhere in this final rulemaking. Viewed in this manner, such residual risk does not change EPA's conclusion that it is not appropriate to issue final section 108(b) requirements for current hardrock mining operations.

Water Legacy and Friends of the Boundary Waters Wilderness submitted separate comments expressing concern that Minnesota's financial assurance laws, for instance, are not adequate to cover mine pit seepage, waste rock pile seepage, tailings dam seepage and/or catastrophic dam failures.<sup>120</sup> However, as is discussed in the site examples elsewhere in this final rulemaking and accompanying Technical Support Document, commenters submitted information to demonstrate that most releases at currently operating facilities are being addressed by owners and operators, and that the costs of these incidents at modern operations are generally not falling to the taxpayer.

EPA received comments from three federally-recognized tribes and from three Alaska Native Claims Settlement Act (ANCSA) resource managers regarding section 108(b) financial responsibility. Tribal comments were generally in support of the proposed rule, and cited some concerns about the potential negative impacts of hardrock mining on commercial enterprises and on subsistence living, along with the need to more fully identify the benefits of the rule. A primary ANCSA concern was that the section 108(b) financial responsibility requirements would duplicate existing federal and state requirements, resulting in a negative impact on Alaska Natives and states, that receive royalties through the Regional and Village Corporations. These comments are discussed in section VIII.G.

<sup>116</sup> Ibid. page 5, 6.

<sup>117</sup> Ibid., page 11.

<sup>118</sup> Ibid., page 12.

<sup>119</sup> Ibid., page 2.

<sup>120</sup> See comment from Water Legacy, EPA-HQ-SFUND-2015-0781-2649, at page 3.

*D. Comments Opposing a Final Rulemaking*

**1. Comments Regarding Appropriateness of Information Used**

**a. Use of Information Not Relevant to the Mines To Be Regulated Under the Rule**

Many commenters on the proposed rule, including mining companies, trade associations, as well as state and federal agencies, commented that EPA's record incorrectly characterized the on-going environmental risk at operating hardrock mining facilities by relying on information related to mines that were constructed and operated before current regulatory requirements were in place, rather than on information specific to current hardrock mining activities, which are highly regulated. Commenters argued that since the rule would not apply to inactive, non-operating sites, EPA should not rely on information related to such sites as part of its rulemaking record to justify the need for financial responsibility requirements for current hardrock mining operations. Several commenters disagreed with EPA's assertion in the proposed rule that the \$4 billion spent by EPA through the Superfund for cleanup costs at historical hardrock mining facilities is an indication of the relative risk present at the facilities covered by the proposed rule. Commenters argued that the 2009 Priority Notice and the proposed rule did not differentiate between costs associated with the highly-regulated mining practices of today and pre-regulation practices in developing that number.

EPA agrees with commenters that information about facilities that present a level of risk similar to those proposed to be regulated is the most appropriate focus for the Agency's record for this action. EPA also agrees with commenters that because mining practices have changed significantly over the past several decades, information related to risk presented by mines that operated before those changes occurred may not reflect the level of risk presented by currently operating facilities that include controls such as surface water containment structures, engineered storage facilities, water treatment, impermeable liners, and leak detection and recovery systems. Finally, EPA agrees with commenters that the cost of addressing releases from mines that operated without the controls in place today should not be assumed to be comparable to the cost of addressing releases from current operations, where controls such as monitoring assure early detection.

Commenters objected to the use of 1980 in the Practices Report,<sup>121</sup> (CERCLA was enacted in December 1980) as the point when "historic" mining practices changed over to "modern" ones. They felt this ignored the evolution of mining practices that took place since 1980, in response to other environmental laws, as well as state mining regulations which were still in their infancy in 1980. Some commenters seemed to agree that EPA should consider "modern" mining practices to have begun post-1990, and some suggested that the mid-1990s was the true beginning of modern hardrock mining practices.

In evaluating the record for this rulemaking, EPA considered the issue of when mining operations became "modern" or "current." EPA recognizes that there are not nationally-applicable federal standards governing the operation of mines,<sup>122</sup> and that the current regulatory scheme of federal and state mining programs has evolved over time. Thus, the requirements of individual hardrock mining programs developed at different paces and sequences. One commenter provided a table demonstrating the evolution of hardrock mining programs over time, extending from 1972 to 2014, and including the adoption of regulations in Alaska, Arizona, Arkansas, Montana, New Mexico, Nevada, and Utah during that period of time.<sup>123</sup> EPA has therefore concluded that no particular date in the past reliably distinguishes between "historic" or "legacy" and "current" or "modern" mines nationwide, and that a better approach is to consider operations taking place under the current applicable regulatory scheme as "current" operations, and mine operations that took place before the enactment of the currently applicable and relevant requirements as "historic" or "legacy."

**b. Use of Data That Did Not Directly Demonstrate Risk at Current Hardrock Mining Operations**

Some commenters who opposed the rule objected to EPA's analysis of the information presented in the 2009 Priority Notice relating to hardrock mining risk. Commenters objected that EPA relied on inappropriate information

<sup>121</sup> EPA relied on this date numerous times in the Practices Report (e.g., pages 7, 8, 72, 119, 126, 127, 133, 145).

<sup>122</sup> In 1986 EPA made a determination under section 3001(b)(3)(C) of RCRA that wastes from the extraction of ores did not pose a significant enough risk to warrant regulation under Subtitle C of RCRA. 51 FR 24496.

<sup>123</sup> See comment from Freeport-McMoRan, EPA-HQ-SFUND-2015-0781-2793, Attachment B.

to demonstrate risk at current hardrock mining operations, by focusing on data that does not address potential exposure to CERCLA hazardous substances, or the possibility that a CERCLA response action may occur in the future, that is—Toxics Release Inventory (TRI), and data from the Hazardous Waste Biennial Report (BR).<sup>124</sup> Commenters argued that EPA's approach to identifying hardrock mining did not evaluate actual or potential risk.

EPA agrees with commenters that information regarding releases from hardrock mining facilities does not, in and of itself, demonstrate risk. For example, as noted in EPA's "Factors to Consider When Using Toxics Release Inventory Data" (2015), "TRI data do not reveal whether or to what degree the public is exposed to listed chemicals."<sup>125</sup> In fact, TRI data generally encompass releases that are permitted under the Clean Air Act (CAA), the Clean Water Act (CWA), or the Safe Drinking Water Act, as well as the lawful disposal of hazardous substances. Accordingly, EPA agrees that TRI data cannot help predict the risk associated with potential mismanagement and therefore cannot be used to support any determination under CERCLA section 108(b) that imposing financial responsibility requirements on a sector is appropriate. Similarly, EPA agrees that BRS data and National Response System (previously referred to as the Emergency Response Notification System (ERNS) data do not provide information on the risk, if any, posed by the management of hazardous substances at hardrock mines.

Another commenter stated that EPA's methodology for assessing risk was simply to describe some of the major mining practices that contributed to past CERCLA releases and simplistically conclude that similar practices are used today. The commenter argued that this approach is not accurate because it fails to account for the major changes in mining practices and regulatory requirements that are applied to modern mines. EPA agrees that it is important to consider modern mining practices and current regulatory regimes and has adopted that approach in this final action.

**2. Comments That EPA Failed To Consider Relevant Information**

Commenters on the 2009 Priority Notice and the proposed rule objected

<sup>124</sup> See, for example, comment from Comstock Mining, Inc., EPA-HQ-SFUND-2015-0781-2735, at page 31.

<sup>125</sup> See [https://www.epa.gov/sites/production/files/2015-06/documents/factors\\_to\\_consider\\_6.15.15\\_final.pdf](https://www.epa.gov/sites/production/files/2015-06/documents/factors_to_consider_6.15.15_final.pdf).

that EPA failed to consider relevant information in the 2009 Priority Notice and the proposed rule, specifically on the role of federal and state regulatory programs and protective practices in reducing risks at current hardrock mining operations, and on information on reduced costs to the taxpayer from regulatory programs and cleanup by owners and operators. For example, the American Exploration and Mining Association (AEMA) commented that the Federal Land Management Agencies and the states have significantly evolved their financial assurance programs with specific emphasis on post-closure care and maintenance, thereby minimizing the long-term potential for releases of hazardous substances and un-bonded agency liability. AEMA further commented that existing financial responsibility programs are working at modern mines and there is no need for a costly EPA program.<sup>126</sup>

a. Comments Providing Information on the Role of Federal and State Programs and Protective Mining Practices in Reducing Risks at Current Hardrock Mining Operations

Many commenters who opposed the rule objected that EPA's analysis failed to consider the technical or engineering requirements specified by other regulatory programs or the requirements that financial assurance be established to ensure that required measures will be funded when needed. The commenters stated that both types of requirements significantly decrease the risks posed by modern mines, including both risks to the environment and risks that potential future liabilities will not be funded by mining companies.<sup>127</sup> EPA agrees that due to the increased regulation of hardrock mining practices over the past several decades, mining operations are conducted in a manner that does not present the same level of risk as practices of the past.

Commenters provided extensive information regarding the requirements of those programs including design standards, engineering controls, and environmental monitoring. Commenters argued that engineering controls and best practices reduce the degree and duration of risk associated with the modern production, transportation, treatment, storage, and disposal of

<sup>126</sup> See comments from American Exploration and Mining Association at Docket ID Number EPA-HQ-SFUND-2015-0781-2657, page 2.

<sup>127</sup> Freeport-McMoRan Inc; Fertilizer Institute; MiningMinnesota; New Mexico Environment Department and New Mexico Energy, Minerals, and Natural Resources Department; Colorado Department of Natural Resources, Division of Reclamation, Mining and Safety; National Mining Association.

hazardous substances to minimal levels and that no additional financial responsibility requirements are necessary to protect the taxpayer or the Superfund. Some of these federal and state programs are discussed below.

(1) Examples of Federal Programs

The regulations of the Bureau of Land Management (BLM) and the Forest Service, applicable to hardrock mining facilities, are described below.

Bureau of Land Management

BLM's surface management regulations at 43 CFR part 3800, subpart 3809, govern the majority of the hardrock mining operations on the public lands that would be subject to the proposed rule. These regulations were first promulgated in 1980 pursuant to the agency's authority under the Mining Law of 1872,<sup>128</sup> and its mandate under section 302(b) of the Federal Land Policy and Management Act of 1976 to take any action to prevent "unnecessary or undue degradation" of the public lands.<sup>129</sup> BLM also regulates the development of solid minerals subject to other mineral disposal authorities, such as phosphate, through the issuance of permits and leases under 43 CFR part 3500. BLM's regulatory programs provide cradle-to-grave oversight of mining operations on the public lands. For example, BLM's subpart 3809 regulations require operators to obtain authorization from BLM to conduct any surface disturbance greater than casual use.<sup>130</sup> All operations under subpart 3809 must comply with the general and specific performance standards set forth in the regulations which govern, among other things, disposal of mining wastes and handling of acid-forming, toxic, or other deleterious materials.<sup>131</sup> In addition, subpart 3809 requires all operations to comply with applicable federal and state laws and regulations, including laws related to air and water quality.<sup>132</sup> For extractive mining operations and some exploration, operators under subpart 3809 must submit and obtain BLM approval of a plan of operations that includes plans for baseline data collection, water management, rock characterization and handling, spill contingency, and reclamation.<sup>133</sup> BLM's subpart 3809 regulations impose also requirements for design, operation, closure, and reclamation to ensure productive use of

<sup>128</sup> 30 U.S.C. 22-54, as amended.

<sup>129</sup> 43 U.S.C. 1732(b).

<sup>130</sup> 43 CFR 3809.10, 3809.11.

<sup>131</sup> See 43 CFR 3809.420.

<sup>132</sup> See 43 CFR 3809.5, 3809.420(b)(4), (b)(5).

<sup>133</sup> 43 CFR 3809.401.

the land after mining. The required reclamation plan must detail stabilization of land disturbed for mining, reclaiming and reshaping the land, wildlife rehabilitation, controlling potentially hazardous materials, and post-closure management.

BLM's regulations also require operators to provide a financial guarantee before they can begin all hardrock mining operations.<sup>134</sup> Moreover, financial guarantees for mining operations must remain in effect until BLM determines that reclamation has been completed in accordance with the authorized operations and the agency releases the financial guarantee.<sup>135</sup> BLM's regulations also allow the agency to initiate forfeiture of the financial guarantee in the event the operator refuses or is unable to conduct reclamation.<sup>136</sup>

Forest Service

The U.S. Department of Agriculture (USDA) Forest Service regulations governing mining under the Mining Law of 1872 were promulgated in 1974<sup>137</sup> and can be found at 36 CFR part 228, subpart A. Disposal of minerals such as phosphates, sodium, potassium, and hardrock minerals on acquired National Forest System lands are subject to the mineral leasing laws and are regulated by BLM under 43 CFR part 3500.

Under the Forest Service regulations at 36 CFR part 228, subpart A, operators must submit and obtain approval of a plan of operations before conducting any operations that might cause significant disturbance of surface resources.<sup>138</sup> The regulations are designed to minimize adverse environmental impacts both during and after mining operations. The regulations prohibit releases of hazardous substances, and require financial guarantee that is calculated to reasonably insure that operations and reclamation are conducted to avoid releases, and to respond to releases that may occur.<sup>139</sup> USDA highlighted in its comments how well developed Plans of Operations, site inspections, and monitoring reduce environmental risks before, during, and after mine closure. Specifically, USDA stated that an operator complies with Forest Service

<sup>134</sup> See 43 CFR 3504.50, 3809.4500.

<sup>135</sup> 43 CFR 3504.71, 3809.590.

<sup>136</sup> 43 CFR 3504.65, 3809.595.

<sup>137</sup> See comment from United States Forest Service, Docket ID: EPA-HQ-SFUND-2015-0781-2400 at page 10; comment from National Mining Association, EPA-HQ-SFUND-2015-0781-2794 at page 29.

<sup>138</sup> 36 CFR 228.4(a).

<sup>139</sup> See comment from United States Forest Service, Docket ID: EPA-HQ-SFUND-2015-0781-2400 at page 2.

regulations by developing a Plan of Operations, which requires that the operator submit enough detail that the agency can analyze various risks associated with the proposed operation and, through the NEPA process, identify proper mitigation measures to reduce or eliminate those risks.<sup>140</sup> The regulations also require that, “all operations be conducted so as, where feasible, to minimize adverse environmental impacts on National Forest surface resources” (36 CFR 228.8). This allows the Agency to be very site-specific in its analysis of risk and mitigation.<sup>141</sup> A Plan of Operations must also include detailed reclamation and closure plans, which are reviewed and approved to minimize the potential future risk to the environment based on predicted outcomes.<sup>142</sup> USDA further stated that Plans of Operation must include hazardous materials inventory and handling procedures, spill prevention plans, and transportation mitigation measures.<sup>143</sup> USDA stated a Plan of Operations for a hardrock mining operation cannot be approved unless hazardous substances are managed so that the threat of present or future release is minimized.<sup>144</sup> During the mine permitting process, the Forest Service actively engages in memorandums of understanding and agreements with other State and Federal Agencies to ensure that all parties’ permits are approved and implemented. Currently this can involve over forty separate permits and authorizations.

The Forest Service requires that mine operators provide a financial guarantee to assure complete reclamation and compliance with environmental laws under the following authorities: 16 U.S.C. 551; 30 U.S.C. 612; 36 CFR 228.8, 228.13.<sup>145</sup> USDA stated that regulatory requirements (36 CFR 228.13) require operators to provide a bond sufficient to insure stabilization, rehabilitation, and reclamation of the area of operations.<sup>146</sup> Environmental protection measures described in under 36 CFR 228.8 also include certification of compliance with all other applicable environmental standards.<sup>147</sup> Forest Service regulations at 36 CFR 228.4(e) allow the agency to require a modification to the Plan of Operations to allow for bond adjustments to address unforeseen

environmental effects.<sup>148</sup> In its comments on the proposed rule the USDA stressed that financial guarantee requirements further reduce financial risk to the public. The operator must provide a financial guarantee that must be of a sufficient amount to ensure that, upon closure, the operation no longer presents long-term risks to the environment and a liability to the Forest Service and the public.<sup>149</sup> USDA further noted that any ongoing obligation to continue the protection of the environment is also provided for in a long-term financial assurance instrument required by the Forest Service.<sup>150</sup>

Commenters also noted the role the NEPA plays in identifying risks at mining operations. NMA stated that a federal plan of operation is also scrutinized under NEPA, usually requiring the preparation of an environmental impact statement, which evaluates potential environmental impacts of the mining operation, assesses alternatives, and requires the identification of mitigation measures to reduce potentially significant environmental impacts.<sup>151</sup> The Forest Service also offered several examples of the ways in which the NEPA process mitigates risk for mines which require the preparation of an environmental impact statement. Specifically, the Forest Service noted that it identifies closure requirements as part of the NEPA process after in-depth studies using site-specific data.<sup>152</sup> Moreover, Forest Service noted that proposed reclamation requirements and potential for releases at mines on NFS lands are examined and disclosed in NEPA documents prepared for Forest Service approval of the plan of operations, which are reviewed by EPA.<sup>153</sup> The Forest Service also noted that EPA reviews all NEPA documents, and comments on the adequacy of mitigation measures and reclamation plans in general. Once an operator incorporates source controls and mitigation measures into their plan, the Forest Service approves that plan, based on the expected outcomes and not the individual engineering standards used.<sup>154</sup> EPA notes that the NEPA process applies to all federal agencies

and thus is not limited to only mines on NFS lands.

## (2) Examples of State Programs

A discussion of the mining programs of five states—Nevada, New Mexico, Alaska, Colorado, and Montana—is provided below. Of the 184<sup>155</sup> mining sites in the potentially regulated universe of mines developed by EPA for purposes of analysis in the proposed rule, roughly one fourth are located in Nevada, and roughly one tenth are located in New Mexico, Alaska, Colorado, and Montana combined. In addition to the examples discussed below, the record includes detailed information on the protectiveness of mining programs in Arizona, Utah, South Dakota, and Idaho that were provided by those states and state organizations.<sup>156</sup> Additional information on state programs also was provided by other commenters.<sup>157</sup>

### Nevada

The Bureau of Mining, Regulation, and Reclamation of Nevada requires closure and reclamation for hardrock mines under the Nevada Revised Statutes (NRS) 519A.010—NRS 519A.280 and the Nevada Administrative Code (NAC) 519A.010—NAC 519A.415.<sup>158</sup> Nevada’s regulatory program was enacted in 1989–1990 and includes the authority for the Nevada Division of Environmental Protection (NDEP) to require financial assurance for long-term management of mine-impacted waters.<sup>159</sup> Commenters reported that Nevada’s stringent regulations “impose extensive permitting, design, operation, monitoring, corrective action, closure, reclamation, and financial assurance requirements on hardrock mining

<sup>155</sup> This number does not include the stand-alone mineral processors in the potentially regulated universe of 221 hardrock mining facilities developed by EPA for purposes of analysis in the proposed rule.

<sup>156</sup> See comment and attachments from Beth A. Botsis, Deputy Executive Director, Interstate Mining Compact Commission, comment number EPA-HQ-SFUND-2015-0781-2759; EPA-HQ-SFUND-2015-0781-2758; EPA-HQ-SFUND-2015-0781-2757, discussing the protectiveness of mining programs in Arizona, Utah, and South Dakota. Together, Arizona and Utah have 35 potentially regulated mines. See also, comment from Governor Butch Otter, noting that that most of the mines in Idaho are on federally managed land and thus would be subject to Forest Service or BLM regulations, comment number EPA-HQ-SFUND-2015-0781-2682. Idaho has nine potentially regulated mines.

<sup>157</sup> See the discussion of comments on state mining programs in below.

<sup>158</sup> See comment from Nevada Lithium Corp. Comment Number: EPA-HQ-SFUND-2015-0781-2681 at page 4.

<sup>159</sup> See comment from Nevada Division of Environmental Protection, comment number EPA-HQ-SFUND-2015-0781-2651 at page 1.

<sup>140</sup> Ibid.

<sup>141</sup> Ibid.

<sup>142</sup> Ibid., page 5.

<sup>143</sup> Ibid., page 4.

<sup>144</sup> Ibid., page 4.

<sup>145</sup> Ibid., page 1.

<sup>146</sup> Ibid., page 3.

<sup>147</sup> Ibid., page 3.

<sup>148</sup> Ibid., page 5.

<sup>149</sup> Ibid., page 5.

<sup>150</sup> Ibid., page 5.

<sup>151</sup> See comment from National Mining Association, EPA-HQ-SFUND-2015-0781-2794 at page 30.

<sup>152</sup> See comment from United States Forest Service, Docket ID: EPA-HQ-SFUND-2015-0781-2400 at page 3.

<sup>153</sup> Ibid., page 5.

<sup>154</sup> Ibid., page 7.

operations in the State.<sup>160</sup> In addition, because many mines in Nevada operate on federal lands, Nevada and BLM and Forest Service have entered into Memoranda of Understanding to ensure coordination of financial assurance requirements across private and public lands.<sup>161</sup> Mines in Nevada estimate the amounts of their required financial assurance through use of Nevada's Standardized Reclamation Cost Estimator (SRCE).<sup>162</sup> The SRCE is well-regarded amongst mining reclamation programs and is used by several other states and Federal agencies.<sup>163</sup>

Nevada's hardrock mining regulatory programs, including its reclamation surety program administered by NDEP, include stringent design standards, including standards in liner systems, dam safety, and tailings impoundments that are intended to manage and contain process wastes.<sup>164</sup> The regulations also specify treatment of spent ore heaps at closure to ensure surface and groundwater impacts are prevented.<sup>165</sup> NDEP provided comment that no modern mines that commenced operation after the promulgation of the Nevada mine reclamation financial assurance regulations have required public funding for proper closure or reclamation as evidence of the strength of Nevada's program.<sup>166</sup>

#### New Mexico

The New Mexico Mining Act ("Mining Act") was adopted in 1993 with the purposes of "promoting responsible utilization and reclamation of lands affected by exploration, mining or the extraction of minerals."<sup>167</sup> The

<sup>160</sup> See comment from Newmont Mining Corporation, comment number EPA-HQ-SFUND-2015-0781-2712 at page 46-47.

<sup>161</sup> See comment from Nevada Division of Environmental Protection, comment number EPA-HQ-SFUND-2015-0781-2651, at page 2, and Attachment.

<sup>162</sup> See comment from Nevada Lithium Corp. Comment Number: EPA-HQ-SFUND-2015-0781-2681, Page 4.

<sup>163</sup> See comments from Women's Mining Coalition, Comment number EPA-HQ-SFUND-2015-0781-2705 at page 5, Pershing Gold Corporation, Comment number EPA-HQ-SFUND-2015-0781-2688 at page 6, Hecla Mining Company, Comment number EPA-HQ-SFUND-2015-0781-2688 at page 21, Mining and Metallurgical Society of America, comment number EPA-HQ-SFUND-2015-0781-2734 at page 3.

<sup>164</sup> See comment from Newmont Mining Corporation, comment number EPA-HQ-SFUND-2015-0781-2712 at page 48.

<sup>165</sup> Ibid., page 49.

<sup>166</sup> See comment from Nevada Division of Environmental Protection, comment number EPA-HQ-SFUND-2015-0781-2651 at page 2.

<sup>167</sup> See comments from New Mexico Environment Department and the New Mexico Energy, Minerals, and Natural Resources Department, Docket ID Number EPA-HQ-SFUND-2015-0781-2676-2 at page 4.

Mining Act broadly defines "mining" and "minerals" to cover the extraction and processing of hardrock minerals.<sup>168</sup>

Mining operations in New Mexico, both "existing" and "new,"<sup>169</sup> are required to obtain permits which include closeout, or reclamation, plans.<sup>170</sup> These plans, which are developed in coordination with closure plans required under the Water Quality Act, address the areas disturbed by mining including impacts from any of the thirteen site features identified by EPA as the sources of releases or threatened releases at hardrock mining sites.<sup>171</sup> The reclamation and remediation of these site features, which include tailings, waste rock, leach piles and open pits, are addressed in the permits issued under the Mining Act and the Water Quality Act.

Mining operations in New Mexico are subject to significant compliance and enforcement provisions. The Mining Act mandates a specific set of minimum inspections for each class of facility including one inspection a month when a mine is conducting significant reclamation activities.<sup>172</sup> If the agency determines that a facility is in violation of the Act, regulations or the permit or is creating an imminent danger to public health or safety or is causing significant environmental harm, the agency can order a cessation of mining or undertake administrative or judicial enforcement proceedings.<sup>173</sup> Violations can result in civil penalties of up to \$10,000 a day, and knowing or willful violations can bring criminal penalties.<sup>174</sup>

Financial assurance is an integral and inseparable part of New Mexico's regulation of hardrock mining and attendant reclamation requirements. Before a permit can be issued under the Mining Act, financial assurance must be filed with the agency. "The amount of the financial assurance shall be sufficient to assure the completion of the performance requirements of the permit, including closure and reclamation, if the work has to be performed by the director or a third-

<sup>168</sup> Ibid. page 4.

<sup>169</sup> "existing mining operations" were producing minerals prior to June 18, 1993, and "new mining operations" began producing minerals after that date. Section 69-36-3(E) and (I).

<sup>170</sup> See comments from New Mexico Environment Department and the New Mexico Energy, Minerals, and Natural Resources Department, Docket ID Number EPA-HQ-SFUND-2015-0781-2676-2 at page 5.

<sup>171</sup> 82 FR 3461, fn. 171.

<sup>172</sup> See comments from New Mexico Environment Department and the New Mexico Energy, Minerals, and Natural Resources Department, Docket ID Number EPA-HQ-SFUND-2015-0781-2676-2 at page 5.

<sup>173</sup> Ibid., page 5.

<sup>174</sup> Ibid., page 5.

party contractor."<sup>175</sup> The financial assurance amount is based on a detailed engineering cost estimate to complete the approved reclamation plan and must be based on what it would cost the State, or the State's contractor, to complete the reclamation plan. Financial assurance must include costs for: Contract administration; mobilization; demobilization; engineering redesign; profit and overhead; procurement costs; reclamation or closeout plan management; and contingencies.<sup>176</sup>

The New Mexico Environment Department (NMED) regulates mining operations under the New Mexico Water Quality Act ("Water Quality Act").<sup>177</sup> Enacted in 1967, the Water Quality Act requires the New Mexico Water Quality Control Commission ("WQCC" or "Commission") to adopt regulations to protect surface water and groundwater quality. The Commission must "adopt water quality standards for surface and ground waters of the state,"<sup>178</sup> and must also adopt regulations requiring a permit for "the discharge of any water contaminant."<sup>179</sup> The Commission authorizes NMED to place conditions on discharge permits to protect groundwater, and must deny a discharge permit if the discharge would cause or contribute to contaminant levels in excess of water quality standards at any place of present or potential future use.<sup>180</sup> The WQCC must adopt procedures for providing notice to interested persons and the opportunity for a public hearing, and must also adopt regulations "for the operation and maintenance of the permitted facility, including requirements, as may be necessary or desirable, that relate to the continuity of operation, personnel training and financial responsibility."<sup>181</sup> Finally, the Water Quality Act was amended in 2009 to direct the WQCC to adopt regulations for the copper industry, resulting in a comprehensive and prescriptive set of copper mine regulations,<sup>182</sup> and in accordance with the directives of the Water Quality Act, the Commission has adopted a body of implementing regulations codified in Title 20, Chapter 6 of the New Mexico Administrative Code.

The stated purpose of the Ground and Surface Water Protection Regulations is

<sup>175</sup> Ibid., page 5.

<sup>176</sup> Ibid., page 5.

<sup>177</sup> Ibid., page 6.

<sup>178</sup> Ibid., page 6.

<sup>179</sup> Ibid., page 6.

<sup>180</sup> Ibid., page 6.

<sup>181</sup> Ibid., page 6-7.

<sup>182</sup> Ibid., page 6.

“to protect all ground water of the state of New Mexico which has an existing concentration of 10,000 [milligrams per liter] or less [total dissolved solids], for present and potential future use as domestic and agricultural water supply.”<sup>183</sup> The regulations include three categories of groundwater quality standards: (1) Maximum numerical standards for thirty-three contaminants for protection of human health; (2) maximum numerical standards for nine contaminants and a range for pH for protection of domestic water supplies; and (3) maximum numerical standards for five contaminants for protection of water for irrigation use.<sup>184</sup>

The regulations also address discharge permits,<sup>185</sup> prohibiting any person from causing or allowing a water contaminant to “discharge so that it may move directly or indirectly into groundwater” unless that person is discharging pursuant to a discharge permit issued by NMED.<sup>186</sup> The regulations provide for notice to the public of a proposed discharge permit, and the opportunity to request a public hearing on the permit.<sup>187</sup> The regulations further provide that a discharge permit may include a closure plan to protect ground water after the cessation of the operations causing the discharge. The closure plan must include “a description of closure measures, maintenance and monitoring plans, post-closure maintenance and monitoring plans, financial assurance, and other measures necessary to prevent and/or abate . . . contamination.”<sup>188</sup>

The Copper Mine Rule<sup>189</sup> was promulgated in 2013 and the state indicated that it is the most prescriptive rule governing copper mining operations in the United States. The Copper Mine Rule establishes specific operational, monitoring, contingency, closure, and post-closure requirements for copper mines to ensure protection of water quality and prevent the release of contaminants into the environment during operations and following closure. The Copper Mine Rule is supplemental to the general discharge permit regulations, and is implemented through the issuance of ground water discharge permits.

The Copper Mine Rule covers all aspects of mine operation and closure. The permit application requirements for copper mine facilities result in a

comprehensive document that identifies all mine units at the facility including: Impoundments; pipelines; tanks; leach stockpiles; waste rock stockpiles; crushing, milling, concentrating, smelting and tailing impoundments; open pits; underground mines; and, truck and equipment washing units.<sup>190</sup> Each of these respective mine units is subject to prescriptive engineering design criteria to control and prevent the release of contaminants.<sup>191</sup>

Existing mine units in operation prior to promulgation of the Copper Mine Rule have extensive groundwater monitoring to determine their effectiveness in preventing the release of contaminants to the environment.<sup>192</sup> Discharge permit requirements for existing mine units include operation of groundwater interceptor systems, as well as seepage and surface runoff capture systems to ensure impacts are contained as close as is practicable.<sup>193</sup> The Copper Mine Rule requires development and implementation of a site-wide water management plan describing in detail how impacted storm water and groundwater at the site is contained and managed.<sup>194</sup> Construction and operation of new mine units or expansion of existing mine units is subject to detailed engineering design requirements that include lined leach stockpiles, double lined process water impoundments, leak detection systems, flow metering, and extensive groundwater monitoring.<sup>195</sup>

Proposals for new mine units such as waste rock stockpiles and tailing impoundments are required to include an aquifer evaluation to determine the nature and extent of any impacts to groundwater that may occur if these mine units are proposed to be unlined.<sup>196</sup> Based on the aquifer evaluation, the Copper Mine Rule requires a design report for proposed interceptor systems to ensure containment of groundwater impacted by the stockpile or tailing impoundment such that applicable standards will not be exceeded at monitoring well locations.<sup>197</sup> As previously stated, monitoring wells must be located as close as practicable to the various mine units being monitored.<sup>198</sup> Impacted water collected at a mine site typically is used in the process water system, offsetting use of potable water. Any

impacted water in excess of process water requirements must be treated prior to release.<sup>199</sup> In the event a demonstration of containment cannot be satisfactorily made, a liner system placed beneath waste rock or tailing impoundments may be required.<sup>200</sup>

The Copper Mine Rule also contains prescriptive requirements for closure of mine units that have the potential to impact water quality<sup>201</sup> including requirements for process solution reduction plans<sup>202</sup> and closure water management and water treatment plans.<sup>203</sup> There are prescriptive engineering design requirements for surface re-grading and cover design to ensure storm water is routed off and away from encapsulated mine waste, and that infiltration into mine waste is minimized.<sup>204</sup> It should be noted that the prescriptive closure design criteria are based on designs that have been implemented successfully not only at copper mines in New Mexico, but mimic successful closure design that has been consistently required and applied at other mine sites in New Mexico.

Under these regulations, any hardrock mine that has the potential to impact groundwater must obtain a permit from NMED. The Water Quality Act provides numerous enforcement mechanisms for violations of the provisions of the Act, the regulations, a water quality standard adopted pursuant to the Act, or a condition of a permit issued pursuant to the Act.<sup>205</sup> These include injunctive relief ordered by a district court; suspension or termination of a permit allegedly violated;<sup>206</sup> civil penalties of up to \$15,000 per day of noncompliance for a violation of the Water Quality Act permit provisions at NMSA 1978, Section 74-6-5, including regulations adopted or a permit issued pursuant to that section;<sup>207</sup> up to \$10,000 per day for each violation of the Water Quality Act or regulations other than Section 74-6-5; up to \$25,000 per day for each day of continued noncompliance with a compliance order; and criminal penalties.<sup>208</sup>

The New Mexico state commenters indicated that NMED and the New Mexico Energy, Minerals, and Natural Resources Department work closely together pursuant to a Joint Powers

<sup>183</sup> Ibid., page 6–7.

<sup>184</sup> Ibid., page 6–7.

<sup>185</sup> Ibid., page 6–7.

<sup>186</sup> Ibid., page 6–7.

<sup>187</sup> Ibid., page 6–7.

<sup>188</sup> Ibid., page 6–7.

<sup>189</sup> Ibid., page 7.

<sup>190</sup> Ibid., page 8.

<sup>191</sup> Ibid., page 8.

<sup>192</sup> Ibid., page 8.

<sup>193</sup> Ibid., page 8.

<sup>194</sup> Ibid., page 8.

<sup>195</sup> Ibid., page 8.

<sup>196</sup> Ibid., page 8.

<sup>197</sup> Ibid., page 8.

<sup>198</sup> Ibid., page 8.

<sup>199</sup> Ibid., page 8.

<sup>200</sup> Ibid., page 8.

<sup>201</sup> Ibid., page 9.

<sup>202</sup> Ibid., page 9.

<sup>203</sup> Ibid., page 9.

<sup>204</sup> Ibid., page 9.

<sup>205</sup> Ibid., page 6–7.

<sup>206</sup> Ibid., page 6–7.

<sup>207</sup> Ibid., page 6–7.

<sup>208</sup> Ibid., page 6–7.

Agreement in drafting and issuing permits for hardrock mining facilities to ensure that financial assurance and other permit requirements are consistent, integrated, and complementary. These agencies allow permitted facilities to submit a single financial assurance instrument, or set of instruments, that are jointly held by the agencies, meeting the financial assurance requirements of both statutes. They also have Memoranda of Understanding with BLM and the Forest Service to avoid duplication where federal land is involved. Through mining permits issued under the Mining Act, and groundwater discharge permits issued under the Water Quality Act, the Agencies have jointly required permittees to establish financial assurance for all operating hardrock mines in New Mexico, as well as many that are no longer operating.

Freeport McMoRan Inc. commented that there are existing, state-imposed financial assurance requirements, often amounting to hundreds of millions of dollars per mine, that might be sufficient to protect against risks,<sup>209</sup> and offered the example that EPA itself has adopted state reclamation requirements specified in New Mexico law, as the CERCLA remedy for the Questa mine site.

#### Alaska

The Alaska Department of Environmental Conservation requires financial assurance to prevent releases from mines to water.<sup>210</sup> Financial assurance for reclamation at mines on state, private, municipal, and federal land is managed by the Alaska Department of Natural Resources under authority granted by the Alaska Mine Reclamation Act.<sup>211</sup> The act describes a general reclamation standard which “prevents unnecessary or undue degradation of land and water resources.”<sup>212</sup> Under the mine permitting process undertaken for most large mines in Alaska, coordination with federal, state, and local governments is employed to review mine plans.<sup>213</sup> As evidence of the stringency of Alaska’s requirements, AEMA offered comment that large mines in Alaska are required to undergo

<sup>209</sup> See comments from Freeport McMoRan, Inc., EPA-HQ-SFUND-2015-0781-2402 at page 9.

<sup>210</sup> See comment from NOVAGOLD, comment number EPA-HQ-SFUND-2015-0781-2720 at page 2.

<sup>211</sup> See comment from Alaska Department of Environmental Conservation, comment number EPA-HQ-SFUND-2015-0781-2785 at page 9.

<sup>212</sup> See comment from Alaska Department of Environmental Conservation, comment number EPA-HQ-SFUND-2015-0781-2785 at page 9.

<sup>213</sup> Ibid., page 10-11.

a comprehensive third-party environmental audit every five years.<sup>214</sup>

Alaska requires further safeguards for mines where the plan includes a dam. These requirements include operation and maintenance plans and contingencies in an emergency action plan.<sup>215</sup> Alaska made the “Guidelines for Cooperation with the Alaska Dam Safety Program” guidance available which outlines regulatory requirements applying to dams, including design standards, methods of analysis, [ . . . ] performance requirements and risk profile of the facility, operation, maintenance and monitoring requirements, emergency action planning and incident reporting, periodic safety inspections” as well as financial assurance.<sup>216</sup>

#### Colorado

In 1976, the Colorado state legislature passed the Mined Land Reclamation Act<sup>217</sup> (MLRA) establishing a Mined Land Reclamation Board (“Board”).<sup>218</sup> The MLRA provided far more structure for permitting mine sites and, importantly, oversight of reclaiming these sites. The MLRA’s legislative declaration stated:

It is the declared policy of this state that the extraction of minerals and the reclamation of land affected by such extraction are both necessary and proper activities. It is further declared to be policy of this state that both such activities should be and are compatible. It is the intent of the general assembly by enactment of this article to foster and encourage the development of an economically sound and stable mining and minerals industry and to encourage the orderly development of the state’s natural resources while requiring those persons involved in mining operations to reclaim land affected by such operations so that the affected land may be put to a use beneficial to the people of this state. It is the further intent of the general assembly by the enactment of this article to conserve natural resources, to aid in the protection of wildlife and aquatic resources, to establish agricultural, recreational, residential, and industrial sites, and to protect and promote the health, safety, and general welfare of the people of this state.<sup>219</sup>

In 1984, the Colorado Division of Reclamation, Mining, and Safety (DRMS) permitted the Summitville

<sup>214</sup> See comment from AEMA, comment number EPA-HQ-SFUND-2015-0781-2657 at page 10.

<sup>215</sup> See comment from Alaska Department of Environmental Conservation, comment number EPA-HQ-SFUND-2015-0781-2785 at page 10.

<sup>216</sup> Ibid., page 19.

<sup>217</sup> C.R.S. section 34-32-101 *et seq.*

<sup>218</sup> See comments from Colorado Division of Reclamation, Mining and Safety at Docket ID number EPA-HQ-SFUND-2015-0781-2774, page 3.

<sup>219</sup> Ibid., page 4.

mine.<sup>220</sup> This was a high elevation mine located in the historic mining district of Summitville in Southwest Colorado. Errors were made in the permitting review and initial build out of this mine site. The financial assurance at Summitville was not site-specific but based on a formulaic approach, and ultimately proved to be far short of the actual reclamation cost.<sup>221</sup> The large cyanide heap leach operation almost immediately encountered problems with construction and water treatment.<sup>222</sup> Ultimately, the operator walked away from the site after a significant environmental release leaving the state with an insufficient financial assurance.

The state indicated that it learned from the errors at Summitville, and the state legislature subsequently passed major programmatic revisions to the MLRA in 1993, strengthening permitting and enforcement provisions.<sup>223</sup> Most importantly, the MLRA was specifically amended to create a new class of mining sites now known as Designated Mining Operations (DMOs) and to clearly require financial assurance for all sites based on site specific, not formulaic, criteria.<sup>224</sup>

The DMO amendment is the backbone of Colorado’s hardrock regulatory program and requires operators to submit an Environmental Protection Plan with numerous technical elements that were previously not required in light of lessons learned from Summitville.<sup>225</sup> A DMO’s Environmental Protection Plan now describes how the operator assures protection of all areas that have the potential to be affected by designated chemicals, toxic or acid forming materials, or acid mine drainage.<sup>226</sup> The plan must include an Emergency Response Plan and must implement any measures required by Colorado Parks and Wildlife for the protection of wildlife or Colorado Water Quality Control Division for the protection of water quality.<sup>227</sup> Other aspects of the DMO amendment required submission of information to evaluate the potential for adverse impacts associated with acid mine drainage or acid or toxic producing materials to leach facilities, heap leach pads, tailing storage or disposal areas, impoundments, waste rock piles, stockpiles (temporary or

<sup>220</sup> Ibid.

<sup>221</sup> Ibid.

<sup>222</sup> Ibid.

<sup>223</sup> Ibid.

<sup>224</sup> Ibid.

<sup>225</sup> Ibid., page 5.

<sup>226</sup> Ibid.

<sup>227</sup> Ibid.

permanent), land application sites and in-situ or conventional uranium mining operations.<sup>228</sup>

Further Environmental Protection Plans must include designated chemicals and materials handling plans, facilities evaluation, groundwater evaluation and protection measures, surface water control and containment facilities information, surface water quality data, hydrologic monitoring plans, detailed climate data to assist in facilities design, geotechnical and geochemical data and analysis, construction schedules including quality assurance and quality control measures, plant and soils analysis, tailings and sludge disposal plans.<sup>229</sup>

The financial assurance amendment required all hardrock mine facilities in Colorado, including prospecting operations, to post a financial assurance equal to the amount necessary for the state to reclaim a site if permit revocation and forfeiture were to occur.<sup>230</sup> The financial assurance amount is calculated during the permitting phase of a mine and updated throughout the life of the mine to account for any changes to the mining or reclamation plans or changes in reclamation costs.<sup>231</sup> As discussed above, DRMS did not calculate site-specific financial assurance prior to the 1993 amendments. As part of the 1993 amendments, language was removed that had allowed sites to be permitted for an established amount (depending on permit type) and language was inserted to mandate that DRMS require, on a site-specific calculation, the total amount of financial assurance necessary for the state to complete reclamation. DRMS now calculates financial assurance amounts during permitting and periodically (at a minimum every four years) through the life of the mine.<sup>232</sup>

The MLRA minimizes the adverse impacts of hardrock mining in Colorado by requiring every operator to obtain a permit and adhere to rigorous reclamation standards, both during and after mining.<sup>233</sup> Many of the MLRA's reclamation standards are designed to prevent the release of hazardous substances into the environment.<sup>234</sup> Pursuant to the MLRA, DRMS regulates mining in Colorado to protect the health, safety and welfare of the people of Colorado and to ensure that affected

lands are appropriately reclaimed by those operating mines and mills.<sup>235</sup> See Section 34-32-102, C.R.S. Under Section 34-32-109, C.R.S., any operator of a mine or mill must obtain and maintain a reclamation permit.<sup>236</sup> To ensure that reclamation obligations are performed, Section 34-32-117(1), C.R.S., provides that no mining and reclamation permit may be issued until the Board receives performance and financial warranties.<sup>237</sup> Pursuant to Section 34-32-117(3)(a), C.R.S., a financial warranty consists of a written promise to the Board to be responsible for reclamation costs together with proof of financial capability.<sup>238</sup> Each operator must submit a financial warranty sufficient to assure compliance with applicable reclamation standards, as incorporated in the operation's reclamation permit.<sup>239</sup> See Section 34-32-117, C.R.S. During the life of a mine, DRMS requires financial assurance for water quality treatment, as well.<sup>240</sup>

Under the MLRA, reclamation must be conducted, both during and after the mining operation, in accordance with a reclamation plan that meets certain performance standards.<sup>241</sup> Many of the reclamation standards are designed to prevent releases of hazardous substances and prevent adverse impacts on surrounding properties.<sup>242</sup> See Section 34-32-116, C.R.S. (requiring measures to minimize disturbance to the hydrologic balance, protect outside areas from damage, and control erosion and attendant air and water pollution).<sup>243</sup> MLRA's financial assurances ensure that DRMS can complete reclamation according to those standards if the operator is unwilling or unable.<sup>244</sup> Regulatory financial assurances require enormous expertise, and must be established by fact-intensive case-by-case review.<sup>245</sup> DRMS calculates the financial assurance amount by developing and aggregating task-by-task cost estimates using current reference materials as well as the regional expertise of its staff.<sup>246</sup> Applicants may submit initial estimates; however, DRMS rigorously reviews those estimates. DRMS is also charged with continuously reviewing the

adequacy of financial warranties and uses the same methods.<sup>247</sup>

DRMS and the Board have promulgated a robust set of rules and regulations specific to the oversight of the hardrock mining industry that implement the MLRA.<sup>248</sup> The rules contain specific performance requirements for hardrock mining to protect, for example, both surface and groundwater, impacts to wildlife, and offsite impacts including erosion controls.<sup>249</sup> The rules are evidence of how DRMS minimizes the risk associated with the potential for releases from hardrock mine facilities.<sup>250</sup>

Colorado's regulatory program is predicated on three essential independent but interrelated elements; permitting, inspection and enforcement<sup>251</sup> that allow DRMS to carefully plan for mining and reclamation through the permitting process which is anchored by a thorough financial warranty calculation.<sup>252</sup> It also allows DRMS to periodically review sites through inspections to determine compliance with their permits and, if necessary, take enforcement action to remedy non-compliance.<sup>253</sup>

The permitting process requires prospective operators to, among other things, assess baseline conditions for hydrology, soils, vegetation, land use, climate, geology, and plan for a number of other factors such as chemical and toxic materials handling plans, as they develop their mining and reclamation plans.<sup>254</sup> Many of these plans are required to be certified by a registered professional engineer to ensure design integrity and performance, particularly with respect to any environmental protection facility.<sup>255</sup> A financial warranty is then calculated utilizing the specific factors associated with these plans, including cost details associated with construction of environmental protection facilities and costs associated with demolition and removal of some of these same facilities and structures.<sup>256</sup> Other aspects included in these calculations address volumes of topsoil to be removed and replaced, volumes of overburden to be moved and regraded, waste piles and tailings impoundments to be constructed, capped and reclaimed

<sup>228</sup> Ibid.

<sup>229</sup> Ibid.

<sup>230</sup> Ibid.

<sup>231</sup> Ibid.

<sup>232</sup> Ibid.

<sup>233</sup> Ibid., page 6.

<sup>234</sup> Ibid.

<sup>247</sup> Ibid.

<sup>248</sup> Ibid., page 7.

<sup>249</sup> Ibid.

<sup>250</sup> Ibid.

<sup>251</sup> Ibid.

<sup>252</sup> Ibid.

<sup>253</sup> Ibid.

<sup>254</sup> Ibid.

<sup>255</sup> Ibid.

<sup>256</sup> Ibid.

and types and amounts of vegetation to be reestablished.<sup>257</sup>

Once an application is approved and the financial and performance warranties are posted, a permit is issued.<sup>258</sup> Upon permit issuance, the site inspection frequency is determined and the site is inspected at an appropriate frequency throughout its mining and reclamation life.<sup>259</sup> If a violation occurs at a permitted site, this matter is presented to the Board for adjudication which includes finding a violation, possibly issuing a cease and desist order, assessing civil penalties and requiring corrective actions to remedy the violation.<sup>260</sup> Failure by an operator to remedy a violation could lead to permit revocation and, ultimately, financial warranty forfeiture.<sup>261</sup>

#### Montana

In the state of Montana, hardrock mining is regulated by the Montana Department of Environmental Quality pursuant to the Montana Metal Mine Reclamation Act (MMR Act).<sup>262</sup> The intent of the legislation is to “provide adequate remedies for the protection of the environmental life support system from degradation and provide adequate remedies to prevent unreasonable depletion and degradation of natural resources”<sup>263</sup> and the “proper reclamation of mined land and former exploration areas not brought to mining stage is necessary to prevent undesirable land and surface water conditions detrimental to the general welfare, health, safety, ecology, and property rights of the citizens of the state.”<sup>264</sup>

The state legislature has amended the MMR Act several times over the years, including reforms to address bankruptcies of mining companies. For example, in the 1999 legislative session following the bankruptcy of the Pegasus Gold Corp. the previous year, section 82-4-390 was added to the MMR Act to prohibit open pit mining for gold and silver using the heap leach or vat leach with cyanide ore-processing agents except for certain mines that were already in operation as of November 3, 1998. In another example, section 82-4-338 concerning performance bonding

requirements was substantially amended in the 2007 legislative session and now authorizes the Department of Environmental Quality to take action, including accessing the financial assurance bond and suspending the permit, to abate an imminent danger to public health, public safety or the environment caused by violation of this law.<sup>265</sup>

Montana has also enacted state laws to protect water<sup>266</sup> and air<sup>267</sup> quality, to regulate hazardous and solid waste disposal,<sup>268</sup> and to assess environmental impacts.<sup>269</sup> The Department of Environmental Quality has developed regulations implementing the MMR Act that require compliance with the environmental laws contained in Title 75 of the Montana Code. For example, reclamation activities must assure long-term compliance with the air and water quality laws<sup>270</sup> and that operating permits must prevent acid mine drainage through the construction of earth dams or other devices to control water drainage.<sup>271</sup> In another example, permit modifications require an assessment of environmental impacts pursuant to the state equivalent of NEPA.<sup>272</sup>

In its comments on the proposed rule, the Montana Department of Environmental Quality stated that the proposed rule was unnecessary because the state’s environmental laws and the MMR Act sufficiently regulate environmental and financial risks posed by current mining operations in the state.<sup>273</sup>

#### Comments on State Mining Programs

Freeport-McMoRan Inc. commented that state regulatory programs are comprehensive, staffed by experienced professionals, and effective. In evaluating the risks of hardrock mining EPA did not take into account common elements of current mining regulation, including the detailed, mandatory closure and reclamation requirements designed to restore large land areas disturbed by mining to an appropriate post-mining land uses, the long-term water management requirements

<sup>265</sup> Montana Code Annotated, section 82-3-338(10).

<sup>266</sup> Montana Code Annotated, Title 75, Chapter 5.

<sup>267</sup> Montana Code Annotated, Title 75, Chapter 2.

<sup>268</sup> Montana Code Annotated, Title 75, Chapter

10.

<sup>269</sup> Montana Code Annotated, Title 75, Chapter 1.

<sup>270</sup> Montana Administrative Rules,

17.24.102(13)(f).

<sup>271</sup> Montana Administrative Rules,

17.24.115(1)(d).

<sup>272</sup> Montana Administrative Rules, 17.24.119.

<sup>273</sup> See comments of Montana Department of Environmental Quality at EPA-HQ-SFUND-2015-0781-2742.

designed to protect and, if needed, remediate both groundwater and surface water resources, and operational requirements designed to prevent environmental problems in the first place.<sup>274</sup>

In its comments, the Fertilizer Institute (TFI) stated that, by applying the CERCLA program to facilities covered by existing federal and state reclamation and bonding programs, EPA is duplicating such programs.<sup>275</sup>

Newmont Mining, in its comments, noted that, given the administrative record compiled by the Agency and the excellent job that the FLMAs and States such as Nevada and Colorado already are doing in regulating the risk of unfunded CERCLA releases at hardrock mining facilities, the Agency must conclude that there is no need for another, expensive, duplicative, and preemptive rule to be layered on top of existing regulations.<sup>276</sup>

NMA commented that mining is comprehensively regulated by a vast range of federal, state, and local environmental laws and regulations, and that these laws and regulations provide “cradle to grave” coverage of virtually every aspect of mining from exploration to operations through mine reclamation and closure/post-closure.<sup>277</sup>

EPA generally agrees with these commenters that in the proposed rule it did not adequately consider the protectiveness and financial assurance requirements of current state regulatory programs in assessing the “degree and duration of risk associated with the production, transportation, treatment, storage, or disposal of hazardous substances” and the risk that taxpayers will be forced to fund CERCLA response actions, and has based this final action in part upon its more comprehensive consideration of those existing programs.

#### Protective Mining Practices

Commenters further argued that new facilities are specifically designed, constructed, operated, and closed in a manner to prevent environmental degradation and to avoid the types of problems that were caused by past practices. The information provided to EPA by commenters emphasized that an assessment of risks of damages to the

<sup>274</sup> See comments from Freeport McMoRan Inc., EPA-HQ-SFUND-2015-0781-2793, pages 23-24.

<sup>275</sup> See comments from The Fertilizer Institute, EPA-HQ-SFUND-2015-0781-2633-34, page 63.

<sup>276</sup> See comments from Newmont Mining Corporation, EPA-HQ-SFUND-2015-0781-2712-207, page 195.

<sup>277</sup> See comments from National Mining Association, EPA-HQ-SFUND-2015-0781-2794, page 28.

<sup>257</sup> Ibid.

<sup>258</sup> Ibid.

<sup>259</sup> Ibid.

<sup>260</sup> Ibid., page 8.

<sup>261</sup> Ibid.

<sup>262</sup> Montana Code Annotated section 82-4-301 *et seq.*; available at: [http://leg.mt.gov/bills/mca/title\\_0820/chapter\\_0040/part\\_0030/sections\\_index.html](http://leg.mt.gov/bills/mca/title_0820/chapter_0040/part_0030/sections_index.html).

<sup>263</sup> Montana Code Annotated, section 82-4-301(2)(a).

<sup>264</sup> Montana Code Annotated, section 82-4-301(3).

environment should not focus on mines of an earlier era, and that the targeted regulated universe—currently operating mines using contemporary mining practices—pose comparatively minimal risks of releases.

NMA noted that new facilities are specifically designed, constructed, operated, and closed in a manner to prevent environmental degradation and avoid the types of problems that were caused by past practices.<sup>278</sup> NMA pointed out that historical operating practices that led to the need for largescale CERCLA type responses in the past (e.g., direct disposal of tailings into streams, uncontrolled infiltration/discharge of mine impacted water, discharge of mine waste into dumps or impoundments without mitigating potential release mechanisms, etc.) are no longer utilized by the modern mining industry or compliant with current state and federal regulatory requirements. Rather, NMA notes that the mining industry routinely designs modern mining operations using detailed scientific and engineering investigations such as groundwater and surface water modeling, environmental risk assessments, and stability analyses which contribute to sound design and operating practices intended to protect human health and the environment.

NMA further stated that risks are further reduced at currently operating hardrock mining sites using technologies such as secondary containment systems, seepage collection systems, surface water management systems, liners, and active monitoring systems to reduce or eliminate the risk of a release. In the event that a release or potential release is identified through installed monitoring systems, remedial actions are immediately implemented as required by regulatory programs using technologies such as interceptor wells, cutoff walls, and hydraulic capture zones.<sup>279</sup>

NMA stated that as federal and state mining programs and groundwater protections have matured, monitoring, reporting, and corrective action have become core components of hardrock mining programs and permits, citing, for example, BLM's current regulations, promulgated in 2001, which require operators to submit a comprehensive monitoring plan that demonstrates compliance with BLM's surface management regulations and other Federal and State environmental laws and regulations, provides early detection of potential problems, and

supplies information that will assist in directing corrective actions should they become necessary.<sup>280</sup>

Numerous other commenters, including MiningMinnesota, AEMA, Energy Fuels Resources, and General Moly, Inc. supported NMA's views, noting that advances in engineering controls, technology, mining industry best practices, and FLMA and state regulatory programs have lowered the “degree and duration of risk” to a point that CERCLA 108(b) financial responsibility requirements are not required.<sup>281</sup> These commenters further elaborated that the FLMA and state mine regulatory and financial assurance programs coupled with engineering controls and best practices reduce the degree and duration of risk associated the production, transportation, treatment, storage, or disposal of hazardous substances and that these FLMA and state reclamation and closure requirements require more than simply reshaping land and revegetation—by requiring a mine to be designed, built, operated and closed to prevent the release of hazardous substances and ensure no adverse environmental impacts through the entire mine life cycle, including closure and post-closure. As such, the commenters believe no additional financial responsibility requirements are necessary to protect the taxpayers or the Superfund Trust Fund.

The Idaho Mining Association (IMA) echoed the same message, noting that modern mining techniques and best practices in the mining industry use technology and appropriate controls in combination with FLMA and state programs to lower risk of release such that EPA's proposed rule is not necessary.<sup>282</sup>

For the planned Donlin Gold project in Alaska, Calista Corporation noted in its comments that one of the primary goals has been to avoid environmental and human health risks both from planned operations and potential unanticipated releases of hazardous substances such as tailings, acid rock drainage, mercury, cyanide, and fuel oil. For example, the Donlin Gold tailings storage facility design is state-of-the-art and includes: (1) Downstream, rock fill dam construction keyed into bedrock, (2) a geo-synthetic liner, and (3) dry

closure to minimize long-term water management needs.<sup>283</sup>

Freeport-McMoRan provided numerous specific examples of how the hardrock mining industry has improved its management of environmental impacts:

- In the area of managing the acidic content of waste rock, the industry employs a far more sophisticated and technology-driven approach that includes a thorough geochemical analysis of the ore reserve body being mined. Using up-to-date information, trucks equipped with GPS systems are routed to specific designated disposal locations based on the acidic potential of the waste rock. These locations in turn are selected based on geochemical modeling that can project out far into the future. Potentially acid-generating material is disposed of in engineered facilities designed to minimize the potential for acid generation by encapsulation or neutralization and thereby reducing the potential for acid rock drainage and seepage.

- The changes to the design and operation of tailings ponds over the last 25 years are also quite extensive. At the operational level, qualified internal tailings-dedicated engineers and onsite leaders manage tailings stability. Sites with tailings dams follow established operations, maintenance and communication protocols. In this process, items regularly inspected and monitored are: Phreatic level trends, deposition plans and adherence to good operational construction practices, water management controls (including pool sizes and location relative to dam faces), seepage management, decant systems and other stability components.

- Prior to the revisions to state mining programs during the late 1980s and into the early 1990s, it was not uncommon for waste rock stockpiles, tailings impoundments, leach pads and ponds to be built with limited or no engineering and design review, limited quality control and questionable operational practices. For example, some leach pads were built on somewhat compacted sub-grade overlain with solvent welded poly-vinyl chloride (PVC) plastic sheeting, many times installed by mine site employees without specific expertise in the construction of these systems. These pads usually had ditches lined with Hypalon sheeting due to this material's superior ultraviolet light resistance compared to PVC. Many of these sites have been decommissioned, closed, and

<sup>278</sup> See comment from National Mining Association, EPA-HQ-SFUND-2015-0781-2794.

<sup>279</sup> Ibid., Appendix B.

<sup>280</sup> See comments from MiningMinnesota, EPA-HQ-SFUND-2015-0781-2655 and from American Exploration and Mining Association (AEMA), EPA-HQ-SFUND-2015-0781-2657, and General Moly, Inc., EPA-HQ-SFUND-2015-0781-2715.

<sup>281</sup> See comment from the Idaho Mining Association, EPA-HQ-SFUND-2015-0781-2772.

<sup>282</sup> See comment from Calista Corporation, EPA-HQ-SFUND-2015-0781-2644.

replaced by more environmentally robust options.

- Modern tailings disposal facilities are engineered and constructed utilizing environmental protection controls. These facilities are constructed utilizing geologic containment or engineered liners to contain the fluid portion of the tailings. As time passes following deposition, the solid fraction of the tailings consolidates, reducing the interstitial pore space and thereby decreasing the hydraulic permeability to a value that is often less than the liner material used during construction. These facilities are often equipped with controls, such as barge pump back systems and containment/collection wells at the toes of the units, to capture any seepage and allow for the recycling of captured water. Upon closure, these facilities take measures to minimize net infiltration into the tailings, such as by utilizing stormwater controls and ensuring that there is positive drainage during storm events. Tailings facilities are also covered and revegetated to produce a passive evapotranspiration mechanism which further reduces net infiltration. These tailings disposal facilities are operated following Tailings Management Plans which are included in the application for environmental protection permits issued by state regulating agencies.

- Prior to the placement of waste rock, the proposed site is evaluated for environmental risks including upstream stormwater run-on, seeps and springs upwelling from beneath the proposed facility, proximity to streams and rivers and other site specific exposures. The waste rock facility must be designed and built in accordance with engineering and construction details required by a mine's state-issued permit, which must be based on geotechnical stability analyses. Stormwater management measures, such as diversion features to intercept water and direct it around the waste rock facility, and facility management plans that govern the placement of potentially-reactive material are also employed to limit contact with potentially acid-producing materials. Other management strategies that may be employed to limit contact with potentially acid-generating material may include blending with neutralizing rock, segregation in cells that are set back a prescribed distance from the base and edges of the facility and are covered or encapsulated in neutralizing material, and landform design to minimize stormwater ponding. Concurrent reclamation is also often incorporated to further reduce the potential for net infiltration into the waste rock facility and return the area

to a productive post-mining land use. Waste rock facility inspections by the operator and regulatory inspectors are also performed on schedules based upon regulatory requirements imposed by laws, regulations and permit stipulations. These inspections include looking for seepage from the facility, slope stability, stormwater ponding and other prescribed conditions. Any issues observed must be corrected per the regulatory and permit requirements imposed. These inspections are conducted during operation and continue through the closure period following reclamation of the facility.

Several commenters also commented on the usefulness of environmental management systems (EMSs) and best management practices (BMPs). For example, NMA commented that the introduction of EMSs in the 1990s was another key development for improved environmental performance—a framework that helps an organization meet its regulatory compliance requirements and otherwise achieve its environmental goals through consistent review, evaluation, and improvement of its environmental performance.<sup>284</sup> This consistent review and evaluation are intended to identify opportunities for continuous improvement in the environmental performance of the organization. NMA states that many HRM facilities have implemented EMS programs, noting that at EPA's request, it, in association with the Society for Mining, Metallurgy, and Exploration ("SME"), developed a model EMS guide to address the agency's concerns about the ability of smaller and medium size mining companies to develop and implement EMS programs. The objective of the EMS guide is to assist companies in achieving reliable regulatory compliance, reducing adverse impacts to the environment, improving environmental stewardship, and continually improving environmental performance. NMA notes the most commonly used framework for an EMS is the one developed by the International Organization for Standardization ("ISO") for the ISO 14001 standard. Established in 1996, this framework is the official international standard for an EMS and includes an optional third-party certification component, meaning an independent certification body audits an organization's practices against the requirements of the standard. Many HRM facilities have taken this extra certification step. The ISO 14001, first published in 1996, underwent

significant revisions in both 2004 and 2015.

Freeport-McMoRan similarly commented that EPA did not consider the implementation of EMSs—under standards developed by reputable third-party organizations, such as the International Standards Organization and the International Council on Mining and Metals.<sup>285</sup> The commenter noted that such standards commit participants to continuing process improvement above and beyond minimum legal requirements. Likewise, standards for sustainability, such as ICMM's, require third party assurance and verification programs. Freeport-McMoRan stated these private initiatives supplement state programs, adding an additional layer of best practices and external review above and beyond what is legally required. The Arizona Department of Environmental Quality (ADEQ) supported this approach, noting the usefulness of its Voluntary Environmental Stewardship Program (VESP) and Voluntary Remediation Program (VRP) that are innovative systems not based on enforceable commitments required for reductions.<sup>286</sup> ADEQ also stated the usefulness of EMSs, ISO certification, third party inspection programs, or similar types of state and federal programs for reducing risk from mining operations and specifically noted that Freeport-McMoRan, with mines in Arizona, employs industry best practices of an ISO14000 environmental management system.

With respect to BMPs, the Forest Service commented that EPA acknowledges that "[t]oday, BMPs have been developed that can mitigate potential impacts from mining to meet EPA's goal . . . that the engineering requirements will result in a minimum degree and duration of risk associated with the production, transportation, treatment, storage, or disposal, as applicable, of all hazardous substances present at that site feature."<sup>287</sup> However, comments submitted by Earthworks, *et al.* raise concern about the use of BMPs, noting that no data was provided to demonstrate that these rules have reduced, or prevented, releases of hazardous materials. Earthworks further noted that numerous reports document substantial impacts at modern hardrock mines, particularly those associated

<sup>284</sup> See comment from Freeport-McMoRan, EPA-HQ-SFUND-2015-0781-2793.

<sup>285</sup> See comment from the Arizona Department of Environmental Quality (ADEQ), EPA-HQ-SFUND-2015-0781-2714.

<sup>286</sup> See comment from USDA Forest Service, EPA-HQ-SFUND-2015-0781-2400.

<sup>284</sup> See comment from National Mining Association, EPA-HQ-SFUND-2015-0781-2794.

with the release of hazardous materials.<sup>288</sup>

EPA recognizes that substantial advances have been made in the development of mining practices and the implementation of federal and state regulatory programs to address releases at hardrock mining facilities. While the risk of a release is never totally eliminated, commenters provided information regarding state regulation of hardrock mining facilities, including detailed information on controls those programs require to prevent releases. This information indicates that state and voluntary programs improve in response to incidents. Barrick Gold commented that EPA cited some releases including at the Summitville and Zortman-Landusky mines, which the commenter stated cannot occur again because federal land management agencies and state regulators have strengthened requirements and practices to prevent the issues that occurred previously. Specifically, they stated that regulations and policy were modified to more carefully identify risks of acid rock drainage or other water contamination, to control potential sources through mine design and to assure those measures are implemented through permit and monitoring obligations. The Colorado Department of Natural Resources, Division of Reclamation, Mining, and Safety's comments support Barrick's statements, stating that "the state learned from the errors at Summitville, and the state legislature passed major programmatic revisions to the Mined Land Reclamation Act (MLRA)" that "strengthened permitting and enforcement provisions. Most importantly, the MLRA was specifically amended [. . .] to clearly require financial assurance for all sites based on site specific, not formulaic, criteria."<sup>289</sup>

The Nevada Mining Association's comments reference Nevada's continual improvement of its regulatory programs to ensure effectiveness and efficiency. This comment argues that state programs are not static and rather make constant improvements.<sup>290</sup> Comments from the Small Business Administration Office of Advocacy explained that the bonding requirements of the Nevada program have been more recently upgraded, in part, because of the experience gained from administering mines through bankruptcies in the early

1990s.<sup>291</sup> NMA notes improvements to federal and state programs made in response to bankruptcies in the mining industry experienced in the 1990s and early 2000s.<sup>292</sup> One coordinated improvement of Federal Land Management Agencies and Nevada cited is the development of the SRCE mentioned above.

Additionally, a commenter operating in several states stated that EPA's evaluation of risk failed to consider important aspects of modern mining, including the deployment of voluntary industry programs (e.g., the International Council on Mining and Metals (ICMM) Sustainable Development Framework) and robust environmental management systems with third-party certification.<sup>293</sup> A commenter also noted the International Cyanide Management Code for the Manufacture, Transportation, and Use of Cyanide in the Production of Gold, which was developed under the guidance of the United Nations Environment Program. The code "focuses exclusively on the safe management of cyanide and cyanidation mill tailings and leach solutions. Companies that adopt the Cyanide Code must have their mining and processing operations that use cyanide to recover gold and/or silver audited by an independent third party to determine the status of Cyanide Code implementation." The requirements under the code include storage and mixing location and containment, secondary containment, lining for leach ponds, and spill prevention and containment.<sup>294</sup> Similarly, another commenter stated that EPA failed to adequately recognize the impacts of the development and adoption of industry BMPs, other voluntary programs, and environmental management systems.<sup>295</sup>

EPA acknowledges that the requirements of current federal and state programs can reduce risk at hardrock mining facilities, and that when determining the need for section 108(b) requirements for hardrock mining facilities at proposal, EPA did not adequately consider their impact. EPA agrees with commenters opposing the proposed rule that those reductions in risk should be considered in

determining the need for final requirements under section 108(b) for current hardrock mining operations.<sup>296</sup> The Agency is thus convinced by those commenters and its own further investigations that the rulemaking record supporting requirements under section 108(b) for currently operating facilities was incomplete in not adequately considering the risk reductions currently obtained by other Federal and state regulatory programs. While EPA also acknowledges that the risk of a release is never totally eliminated by the requirements of other programs, this residual risk is to be evaluated in light of EPA's discretion under the statute on whether to set section 108(b) requirements, and in light of the other information in the record for today's action discussed elsewhere in this final rulemaking. Viewed in this manner, such residual risk does not change EPA's conclusion that it is not appropriate to issue final section 108(b) requirements for current hardrock mining operations.

Finally, it should be noted that in addition to the federal and state mining programs that regulate mine operation and closure, hardrock mining facilities are regulated under a number of other federal programs, discussed above, which contribute to reduction in risk at these facilities. For example, mines are generally required under the Clean Water Act regulations to obtain NPDES permits, and to meet federal water quality standards for point-source discharges to water sources from industrial operations. Requirements of the Safe Drinking Water Act include permitting and technical standards for underground injection wells that might be used in mineral extraction. And, requirements under the CAA apply National Emission Standards for Hazardous Air Pollutants to hazardous air releases from mining and processing operation sources.

#### b. Comments Providing Information on Reduced Costs to the Taxpayer Resulting From Effective Hardrock Mining Programs and Owner or Operator Responses

Commenters also argued that the reduced risk at modern hardrock mining facilities is evidenced by the fact that there are very few cases where modern hardrock mining facilities have been addressed by Superfund and/or at taxpayer expense.

<sup>288</sup> See comment from Earthworks *et al.*, EPA-HQ-SFUND-2015-0781-2739.

<sup>289</sup> See comment from Colorado Department of Natural Resources, EPA-HQ-SFUND-2015-0781-2774, page 3.

<sup>290</sup> See comment from the Nevada Mining Association, EPA-HQ-SFUND-2015-0781-2684, page 7.

<sup>291</sup> See comment from the Small Business Administration, EPA-HQ-SFUND-2015-0781-1406, page 4.

<sup>292</sup> See comment from the National Mining Association, EPA-HQ-SFUND-2015-0781-2794, page 64.

<sup>293</sup> See comment from Freeport-McMoRan Inc., EPA-HQ-SFUND-2015-0781-2402.

<sup>294</sup> See *Id.*, Appendix D page at 8.

<sup>295</sup> See comment from National Mining Association, EPA-HQ-SFUND-2015-0781-2794.

Several commenters disagreed with EPA's assertion in the proposal that the estimated \$4 billion spent by EPA through the Superfund for cleanup costs at historical hardrock mining facilities is an indication of the relative risk present at the facilities covered by the proposed rule. Commenters stated that EPA did not differentiate between costs associated with the highly-regulated mining practices of today and pre-regulation practices in developing that number. EPA agrees that the analysis discussed in the preamble to the proposed rule<sup>297</sup> did not adequately distinguish between legacy and current mines.

Commenters argued that such analyses would further demonstrate that any risks from modern operations entail much less costly responses, and that the bulk of the observed historical response costs are attributable to pre-regulation practices.

In addition, many commenters stated that the risk that there will be inadequate funding to cover CERCLA liabilities at hardrock mining facilities in the future is adequately addressed by existing federal and state financial assurance programs. Commenters provided numerous examples of existing trust, bonds, and letters of credit (LOCs) available to pay for necessary actions at these sites.<sup>298</sup> Commenters also provided examples of facilities where the response costs have been paid for by owners and operators at no cost to taxpayers.<sup>299</sup>

Since a goal of section 108(b) requirements is to provide funds to address CERCLA liabilities at sites, evidence of such privately-funded responses contributes to support for the decision that financial responsibility requirements under section 108(b) for current hardrock mining operations are not appropriate.

#### *E. Evidence Rebutting EPA's Site Examples*

In developing the 2009 Priority Notice and the proposed rule, EPA cited examples of hardrock mining facilities where releases of hazardous substances have occurred, and in some cases where CERCLA or CERCLA-like actions were necessary, as evidence of risk associated with hardrock mining operations.<sup>300</sup>

<sup>297</sup> See 82 FR 3479, January 11, 2017.

<sup>298</sup> See a discussion of this issue in the Technical Support Document for this final rulemaking: EPA, CERCLA Section 108(b) Hardrock Mining Final Rule: Technical Support Document, December 1, 2017.

<sup>299</sup> See a discussion of this issue in the Technical Support Document for this final rulemaking, *Ibid.*

<sup>300</sup> See the Releases Report, the Practices Report, and the Evidence Report. NMA comments included

The examples fell into three categories: (1) Examples now not relevant to the mines to be regulated under the rule, (2) examples reflecting a reassessment of costs to the taxpayers based on new information, and (3) examples where program requirements were subsequently modified to address the problem.

Commenters on the proposed rule provided information to rebut the facts associated with the case studies and their significance in support of the 2009 Priority Notice and the proposed rule, by pointing out that response actions were due to legacy contamination, were privately funded, were covered by financial assurance under other law, or were the result of situations that have been subsequently addressed by state law.<sup>301</sup> The information provided by these case studies formed a significant portion of the record on which the 2009 Priority Notice and the proposed rule were based. This additional information provided by commenters has caused EPA to reevaluate its conclusions in the proposed rule regarding the level of potential taxpayer liability from modern mines operating under currently existing regulatory programs.

One example in each of the three categories is discussed below. A full discussion of the case studies and the evidence provided in rebuttal can be found in a support document entitled "CERCLA Section 108(b) Hardrock Mining Final Rule: Technical Support Document," which is available in the docket for this rulemaking.

#### 1. Example of Sites Now Not Relevant to the Mines To Be Regulated Under the Rule

Commenters provided information demonstrating that several of the site examples relied upon in the proposed rule are not relevant to an evaluation of the risk at current hardrock mining operations because they relate to historic mining activities that do not reflect current mining practices or regulatory regimes at the state or federal level. EPA agrees that the historical mining practices, and environmental contamination that may have occurred as a result of such practices, are not an accurate representation of the risks associated with current hardrock mining operations. Many of the sites referenced in the proposed rule, the 2009 Priority

a detailed critique of the Practices Report prepared by the Society for Mining Metallurgy and Exploration, Inc., as Appendix D to its comments.

<sup>301</sup> In fact, comments submitted by NMA included a lengthy Appendix addressing the individual facilities cited by EPA. See comment EPA-HQ-SFUND-2015-0781-2794, Appendices C-1, C-2, and C-3.

Notice, and record of support, are not relevant to EPA's assessment of risk posed by current hardrock mining operations that are already subject to applicable federal and state regulatory regimes. Rio Tinto Kennecott Bingham Canyon Site in Utah is an example of a site that was now not relevant to current hardrock mining operations.

This mine was included in the preamble of the proposed rule as an example of the impacts that can occur from large-scale operations.<sup>302</sup> For example, the discussion of this mine references the large-scale disturbance of land, accumulation of waste rock, and leaching of hazardous substances and acid rock drainage, but it does not provide details about the history of the mine or context about whether certain activities are best characterized as legacy mining activities or ones that reflect current mining practices and regulatory regimes.

According to Rio Tinto's comments and EPA's record for the site, there has been active mining in the canyon since the 1860s and that the historic mining activities "based on a less sophisticated understanding of environmental sciences and substantially less regulation by emerging environmental protection laws inarguably left their mark."<sup>303</sup> According to the record for this action, EPA has secured more than \$270 million to pay for response actions for this site through enforcement orders and consent decrees. Rio Tinto in its comments acknowledges that accidents do happen and that reporting, inspections, and enforcement can help prevent and address problems that do occur. In its comments, NMA stated that the cooperation between the mining company, EPA, and the state is a model for addressing legacy environmental contamination at mining sites.<sup>304</sup> EPA has touted the cooperative effort to clean up the site as a "major accomplishment of the Superfund program and law."<sup>305</sup> Further

<sup>302</sup> 82 FR 3388, 3472; see also, Comment submitted by Earthworks (EPA-HQ-SFUND-2015-0781-1072). The four-page report characterizes the mine as the "second most polluting mine in the US by toxic releases" based on TRI data; however, as noted in the preamble to the final rulemaking, TRI data are not an accurate representation of risk at a particular site. As the Earthworks comment notes, EPA and the state have reached an agreement to not finalize the proposal to list the site on the NPL and there have been several state and federal regulatory and enforcement actions at the site, which required the company to take steps to mitigate risks to human health, water, and other natural resources.

<sup>303</sup> EPA-HQ-SFUND-2015-0781-2747; see also, EPA-HQ-SFUND-2015-0781-0186.

<sup>304</sup> EPA-HQ-SFUND-2015-0781-2794, table C.

<sup>305</sup> See comment from the National Mining Association, EPA-HQ-SFUND-2015-0781-2747, Appendix F.

discussion of this mine can be found in the Technical Support Document for this final rulemaking.<sup>306</sup> EPA agrees that this mine, which has an expansive footprint but whose current operations are subject to considerable oversight by regulatory authorities, is not a relevant example on which to base a rule under section 108(b).

## 2. Example Reflecting Reassessment of Costs to the Taxpayers Based on Additional Information

As discussed above, a goal of regulations under section 108(b) is to increase the likelihood that owners and operators will provide funds necessary to address the CERCLA liabilities at their facilities. In doing so, section 108(b) requirements assure that owners and operators, rather than the taxpayers, bear the costs associated with necessary responses to releases and potential releases of hazardous substances at their sites. Commenters on the proposed rule objected that EPA did not properly consider whether a release resulted in expenditure of taxpayer funds to determine the need for a rule under section 108(b). EPA's reconsideration of these case studies supports the determination that section 108(b) financial responsibility requirements at hardrock mining facilities are not necessary to provide funds to address CERCLA liabilities at sites. Many of the sites referenced in the proposed rule, the 2009 Priority Notice, and record of support, are not relevant to EPA's assessment of risk posed to the taxpayer because cleanup is being paid for by private parties. Golden Sunlight Mine in Montana is an example of such a site.

The Releases Report presented this mine as an example of a current mine with releases to the environment where a response action was necessary. NMA and Barrick Gold both commented that the releases from the tailings facility detected in 1993 were discovered by monitoring implemented at the behest of state mining permits at the site and corrective action was taken by the operator.<sup>307</sup> In the proposed rule, the agency described the actions by the owner/operator to immediately repair the bentonite cut-off wall to control seepage from the tailings impoundments. The facility has also installed an extensive system of monitoring wells and several hydrogeologic investigations have been

<sup>306</sup> See: EPA, CERCLA Section 108(b) Hardrock Mining Final Rule: Technical Support Document, December 1, 2017.

<sup>307</sup> National Mining Association comments on proposed rule appendix table C-2 pg 6; Barrick Gold July 11, 2017 comments on proposed rule page 20.

undertaken to continue to monitor, evaluate, and control leakage from the tailings impoundment.

As discussed in the Technical Support Document and elsewhere in the preamble, Montana substantially reformed its mining laws over the past couple of decades. Montana Department of Environmental Quality commented on the proposed rule that Montana State Law "requires Hard Rock operators to submit to Montana Department of Environmental Quality a bond in an amount no less than the estimated cost to the state to ensure compliance with Montana's Air Quality Act, Montana's Water Quality Act, the Metal Mine Reclamation Act, and the permit issued by DEQ under the Metal Mine Reclamation Act (MMRA). The site is also subject to Montana's Environmental Policy Act (MEPA) which is patterned after NEPA). The mine has been the subject of several environmental assessments and one environmental impact statement for amendments to its operating permit. In addition, and at a minimum, Montana Department of Environmental Quality is required to perform a comprehensive bond review every five years for each Hard Rock operation to ensure that the bonding level is appropriate."<sup>308</sup>

The Agency researched Montana's requirement to perform a comprehensive bond review every five years as it applies to the Golden Sunlight Mine. The agency found a final bond determination for Golden Sunlight Mine dated July 28, 2017 in which Montana DEQ determined that the current bonding level of \$112,153,980 did not represent the present cost of compliance with the MMRA, the administrative rules, and Operating Permit No. 00065. After negotiations between Montana Department of Environmental Quality, the Bureau of Land Management, and the mine owner, and a 30-day comment period, the bond amount was increased to \$146,564,163. The next comprehensive bond review will be in 2020.<sup>309</sup> Further discussion of this mine can be found in the Technical Support Document for this final rulemaking.<sup>310</sup>

<sup>308</sup> EPA-HQ-SFUND-2015-0781-2742.

<sup>309</sup> See: EPA, CERCLA Section 108(b) Hardrock Mining Final Rule: Technical Support Document, December 1, 2017. [http://deq.mt.gov/Portals/112/Land/Hardrock/Active%20Amendments/Golden%20Sunlight%20016/00065\\_GSM\\_2017\\_0728\\_Final\\_Bond.pdf](http://deq.mt.gov/Portals/112/Land/Hardrock/Active%20Amendments/Golden%20Sunlight%20016/00065_GSM_2017_0728_Final_Bond.pdf).

<sup>310</sup> See: EPA, CERCLA Section 108(b) Hardrock Mining Final Rule: Technical Support Document, December 1, 2017.

## 3. Example Where Program Requirements Were Subsequently Modified To Address the Problem

Commenters provided information to demonstrate that when problems have arisen at hardrock mining facilities, states have responded by improving their programs to prevent similar problems in the future and that there is, therefore, no need for financial responsibility requirements under section 108(b). Commenters provided examples of such state program modifications to rebut evidence provided in the record supporting the proposed rule. Barite Hill/Nevada Goldfields Facility in South Carolina is an example of a situation where program modifications reduced future risk.

As was discussed in the proposed rule, the Barite Hill/Nevada Goldfields was a gold and silver surface mine located in McCormick, South Carolina that was operated by Nevada Goldfields.<sup>311</sup> The mine operated an open pit cyanide heap leach operation on the property from 1989 to 1994. Nevada Goldfields conducted mine reclamation activities from 1995 to 1999, when it filed for bankruptcy and abandoned the site, turning over control to the South Carolina Department of Health and Environmental Control.<sup>312</sup>

NMA commented that EPA's description of the mine in the proposed rule included mischaracterizations and omissions, including that significant changes were made to South Carolina Mining Act in 1990 that specified reclamation requirements and provided enforcement tools. NMA also stated that the most recent facility that had been permitted in the state had a waste rock management plan to prevent acid mine drainage.<sup>313</sup> EPA has confirmed that South Carolina finalized regulations implementing this new authority in 1992, including requirements that a mine obtain a reclamation bond as a condition for receiving a mining permit, and that the recently permitted gold mine is subject to stricter environmental and financial assurance requirements.<sup>314</sup> These regulations were not completed in time to significantly reduce risks at Nevada Goldfields, which ceased active mining in 1994, but EPA believes that similar mines operating in South Carolina today under

<sup>311</sup> 82 FR at 3473.

<sup>312</sup> ATSDR 2011 PHA Barite Hill EPA-HQ-SFUND-2015-0781.

<sup>313</sup> NMA EPA-HQ-SFUND-2015-0781-2794 Attachment #109 pdf p. 81/119; Attachment #110 pdf p. 330, 346, and 387/440.

<sup>314</sup> S.C. State Register, Vol. 16, Issue 4 (April 24, 1992); available at: <http://digital.tcl.sc.edu/cdm/compoundobject/collection/scsreg/id/31138/rec/5>.

the current regulations would have significantly reduced risks of unpermitted releases and taxpayer liability. Further discussion of this mine can be found in the Technical Support Document for this final rulemaking.

#### *F. Information Regarding Financial Responsibility Instrument Availability*

During the public comment period for the proposed rule, commenters representing or participating in the insurance, surety and banking industries identified several concerns with EPA's proposed instrument terms, and expressed concern that those terms could impact the availability of instruments. Similarly, entities in the mining industry expressed concerns that instruments may not be available for the amounts proposed in the forms specified. Information provided by commenters on likely lack of available instruments to satisfy section 108(b) requirements provides further support for EPA's determination that the proposed financial responsibility requirements are not appropriate.

EPA considered the capacity of the financial market to provide instruments as part of the development of the proposed rule. The Conference Committee Report for the Consolidated Appropriations Act (2016) instructed EPA to conduct a study of the market capacity regarding the necessary instruments for meeting any new section 108(b) financial responsibility requirements. EPA accordingly developed a study,<sup>315</sup> which suggested significant uncertainty exists around the ultimate availability of instruments.

Many commenters expressed concerns regarding the uncertainty inherent in the study as well and expressed concerns that financial responsibility instruments may not be universally available and affordable.<sup>316</sup> The concerns raised by commenters regarding the terms and conditions of the proposed instruments as well as the comments on the market capacity study

<sup>315</sup> Doc. ID EPA-HQ-SFUND-2015-0781-0496; Letter from USEPA, Chief Financial Officer, to members of Senate and House Subcommittees on Interior, Environment, and Related Agencies, dated Sept. 1, 2016, along with attached submission of EPA study titled, "CERCLA 108(b) Hardrock Mining and Mineral Processing Evaluation of Markets for Financial Responsibility Instruments, and the Relationship of CERCLA 108(b) to Financial Responsibility Programs of Other Federal Agencies", August 25, 2016.

<sup>316</sup> See, for example, Freeport McMoran comments on the proposed rule Docket ID: EPA-HQ-SFUND-2015-0781-2793 pg 89-91; American Exploration and Mining Association comments on the proposed rule Docket ID: EPA-HQ-SFUND-2015-0781-2795 pg 30-32; National Mining Association comments on the proposed rule Docket ID: EPA-HQ-SFUND-2015-0781-2794 pages 81-82.

have contributed to uncertainty regarding the availability of instruments to owners and operators seeking to comply with the proposed section 108(b) requirements. If instruments were not available, owners and operators would be unable to comply with section 108(b) requirements, and the goal of the rule to provide funds to address CERCLA liabilities at sites would not be achieved.

The issue of availability of instruments is discussed in more detail in section VII.D. of this final rulemaking.

#### **V. Decision to Not Issue the General Facility Requirements of Subparts A Through C in This Final Rulemaking**

The Agency also has decided not to issue as final any provisions of the proposed rule, including the general financial responsibility requirements in subparts A through C. EPA would include general facilities requirements, such as these, in the first of any subsequent rulemaking proposals under section 108(b), rather than issue final requirements under those subparts at this time.

EPA decided on this approach because there is no need to issue final requirements in subparts A through C at this time as they would not be applicable to any classes of facilities until such time as final section 108(b) regulations applicable to classes of facilities are issued.

In addition, the Agency received significant comment on the general financial responsibility provisions of the proposed rule, many of which identified significant issues with those portions of the proposal. These included, for example, the financial industry's concerns regarding certain provisions included with the language of the instruments, as described in detail below. By issuing a new proposed set of general requirements for any subsequent industry class, EPA would be able to gather additional information as appropriate. Accordingly, EPA would be able to present a new set of general facility requirements in any subsequent proposal, with an additional opportunity for public comment, rather than having to create a proposal to modify existing requirements, thus avoiding potential confusion to commenters.

#### **VI. Obstacles To Developing and Implementing Section 108(b) Financial Responsibility Requirements for Hardrock Mining Facilities**

EPA decided not to issue final requirements under section 108(b) for hardrock mining facilities because the

Agency believes that final requirements are not appropriate. Furthermore, the Agency encountered a set of challenges that validate the decision not to issue final regulations. First, challenges remain regarding the potential disruption of state, tribal, and local mining programs by section 108(b) requirements. Second, section 108(b) continues to present particular challenges regarding the determination of a financial responsibility amount. Third, the Agency's evaluation of the economic impacts of the proposed rule does not support the need for a rule. Fourth, concerns regarding the availability of instruments remain. Finally, section 108(b) continues to present challenges in identifying the facility for purposes of the rule. These concerns were raised by commenters, and are discussed in detail below.

#### *A. Potential Disruption of State, Tribal, or Local Mining Programs*

In the proposed rule, EPA acknowledged the role that effective reclamation and closure requirements at hardrock mining facilities under federal and state programs can have in reducing the likelihood of releases or potential releases of hazardous substances to the environment. EPA also documented that federal and state mining regulatory programs require financial assurance to support implementation of reclamation and closure requirements.

Numerous observers raised questions about the effects of an express preemption provision in CERCLA section 114(d) during EPA's development of the proposed rule. This provision states in part:

Except as provided in this subchapter, no owner or operator of a . . . facility who establishes and maintains evidence of financial responsibility in accordance with this subchapter shall be required under any State or local law, rule or regulation to establish or maintain any other evidence of financial responsibility in connection with liability for the release of a hazardous substance from such . . . facility. Evidence of compliance with the financial responsibility requirements of this subchapter shall be accepted by a State in lieu of any other requirement of financial responsibility imposed by such State in connection with liability for the release of a hazardous substance from such . . . facility.<sup>317</sup>

EPA discussed its views on the preemption provision in the proposed rule. Specifically, EPA explained that it did not intend for its section 108(b) regulations to result in widespread displacement of state mine bonding programs under section 114(d), nor did

<sup>317</sup> 42 U.S.C. 9614(d).

it believe that such preemption is intended by CERCLA, necessary, or appropriate. In support of this conclusion, EPA discussed the language of paragraph (d) and section 114 as a whole, and considered whether state bonding programs were “in connection with liability for the release of a hazardous substance” as that term is used in section 114(d), and also took into account relevant policy considerations.<sup>318</sup>

Commenters on the proposal nevertheless continued to express concern that preemption would indeed occur if section 108(b) requirements were implemented at facilities, resulting in disruption of those programs not only from successful preemption challenges, but also from the mere need to defend against those challenges.<sup>319</sup>

Although EPA discussed its views on the question in the proposed rule, it will be the courts, rather than EPA, that will decide the effect of section 114(d). Thus, EPA cannot ensure that preemption will not occur if financial responsibility under section 108(b) requirements is in place at a facility. EPA thus understands why states and local governments have concerns that they would have to defend preemption challenges, and concerns over the possibility that preemption could occur.

EPA also recognizes that the potential impact of preemption of financial assurance requirements extends beyond the concerns relating to the financial impacts, as financial assurance is an integral part of state mining programs—that is, financial assurance can provide enforcement leverage to regulators, and can prevent delays in conducting closure and reclamation at a site should the owner or operator become unwilling or unable to do so, thus minimizing environmental harm.

For all of these reasons, EPA believes that preemption of state financial assurance requirements, should it occur, would be an undesirable and damaging consequence of section 108(b) requirements. The Agency’s decision not to issue final requirements under section 108(b) for hardrock mining facilities avoids this undesirable outcome.

<sup>318</sup> 82 FR 3403–04.

<sup>319</sup> See, for example, Montana Dept. of Environmental Quality, Comment #: EPA-HQ-SFUND-2015-0781-2742; Arizona Dept. of Environmental Quality (ADEQ), Comment #: EPA-HQ-SFUND-2015-0781-2714; and State of Alaska (Dept. of Natural Resources (ADNR), Dept. of Environmental Conservation (ADEC), and the Alaska Dept. of Law), Comment #: EPA-HQ-SFUND-2015-0781-2785.

#### *B. Challenges To Determine the Level of Financial Responsibility*

In developing the proposed rule, EPA considered four approaches to identify a financial responsibility amount for a facility—fixed amount, site-specific amount, parametric approach, and formulaic approach, and described three of those approaches in the proposed rule. EPA also identified some of the challenges of the three approaches described and sought comment on various aspects of these approaches.

Under a fixed amount approach, the Agency would identify a standard cost for the class of regulated facilities. This method would not rely on site-specific factors but rather on historical costs associated with similar facilities to calculate an expected future amount. This approach is best applied where the costs at issue are fairly uniform, as the wider the variation, the lower the accuracy of the financial responsibility amount for that cost. If there is wide variation in the costs associated with the facilities within the class to which the fixed amount is applied, the result can be significant over-regulation at those facilities with lower levels of liabilities, and significant under-regulation of facilities with higher levels of liabilities. At the same time, this approach has advantages in that it requires a lower level of effort on the part of the regulated community and the Agency to implement because the rule does not require a site-specific calculation to be developed, submitted, or evaluated. EPA proposed the use of a fixed amount for the health assessment component of the financial responsibility amount from hardrock mining facilities.

The second method considered by EPA was a site-specific approach. Under this approach, the owner or operator would calculate the cost of conducting known activities to address identified problems. This approach is the most precise of the three approaches considered by EPA. However, it is also the most resource intensive to implement. It requires gathering detailed information about the site, including an assessment of the site conditions, and is most easily implemented where a release has occurred, a response is necessary, and a remedy determination has been made. In fact, EPA already requires financial responsibility identified on a site-by-site basis when requiring parties to carry out response actions under CERCLA.<sup>320</sup> EPA notes that state regulatory programs

and the programs of BLM and the Forest Service generally do use a site-specific approach based on extensive knowledge of site conditions to establish financial responsibility amounts, and this is one of the strengths of existing programs relative to the formula based approach in the proposed rule. Having identified reasons that a fixed cost and a site-specific approach may not be appropriate to identify the level of financial responsibility under section 108(b) for response costs and natural resource damages for hardrock mining facilities, EPA sought to develop an approach that was more accurate than the fixed amount, yet could be implemented without conducting a full site investigation at the facility. The Agency’s efforts resulted in development of a formula for facilities within the hardrock mining industry.

The proposed formula identified categories of response action at hardrock mining facilities, based on past response actions to legacy contamination and estimated the costs of those actions based on reclamation activities under federal and state laws. Instead of taking other regulations or facility practices into account when identifying the risk to be addressed by financial responsibility requirements, the formula assumed the need for a CERCLA response, and then allowed reductions in the financial responsibility amount based on a demonstration of compliance with other regulatory requirements or other facility practices. As discussed above, EPA no longer believes that this approach would result in financial responsibility requirements “consistent with the degree and duration of risk associated with the production, transportation, treatment, storage, or disposal of hazardous substances.” Thus, the formula does not reflect a level of financial responsibility that EPA in its discretion believes is appropriate.

The financial responsibility formula proposed for hardrock mining was specific to that industry, and was not designed for use in future rulemakings under section 108(b). In future rulemakings under section 108(b), EPA will evaluate how to determine financial responsibility amounts for each particular rule, and will propose an appropriate methodology on which it would seek additional public comment.

#### *C. Concerns Regarding Costs and Economic Impacts of the Proposed Rule*

##### **1. Overall Concerns Regarding Cost and Economic Impact**

EPA received significant comments on the Regulatory Impact Analysis (RIA) for the proposed section 108(b) rule that

<sup>320</sup> See Guidance on Financial Assurance in Superfund Settlement Agreements and Unilateral Administrative Orders (April 2015).

highlight detrimental economic outcomes of concern to commenters. In addition to numerous comments critical of various methodological and data limitations in the RIA, the leading criticism focuses on the disparity between projected industry costs in comparison with the rule's predicted transfer of liability costs from the government to the hardrock mining industry.

Using a period of analysis from 2021 to 2055, and assuming a seven percent social discount rate, EPA estimated the annualized compliance costs for industry to procure third-party instruments would be approximately \$111 to \$171 million (the net present value (NPV) of which is \$1.4 to 2.2 billion over 34 years). These values represent the proposed rule's estimated incremental costs to industry.<sup>321</sup>

EPA then also quantified the transfer of potential CERCLA-related costs from the government to private industry that the proposed rule would yield. Based on an assumed facility default rate of 7.5 percent, the rule was expected to transfer a burden of just \$15 to 15.5 million in annual liability from the federal government to the regulated industry (or \$511 to \$527 million over 34 years).

Based on these estimates, commenters objected that the projected annualized costs to industry (\$111–\$171 million) are a magnitude of order higher than the avoided costs to the government (\$15–15.5 million) sought by the rule. Estimates of government cost savings in the baseline, and industry compliance costs under the rule, occur under different regulatory scenarios and are therefore not readily comparable. However, these findings do reveal that the costs borne by industry far exceed the relative scale of cost savings gained by the government as a result of the rule. In the words of one owner/operator, “the proposed rules inflict grossly disproportionate burdens on the hardrock mining industry relative to the small benefit that it is intended to provide to the taxpayers.”<sup>322</sup>

Beyond these concerns, commenters also took significant issue with the broader economic impacts that the rule could have on the hardrock mining industry and the nation. A trade association noted that the cost of compliance relative to cash flow will be

<sup>321</sup> The majority of the industry costs represented a transfer from the regulated industry to the financial industry in association with the procurement of third party instruments, and hence the quantified annualized net social costs were estimated at \$30 million to \$44 million.

<sup>322</sup> See comments from Freeport McMoran, EPA–HQ–SFUND–2015–0781–2793 page 3.

devastating to many companies.<sup>323</sup> According to some, the high cost of compliance will result in existing mines closing, and new mines not being built. Another commenter stated that the high costs of the rule would force more companies into bankruptcy, which they suggested is an unacceptable environmental risk without any demonstrated benefits.<sup>324</sup> That commenter stated that it takes much effort and expertise over several years to administer a bankruptcy, so it is important to keep operators in business to conduct their own reclamation responsibilities.<sup>325</sup>

State mining associations also repeatedly commented on the importance of the hardrock mining sector in their individual states.<sup>326</sup> States commented that they would be grievously harmed financially if facilities reduced operations, ceased planned expansions, or otherwise closed or went bankrupt. In states where mining is prevalent, those states count heavily upon the tax and permitting revenues, jobs, etc. that come from the industry.

According to AEMA the cash collateral required to obtain a section 108(b) financial responsibility instrument could be significant and also very problematic, because this cash collateral requirement reduces the capital that companies have available to conduct reclamation activities, advance environmental improvement initiatives, and pursue development opportunities. Ultimately, AEMA commented that the drain on corporate capital from the section 108(b) financial responsibility program would reduce the domestic production of minerals, cost hardrock mining jobs, and economically devastate mining dependent rural communities.<sup>327</sup>

In an effort to further emphasize the adverse economic impacts of the proposed rule, an analysis was independently conducted by Dr. Gordon Rausser of OnPoint Analytics, on behalf of Freeport McMoRan, and submitted for the record in this rulemaking.<sup>328</sup>

<sup>323</sup> EPA–HQ–SFUND–2015–0781–2666–20/ Organization: ACC, AFPM, AISI, CKRC, IMA–NA, NAM, NMA, NAMC, PCA, SSP, TFI, and the Chamber.

<sup>324</sup> See comment from Scott Richey and Susan Elliott, USDA Forest Service Humboldt–Toiyabe National Forest EPA–HQ–SFUND–2015–0781–2722 page 1.

<sup>325</sup> Ibid., page 1.

<sup>326</sup> See comment from Arizona Mining Association Docket ID: EPA–HQ–SFUND–2015–0781–2744 at pages 2–3.

<sup>327</sup> See comment from American Exploration and Mining Association, Docket ID: EPA–HQ–SFUND–2015–0781–2657 page 35.

<sup>328</sup> EPA–HQ–SFUND–2015–0781–2650–4/ Organization: New Mexico Mining Association.

These industry supported analyses found that when all impacts are considered (including impacts on cash flow, production, and available resources), the proposed rule is estimated to cost the U.S. hardrock mining industry ten times the amount projected in the RIA—an amount reported to be between 23 percent and 66 percent of annual industry profits. The study also estimates that U.S. investment in the hardrock mining industry would drop by more than \$5.6 billion, and that between 3,486 to 10,110 jobs would be lost in the U.S. hardrock mining industry should the proposed rule have become final.<sup>329</sup>

Lastly, commenters note that while mining occurs at the local level, the mining sector is a global industry. A commenter stated that increased costs have implications at the state and local levels, but these same increased costs could place U.S. mining at a competitive disadvantage. The commenter further explained that those increases could be a disincentive to investment in domestic projects and an incentive to focus on operations and production outside of the U.S.<sup>330</sup> The commenter continued to speculate that this could further result in a shortage of strategic metals at home. The commenter explained by way of an example that lithium is viewed as a strategic mineral currently in high demand globally as a lubricant, for use in steel and aluminum production, and in batteries and in electrolytes and electrodes.<sup>331</sup> Finally, the commenter stated that lithium mining is an area of considerable expansion in the U.S., and implied that could be threatened under the proposed rule.<sup>332</sup>

EPA's decision not to issue final requirements under section 108(b) for hardrock mining facilities will thus alleviate potential burden on owners and operators, and will help prevent any disruptions to markets in the U.S. and abroad. EPA further seeks to avoid negatively impacting facility resources that could otherwise have greater benefits to the economy. The state of Idaho, for example, commented that the proposed requirements may divert funds from uses such as the implementation of environmental protection and enhancement programs, reclamation projects, exploration and

<sup>329</sup> EPA–HQ–SFUND–2015–0781–2712–135/ Organization: Newmont Mining Corporation.

<sup>330</sup> See comment from Nevada Mining Association Docket ID: EPA–HQ–SFUND–2015–0781–2684 pg 11.

<sup>331</sup> Ibid.

<sup>332</sup> Ibid.

development of new mineral deposits, etc.<sup>333</sup>

## 2. Concerns Particular to Impacts on Small Entities/Businesses

Concerns raised by commenters also point to the burden that the proposed rule could impose on small entities. In the RIA of the proposed rule, EPA assessed the economic impacts on small entities. Of the 221 mines and mineral processing facilities in the potentially regulated universe, EPA identified approximately 53 facilities that were owned by 44 small businesses. Twelve additional mines have owners of unknown size (due to lack of available company data). For these small entities, EPA compared the estimated annualized compliance costs with their annual revenues in order to assess whether these small entities could be expected to incur costs that constitute a significant impact; and whether the number of those small entities estimated to incur a significant impact represent a substantial number of small entities. Results of the analysis showed that 80 percent to 87 percent of these small entities may face an average annual compliance cost that is greater than one percent of their revenues. Similarly, 57 percent to 75 percent of these small entities may experience impacts upon revenues that exceed three percent. These impact estimates were found by EPA to surpass the significant impact thresholds as set forth by the Regulatory Flexibility Act.

In line with these findings, many of the commenters likewise suggested that a major number of small entities under the proposed rule would face significant annualized costs which would either severely hinder their ability to operate, cause them to cease operations, or be a barrier to them being able to acquire financing to begin new operations. In light of the findings from the Agency's own small entity analyses, and the comments of concern raised by the regulated community, EPA agrees that the proposed financial responsibility requirements could prove particularly burdensome for small businesses. Such impacts will be avoided in the absence of such requirements under this final decision.

## D. Concerns Regarding Financial Responsibility Instrument Availability

As discussed above, during the public comment period for the section 108(b) hardrock mining rule, commenters representing or participating in the insurance, surety, and banking

industries identified several concerns with EPA's proposed instrument terms, and expressed concern that those terms could impact the availability of instruments. Similarly, entities in the mining industry expressed concerns that instruments may not be available for the amounts proposed in the forms specified. EPA agrees with these concerns.

Section 108(b) discusses particular instruments for EPA to consider in its regulations. Specifically, paragraph (b)(2) states that financial responsibility may be established by any one, or any combination, of the following: Insurance, guaranteee, surety bond, letter of credit, or qualification as a self-insurer. Paragraph (b)(2) further authorizes the President to specify policy or other contractual terms, conditions, or defenses that are necessary, or that are unacceptable in establishing evidence of financial responsibility. Paragraph (b)(2) also requires EPA to cooperate with and seek the advice of the commercial insurance industry to the maximum extent practicable when developing financial responsibility requirements. Paragraph (b)(4) provides direction on how the section 108(b) instruments are to address multiple owners and operators at a single facility.

Section 108(c) also includes a "direct action" provision, under which CERCLA claims can be brought directly against an insurer or other entity issuing an instrument pursuant to the section 108(b) regulations. Section 108(c)(2) provides that any claim authorized by section 107 or section 111 may be asserted directly against any guarantor providing evidence of financial responsibility under section 108(b) if the person is liable under section 107 and: (1) Is in bankruptcy, reorganization, or arrangement pursuant to the Federal Bankruptcy Code, or (2) is likely to be solvent at the time of judgment but over whom jurisdiction in the federal courts cannot be reached with reasonable diligence.

The areas of most significant concern identified by commenters are: (1) The specification that the instruments need pay to multiple claimants; (2) the direct action provisions in the instruments; and (3) the continuity of coverage provisions that subject providers to potential liability. These three features of the proposed section 108(b) financial responsibility program and the comments received regarding each are discussed below.

## The Specification That the Instruments Need Pay to Multiple Claimants

EPA proposed that instruments would be payable to the full range of potential future CERCLA claimants, and not solely to a currently designated beneficiary specified in instruments.

Financial industry representatives commenting on the proposed rule expressed concerns that the proposed financial mechanisms would not have a single designated beneficiary. Commenters argued that instrument providers would be required to undertake more due diligence and exercise more discretion while also potentially being subject to more liability themselves absent a specified designated beneficiary.

## Direct Action Provision

Commenters also expressed concern that providers of instruments may be subject to direct action suit. However, the CERCLA statute itself, at section 108(c)(2), includes a direct action provision that expressly authorizes, in specified circumstances, any claim under section 107 and section 111 be made directly against the guarantor providing evidence of financial responsibility. Commenters from the surety industry claimed that the direct action provision significantly increased their risk exposure and included too broad of a trigger (bankruptcy). Banking industry representatives asserted that the provision was at odds with relevant commercial law and practice and would significantly deter banks from providing such instruments and services. The insurance industry commented that direct action creates the potential for significant increase in defense costs and administrative costs associated with the management of multiple lawsuits.

## Continuity of Coverage Provisions

To address the risk that the facility would no longer have financial responsibility when necessary, EPA proposed that owners and operators using a letter of credit, surety bond or insurance to demonstrate financial responsibility also establish a standby trust. In the event the instrument issuer intended to cancel the instrument and the owner or operator failed to obtain alternate financial responsibility, EPA could draw on the instrument and fund the standby trust.

Commenters from the surety and insurance industry suggested that the requirements for prescriptive cancellation provisions that include potential issuer liability would limit the interest on behalf of sureties and insurers in providing mechanisms.

<sup>333</sup> See comment from State of Idaho Docket ID: EPA-HQ-SFUND-2015-0781-2682 at page 7.

Commenters also suggested that this proposed provision in combination with the difficult-to-predict date at which a facility may be released from the proposed financial responsibility requirements created unwelcome uncertainty around the duration of the provider's obligation.

Based on the negative comments received, EPA believes there is uncertainty around the adequate availability of instruments were final regulations to be promulgated at this time. This uncertainty necessarily means it is also unclear whether regulated entities would be able to obtain the necessary instruments when faced with a regulatory obligation under section 108(b) to obtain an instrument. This information thus also indicates that issuance of section 108(b) requirements for current hardrock mining operations is not appropriate.

#### *E. Challenges To Identify the Facility*

Many commenters on the rule raised concerns regarding the applicability of section 108(b) to historical mining areas at facilities. The question of what the relevant facility is for purposes of section 108(b) regulations arose in several contexts—developing requirements for applicability of the rule, determining a financial responsibility amount, and developing conditions for payment of funds from the instruments. This was another difficult challenge EPA encountered in developing the proposed rule.

In a typical CERCLA response action, the definition of the facility relies on a site-by-site determination based on site-specific conditions, and the facility is defined by where contamination comes to be located, as understood by EPA at a particular point in time, and is typically formally delineated in a decision document identifying the response actions to be taken. The relevant facility may include areas owned and/or operated by several parties and the facility is defined without regard to ownership. In addition, particular parties' CERCLA liability is determined through settlements and/or litigation.

For the reasons discussed in the proposed rule, for purposes of determining the proposed rule's applicability, and for determining the financial responsibility amount, EPA found it necessary to consider the relevant facility to be only the current operations of the current owner(s) and operator(s). Two effects of this approach were to not require a financial responsibility amount under the proposed rule based on conditions present at historic areas of the mine, or

to require evidence of financial responsibility from parties other than the current owner(s) or operator(s).

This approach—that EPA found necessary to implement section 108(b)—has no effect on CERCLA liability for parties that may be involved at a CERCLA site, or on the definition of facility for purposes of a CERCLA response. Thus, in the context of a particular response action, the facility may be defined to include an area broader than the current operations, and CERCLA liability may attach to parties other than the current owner or operator. Thus, there is an inconsistency in these respects between what EPA believed was necessary for practical development of section 108(b) instruments, and the definition that would apply when the instruments are invoked.

This difficulty was also identified by outside parties to EPA. Instrument providers, during pre-proposal outreach, cited the inability to distinguish between and establish separate amounts for historic releases and potential future releases as a factor that may increase the cost and difficulty of obtaining instruments. Specifically, representatives of insurance companies noted that combining two distinct types of coverage (e.g., coverage for cleanup of known existing releases and coverage for liabilities that may arise from future releases) will increase premiums. Another insurance representative commented that amounts of coverage may be limited by reinsurance treaties if the two types of coverage were combined.<sup>334</sup> Relatedly, a representative from a surety also noted that separating out known pre-existing issues and releases from current operations that have not yet occurred into separate mechanisms would likely enhance availability.<sup>335</sup> Yet it was the impossibility of predetermining the source of any contamination that would ultimately be the subject of a CERCLA claim, or where contamination would ultimately come to be located, that was a factor in EPA's decision to propose instruments that could pay for any CERCLA section 107 or section 111 claims against a current owner or operator, irrespective of whether the claim arose as a result of current or historical operations.

Commenters' concerns also highlight another source of uncertainty for instrument availability. Thus, this issue

raises similar concerns as in section E. Above. Therefore, this information further supports EPA's determination that issuance of section 108(b) requirements for current hardrock mining operations is not appropriate.

#### **VII. Statutory and Executive Order Reviews**<sup>336</sup>

##### *A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review*

This action is a significant regulatory action that was submitted to the Office of Management and Budget (OMB) for review, because it may raise novel legal or policy issues [3(f)(4)], although it is not economically significant. Any changes made in response to OMB recommendations have been documented in the docket. EPA prepared an economic analysis for the proposed rule, but that analysis is not relevant for this final rulemaking because no regulatory provisions are being finalized.

##### *B. Executive Order 13771: Reducing Regulation and Controlling Regulatory Costs*

This action is not an Executive Order 13771 regulatory or deregulatory action, because this action does not alter any regulatory requirements.

##### *C. Paperwork Reduction Act (PRA)*

This action does not impose an information collection burden under the PRA, because this action does not impose any regulatory requirements.

##### *D. Regulatory Flexibility Act (RFA)*

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. This action will not impose any requirements on small entities.

##### *E. Unfunded Mandates Reform Act (UMRA)*

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments, because this action does not impose any regulatory requirements.

##### *F. Executive Order 13132: Federalism*

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national

<sup>334</sup> See Notes and Attendees for CERCLA 108(b) Insurance Meeting December 8, 2015 Docket ID: EPA-HQ-SFUND-2015-0781-0447.

<sup>335</sup> See Notes and Attendees for CERCLA 108(b) Surety Meeting January 14, 2016 Docket ID: EPA-HQ-SFUND-2015-0781-0445.

<sup>336</sup> Additional information about these statutes and Executive Orders can be found at <https://www.epa.gov/laws-regulations/laws-and-executive-orders>.

government and the states, or on the distribution of power and responsibilities among the various levels of government.

*G. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments*

This action does not have tribal implications as specified in Executive Order 13175, because this action imposes no regulatory requirements. Thus, Executive Order 13175 does not apply to this action. However, EPA consulted with tribes and Alaska Native Corporations and Alaska Native Villages during the rulemaking process.

EPA received comments from three federally-recognized tribes and from three Alaska Native Claims Settlement Act (ANCSA) resource managers regarding section 108(b) financial responsibility. Tribal comments were generally in support of the proposed rule, and cited some concerns about the potential negative impacts of hardrock mining on commercial enterprises and on subsistence living, along with the need to more fully identify the benefits of the rule. A primary ANCSA concern was that the section 108(b) financial responsibility requirements would duplicate existing federal and state requirements, resulting in a negative impact on Alaska Natives and states,

that receive royalties through the Regional and Village Corporations. Other ANCSA comments related primarily to the calculation of the financial responsibility amount, and requested that EPA consult with them early in the regulatory development process. EPA acknowledged the challenges in determining a financial responsibility amount, and provided the opportunity for federally-recognized tribes and ANCSA resource managers to consult with the Agency during the public comment period.

*H. Executive Order 13045: Protection of Children From Environmental Health and Safety Risks*

This action is not subject to Executive Order 13045 because it is not economically significant as defined in Executive Order 12866, and because EPA does not believe the environmental health or safety risks addressed by this action present a disproportionate risk to children, since this action imposes no regulatory requirements.

*I. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use*

This action is not a “significant energy action” because it is not likely to have a significant adverse effect on the supply, distribution or use of energy.

*J. National Technology Transfer and Advancement Act*

This rulemaking does not involve technical standards.

*K. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations*

EPA believes that this action is not subject to Executive Order 12898 (59 FR 7629, February 16, 1994) because it does not establish an environmental health or safety standard, since this action imposes no regulatory requirements.

*L. Congressional Review Act (CRA)*

This action is subject to the CRA, and EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is not a “major rule” as defined by 5 U.S.C. 804(2).

**List of Subjects in 40 CFR Part 320**

Environmental protection, Financial responsibility, Hardrock mining, Hazardous substances.

Dated: December 1, 2017.

**E. Scott Pruitt,**  
*Administrator.*

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