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Developing a Sustainable Hardrock Mining and Mineral Processing Industry: Environmental and Natural Resource Law for Twenty-First Century People, Prosperity, and the Planet

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*This is a defining moment. Some of the best opportunities we'll ever have to make a change and save our planet are happening right now. The actions we take—or don't take—are going to affect what happens today and for generations to come. That is our reality right now. But, there is plenty we can do.*¹

We are living in an extraordinary time. A myriad of social, environmental, and economic problems are impacting our country and the world including a worldwide recession; global climate change; and ongoing wars, famine, and terrorism. Current problems can be traced to industrial behavior that promotes unbridled growth.² Yet, problems can lead to solutions. For example, developing a sustainable hardrock mining and mineral processing industry could help moderate uncontrolled growth. We can create this opportunity by embracing the three pillars of sustainable development: environmental protection, social equity, and economic prosperity.³ The U.S. Environmental Protection Agency (EPA) defines sustainability as

the satisfaction of basic economic, social, and security needs now and in the future without undermining the natural resource base and environmental quality on which life depends. From a business perspective, the goal of sustainability is to increase long-term shareholder and social value, while decreasing industry's use of materials and reducing negative impacts on the environment.⁴

Hardrock mining and mineral processing industry reformers are looking for sustainable development opportunities because this

¹ Posting of Lisa Jackson, Environmental Protection Agency Administrator, to Greenversations, <http://blog.epa.gov/blog/2009/04/22/celebrate-earth-day-2009/> (Apr. 22, 2009, 8:25 EST).

² See John W. Ragsdale, Jr., *Possession: An Essay on Values Necessary for the Preservation of Wild Lands and Traditional Tribal Cultures*, 40 URB. LAW. 903, 908–09 (2008) (“It has been suggested that growth—economic, physical, and numerical—is the secular religion of America.”) (citing DANIEL BELL, *THE CULTURAL CONTRADICTIONS OF CAPITALISM* 237 (1976)).

³ Cf. ZYGMUNT J.B. PLATER ET AL., *ENVIRONMENTAL LAW AND POLICY: NATURE, LAW, AND SOCIETY* 85–88 (3d ed. 2004) (describing the three pillars as a balance between “three economies,” where environmental protection is the economy of nature, social equity is the civic societal economy, and economic prosperity is the market place economy).

⁴ U.S. EPA, *Sustainability, Basic Information*, <http://www.epa.gov/sustainability/basicinfo.htm#sustainability> (last visited Apr. 2, 2010).

industry contributes to our environmental misfortunes.⁵ This industry successfully resists modern environmental law protections, follows antiquated mine development rules, and uses waste management practices that damage the environment and harm human health. The federal, state, and tribal environmental and natural resource laws and regulations exempt hardrock mining and mineral processing facilities from reasonable pollution control and allow unsustainable nineteenth century mineral activities and industrial behaviors.⁶ Not surprisingly, though promoting industrialization and economic growth, this approach has resulted in a horrible parade of human and environmental tragedies.⁷

Furthermore, these tragedies are global because multinational corporations mine, process, and trade minerals worldwide. For example, in the United States, massive asbestos contamination in the town of Libby, Montana, caused primarily by W.R. Grace's vermiculite mining and processing activities from 1963 to 1990, resulted in the deaths of 200 people and criminal indictments against top executives.⁸ The health effects were so serious that in June 2009 the EPA declared a public health emergency⁹ for the first time in the

⁵ In this Article, hardrock mining and mineral processing refers to gold, silver, lead, zinc, phosphate, uranium, and other mineral activities, but excludes coal, oil, and gas mineral activities.

⁶ OFFICE OF INSPECTOR GEN., U.S. ENVTL. PROT. AGENCY, NATIONWIDE IDENTIFICATION OF HARDROCK MINING SITES 6 (2004), available at <http://www.epa.gov/oig/reports/2004/20040331-2004-p-00005.pdf>.

⁷ See, e.g., Teresa Cespedes & Terry Wade, *Gold Mine Tailings Dump to be Drained to Save Lima Water Supply*, MINEWEB, Feb. 5, 2009, <http://www.mineweb.com/mineweb/view/mineweb/en/page68?oid=77988&sn=Detail> (describing measures taken to prevent possible contamination of a river that supplies water to Lima, Peru); Dorothy Kosich, *Newmont Independent Community Relations Study Shows Gaps Between Policy and Practice*, MINEWEB, Mar. 10, 2009, <http://www.mineweb.com/mineweb/view/mineweb/en/page68?oid=79911&sn=Detail> (describing a study of Newmont Mining Company's community relations policy that revealed a gap existed between its implementation in developed versus developing nations).

⁸ Associated Press, *Charges Issued Over Asbestos at a Mine*, N.Y. TIMES, Feb. 8, 2005, at A16. Although indicted, four years later the executives were acquitted in May 2009, in the presence of perjury allegations against a government witness. David S. Hilzenrath & Carrie Johnson, *W.R. Grace Acquitted in Mont. Asbestos Case: 3 Former Officials Also Found Not Guilty*, WASH. POST, May 9, 2009, at A14.

⁹ See Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9604(a)(4) (2006) (allowing the President to declare "a public health or environmental emergency [when] no other person with the authority and capability to respond to the emergency will do so in a timely manner").

history of the agency.¹⁰ In addition, 99.9% of the children under age seven who were tested and live near the Doe Run Resources Company, a lead smelter in La Oroya, Peru, had blood lead levels that were above the international standard for lead poisoning.¹¹ At another Doe Run lead smelter located in Herculaneum, Missouri, lead pollution has caused residential relocations, and nearly twenty-five percent of children tested have elevated blood lead levels.¹² Finally, a negligent cyanide spill resulting in fish kills at the Newmont Ahafo Gold Mine, in the Asutifi District of Ghana, Africa, highlights the pervasiveness and complexity of these situations.¹³ These atrocities are incongruent with sustainability, and nations must take action to prevent such outrageous industrial behavior.

The U.S. government has multiple opportunities for sustainable development of the mining industry that would allow for mineral activity in appropriate places while still controlling pollution and recognizing that ore bodies are finite. Sustainable development requires that hardrock mining proponents and regulators consider, at the initial planning stages, the full life cycle of mining and

¹⁰ Press Release, U.S. Env'tl. Prot. Agency, EPA Announces Public Health Emergency in Libby, Montana; EPA to Move Aggressively on Cleanup and HHS to Assist Area Residents with Medical Care (June 17, 2009), available at <http://yosemite.epa.gov/opa/admpress.nsf/bd4379a92ceceac8525735900400c27/0d16234d252c98f9852575d8005e63ac!OpenDocument>.

¹¹ Sara Shipley, *Doe Run Smelter in Peru Poisons Kids, Study Finds Lead Level in 99.9 pct. Was Higher Than Global Standard, Report Says*, ST. LOUIS POST-DISPATCH, Apr. 10, 2005, at A5. Doe Run Resources is a multinational corporation headed by Ira Rennert, a New York businessman. See Michael Shnayerson, *Devastating Luxury*, VANITY FAIR, July 2003, at 128 (describing Mr. Rennert's international financial successes and the extensive pollution caused by his companies).

¹² Chris Carroll & Karen Branch-Brioso, *Data Reveal Lead Levels in Herculaneum Children; One in 4 Tested Are Contaminated; Gephardt Seeks Action*, ST. LOUIS POST-DISPATCH, Jan. 9, 2002, at B4.

¹³ See WACAM Ghana, WACAM Chides Newmont Ghana (Oct. 21, 2009), <http://www.wacamghana.com/index.php/news/view/2/1>. However, news reports differ on the effect of the cyanide spill at the Newmont Ahafo Gold Mine in the Ahafo Bongo District, Ghana, Africa, on or about October 10, 2009. Compare *id.* with Boakye-Dankwa Boadi, *Of Negligence, Newmont and Cyanide Spillage*, GHANAIAAN J., Oct. 17, 2009, <http://www.theghanaijournal.com/2009/10/17/of-negligence-newmont-and-cyanide-spillage/>. Meanwhile, the multinational Newmont Mining Company boasts that "[i]n 2007, Newmont became the first gold company selected to join the Dow Jones Sustainability World Index because of the company's industry-leading environmental and social performance." Newmont Ghana, *Newmont: A Responsible Company in Ghana* (Jan. 29, 2009), <http://www.newmontghana.com/>.

processing, mine closure, and environmental matters.¹⁴ Additionally, sustainable development should prohibit mining in certain protected places.

Developing a sustainable mining and mineral processing industry with appropriate governmental oversight means (1) enacting “necessary legal, fiscal, and environmental policies”¹⁵ to support strong mining institutions with accountability and transparency,¹⁶ and (2) establishing clear environmental and social policies, as well as compliance standards that achieve rigorous standards of environmental and social conduct, which would include providing support to local and indigenous populations.¹⁷

Effective governmental oversight of the mining industry can best be achieved through an integral approach. An integral approach means that the environmental management and supervision rest in the hands of a central environmental agency, for example, the EPA. Supervision of environmental management regulatory programs should not be sectoral, in other words the supervision should not be tied to a government resource “sector, which forms part of the development planning scheme.”¹⁸ Overseeing mining and mineral processing waste management and protection of human health and the environment should be the EPA’s responsibility. On the other hand, overseeing mineral development and reclamation on public land is the responsibility of federal land management (FLM) agencies, such as the U.S. Department of the Interior’s (DOI) Bureau of Land

¹⁴ See INDUS. & MINING DIV., INDUS. & ENERGY DEP’T, WORLD BANK, A MINING STRATEGY FOR LATIN AMERICA AND THE CARIBBEAN xiv (1996) (“For mining to be sustainable, attention must be given to the full cycle. Mine closure, environmental matters and follow up activities must be considered at an early stage.”) [hereinafter WORLD BANK REPORT].

¹⁵ *Id.* at xiii.

¹⁶ *Id.* at xiv–xv.

¹⁷ See *id.* at xvii; see also *id.* at xviii (“The World Bank Group can assist [Latin American and Caribbean countries] address these key sustainability issues through the support of macro-economic, legal, institutional and environmental reforms as well as providing financing and guarantees for mining projects.”).

¹⁸ *Id.* at xvii (“[This] report concludes that the integral approach, through an environmental government institution (EGI), not tied to any sector, which forms part of the development planning scheme, is the most preferred solution to this dilemma.”). Since this advice to developing nations comes from a renowned institution, the World Bank, it is equally compelling for developed countries.

Management or the U.S. Department of Agriculture's U.S. Forest Service.¹⁹

The U.S. government can readily create a sustainable development paradigm for the hardrock mining industry. The EPA could promulgate new environmental regulations under the Resource Conservation and Recovery Act (RCRA),²⁰ which would control hardrock mining and mineral processing waste management, and under the Clean Water Act (CWA),²¹ which would mitigate the discharge of mining waste into the waters of the United States. Congress could reinstate the Superfund²² tax and expand it to include the hardrock mining industry in order to provide funds to clean up abandoned mine sites. Reforming these environmental laws should be an integral approach where the EPA establishes the compliance standards similar to the federal minimum technical requirements, while state and tribal governments implement the rules under cooperative federalism principles. Additionally, Congress could reform the General Mining Law of 1872,²³ and the Federal Land Policy and Management Act²⁴ to regulate hardrock mining and mineral processing development activities. Congressional reforms that reclaim, restore, and conserve natural capital would preserve treasured national landscapes and protect natural resources from mineral exploitation. Finally, Congress could encourage global sustainable development by enacting trade measures to maintain free and fair trade in domestic and foreign mineral commodity markets.

The EPA's role is essential in this legal reform effort because its mission is to protect human health and the environment in the national commons by controlling pollution.²⁵ For example, under the CWA, the EPA establishes federal minimum standards for water

¹⁹ John F. Seymour, *Hardrock Mining and the Environment: Issues of Federal Enforcement and Liability*, 31 *ECOLOGY L.Q.* 795, 813 (2004).

²⁰ Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901–6992k (2006).

²¹ Clean Water Act, 33 U.S.C. §§ 1251–1387 (2006).

²² Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601–9675 (2006). The Superfund Trust fund was originally created from special taxes on industry. *Id.* § 9611.

²³ General Mining Law of 1872, 30 U.S.C. §§ 21–54 (2006).

²⁴ Federal Land Policy and Management Act, 43 U.S.C. §§ 1701–1787 (2006).

²⁵ U.S. EPA, About EPA, <http://www.epa.gov/epahome/aboutepa.htm> (last visited Mar. 5, 2010) (“EPA’s mission is to protect human health and the environment.”).

quality,²⁶ and under RCRA, the EPA establishes federal minimum standards to protect land and water resources.²⁷ Also, the EPA cleans up abandoned waste sites, including abandoned mine lands, under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund).²⁸ Thus, the EPA is the quintessential environmental “cop on the beat” that should make and enforce the rules, based on congressional directives, for waste management at hardrock mining and mineral processing operations. Unfortunately, under the current federal environmental laws, the government has been off the beat in regulating these industrial wastes.

Major regulatory reforms and a few statutory changes are necessary to control pollution from active and inactive hardrock mining and mineral processing operations and abandoned mine lands. Parts I, II, and III discuss reforms to RCRA, the CWA, and CERCLA, respectively, which would enhance governmental oversight of this industry and, in so doing, better protect human health and the environment.

The mineral development laws of the United States,²⁹ including the General Mining Law of 1872,³⁰ are so antiquated, that regulatory reform alone will be insufficient and statutory changes are necessary. Part IV discusses congressional action to reform natural resource laws that will preserve treasured national landscapes including sacred sites, avoid conflict with federal Indian law, and protect natural capital. Part V describes how Congress can encourage sustainable development of the U.S. mining and mineral processing industry by integrating environmental protection into global trading systems. Finally, Part VI concludes that now is the time to take advantage of opportunities for government actions to develop a sustainable hardrock mining and mineral processing industry. Sustainable mining and mineral processing development is not an oxymoron; this industrial sector can develop new behaviors that will protect the environment and human health and yet still be profitable.

I

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)

²⁶ 33 U.S.C. §§ 1311–1313.

²⁷ §§ 3002–3005, 42 U.S.C. §§ 6922–6925 (2006).

²⁸ §§ 104, 106–07, 120–21, 42 U.S.C. §§ 9604, 9606–07, 9620–21 (2006).

²⁹ *See, e.g.*, Mining and Minerals Policy Act of 1970, 30 U.S.C. § 21a (2006).

³⁰ General Mining Law of 1872, 30 U.S.C. §§ 21–54 (2006).

REFORM: NEW SPECIAL WASTE REGULATIONS

The “most dramatic environmental regulatory loophole” for the mining and mineral processing industry is the EPA’s failure to establish specific regulations to control special wastes.³¹ For example, mining and mineral processing wastes are special wastes, which mean they are exempt from the definition of hazardous waste under the 1980 Bevill Amendment to RCRA.³² RCRA is a multifaceted federal law authorizing the EPA, as well as other federal agencies and state partners, to regulate solid wastes including municipal, industrial, and hazardous wastes. Under the Bevill Amendment, the EPA exempts from hazardous waste regulation all of the solid wastes from the “extraction and beneficiation, and processing of ores”³³ and twenty specifically listed mineral processing wastes.³⁴ Bevill-exempt wastes would otherwise qualify as hazardous wastes under RCRA standards and testing protocols.³⁵ For example,

³¹ See *Oversight Hearing to Consider Whether Potential Liability Deters Abandoned HardRock Mine Cleanup: Hearing Before the S. Comm. on Environment and Public Works*, 109th Cong. 70 (2006) [hereinafter *Senate Oversight Hearing*] (statement of Velma M. Smith, Senior Policy Associate, National Environmental Trust). Ms. Smith testified that greater regulation of the hardrock mining and mineral processing industry is warranted. *Id.* She recommended that Congress “direct[] EPA to establish waste regulations specifically crafted for the management of mine waste rock, tailings or other mineral-processing wastes, including wastes currently covered by the Bevill amendment.” *Id.*

³² See Solid Waste Disposal Act Amendments of 1980 § 3001, 42 U.S.C. §§ 6921(b)(2)(A), (b)(3)(A), (b)(3)(C), 6982(f), (m)–(p) (2006). Congressman Thomas Bevill and Senator Lloyd Benston proposed these amendments, which required the EPA to conduct a study of special wastes including mining and mineral processing and prepare a report to Congress to “either determine to promulgate regulations under [the hazardous waste management provisions] or determine that such regulations are unwarranted.” See *id.* § 6921(b)(3)(C); Steven G. Barringer, *The RCRA Bevill Amendment: A Lasting Relief for Mining Wastes?*, 17 NAT. RESOURCES & ENV’T 155, 157 (2003).

³³ 40 C.F.R. § 261.4(b)(7) (2009) (“Solid waste from the extraction, beneficiation, and processing of ores and minerals (including coal, phosphate rock, and overburden from the mining of uranium ore).”).

³⁴ *Id.* § 261.4(b)(7)(ii) (“For the purposes of § 261.4(b)(7), solid waste from the processing of ores and minerals includes only the following wastes as generated: (A) Slag from primary copper processing; (B) Slag from primary lead processing; (C) Red and brown muds from bauxite refining; (D) Phosphogypsum from phosphoric acid production; (E) Slag from elemental phosphorus production; (F) Gasifier ash from coal gasification . . .”). This regulation lists twenty wastes in total. See *id.*

³⁵ See 42 U.S.C. §§ 6921(b)(3), 6982; 40 C.F.R. § 261.4(b) (identifying and listing hazardous wastes); see also 40 C.F.R. §§ 261.20–261.24 (criteria for identifying characteristic hazardous wastes incorporating American Society for Testing and Materials and EPA test methods).

samples of wastes from mining and mineral processing facilities fail the toxicity characteristic test for heavy metals, such as lead.³⁶ The EPA estimates that approximately seventy percent of mining wastes have hazardous characteristics.³⁷ Nevertheless, as a direct result of the Bevill Amendment, the EPA promulgated regulations excluding mining and mineral processing wastes from the definition of hazardous wastes because of their relatively high volume and low toxicity characteristics as compared to other hazardous wastes.³⁸ However, because the EPA remained concerned that Bevill-exempt wastes (or special wastes) could cause actual or potential harm, the EPA developed a plan to create a special regulation for Bevill-exempt

³⁶ See U.S. EPA, NPL Site Narrative for Newtown County Mine Tailings, <http://www.epa.gov/superfund/sites/npl/nar1677.htm> (last visited Apr. 2, 2010) (describing how "soil sampling indicated surface soil lead contamination as high as 33,500 milligrams per kilogram (mg/kg) in the city of Granby" at the Newton County Mine Tailings Site in Missouri). This extremely high number, 33,500 parts per million (ppm), suggests highly contaminated soil would be found toxic for lead. Cf. 40 C.F.R. § 261.24 ("A solid waste . . . exhibits the characteristic of toxicity if, using the Toxicity Characteristic Leaching Procedure . . . the extract from a representative sample of the waste contains any of the contaminants listed in table 1 at the concentration equal to or greater than the respective value given in that table," which lists 5.0 micrograms per liter (mg/L) or ppm as the toxicity characteristic level for lead).

³⁷ Regulatory Determination for Wastes from the Extraction and Beneficiation of Ores and Minerals, 51 Fed. Reg. 24,496, 24,498 (July 3, 1986) (codified at 40 C.F.R. pt. 261) (detailing potential hazardous characteristics); see also U.S. ENVTL. PROT. AGENCY, RISKS POSED BY BEVILL WASTES 2 n.2 (1997), available at <http://www.epa.gov/osw/hazard/tsd/ldr/mine/risks.pdf>.

³⁸ See Regulatory Determination for Wastes from the Extraction and Beneficiation of Ores and Minerals, 51 Fed. Reg. at 24,496, 24,499 (setting forth the EPA's determination that regulation of mining waste under Subtitle C of RCRA was not warranted at that time "based on EPA's belief that several aspects of EPA's current hazardous waste management standards are likely to be environmentally unnecessary, technically infeasible, or economically impractical" due primarily to the high volume of such waste). In general, the 1989 rule differentiated between mining wastes from extraction and beneficiation and wastes from mineral processing but found that both classifications were high volume wastes, while the 1998 rule further clarified that the Bevill exemption for mineral processing wastes is limited to the twenty wastes specifically listed at 40 C.F.R. § 261.4(b)(7), so the exemption applies only to those that meet the high volume, low toxicity classification. See *Envtl. Def. Fund v. EPA*, 852 F.2d 1316, 1328-29 (D.C. Cir. 1988) ("[I]t is clear that Congress did not intend the mining waste exclusion to encompass all wastes from primary smelting and refining. On the contrary, Congress intended the term 'processing' in the Bevill Amendment to include only those wastes from processing ores or minerals that meet the 'special waste' criteria, that is, 'high volume, low hazard' wastes."); *Mining Waste Exclusion*, 54 Fed. Reg. 36,592, 36,593 (Sept. 1, 1989) (codified at 40 C.F.R. pt. 261).

industrial wastes under state and regional solid waste planning authority pursuant to Subtitle D of RCRA.³⁹

The U.S. government needs to reform the Bevill-exempt waste scheme and create a new special waste management program for the hardrock mining and mineral processing industry. Although the EPA decided decades ago to develop a special waste management program for Bevill-exempt wastes, it has not yet done so.⁴⁰ Such a program could rely on authority given to the EPA under RCRA to develop modified requirements of special wastes under section 3004(x), entitled “mining and other special wastes,” (also known as the 1984 Simpson Amendment)⁴¹ to protect human health and the environment.⁴² The EPA’s own Inspector General encouraged that agency to develop a regulatory program to control special wastes, which could be a program under section 3004(x).⁴³

The Simpson Amendment to RCRA applies to special wastes, including mining and mineral processing wastes among others.⁴⁴ The

³⁹ See 42 U.S.C. §§ 6941–6949a; Regulatory Determination for Wastes from the Extraction and Beneficiation of Ores and Minerals, 51 Fed. Reg. at 24,496 (explaining that the agency “is concerned about certain actual and potential mining waste problems, and therefore plans to develop a program for mining waste under Subtitle D of RCRA,” which sets forth the state and regional solid waste plans).

⁴⁰ See Regulatory Determination for Wastes from the Extraction and Beneficiation of Ores and Minerals, 51 Fed. Reg. at 24,496 (“The Administration will work with Congress to develop expanded Subtitle D authority (i.e., Federal oversight and enforcement) to support an effective State-implemented program for mining waste.”); see also Barringer, *supra* note 32, at 155 (describing how RCRA still exempts many wastes from regulation); OFFICE OF INSPECTOR GEN., U.S. ENVTL. PROT. AGENCY, EPA CAN DO MORE TO HELP MINIMIZE HARDROCK MINING LIABILITIES 16 (1997) [hereinafter EPA AUDIT 1997], available at <http://www.epa.gov/oig/reports/1997/7100223.pdf> (“EPA has recognized for some years that it needed a more coordinated approach to effectively deal with hardrock mining issues. However, EPA has yet to develop it.”).

⁴¹ See Barringer, *supra* note 32, at 157.

⁴² 42 U.S.C. § 6924(x) (authorizing the EPA to modify requirements if solid waste from the extraction, beneficiation or processing of ores and minerals “is subject to regulation under [RCRA’s hazardous waste management section] . . . so long as such modified requirements assure protection of human health and the environment”).

⁴³ See EPA AUDIT 1997, *supra* note 40, at 15. For example, the Office of Inspector General stated that the EPA has “not pursued development of a mining waste regulatory program under RCRA,” nor has it promulgated special waste management and disposal regulations despite its authority under section 3004(x) of RCRA to regulate and prevent serious environmental damage from hardrock mining facilities. *Id.*

⁴⁴ 42 U.S.C. § 6924(x) (defining special wastes as including wastes from extraction, beneficiation, or mineral processing of ores and minerals; wastes from combustion of coal and fossil fuels; and cement kiln dust waste). Unfortunately, special wastes have caused

EPA has determined that special wastes are typically generated in mountainous volumes (over 50,000 metric tons per facility per year) and exhibit relatively low toxicity compared to other hazardous wastes.⁴⁵ Under the Simpson Amendment, the EPA has authority to adapt RCRA's hazardous waste regulations to accommodate the high volume and low toxicity characteristic of special wastes.⁴⁶ Adaptation is necessary because imposing the full panoply of RCRA hazardous waste regulations, such as minimum technology disposal requirements,⁴⁷ is impractical and too costly for special wastes.⁴⁸ For example, the Hazardous and Solid Waste Amendments of 1984 require "the installation of two or more liners and a leachate collection system above (in the case of a landfill) and between such

significant harm to health and the environment, for example, the major coal combustion ash waste disaster at the Kinston Facility in Harriman, Tennessee, that resulted in fish kills and destruction of homes. Shaila Dewan, *Tennessee Ash Flood Larger Than Initial Estimate*, N.Y. TIMES, Dec. 27, 2008, at A10. The Obama administration is evaluating new regulations for special wastes. See *Obama Keeping Secret Locations of Coal Ash Sites*, MSNBC NEWS, June 12, 2009, http://www.msnbc.msn.com/id/31327223/ns/us_news-environment/ ("The EPA is currently considering regulating the waste, but it is unclear whether the agency will classify it as hazardous or regulate it like household waste.").

⁴⁵ Mining Waste Exclusion, 54 Fed. Reg. 36,592, 36,597 (Sept. 1, 1989) (codified at 40 C.F.R. pt. 261) (discussing low hazard criterion based on EPA Method 1312—Synthetic Precipitation Leaching Procedure); *id.* at 36,607 (setting forth high volume criterion).

⁴⁶ See EPA AUDIT 1997, *supra* note 40, at 15.

⁴⁷ See 42 U.S.C. §§ 6921–6939e (including mandating use of double liners, leachate controls, and groundwater monitoring).

⁴⁸ See Regulatory Determination for Wastes from the Extraction and Beneficiation of Ores and Minerals, 51 Fed. Reg. 24,496, 24,498 (July 3, 1986) (codified at 40 C.F.R. pt. 261) ("The Report to Congress presented for five metal mining segments, total annualized costs ranging from \$7 million per year (for a scenario that emphasizes primarily basic maintenance and monitoring for wastes that are hazardous under the current RCRA criteria) to over \$800 million per year (for an unlikely scenario that approximates a full RCRA Subtitle C regulatory approach, emphasizing cap and liner containment for all wastes considered hazardous under the current criteria, plus cyanide and acid formation wastes).").

liners.”⁴⁹ The Simpson Amendment relaxes these stringent statutory provisions.⁵⁰

A new special waste management program is necessary because the EPA’s Bevill-exempt waste scheme has failed to prevent or mitigate environmental damage and associated health risks. Since 1986, the EPA has intended to create a RCRA Subtitle D+ Program⁵¹ by promulgating new regulations and by modifying state and regional solid waste management plans in order to regulate Bevill-exempt wastes.⁵² However, the regulations, known as the “Strawman I and II” were never promulgated because the EPA simply does not have permitting or enforcement authorities under RCRA Subtitle D, the solid waste program.⁵³ Meanwhile, toxic industrial wastes from hardrock mining and twenty mineral processing facilities are merely regulated under the solid waste program, which is inadequate to protect human health and the environment from harm due to these wastes.⁵⁴

After decades of diminishing efforts,⁵⁵ a new approach is necessary to replace the Bevill-exempt waste scheme because the EPA has

⁴⁹ 42 U.S.C. § 6924(o)(1)(A)(i); Regulatory Determination for Wastes from the Extraction and Beneficiation of Ores and Minerals, 51 Fed. Reg. at 24,500 (“[C]ertain Subtitle C requirements such as single and double liner system requirements which provide liquid management, and closure and capping standards to minimize infiltration, may be technically infeasible or economically impractical to implement for mining wastes because of the quantity and nature of waste involved.”).

⁵⁰ See 42 U.S.C. § 6924(x) (authorizing the EPA to modify this section’s requirements “to take into account the special characteristics of such [mining and other special] wastes”).

⁵¹ U.S. DEP’T OF THE INTERIOR, RCRA REGULATION IMPACT ON ALASKA MINERAL DEVELOPMENT: WASTE ROCK MANAGEMENT 16 (1992) (“EPA has not initiated the rule-making process to develop solid waste regulations for the management of tailings and waste rock. . . . EPA declared its intent to develop a specific program for mining wastes which it has described as a Subtitle D+ program. The D+ notation implies that it would be a regulatory program that is more stringent than the Subtitle D solid waste program . . .”).

⁵² Barringer, *supra* note 32, at 191.

⁵³ *Id.* at 191–92 (describing the EPA’s two attempts at “draft conceptual framework[s] for Bevill-exempt mining wastes” in 1988 and 1990, and how “EPA remains without enforcement and permitting tools that presumably it would need to implement a regulatory program under RCRA Subtitle D.”); see also U.S. ENVTL. PROT. AGENCY, RISKS POSED BY BEVILL WASTES, *supra* note 37, at 3.

⁵⁴ U.S. ENVTL. PROT. AGENCY, RISKS POSED BY BEVILL WASTES, *supra* note 37, at 4 (“The Agency continues to believe that mining waste poses a broad range of environmental risk. Some types of mines and waste management practices pose very little risks while others pose significant environmental problems and threats to human health.”).

⁵⁵ See *id.* at 2–4.

apparently abandoned the unworkable Subtitle D+ Program. Senator Simpson's brainchild, section 3004(x) of RCRA, is well suited for a new special wastes program. As early as 1986, the EPA decided that, if Subtitle D is unworkable, section 3004(x) of RCRA could be used to modify the hazardous waste regulations because it provides ample permitting and enforcement authority to create a flexible waste management program that could address the high volume and low toxicity levels characteristic of mining and mineral processing wastes.⁵⁶

Other mining industry reformers suggest repeal of the Beville Amendment and regulating all mining and mineral processing wastes as hazardous.⁵⁷ However, that legal solution results in technically complex implementation problems and overregulation because minimum technology controls are too stringent for the mountains of relatively low toxicity wastes that are generated at extremely high annual rates.⁵⁸ In contrast, section 3004(x) authority provides flexibility, works without legislative repeal or amendment to RCRA, and the EPA has planned for this eventuality.⁵⁹

Equally important, a section 3004(x) hardrock mining and mineral processing waste program would resolve an overregulation problem for certain mineral processing wastes. The new 3004(x) program would regulate all extraction and beneficiation mining wastes, but not

⁵⁶ Regulatory Determination for Wastes from the Extraction and Beneficiation of Ores and Minerals, 51 Fed. Reg. 24,496, 24,496–24,501 (July 3, 1986) (codified at 40 C.F.R. pt. 261) (“If EPA is unable to develop an effective mining waste program under Subtitle D, the Agency may find it necessary to use Subtitle C authority in the future. . . . Initially, EPA will use this information [from the mining industry] to develop a program under Subtitle D. The information, however, may indicate the need to reconsider Subtitle C for certain mining wastes. . . . [T]he Agency may find that the Subtitle D approach is unworkable, perhaps because there is insufficient authority to implement an effective program (i.e., the Agency does not obtain [from Congress] oversight and enforcement authority under Subtitle D), or that States lack adequate resources to develop and implement the program. In such an event, EPA may find it necessary to reexamine use of Subtitle C authority with modified mining waste standards in the future.”); *see supra* notes 38–40, 49–50.

⁵⁷ *E.g.*, Bart Lounsbury, Comment, *Digging Out of the Holes We've Made: Hardrock Mining, Good Samaritans, and the Need for Comprehensive Action*, 32 HARV. ENVTL. L. REV. 149, 207–08 (2008) (“The solution to this environmentally detrimental lack of regulatory authority is simple: repeal the Beville Amendment and start regulating all hazardous mining byproducts.”).

⁵⁸ *See supra* notes 49–50.

⁵⁹ *See supra* notes 38, 43, and accompanying text.

necessarily all twenty of the mineral processing wastes.⁶⁰ A new 3004(x) program would regulate eleven of these twenty wastes by modifying and flexibly applying the appropriate Subtitle C requirements. Nevertheless, the other nine mineral processing wastes may be appropriately regulated as nonhazardous, solid wastes because they pose few, if any, risks.⁶¹ Applying the new special waste program to these nine wastes could be considered overregulation. However, such overregulation could be avoided by carefully analyzing the characteristics, management practices, and risks associated with these nine processing wastes. The EPA would decide whether or not and which ones, if any, to include in the new program.

A. Benefits of a RCRA Special Waste Management Program for Hardrock Mining and Mineral Processing Industry

Developing a RCRA special waste management program for toxic wastes from hardrock mining and mineral processing facilities has many advantages. The benefits of a RCRA special waste program include: (1) easy to draft regulations, (2) financial assurances to protect the environment, and (3) national consistency for states and tribes. This program would also ensure federal, state, and tribal government compliance with RCRA.⁶² States may implement EPA-approved RCRA hazardous waste programs provided their programs are enforceable and no less stringent than federal minimum criteria.⁶³ RCRA also applies to public and private lands.⁶⁴ Finally, RCRA is a multimedia statute that protects surface water, ground water,

⁶⁰ See Final Regulatory Determination for Special Wastes from Mineral Processing (Mining Waste Exclusion), 56 Fed. Reg. 27,300 (June 13, 1991) (codified at 40 C.F.R. pt. 261) (finding that a modified Subtitle D program would be appropriate for eighteen of the twenty mineral processing wastes and that a modified hazardous waste program (C-Minus) may be economically damaging in many cases); see also *id.* at 27,323 (“For example, in some cases, adequately protective design and operating standards for new waste management units under Subtitle C-Minus and D-Plus have been defined by EPA to be identical.”).

⁶¹ *Id.* at 27,325.

⁶² For example, RCRA holds criminally liable any “person,” who is in violation of that Act, defining “person” to include municipal, state, and federal governments, and “municipal” to include Indian tribes and Alaskan Native villages/organizations. §§ 1004(13), 1004(15), 3008(a), 42 U.S.C. §§ 6903(13), 6903(15), 6928(a) (2006).

⁶³ *Id.* § 6926(b).

⁶⁴ *Id.* § 6901(b).

sediments, and land.⁶⁵ Also, using available RCRA authority under section 3004(x) to make a regulatory change would be easier and faster than creating a statutory amendment to another law and creating a whole new program, as some legislators have proposed,⁶⁶ especially if the other statutes only apply to federal lands or coal mining.

1. *Easy to Draft New Regulations*

The special waste management program regulations would be easy to draft because the EPA could adopt previously promulgated hazardous waste storage and disposal requirements, including permits, closure and post-closure standards, financial assurances, corrective action standards, manifests, and enforcement provisions with penalties.⁶⁷ The more onerous land disposal regulatory provisions, such as minimum technology and ground water monitoring systems, could be modified based on site-specific factors, including geography, physical conditions of facilities, nearby populations, and sensitive ecosystems.⁶⁸ Also, the language from the 1990 Strawman draft regulation could be easily revised for this new program.⁶⁹

2. *Financial Assurances Protect Government Reserves*

The special waste program could adopt RCRA financial assurance requirements for closure and post-closure activities to ensure that the hardrock mining and mineral processing industry fully internalizes the costs of toxic waste management. Insufficient financial assurance has

⁶⁵ *Id.* §§ 6901(b)(2), 6901(b)(4), 6902(a)(10), 6924(u), 6924(v).

⁶⁶ *See generally* Hardrock Mining and Reclamation Act of 2009, S. 796, 111th Cong. (2009) (amending existing law and proposing establishment of new funds for restoration of land and water resources).

⁶⁷ 42 U.S.C. §§ 6922–6925, 6928, 6973.

⁶⁸ Regulatory Determination for Wastes from the Extraction and Beneficiation of Ores and Minerals, 51 Fed. Reg. 24,496, 24,498 (July 3, 1986) (codified at 40 C.F.R. pt. 261) (“The actual human health and environmental threat posed by any of these releases is largely dependent upon site-specific factors, including a site’s proximity to human populations or sensitive ecosystems. Sites well removed from population centers, drinking water supplies, and surface waters are not likely to pose high risks.”).

⁶⁹ *See generally* OFFICE OF SOLID WASTE, U.S. ENVTL. PROT. AGENCY, STRAWMAN II: RECOMMENDATIONS FOR A REGULATORY PROGRAM FOR MINING WASTE AND MATERIALS UNDER SUBTITLE D OF THE RESOURCE CONSERVATION AND RECOVERY ACT 1 (1990) [hereinafter STRAWMAN II] (setting forth a working draft of proposed informal regulations for “a program to protect human health and the environment from the problems that may be associated with noncoal mining wastes and other materials”).

been a systemic problem at hardrock mining sites on private and public lands,⁷⁰ and has resulted in the failure to cover the costs of waste storage and disposal as well as mine reclamation. In addition, “adequate financial assurances must be incorporated in hardrock mine permits to ensure protection of human health and the environment and minimize future cleanup costs.”⁷¹

Financial assurances under RCRA distinguish closure costs for protection of health and the environment, from costs stemming from natural resource laws that require bonding to cover the reclamation and restoration of natural resources.⁷² The latter may be appropriate for separate regulation under DOI statutes, see *infra* Part IV.B. Although other FLM agencies have proposed financial assurance rules to cover potential environmental harms, their authorizing legislation lacks specificity to impose substantial environmental protections that would prevent irreparable harm.⁷³ For example, DOI financial assurance regulations do not necessarily protect public lands and waters from the potential release of dangerous waste materials into the environment.⁷⁴ RCRA is clear and unambiguous; financial

⁷⁰ U.S. GOV. ACCOUNTABILITY OFFICE, *HARDROCK MINING: INFORMATION ON ABANDONED MINES AND VALUE AND COVERAGE OF FINANCIAL ASSURANCES ON BLM LAND 2–3* (2008) [hereinafter *SENATE HEARING ON HARDROCK MINING*] (statement of Robin M. Nazzaro, Director, Natural Resources and Environment) (reporting that financial assurances on federal lands were insufficient).

⁷¹ EPA AUDIT 1997, *supra* note 40, at 7.

⁷² See generally § 3004(a)(6), 42 U.S.C. § 6924(a)(6) (2006) (mandating that the EPA promulgate regulations with respect to requirements for “financial responsibility (including financial responsibility for corrective action) as may be necessary or desirable”); *id.* § 6928(h) (permitting financial assurances for corrective action); 40 C.F.R. § 265.143 (requiring financial assurances for closure); EPA AUDIT 1997, *supra* note 40, at 8.

⁷³ See Seymour, *supra* note 19, at 839–53. Specifically, the Department of the Interior (DOI) believes the General Mining Law of 1872 and the Federal Land Policy and Management Act “[t]aken together . . . clearly authorize regulation of environmental impacts of mining through measures such as mitigation.” *Id.* at 843 n.232 (quoting Mining Claims Under the General Mining Law; Surface Management, 65 Fed. Reg. 69,998, 70,012 (Nov. 21, 2000) (codified at 43 C.F.R. pts. 2090, 2200, 2710, 2740, 3800 and 9260)). However, DOI regulations are insufficient because they set a general management standard that prevents only “unnecessary or undue degradation.” See 43 C.F.R. § 3809.1 (2009). At least, the DOI regulations require compliance with state and federal environmental law. Seymour, *supra* note 19, at 843. However, when mining operators are not constrained by mandatory environmental laws, DOI regulatory controls function to minimize and prevent contamination *only when practicable*, see *id.* at 841–43, 851, which is insufficient to protect human health and the environment.

⁷⁴ EPA AUDIT 1997, *supra* note 40, at 7.

assurances must be sufficient to cover closure and post-closure costs associated with hazardous waste management units to protect health and the environment at any property, whether private, state, tribal, or federal.⁷⁵

3. *National Consistency, State Implementation, and Tribal Issues*

RCRA allows states to implement hazardous waste management programs, which reflects an ideal form of cooperative federalism. All of the fifty states would be eligible for an EPA-approved special waste program.⁷⁶ A minimum level of federal protection and national consistency would be assured because, although State programs can be broader and more stringent than the EPA's federal RCRA program, they cannot be less stringent.⁷⁷

At present, many states have developed mining and mineral management laws that are not uniform and not protective of the environment.⁷⁸ Federal guidance and oversight under a new RCRA special waste program would ensure more national consistency for the benefit of industry. For example, both federal minimum

⁷⁵ 42 U.S.C. § 6924(a)(6), (t). However, in general DOI regulates mining on public lands, not private. See General Mining Law of 1872, 30 U.S.C. § 26 (2006) (governing mining locations situated on the public domain). Also, DOI rules require only minimal financial assurances for harm to public lands. EPA AUDIT 1997, *supra* note 40, at 8–9.

⁷⁶ 42 U.S.C. § 6926(b) (“Any State which seeks to administer and enforce a hazardous waste program pursuant to this subchapter may develop and . . . submit to the [EPA] Administrator an application . . . for authorization of such program.”). Unlike RCRA, the proposed Hardrock Mining and Reclamation Act of 2009 unfairly provides more funding and special authorizations for fourteen western states to implement a program for abandoned mine land (AML) cleanup. Compare *id.* with S. 796, 111th Cong. §§ 401(e), 402(a) (2009). Specifically, Senate bill 796 defines the term “abandoned hardrock mine State” to mean each of the States of Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming. *Id.* § 2(1). Thus, the bill allows these fourteen states to receive preapproval of their existing state reclamation programs, *see id.* § 401(e); allows these states to receive funds from a new federal hardrock reclamation fund, *see id.* § 402(a); and also limits other states to only ten percent of the fund, *see id.* §§ 402(b)(4), 402(e). Although the majority of AML may be found in the western states, the proposed law is unfair to the Midwestern, Southeastern, and Eastern states that also have significant numbers of AML sites. Cf. U.S. EPA, AML CERCLIS Inventory, <http://www.epa.gov/aml/amlsite/nonnpl.htm> (last visited Mar. 5, 2010).

⁷⁷ 42 U.S.C. § 6926(b); 40 C.F.R. §§ 271.1(i), 271.4 (2009) (allowing states to provide more stringent requirements or ones effectively broader in scope unless inconsistent with the federal program).

⁷⁸ See EPA AUDIT 1997, *supra* note 40, at 9–10, *see also Senate Oversight Hearing*, *supra* note 31, at 15 (statement of Sen. Barbara Boxer, California) (describing an example of “a well-intentioned cleanup effort gone wrong”).

environmental performance standards and uniform financial assurance requirements would help avoid a race to the bottom where states relax environmental standards hoping to lure or retain industry jobs.⁷⁹ Effectively, uniform minimum federal standards and requirements would level the playing field for states and bring consistency to the industry.

Additionally, the new special waste program would apply in Indian country, where the EPA would implement the program to assure national consistency. Tribes are not eligible to implement RCRA in the same manner as states because RCRA defines tribal governments as municipalities.⁸⁰ Thus, tribes could not implement the new special waste program. A statutory correction to this definition would be necessary for the EPA to authorize tribal governments. Moreover, Subtitle D does not authorize the EPA to implement permitting or enforcement of state solid waste programs because only states have implementing authority.⁸¹ Thus, creating a new special waste program under Subtitle C of RCRA would fill a regulatory gap where neither the EPA nor tribal governments have authority under Subtitle D to implement an enforceable waste management program for mining and mineral processing wastes in Indian country.⁸²

⁷⁹ At least two state governments, Alaska and California, have environmental performance standards and financial assurances for hardrock mining site closure. *See* EPA AUDIT 1997, *supra* note 40, at 9. In general though, state requirements are not uniform and may be insufficient to provide minimal levels of environmental protection. *Id.* at 9–11.

⁸⁰ 42 U.S.C. § 6903(13) (defining tribes as municipalities); *id.* § 6904 (mandating cooperation with state agencies). RCRA has no provision authorizing tribes to be treated as states as other environmental laws do; therefore, tribes are not accorded the same rights as states under RCRA. *Compare id.* §§ 6901–6996k with Clean Water Act § 518(e), 33 U.S.C. § 1377(e) (2006) (providing tribes the same treatment as states). In addition, the EPA has to exercise caution in interpreting silent or ambiguous statutes. *See* *Backcountry Against Dumps v. EPA*, 100 F.3d 147, 148 (D.C. Cir. 1996) (holding that RCRA defines Indian tribes as municipalities, not states; therefore, the statute’s authorization for EPA approval of state permitting plan does not apply to tribes).

⁸¹ 42 U.S.C. §§ 6941–6949a (authorizing states to regulate solid waste landfills and setting forth minimum standards for state or regional solid waste plans). In general, RCRA limits the EPA’s solid waste authority to enforcement at open dumps and cases of imminent and substantial endangerment. *See* 42 U.S.C. §§ 6943(a)(3), 6945, 6973; 40 C.F.R. pt. 257 (setting forth criteria for classification of solid waste facilities and practices).

⁸² *See* 42 U.S.C. § 6945(c)(2); Memorandum from the Office of Civil Enforcement, U.S. Env’tl. Prot. Agency to its Regional Counsels et al., 1 (Mar. 30, 2007), <http://www.epa.gov/compliance/resources/policies/civil/rcra/rcrasection4005c2-guidance.pdf> (providing “Guidance on Using RCRA Section 4005(c)(2) to Address Uncontrolled

B. Pitfalls to Avoid

A new special wastes management program must preserve the integrity of RCRA and other environmental laws. For example, weaknesses in the 1990 draft Bevill waste regulations, referred to as Strawman II, distorted RCRA and CERCLA regulatory programs.⁸³ Strawman II proposed to regulate all twenty mineral processing wastes and other nonhazardous wastes “co-located and commingled with regulated materials generated by extraction and beneficiation.”⁸⁴ The draft recommendations for a regulatory program exempted voluntary reminging activities from CERCLA liability, failed to define federally enforceable numeric performance standards, and provided constrained federal oversight of EPA-authorized state programs.⁸⁵ These pitfalls could be easily avoided. For example, the EPA’s 2007 Good Samaritan Initiative eliminates any need to modify CERCLA liability for volunteers who remine wastes at abandoned mine sites.⁸⁶ Inconsistent state requirements⁸⁷ are readily resolved by establishing uniform financial assurance rules and federal minimum

Waste Dumps in Indian Country”). The EPA’s guidance allows regional counsels to use enforcement authorities under Subtitle C of RCRA to take enforcement actions at solid waste landfills in Indian country in limited circumstances. *Id.*

⁸³ See, e.g., STRAWMAN II, *supra* note 69, at 21–22, 27 (setting forth the Strawman II framework which could have limited EPA enforcement in ways inconsistent with authority under Subtitle C of RCRA, and proposing modification to CERCLA to promote voluntary reminging or closure by limiting liability for third parties who wish to remine at abandoned sites).

⁸⁴ *Id.* at 28–29.

⁸⁵ *Id.* at 20, 27, 37.

⁸⁶ See Memorandum from the Office of Enforcement and Compliance Assurance et al., U.S. Env’tl. Prot. Agency to its Regional Administrators et al., at 3–4 (June 6, 2007) (setting forth “Interim Guiding Principles for Good Samaritan Projects at Orphan Mine Sites and Transmittal of CERCLA Administrative Tools for Good Samaritans” that eliminate need to amend CERCLA for reminging operations by providing for a qualifying Good Samaritan to avoid CERCLA liability); see also Lounsbury *supra* note 57, at 214 (concluding that “existing alternatives to the liability relief provisions of Good Samaritan legislation probably suffice to enable Good Samaritan mine remediation. Certainly, with its new model documents, EPA has begun to clear the way for Good Samaritans without creating dangerous blanket exemptions from environmental laws.”). *But see Senate Oversight Hearing, supra* note 31, at 64 (statement of Velma M. Smith, Senior Policy Associate, National Environmental Trust) (recommending no amendment to CERCLA for Good Samaritan cleanups).

⁸⁷ See generally James R. Kuipers & Sarah Zuzulock, Financial Assurance for Hardrock Mine Cleanup, Presentation at Western Mining Activist Network, Vancouver (Oct. 3–5, 2003) (presenting case studies that show significant differences in state hardrock mine cleanup financial assurance requirements), <http://www.csp2.org/REPORTS/Financail%20Assurance%20for%20Hardrock%20Mine%20Cleanup.pdf>.

environmental protection standards for all states and Indian country, as well as clear federal oversight responsibilities for the EPA.

C. Collaboration with Other Special Waste Programs

The new special waste program should be coordinated inside the government using a broad approach that involves a number of special wastes and different offices within the EPA, not just the mining and mineral processing waste experts. EPA rulemaking is underway for the regulation of other special wastes including cement kiln dust and coal combustion ash,⁸⁸ as well as the use of recovered mineral component in cement or concrete projects.⁸⁹ Also, the 2007 chat rule authorizes and encourages the use of certain mining wastes in federal

⁸⁸ Press Release, U.S. Env'tl. Prot. Agency, EPA Announces Plans to Regulate Coal Ash / Agency Proposals Would Address Risks of Unsafe Coal Ash Disposal, While Supporting Safe Forms of Beneficial Use (May 4, 2010). Cement kiln dust and coal combustion ash (CCA) could be regulated under section 3004(x) of RCRA. *See* 42 U.S.C. § 6924(x) (2006). One option under the proposed rule is to rely on Subtitle C, which creates a comprehensive program of federally enforceable requirements for waste management and disposal. *See* Press Release, U. S. Env'tl. Prot. Agency, *supra*. Fortunately, the EPA is preparing regulations for CCA, but only after well-publicized catastrophes of CCA spilling into rivers. *See, e.g.*, Shaila Dewan, *Hundreds of Coal Ash Dumps Lack Regulation*, N.Y. TIMES, Jan. 7, 2009, at A1. In March 2009, the EPA issued information request letters to dozens of facilities that manage CCA, and interestingly, used CERCLA information gathering authorities rather than RCRA. *See, e.g.*, Letter from Barry N. Breen, Acting Assistant Adm'r, U.S. Env'tl. Prot. Agency to Plant Manager, Gorgas Power Station, Ala. (Mar. 9, 2009), <http://www.epa.gov/osw/nonhaz/industrial/special/fossil/coalashletter.htm>. In November 2009, the news media reported that four environmental groups filed a notice of intent to sue CCA facilities under the Clean Water Act. *Maryland Coal Ash Landfill Leaks Trigger Lawsuit Threat*, ENVTL. NEWS SERV., Nov. 22, 2009, <http://www.ens-newswire.com/ens/nov2009/2009-11-22-093.asp>.

⁸⁹ *See* Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, § 6017, Pub. L. 109-59, 119 Stat. 1888-90 (amending 42 U.S.C. §§ 6961–6964) (“Increased use of recovered mineral component in federally funded projects involving procurement of cement or concrete.”); *see generally* U.S. ENVTL. PROT. AGENCY ET AL., STUDY ON INCREASING THE USAGE OF RECOVERED MINERAL COMPONENTS IN FEDERALLY FUNDED PROJECTS INVOLVING PROCUREMENT OF CEMENT OR CONCRETE TO ADDRESS THE SAFE, ACCOUNTABLE, FLEXIBLE, EFFICIENT TRANSPORTATION EQUITY ACT: A LEGACY FOR USERS ES-1 (2008), <http://www.epa.gov/osw/conserves/tools/cpg/pdf/rtc/report4-08.pdf> (reporting to Congress agencies’ analysis and conclusions regarding “energy savings and environmental benefits associated with” recovered mineral components, including special wastes such as CCA, as well identification of the barriers and “potential mechanisms to achieve greater substitution of [such] recovered mineral components.”); U.S. EPA, Special Wastes, <http://www.epa.gov/osw/nonhaz/industrial/special/index.htm> (last visited Mar. 5, 2010).

highway projects.⁹⁰ In addition, the EPA is considering, but has not yet decided on an administrative petition⁹¹ to reconsider the October 2008 final rule that excluded recycled hazardous wastes from compliance with hazardous waste regulations.⁹² Specifically, that rule excluded certain wastes, including mineral processing wastes, from the definition of a solid waste if they had been recycled and redefined these wastes as secondary materials.⁹³ All these rules could be harmonized by a “Special Waste Regulatory Strategy” initiative that would effectively regulate the entire special waste category.

Moreover, if the EPA does not regulate special wastes, Congress is considering action, particularly on coal combustion ash waste. As Congressman Rahall stated, “[T]here are no federal standards for coal ash impoundments. They are constructed and maintained under a patchwork of State requirements, or on a voluntary basis.”⁹⁴

⁹⁰ See Criteria for the Safe and Environmentally Protective Use of Granular Mine Tailings Known as “Chat”, 72 Fed. Reg. 39,331 (July 18, 2007) (codified at 40 C.F.R. pts. 260, 278). As an example of why the United States should have nationally consistent, environmentally protective regulations, see *Special Report: Lead in Our Roadways* (KCTV5 video broadcast Mar. 4, 2010), <http://www.kctv5.com/video/22738608>.

⁹¹ See U.S. EPA, DSW Federal Register Notices, <http://www.epa.gov/osw/hazard/dsw/rulemaking.htm> (last visited Mar. 5, 2010).

⁹² See Revisions to the Definition of Solid Waste, 73 Fed. Reg. 64,668 (Oct. 30, 2008) (codified at 40 C.F.R. pts. 260, 261, and 270); see also *Hearing before the Subcomm. on Regulatory Affairs of the H. Comm. on Government Reform*, 109th Cong. 73–75 (2005) (statement of Scott Slesinger, Vice President for Gov’t Affairs, Environmental Technology Council) (testifying that the proposed hazardous waste recycling rule would be detrimental to the environment, “fail to adequately protect public health” and possibly cause “the economic incentive to dump the waste along the road [to] return for the first time since 1976”). Nevertheless, the EPA issued the final rule in October 2008. See Aaron M. Cohn & Amy L. Edwards, *EPA Issues Final Rule Redefining “Solid Waste,” Thereby Generating Substantial Industry Cost Savings*, ENV’T NEWSL. (Holland & Knight, San Francisco, Cal.), Jan. 5, 2009, <http://www.hklaw.com/id24660/PublicationId2523/ReturnId31/contentid53480/> (providing a positive critique of this rule, but noting comments received expressed a “worry that companies will avoid RCRA by engaging in sham recycling”).

⁹³ Cf. Revisions to the Definition of Solid Waste, 73 Fed. Reg. at 64,680 (explaining how the final rule “excludes from the definition of solid waste those hazardous secondary materials which remain under the control of the generator when legitimately reclaimed”); 40 C.F.R. § 261.10 (2009) (defining hazardous secondary material).

⁹⁴ 155 CONG. REC. E82 (daily ed. Jan. 14, 2009) (statement of Rep. Rahall) (introducing new legislation to control coal ash, he stated: “Just a few weeks ago, in December, a facility owned by the Tennessee Valley Authority (TVA) gave way, unleashing an avalanche of coal ash sludge that covered more than 300 acres. This time Heaven intervened, and thankfully no lives were lost. This disaster—which could have been avoided if TVA had exercised appropriate engineering and monitoring regimes at its Kingston facility in Harriman, Tennessee—was a clarion call for action. Now is the time

Meanwhile, the release of toxic coal ash sludge is killing fish and threatening human health and welfare,⁹⁵ and citizens are filing lawsuits to force some action.⁹⁶

D. RCRA Reform Summary

Sustainable development of the hardrock mining and mineral processing industry requires protecting health and the environment through government regulation. The EPA can readily promulgate a special waste management program using authority conferred by section 3004(x) of RCRA for the mining and mineral processing industry. A new program would end decades of underregulation of this industry and provide nationally consistent environmental protections and uniform financial assurances to cover potential insolvent operations on public, private, and Indian country. This RCRA reform would protect all media, including soil, air, surface water, sediments, and groundwater, from active and inactive industrial mining and mineral processing operations. Finally, as part of a special waste regulatory strategy, this program could be combined with ongoing reforms for coal ash and cement kiln dust wastes.

II CLEAN WATER ACT (CWA) REFORM: LEGISLATION AND REGULATION

The two most significant water pollution regulatory mechanisms ripe for reforms to improve water quality at mining and mineral processing facilities are the EPA's National Pollutant Discharge Elimination System (NPDES) permit program⁹⁷ and the U.S. Army

to take that action, before any lives are lost to a similar disaster. Simply put, there are no federal standards for coal ash impoundments. They are constructed and maintained under a patchwork of State requirements, or on a voluntary basis.”).

⁹⁵ See *supra* notes 44, 88, and accompanying text.

⁹⁶ Press Release, Lief Cabraser Heimann & Bernstein LLP, Tennessee Family Files Lawsuit Against Tennessee Valley Authority (TVA) Seeking Medical and Environmental Testing (Jan. 12, 2009), *available at* <http://eon.businesswire.com/news/eon/20090112005639/en/Kingson-environmental-disaster/TVA-coal-ash-spill/TVA-spill>.

⁹⁷ Clean Water Act § 402, 33 U.S.C. § 1342 (2006) (setting forth the NPDES permitting program that establishes national standards for the protection of surface waters based on technology and water quality-based effluent limitations for the discharge of pollutants into waters of the United States); see also U.S. ENVTL. PROT. AGENCY, MINING AND MINERAL PROCESSING COMPLIANCE ASSISTANCE RESOURCES FOR THE GOLD AND

Corps of Engineers' (Army Corps) 404 permit program for the discharge of dredge and fill material.⁹⁸ The U.S. government relies heavily on CWA regulation and enforcement to protect surface waters from toxic mining wastes, especially acid mine drainage.⁹⁹ Unfortunately, these CWA programs have been assaulted in recent years by regulatory rollbacks¹⁰⁰ and Supreme Court opinions that limit their effectiveness.¹⁰¹ Reforming the CWA and its implementing regulations could substantially improve water quality at hardrock mining and mineral processing facilities.

A. Redefine the CWA Definition of Fill Material

The CWA regulations defining fill material were revised in 2002 under a joint regulation from the Army Corps and the EPA.¹⁰² The new definition has come under intense scrutiny because it creates confusion and a conflict exists between the NPDES and the 404

COPPER INDUSTRIES 3 (2007), <http://www.epa.gov/oecaerth/resources/publications/assistance/sectors/miningcompendium.pdf> (listing section 402 as one of the “[k]ey sections of CWA that may apply to mining and mineral processing facilities”).

⁹⁸ 33 U.S.C. § 1344; see CLAUDIA COPELAND, CONG. RESEARCH SERV., CONTROVERSIES OVER REDEFINING “FILL MATERIAL” UNDER THE CLEAN WATER ACT 5 (2009) [hereinafter CRS FILL MATERIAL REPORT] (“The most controversial aspect of the final rule was elimination of the waste exclusion previously contained in the Corps’ definition of fill material, coupled with the specific inclusion of mining overburden to be regulated under Section 404. In some parts of the country, particularly in Appalachia, waste material that results from coal surface mining operations is deposited or discharged into waters of the United States as part of the overall mining activity.”).

⁹⁹ Seymour, *supra* note 19, at 823 (stating nearly twenty percent of the EPA’s inspections at mining sites from 1990 to 1995 resulted in “enforcement actions for releases of pollutants”) (citing U.S. ENVTL. PROT. AGENCY, NATIONAL HARDROCK MINING FRAMEWORK 2 (1997), available at <http://www.epa.gov/owm/frame.pdf>).

¹⁰⁰ See ROBERT F. KENNEDY, JR., CRIMES AGAINST NATURE: HOW GEORGE W. BUSH AND HIS CORPORATE PALS ARE PLUNDERING THE COUNTRY AND HIJACKING OUR DEMOCRACY 35, 39–40, 136–42 (2004) (providing an in-depth look at the Bush II administration, its regulatory rollbacks, and evisceration of environmental laws).

¹⁰¹ See, e.g., *Solid Waste Agency of N. Cook County v. U.S. Army Corps of Engineers* (SWANCC), 531 U.S. 159 (2001); *Rapanos v. United States*, 547 U.S. 715 (2006); see generally EARTHJUSTICE ET AL., COURTING DISASTER: HOW THE SUPREME COURT HAS BROKEN THE CLEAN WATER ACT AND WHY CONGRESS MUST FIX IT (2009) [hereinafter COURTING DISASTER] (urging Congress to fix these damaging Supreme Court decisions).

¹⁰² See Final Revisions to the Clean Water Act Regulatory Definitions of “Fill Material” and “Discharge of Fill Material”, 67 Fed. Reg. 31,129, 31,129–30 (May 9, 2002) (codified at 40 C.F.R. pt. 232) (“Today’s final rule completes the rulemaking process . . . jointly proposed to amend [the EPA’s and U.S. Army Corps of Engineers’] respective regulations so that both agencies would have identical definitions of these key terms. The proposal was intended to clarify the [CWA] Section 404 regulatory framework and generally to be consistent with existing regulatory practice.”).

permit programs.¹⁰³ A brief comparison of the two programs illustrates the need for a new definition of fill material that maintains the separate functions of each program.

In general, the NPDES and 404 permit programs are complementary and are not supposed to overlap.¹⁰⁴ The NPDES permit program limits the discharge of pollutants and contaminants,¹⁰⁵ while the 404 permits control discharges of normally inert materials.¹⁰⁶ The 404 permits allow for dredge and fill in waters of the United States so long as applicable state or tribal water quality standards are not violated.¹⁰⁷ Under a power sharing arrangement, the Army Corps issues 404 permits and enforces compliance with those permits, while the EPA establishes environmental guidelines specifying disposal sites for dredged or fill material and levies penalties for failing to obtain a 404 permit.¹⁰⁸ In addition, the EPA has veto power over Army Corps 404 permits, although it is rarely exercised.¹⁰⁹ States may seek authorization to implement a 404

¹⁰³ See CRS FILL MATERIAL REPORT, *supra* note 98, at 8.

¹⁰⁴ *Id.* at 2; Proposed Revisions to the Clean Water Act Regulatory Definitions of “Fill Material” and “Discharge of Fill Material,” 65 Fed. Reg. 21,292, 21,293 (Apr. 20, 2000) (codified at 40 C.F.R. pt. 232) (“Two different permitting regimes are created by the [CWA]: (1) section 404 permits, primarily administered by the Corps, addressing the discharge of dredged or fill material, and (2) section 402 permits (commonly referred to as National Pollutant Discharge Elimination System, or “NPDES” permits), administered by EPA and the States, which address the discharge of all other pollutants.”).

¹⁰⁵ Clean Water Act § 101(a)(1), 33 U.S.C. § 1251(a)(1) (2006) (setting forth a national goal that discharge of pollutants into surface waters be eliminated); *id.* § 1342(a)(1) (allowing the EPA to issue NPDES permits “for the discharge of any pollutant, or combination of pollutants”).

¹⁰⁶ See Proposed Revisions to the Clean Water Act Regulatory Definitions of “Fill Material” and “Discharge of Fill Material,” 65 Fed. Reg. at 21,293 (“[S]ection 404 focuses exclusively on two materials: dredged material and fill material. The term ‘fill material’ clearly contemplates material that fills in a water body, and thereby converts it to dry land or changes the bottom elevation.”). Usually, the fill is inert, nontoxic material, such as “rock, sand, soil, clay, plastics, construction debris, wood chips, overburden from mining or other excavation activities.” See 33 C.F.R. § 323.2(e)(2) (2009); see also CRS FILL MATERIAL REPORT, *supra* note 98, at 2.

¹⁰⁷ 40 C.F.R. § 230.10(b)(1) (2009) (“No discharge of dredged or fill material shall be permitted if it: (1) Causes or contributes, after consideration of disposal site dilution and dispersion, to violations of any applicable State water quality standard.”); *id.* § 131.08 (setting forth the requirements for an Indian tribe to administer a water quality standards program).

¹⁰⁸ See CRS FILL MATERIAL REPORT, *supra* note 98, at 2–3.

¹⁰⁹ 33 U.S.C. § 1344(c); *Alliance to Save the Mattaponi v. U.S. Army Corps of Eng’rs*, 606 F. Supp. 2d 121, 138–40 (D.D.C. 2009) (holding the EPA acted arbitrarily and

program, but in general the states have not done so, leaving the EPA and the Army Corps to implement the program.¹¹⁰ In contrast, forty-seven states jointly administer the NPDES program with the EPA.¹¹¹

The NPDES permit program controls water pollution discharges through water quality-based effluent limitations (WQBELs) and technology-based effluent limitations (TBELs).¹¹² The WQBELs are based on federal guidelines and EPA-approved state or tribal water quality standards programs.¹¹³ These water quality standards programs protect surface water based on designated uses and numeric limits that must be no less stringent than the EPA's national ambient water quality criteria.¹¹⁴ The TBELs are numeric limits based on the pollution control technologies of dozens of industrial sectors including hardrock mining and mineral processing industries.¹¹⁵ Because mining effluents may be toxic, the TBELs are stringent and in some cases entirely prohibit the discharge of pollutants or

capriciously when it failed to veto a 404 permit issued by the Corps for construction of a reservoir).

¹¹⁰ U.S. EPA, State or Tribal Assumption of the Section 404 Permit Program, <http://www.epa.gov/owow/wetlands/facts/fact23.html> (last visited Apr. 15, 2010) (indicating that only two states currently have authorized 404 programs). The 404 Permit program is almost exclusively implemented by the Army Corps of Engineers and the EPA. *See id.* Although states and tribes may seek authorization, in general, states or tribes have not sought to implement the 404 program. *See* Environmental Council of the States, Resolution No. 08-3, State Delegation of Clean Water Act Section 404 Permit Program (Apr. 14, 2008), http://www.ecos.org/files/3117_file_Copy_of_Resolution_08_3.pdf (asserting that only two states "have sought and assumed the [404] program").

¹¹¹ U.S. EPA, National Pollutant Elimination System (NPDES), State Program Status, <http://cfpub.epa.gov/npdes/statestats.cfm> (last visited Apr. 15, 2010) (indicating that about forty-seven states have authorized NPDES Programs). No tribe has an NPDES permit program. *Cf. id.* All states and about fifty-four tribes have authorized water quality standards and certification programs. *Id.* (discussing state programs); U.S. EPA, Tribes: Water Quality Standards & Criteria: Indian Tribal Approvals, <http://www.epa.gov/waterscience/tribes/approvtable.htm> (last visited Apr. 5, 2010) (discussing tribal programs).

¹¹² PLATER ET AL., *supra* note 3, at 620–21, 655.

¹¹³ *See id.* at 662–63.

¹¹⁴ 33 U.S.C. §§ 1313–1314; 40 C.F.R. pt. 131 (2009) (including regulations pertaining to water quality standards); 40 C.F.R. pt. 125 (2009) (setting forth "Criteria and Standards for Technology-Based Treatment Requirements").

¹¹⁵ *See* 33 U.S.C. § 1316; 40 C.F.R. § 440.100–105 (2009) (including regulations concerning copper, lead, zinc, gold, silver, and molybdenum ores). The CWA regulations include dozens of categories for technology-based effluent limitations from every kind of point source imaginable, including hospitals, photographic equipment, explosives, ink, paint, and landfills. *See* 40 C.F.R. pts. 400 to 469 (2009) (listing over fifty categories).

contaminants.¹¹⁶ Generally, states issue and enforce NPDES permits. As necessary, the EPA may also take enforcement actions against violators.¹¹⁷

In contrast to the NPDES permits, the 404 permits control water pollution by following established statutory and regulatory water quality guidelines.¹¹⁸ In general, a permittee must obtain a state or tribal certification that the permit will meet applicable water quality standards.¹¹⁹ In states or Indian country without approved certification programs, the EPA issues the certification.¹²⁰ Water quality standard certifications may require a permittee to comply with additional specific conditions enforceable under the 404 permit.¹²¹

Arguably, both permit programs provide equivalent protection for surface waters because of the water quality standard requirements. However, the 2002 rule redefining fill material and the EPA's interpretation of that rule have shaken the carefully constructed statutory balance at mining facilities. The 2002 definition of "discharge of fill material" allows "placement of overburden, slurry, or tailings or similar mining-related materials" into the waters of the United States,¹²² which significantly impacts the quality of surface waters and aquatic life habitats.¹²³

¹¹⁶ *E.g.*, 40 C.F.R. § 440.104(b)(1) ("[T]here shall be no discharge of process wastewater to navigable waters from mills that use the froth-flotation process . . .").

¹¹⁷ 33 U.S.C. § 1319.

¹¹⁸ 33 U.S.C. § 1344; 40 C.F.R. § 230 (2009) (setting forth "Guidelines for Specification or Disposal Sites for Dredged and Fill Materials").

¹¹⁹ However, permittees of state issued 404 permits are not required to obtain a water quality standard certification because it is presumed that the state would not issue a 404 permit in violation of its own standard. Moreover, few states presently have authorized 404 permit programs because federal funding to support state 404 programs is limited. Environmental Council of the States, *supra* note 110.

¹²⁰ 33 U.S.C. § 1341(a)(1); 40 C.F.R. § 121.21 (2009).

¹²¹ 40 C.F.R. § 121.2(a)(4) ("A statement of any conditions which the certifying agency deems necessary or desirable with respect to the discharge of the activity . . .").

¹²² 40 C.F.R. § 232.2 (2009). Significantly, this definition allows toxic mining waste from hardrock mines to be disposed as if it were inert material, effectively legalizing mountaintop coal mining and valley fill operations in the Appalachian Mountains. *See* CRS FILL MATERIAL REPORT, *supra* note 98, at 6–7. The debate over mountaintop mining and valley fill in coal country is beyond the scope of this paper; however, it is mentioned here to display how the changed definition of "fill material" disregards the different chemical compositions of coal and hardrock ores. *Id.*

¹²³ For example, hardrock mines generate acid mine drainage and toxic metals that poison aquatic life. *See generally* U.S. ENVTL. PROT. AGENCY, EPA OFFICE OF COMPLIANCE SECTOR NOTEBOOK PROJECT: PROFILE OF THE METAL MINING INDUSTRY

The Army Corps issued a 404 permit under the 2002 definition to the Kensington gold mine in Alaska, which allows discharge of 4.5 million tons of mine tailings into Lower Slate Lake, an amount that will kill all aquatic life.¹²⁴ The crux of the issue is whether the 404 permit obviated the need for the applicable NPDES permit for discharge of a pollutant from a gold mine including stringent TBELs.¹²⁵ The concern is not necessarily the toxicity of these tailings,¹²⁶ but the complete avoidance of applicable TBELs under the NPDES regulations. Indeed, the U.S. Supreme Court recently ruled that the 404 permit at Kensington gold mine is legally sufficient to usurp the applicable NPDES 402 authority based on the Agency's

17–21 (1995). One example of the toxic effects of hazardous mine wastes is the poisoning of trumpeter swans due to the presence of zinc and lead at the Tri-State Mining District Superfund sites. W.N. Beyer et al., *Zinc and Lead Poisoning in Wild Birds in the Tri-State Mining District (Oklahoma, Kansas, and Missouri)*, 48 ENVTL. CONTAMINATION & TOXICOLOGY 1, 111–14 (2004). Additionally, in southeastern Missouri, crayfish have been poisoned and their populations decimated as a result of living downstream from active lead mines. A.L. Allert et al., *Ecological Effects of Lead Mining on Ozark Streams: In-situ Toxicity to Woodland Crayfish*, 72 ECOTOXICOLOGY & ENVTL. SAFETY 1207, 1208 (2008) (describing the toxic effects of increased metal exposures and reduced population densities of crayfish immediately downstream of lead mining sites).

¹²⁴ Press Release, Earthjustice, Court Stops Destruction of Alaskan Lake by Mining Company (Aug. 24, 2006), available at <http://www.earthjustice.org/news/press/006/court-stops-destruction-of-alaskan-lake-by-mining-company.html>. That mining company was in the process of preparing the lake for use as a waste disposal site, where it plans to eventually dispose 4.5 million tons of mine waste. *Id.* On August 24, 2006, the Ninth Circuit Court of Appeals issued a temporary injunction halting the destruction of Lower Slate Lake at the site of the proposed Kensington gold mine. *Id.* However, in a recent U.S. Supreme Court opinion, six Justices ruled that the 404 permit was legally sufficient based on the support of an EPA interagency memorandum. *Coeur Alaska, Inc. v. Se. Alaska Conservation Council*, 129 S. Ct. 2458, 2473, 2479 (2009) (J. Breyer, concurring; J. Scalia, concurring in part and in the judgment). The three dissenting Justices stated the Court's interpretation of the regulatory scheme was unsupportable under the clear congressional intent of the CWA to protect waters of the United States. *Id.* at 2484 (Ginsburg, J., Stevens, J., Souter, J., dissenting).

¹²⁵ 40 C.F.R. § 440.102 (2009); see Memorandum from Diane Regas, Dir., Office of Wetlands, Oceans, and Watersheds, U.S. Env'tl. Prot. Agency, et al., to Randy Smith, Dir., Office of Water, U.S. Env'tl. Prot. Agency (May 17, 2004). Compare Supplemental Brief for Petitioner Coeur Alaska, Inc. at 2, *Coeur Alaska, Inc. v. Se. Alaska Conservation Council*, 129 S. Ct. 2458 (2009) (No. 07-984, 07-990) with Supplemental Brief for Respondents Se. Alaska Conservation Council at 7, *Coeur Alaska, Inc. v. Se. Alaska Conservation Council*, 129 S. Ct. 2458 (2009) (No. 07-984, 07-990).

¹²⁶ See Supplemental Brief for Petitioner State of Alaska at 20, *Coeur Alaska, Inc. v. Se. Alaska Conservation Council*, 129 S. Ct. 2458 (2009) (No. 07-984, 07-990). Alaska contends that tailings from Kensington gold mine are similar to the traditional rock and soil used as fill material with the same effect on the aquatic environment as those materials. *Id.*

2002 definition of fill material and the subsequent EPA interpretation of that rule.¹²⁷

The 2002 Agency definition, the EPA's interpretative memo, and the Supreme Court's June 2009 opinion created a schism in the boundary between the NPDES and 404 permit programs.¹²⁸ A 404 permit should not be sufficient to allow a discharge that is otherwise prohibited under applicable NPDES effluent limit guidelines. Regardless of the Supreme Court's ruling in the *Kensington Gold Mine* case, the 2002 Agency definition of fill material could be withdrawn and reevaluated by the Army Corps and the EPA to restore balance in the two permit programs. Environmental degradation resulting from the disposal of hardrock mine tailings into surface waters is untenable in light of the CWA's purpose to restore the integrity of the waters of the United States.¹²⁹ If the agency's action is insufficient, then Congress may enact a clarification to the CWA. For example, one proposed CWA amendment stated its intention "to reverse the revised regulations," e.g., Clean Water Protection Act, H.R. 1310, 111th Cong. (2009), which would have added "a definition of 'fill material' to the Clean Water Act similar to the EPA's regulatory definition that was in effect before 2002 . . . plus a statement that the term does not include 'any pollutant discharged into the water primarily to dispose of waste.'" ¹³⁰

¹²⁷ See *Coeur Alaska*, 129 S. Ct. at 2474 ("Here, we now hold, §404 applies, not §402.").

¹²⁸ CRS FILL MATERIAL REPORT, *supra* note 98, at 8–9 ("One analyst [has] observed that the result of the [rule change is that] the baseline of what is regulated by the 404 program [and] the NPDES program [has changed]. Under the Corps' previous regulation, the disposal of waste was solely subject to Section 402. Now, where the waste has the effect of fill, the government believes that regulation under Section 404 is appropriate. Thus, fill material now defines the extent of the NPDES program, because only pollutants subject to effluent limitations are excluded from regulation as fill. According to this view, the Section 404 permitting program has been expanded at the expense of EPA's NPDES program.") (citing Nathaniel Browand, Note, *Shifting the Boundary Between the Sections 402 and 404 Permitting Programs by Expanding the Definition of Fill Material*, 31 B.C. ENVTL. AFF. L. REV. 617, 645–48 (2003)).

¹²⁹ See Clean Water Act § 101(a), 33 U.S.C. § 1251(a) (2006) (setting forth the goal of the Act "to restore and maintain chemical, physical, and biological integrity of the Nation's waters"); *id.* § 1311(a).

¹³⁰ CRS FILL MATERIAL REPORT, *supra* note 98, at 3–4, 8; *see also* Clean Water Protection Act, H.R. 1310, 111th Cong. § 2 (2009) (amending section 502 of the CWA to define "fill material").

The Obama administration need not wait for Congress. A coherent policy on mining waste disposal for coal waste could include hardrock mines, too.¹³¹ For example, mining overburden, but not tailings or slag, could be included in a revised definition of fill material provided the source is not subject to TBELs and the material passes a toxicity test, such as the RCRA toxicity characteristic test¹³² or the Synthetic Precipitation Leaching Procedure test for low toxicity wastes described in Part I *supra*.¹³³ On the other hand, a new government policy could forbid mountaintop coal mining and valley fill, which would also effectively ban the use of hardrock mining overburden and wastes as fill material.

In the meantime, states and tribes with authorized water quality standards certification programs should continue to exercise their authority to place specific conditions on 404 permits for disposal of hardrock mining wastes in accordance with their state and tribal laws and regulations. The importance of tribal governments establishing water quality standards and certification programs to control 404 permits cannot be understated, especially for purposes of protecting waters in Indian country.¹³⁴

Other reformers suggest CWA legislative changes that will control contamination at hardrock mining sites, for example, “tightening the CWA’s standards to include, or more stringently regulate, discharges to groundwater and to non-navigable waters could lessen the environmental degradation caused by hardrock mining.”¹³⁵ However laudable the suggestion may be, Congress may not be ready to control groundwater quality through the CWA. The CWA is already complex, even though it only addresses surface waters, and other

¹³¹ Interior Secretary Salazar stated that the Obama administration plans to develop “a coherent new policy on mountain removal mining.” James Bruggers, *Mining Rule on Waste Rock to be Challenged in Court: Salazar Decries Edict on Stream Buffer Zone*, COURIER-JOURNAL (Louisville, Ky.), Apr. 28, 2009 (quoting Interior Department spokesman Frank Quimby).

¹³² 40 C.F.R. § 261.24 (2009).

¹³³ 40 C.F.R. § 278.3 (2009); Mining Waste Exclusion, 54 Fed. Reg. 36,592, 36,597 (Sept. 1, 1989) (codified at 40 C.F.R. pt. 261) (discussing low hazard criterion based on EPA Method 1312—Synthetic Precipitation Leaching Procedure).

¹³⁴ See *supra* note 111 and accompanying text. Only a few tribes have EPA-approved water quality standards and certification programs. *Id.* Using powers under section 401 of the CWA is proactive and may be more effective influence over the 404 permit program compared to challenging the Corps after the fact. *Cf.* Alliance to Save the Mattaponi v. U.S. Army Corps of Eng’rs, 606 F. Supp. 2d 121, 138–40 (D.D.C. 2009).

¹³⁵ Lounsbury, *supra* note 57, at 207.

statutes are available, for example RCRA and CERCLA, that regulate groundwater and runoff. For additional discussion of these statutes, see discussion *supra* Part I and *infra* Part III.

B. Clarify CWA Stormwater Rules and Permits for Mining Sites

An important component of the NPDES program is the regulation of stormwater runoff that results from industrial activities that involve both active and inactive hardrock mining.¹³⁶ The federal minimum requirements and other details of this stormwater program are described in the CWA's implementing regulations and the EPA-issued NPDES Stormwater Multi-Sector General Permit (MSGP) for Industrial Activities (for use in states and tribes without NPDES stormwater programs).¹³⁷ State and tribal governments are required to control stormwater runoff from industrial activities as part of their EPA-authorized NPDES stormwater programs.¹³⁸

The MSGP only calls for visual inspections once per year, which can be waived, and unlike other sectors, there is no requirement that a permit holder certify "no industrial materials or activities [were] exposed to stormwater."¹³⁹ The EPA should be more protective of the environment and revise the MSGP at its next reissuance to require that stormwater discharges at inactive mining sites be subject to such management practices.

In addition, when the EPA establishes a new RCRA hardrock mining and mineral processing special waste management program, see discussion *supra* Part I, then the MSGP should incorporate a

¹³⁶ 40 C.F.R. § 122.26(b)(14)(iii) (2009). Stormwater discharges associated with industrial activities include active and inactive mining operations, as well as non-coal mine activities until reclamation is completed under other applicable federal and state laws. *Id.*

¹³⁷ See generally U.S. ENVTL. PROT. AGENCY, MULTI-SECTOR GENERAL PERMIT (MSGP) FOR STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY, subpt. 8 (2009), available at http://www.epa.gov/npdes/pubs/msgp2008_finalpermit.pdf (setting forth the sector-specific requirements for those seeking an EPA multi-sector general permit). Note that to date, no tribal government has an EPA-approved NPDES program. See *supra* note 111 and accompanying text.

¹³⁸ 40 C.F.R. § 123.25(a)(9) (2009) (requiring state programs to implement and administer stormwater discharge permitting requirements); see generally U.S. EPA, Authorization Status for EPA's Stormwater Construction and Industrial Programs, <http://cfpub.epa.gov/npdes/stormwater/authorizationstatus.cfm> (last visited Mar. 5, 2010).

¹³⁹ U.S. ENVTL. PROT. AGENCY, MULTI-SECTOR GENERAL PERMIT (MSGP) FOR STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY: FACT SHEET 128 (2008), available at http://www.epa.gov/npdes/pubs/msgp2008_finalfs.pdf.

reference to this new program just as the 2008 general permit incorporates state and federal mining reclamation definitions and standards.¹⁴⁰ Finally, where states fail to regulate and enforce stormwater discharge controls at inactive mining operations, the EPA should reduce the CWA's grant funding until these states establish such controls.

C. Redefine Waters of the United States

The government's CWA permit writers, who write both NPDES and 404 permits, are overwhelmed with lengthy and costly procedures devoted to the simple purpose of evaluating whether or not water bodies, such as streams, creeks, western arroyos, and wetlands are waters of the United States subject to regulation under the CWA.¹⁴¹ The U.S. Supreme Court generated a great deal of confusion about the regulatory definition of the CWA term, "waters of the United States," as a result of its *SWANCC*¹⁴² and *Rapanos* decisions.¹⁴³ Clarifying this term would simplify CWA jurisdiction over wetlands and other surface waters, which would consequently improve oversight of mining waste discharges.¹⁴⁴ This clarification would allow the permit writers to focus on controlling discharges rather than having endless debates about whether a particular water body is covered by the

¹⁴⁰ *Id.* at 129 ("Changes from Proposed Permit: Commenters raised concerns regarding the proposed language that required continued coverage, despite the fact that the site had been released from applicable reclamation requirements, for sites that have the potential to cause or contribute to exceedances of applicable water quality standards. EPA agreed that this language was inconsistent with 40 CFR 122.26(b)(14)(iii), and deleted it in the final permit."); *see also* 40 C.F.R. § 122.26(b)(14)(iii).

¹⁴¹ Editorial, *A Clear, Clean Water Act*, N.Y. TIMES, Apr. 17, 2009, at A28 ("An internal [EPA] report furnished to Congress last year revealed that the agency had dropped or delayed more than 400 cases involving suspected violations of the [CWA]—nearly half the agency's entire docket."); COURTING DISASTER, *supra* note 101, at 4.

¹⁴² *Solid Waste Agency of N. Cook County v. U.S. Army Corps of Eng'rs (SWANCC)*, 531 U.S. 159, 161 (2001) (ruling that certain isolated intrastate ponds were not protected by the CWA although the water bodies were used as migratory bird habitat).

¹⁴³ *Rapanos v. United States*, 547 U.S. 715, 739, 742 (2006) (holding in a plurality opinion that the CWA protects "only those relatively permanent, standing or continuously flowing bodies of water" and "only those wetlands with a continuous surface connection to bodies that are 'waters of the United States' in their own right"). In that opinion, Justice Kennedy concurred in the judgment but asserted that the proper test was "whether the specific wetlands at issue possess[ed] a significant nexus" to traditional navigable waters. *Id.* at 787; *see also* COURTING DISASTER, *supra* note 101, at 3.

¹⁴⁴ *See, e.g.,* COURTING DISASTER, *supra* note 101, at 3, 34–35 (referencing *United States v. Cundiff*, 555 F.3d 200 (6th Cir. 2009), which took seventeen years to resolve due to uncertainty over CWA wetlands jurisprudence).

CWA. For example, many have suggested removing the term “navigable” from the statute to eliminate any argument that this term restricts federal CWA authority to “navigable-in-fact” water bodies.¹⁴⁵

D. Summary of Recommended CWA Reform: Legislation and Regulation

The most urgent action needed to improve CWA protections against hardrock mining waste pollution is to withdraw the 2002 rule defining discharge of fill material into surface water, which has corrupted the CWA by including overburden and mining wastes in that definition.¹⁴⁶ Although the Supreme Court upheld application of this definition in the controversial *Kensington Gold Mine* case, giving deference to the expert administrative agency that promulgated and interpreted its own rule,¹⁴⁷ the best thing the government could do is withdraw the 2002 rule and forbid the disposal of hardrock overburden and mining waste as fill material under the 404 permit program. This would protect integrity of the water and restore balance between the 404 and NPDES permit programs. The EPA should also institute a test that screens nontoxic versus toxic wastes and allows the use of only relatively nontoxic, inert, hardrock wastes as fill material under 404 permits. In addition, the next MSGP should include best management practice requirements for inactive hardrock mining facilities. Finally, Congress should clarify the meaning of “waters of the United States” as used in the CWA. These CWA reforms would improve surface water protections at active and inactive hardrock mining and mineral processing facilities.

¹⁴⁵ See Clean Water Restoration Act, S. 787, 111th Cong. § 5 (2009) (amending the CWA to clarify federal jurisdiction); see also Editorial, *supra* note 141, at A28; COURTING DISASTER, *supra* note 101, at ES-4, ES-40.

¹⁴⁶ Final Revisions to the Clean Water Act Regulatory Definitions of “Fill Material” and “Discharge of Fill Material,” 67 Fed. Reg. 31,129 (May 9, 2002) (codified at 40 C.F.R. pt. 232); see *supra* notes 25–28 and accompanying text.

¹⁴⁷ *Coeur Alaska, Inc. v. Se. Alaska Conservation Council*, 129 S. Ct. 2458, 2468, 2474 (2009).

III

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITIES ACT (CERCLA) REFORM: LEGISLATIVE RENEWAL OF THE SUPERFUND TRUST FUND

The Superfund Trust Fund (or CERCLA) is one of the most powerful regulatory programs in existence for cleanup of abandoned mine lands (AMLs).¹⁴⁸ The Superfund is used to conduct environmental response actions at abandoned and inactive hazardous waste sites in order to comprehensively protect and preserve public health and the environment from the effects of releases or threatened releases of hazardous substances to the environment.¹⁴⁹ Although CERCLA works well, legislative amendments are necessary to reform this statute's funding mechanism and expedite the cleanup process at AMLs. Congress should amend CERCLA to renew the Superfund tax on oil and chemical industries and expand the Act's reach to include the hardrock mining and mineral processing industry to allow federal land managers to use Superfund monies for limited response costs at AMLs.

A. Renew and Expand the Superfund Tax

Congress created the Hazardous Substances Superfund Trust Fund by instituting a Superfund tax, a special tax assessment where the largest share falls on oil and chemical industries and the smallest share is on business corporations.¹⁵⁰ This tax codifies the polluter pays principle by spreading the cost of abandoned hazardous waste

¹⁴⁸ Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) §§ 101–405, 42 U.S.C. §§ 9601–9675 (2006). CERCLA has been identified by U.S. Forest Service experts as one of the most important laws governing the cleanup of AMLs. Michael N. Greeley, Program Manager, U.S. Forest Service, Reclamation of Abandoned Mine Land, Presentation before the Society of Mining, Metallurgy, and Exploration (Mar. 1999), *available at* <http://www.fs.fed.us/geology/amlpaper.htm> [hereinafter Greeley Presentation]; *see generally* U.S. EPA, Abandoned Mine Lands, <http://www.epa.gov/superfund/programs/aml/> (providing information on abandoned mine lands and site locations, as well as links for policy guidance and technical resources) (last visited Mar. 5, 2010).

¹⁴⁹ H.R. Rep. No. 96-1016, pt. 1, at 17 (1980), *reprinted in* 1980 U.S.C.C.A.N. 6119, 6119–20.

¹⁵⁰ Taxes were initially assessed under section 511, but the taxing authority has expired. *See* 42 U.S.C. § 9653; *see also infra* discussion Part III.C; JONATHAN L. RAMSEUR ET AL., CONG. RESEARCH SERV., SUPERFUND TAXES OR GENERAL REVENUES: FUTURE FUNDING ISSUES FOR THE SUPERFUND PROGRAM 3 (2008) [hereinafter CRS REPORT, SUPERFUND TAXES OR GENERAL REVENUES].

site cleanup among the responsible industries.¹⁵¹ However, the oil and chemical industries complain that the tax is unfair because the mining and mineral processing industry pay only the smaller business corporation share even though Superfund spends billions on AMLs.¹⁵² The oil and chemical companies are correct that the Superfund spent at least twenty-two billion dollars from 1998 to 2007, cleaning up abandoned hardrock mines.¹⁵³ The mining industry should pay a fair share of the Superfund tax.

In 1995, the U.S. government allowed the Superfund tax provisions to expire,¹⁵⁴ and by 2004 the Superfund Trust Fund had been completely depleted.¹⁵⁵ Consequently, the government's premier cleanup program for abandoned hazardous waste sites is now supported by general tax revenues.¹⁵⁶ The program is starved for funds and cleanup actions are stalled.¹⁵⁷ For example, the Stimulus Act of 2009¹⁵⁸ provided \$600 million for shovel-ready Superfund cleanup projects where risks to human health and the environment have been exacerbated by sites that had not yet been cleaned up due to lack of funds.¹⁵⁹ At least \$50 million of these funds were allocated to AMLs or mineral processing facilities in EPA Region 7.¹⁶⁰ Instead

¹⁵¹ See generally RENA STEINZOR & MARGARET CLUNE, CTR. FOR AM. PROGRESS, *THE TOLL OF SUPERFUND NEGLECT: TOXIC WASTE DUMPS & COMMUNITIES AT RISK* 17 (2006) [hereinafter *SUPERFUND NEGLECT*] (describing the deterioration of the widely known "polluter pays" principle and the consequent threat to public health); see also 42 U.S.C. § 9607.

¹⁵² Seymour, *supra* note 19, at 942, 942 n.797. Oil and chemical industries have complained that mining and mineral processing industries should be included to make the Superfund tax fair. *Id.* at 943.

¹⁵³ SENATE HEARING ON HARDROCK MINING, *supra* note 70, at 4. While the EPA spent \$22 billion, the BLM and Forest Service spent a total of \$259 million. *Id.* at 4–5.

¹⁵⁴ CRS REPORT, *SUPERFUND TAXES OR GENERAL REVENUES*, *supra* note 150, at 3.

¹⁵⁵ *Id.* at 4–5.

¹⁵⁶ *Id.*

¹⁵⁷ *SUPERFUND NEGLECT*, *supra* note 151, at 7.

¹⁵⁸ American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115 (2009) (to be codified at 26 U.S.C. § 1).

¹⁵⁹ *SUPERFUND NEGLECT*, *supra* note 151, at 7, 17–18; see also John M. Broder, *Without Superfund Tax, Stimulus Aids Cleanups*, N.Y. TIMES, Apr. 26, 2009, at A16 (reporting the EPA Administrator Jackson stated that "[u]nder the Recovery Act, we're getting harmful pollutants and dangerous chemicals out of these communities and putting jobs and investment back in."). This article also stated that stimulus monies would "accelerate progress at 50 Superfund sites in 28 states." *Id.*

¹⁶⁰ Nancy Gaarder, *Stimulus Funds to Speed Omaha Lead Cleanup*, OMAHA WORLD HERALD, Apr. 15, 2009, <http://www.olscag.com/en/resourcesGeneral/StimulusFunds.pdf>

of relying on fluctuating emergency funding and general revenues, renewal of the Superfund tax would ensure that the Superfund Trust Fund is available for such cleanups. Moreover, given the purpose of CERCLA, as a comprehensive response, cleanup, and liability scheme, it is fair to reinstate the Superfund tax and expand its reach to the mining and mineral processing industry. The reinstatement and expansion of this tax would ensure that cleanup costs are borne by those industries responsible for the toxic wastes at AMLs and mineral processing facilities.

B. Federal Land Managers' Access to the Superfund Trust Fund

CERCLA mandates that federal land management (FLM) agencies conduct investigations and cleanup at abandoned hazardous waste sites on public lands where the federal government is a liable party.¹⁶¹ The U.S. government is therefore responsible, in certain situations, for serious environmental and public health threats presented at hardrock mining sites.¹⁶² Cleanup of AMLs on public lands is funded by appropriations to FLM agencies, by private parties (such as former mine operators) when viable potentially responsible parties (PRPs) are identified, or by both.¹⁶³ In some cases, no such parties are identified and the FLM funds the entire cleanup of the orphan sites.¹⁶⁴ In general, Superfund Trust Fund monies are not available for the cleanup of AMLs on public lands.¹⁶⁵

(describing how \$25 million will be allocated to speed cleanup of lead-contaminated yards in Omaha, Nebraska, from a lead smelter facility). Wally Kennedy, *Stimulus Funding to Provide Millions for Mining Cleanup*, JOPLIN GLOBE, Apr. 15, 2009, http://www.joplin-globe.com/neo_sek/local_story_105213609.html?keyword=secondarystory (describing how \$45–\$75 million in stimulus funding will be directed to the cleanup of contaminated mining sites in two counties in Missouri, as well as Cherokee County, Kansas, and Ottawa County, Oklahoma).

¹⁶¹ See, e.g., §§ 107, 120, 42 U.S.C. §§ 9607, 9620 (2006) (imposing liability on current owner(s)/operator(s), former owner(s)/operator(s), and arrangers); *United States v. Newmont USA Ltd.*, 504 F. Supp. 2d 1050, 1076 (E.D. Wash. 2007) (finding the U.S. government liable for its share for the cleanup of Midnite Mine, an uranium mine on an Indian reservation). For an in-depth review of the FLM agencies' CERCLA liability at AMLs, see Seymour, *supra* note 19, at 857–933.

¹⁶² See Seymour, *supra* note 19, at 807.

¹⁶³ *Id.* at 805–06.

¹⁶⁴ *Id.* at 864 (explaining that for orphan sites, federal land managers do not have access to the Superfund Trust Fund to offset cleanup costs). CERCLA provides that “no money in the Fund shall be available to pay for remedial action . . . with respect to federally owned facilities.” 42 U.S.C. § 9611(e)(3).

¹⁶⁵ See Seymour, *supra* note 19, at 864.

The FLM agencies need access to the Superfund Trust Fund monies to investigate and cleanup AMLs because agency budgets for this purpose are embarrassingly small.¹⁶⁶ Also, most CERCLA liability for AMLs is based on these agencies' land ownership rather than on operations or arranger liability.¹⁶⁷ Federally funded cleanup of AMLs is only a small part of the massive DOI and Forest Service responsibilities, which include areas where these agencies have more expertise, such as "road, bridge and trail maintenance . . . watershed restoration and ecosystem enhancement projects; facilities improvement, maintenance and renovation . . ."¹⁶⁸ Increasing the annual budgets of FLM agencies or providing more stimulus funding could expedite the cleanup of AMLs, but relying on general tax revenues simply fails to realize one of Superfund's fundamental goals: the polluter pays.

Paying for the investigation of AMLs and orphan site cleanups with Superfund Trust Fund monies that are generated through a renewed tax that includes taxation of the hardrock mining and mineral processing would shift the financial burden to the mining industry, where it belongs. The Superfund tax and CERCLA liability for miners and mineral processing operators is "a fair—although long delayed and not entirely expected—recompense for generations of free and open access to the public lands."¹⁶⁹ Also, it is easier for Congress to amend CERCLA, reinstate the Superfund tax, and provide the FLM agencies access to Superfund monies than to enact a whole new tax and create a new mine reclamation trust fund system as some have suggested.¹⁷⁰ In the end, both methods would achieve the same polluter pays purpose, save general revenues for other projects, and use an industry-donor/government-beneficiary trust fund for the cleanup of AMLs.

FLM agencies could use Superfund monies to identify other viable PRPs at AMLs on public lands. Searches for PRPs are expensive because mining land ownership and mineral titles can be complex.¹⁷¹

¹⁶⁶ See Scott Fields, *The Earth's Open Wounds: Abandoned and Orphaned Mines*, 111 ENVTL. HEALTH PERSP. A-154, A-161 (2003).

¹⁶⁷ See Seymour, *supra* note 19, at 805–06, 866.

¹⁶⁸ American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115 (2009) (to be codified at 26 U.S.C. § 1).

¹⁶⁹ See Seymour, *supra* note 19, at 935–36.

¹⁷⁰ *Id.* at 933.

¹⁷¹ *Id.* at 864, 951.

When PRP searches are conducted early in the process and another viable PRP is identified, cleanup is faster because the FLM agency and private parties share the cleanup responsibilities.¹⁷² When PRP searches are delayed and no other viable PRPs are found, the site is deemed an orphan site and the cleanup process slows down.¹⁷³ The FLM agency has to seek congressional appropriations for the cleanup of AMLs, which competes with that agency's primary mission and budget priorities. Giving the FLM agency access to Superfund Trust Fund monies removes this bureaucratic hurdle, allows faster identification of orphan AMLs, and speeds up the FLM agency response.

Allowing FLM agencies to access the Superfund Trust Fund for these limited purposes would not mean allowing wholesale use of Superfund monies for the FLM agency. This proposed exception is for AMLs only and would not excuse the FLM agencies from liability at federal facilities. The exception would simply provide access to funds that would speed cleanup of AMLs. Furthermore, if the tax is renewed, the polluters would be providing the funding, not the taxpayers.

In summary, a carefully drafted amendment to section 111(c) of CERCLA, "Uses of the Fund,"¹⁷⁴ could authorize use of Superfund Trust Fund monies for PRP searches at AMLs on public lands and for cleanup of orphan sites. This amendment would realize fundamental CERCLA goals, including the polluter pays principle, and expedite response actions to protect human health and the environment.

¹⁷² *Id.* at 865.

¹⁷³ Greeley Presentation, *supra* note 148 ("The inherent complexity of mineral and surface title presents one of the most difficult institutional barriers to AML reclamation. Identification of potentially responsible parties (PRPs) at abandoned mine sites is laborious and expensive. When found, the responsible party or current owner may not be financially capable of funding the cleanup. Ultimately, the party held responsible may be the state or federal government. . . . A major impediment to the use of CERCLA, however, is the requirement that before cleanup occurs, a search for PRPs must be conducted and, if found, the responsible party must conduct the reclamation or pay for it. The PRP procedure is costly, time consuming, and often non-productive. Some states and private interests have shown extreme reluctance to participate in the Interdepartmental AML Watershed Cleanup program if CERCLA is involved.").

¹⁷⁴ 42 U.S.C. § 9611(c) (2006).

C. Advantages of Superfund Tax Renewal and FLM Access to the Superfund Trust Fund

Legislative reinstatement and expansion of the Superfund tax offers many advantages,¹⁷⁵ including prioritizing cleanups and conducting inventories at AMLs. Legislative action would also promote good governance by initiating an integral approach. Finally, a solvent Superfund would speed response actions in general.¹⁷⁶

1. Inventory and Prioritization

The EPA's Hardrock Mining Framework provides a partial inventory of AMLs using the CERCLA Information System (CERCLIS).¹⁷⁷ States use many different methods to identify abandoned mines, which confuses site inventories and prioritization.¹⁷⁸ Nevertheless, determining the exact number of AMLs in the United States and the exact prioritization for cleanup is not as important as getting started on the sites already identified and evaluated.¹⁷⁹ Thus, a separate federal inventory just for AMLs is unnecessary and duplicative given existing CERCLIS methodology.

¹⁷⁵ SUPERFUND NEGLECT, *supra* note 151, at 17–18 (“First, [Superfund] created a liability scheme to get [PRPs] to pay for the cleanup of contaminated sites themselves [Uncooperative PRPs] were subject to ‘treble damages’ — three times ultimate cleanup costs — as punishment for their recalcitrance. Second, the statute created a multi-billion dollar trust fund . . . that the federal government could use to pay for site cleanups where responsible parties ‘could not, or would not, foot the bill.’ The law further provided that the government could recover those costs from [PRPs], leading to the colloquial label ‘shovels first, lawyers later.’ To finance the Trust Fund, Congress levied taxes on those industrial sectors most likely to have contributed to the hazardous wastes sites.”).

¹⁷⁶ *See id.* at 12–13; Seymour, *supra* note 19, at 936 (“A more fundamental problem [compared to the inventory problem] with hardrock mining cleanups, of course, is that sources of funding for mine cleanups are limited.”); *Senate Oversight Hearing*, *supra* note 31, at 64 (statement of Velma M. Smith, Senior Policy Associate, National Environmental Trust) (stating that the single most compelling impediment to cleanup of AML “is not regulatory but financial”).

¹⁷⁷ U.S. EPA, Superfund Site Information, <http://epa.gov/superfund/sites/cursites/index.htm> (last visited Mar. 5, 2010); U.S. ENVTL. PROT. AGENCY, NATIONAL HARDROCK MINING FRAMEWORK, *supra* note 99, at appx. F (“Priority Setting Options”).

¹⁷⁸ U.S. ENVTL. PROT. AGENCY, NATIONAL HARDROCK MINING FRAMEWORK, *supra* note 99, at appx. F-11, F-17; *see also* Seymour, *supra* note 19, at 936 (proposing that an accurate inventory and prioritizing method is necessary).

¹⁷⁹ Fields, *supra* note 166, at A-156 (“In practical terms, says U.S. Environmental Protection Agency (EPA) biologist and geologist Carol Russell, whether there are 100,000 or 500,000 abandoned mines may not matter much. ‘There are so many that we don’t need to go inventory them,’ she says. ‘We don’t have enough money to deal with the ones we’ve found already.’”). Experts agree that (1) the number of AML sites is unknown and

The most serious AMLs are already prioritized for cleanup under the Superfund National Priorities List and the Hazardous Ranking System.¹⁸⁰ At least, sixty-five nonfederal facility mining or mineral processing sites are listed on the National Priorities List.¹⁸¹ On April 8, 2009, the EPA added three additional mining or mineral processing sites to that list.¹⁸² Incidentally, none of the new added sites are located in Western states, and only one site of the thirteen proposed new sites is in a Western state.¹⁸³ The listing process ranks AMLs relative to other abandoned waste sites in the United States.¹⁸⁴ For federal public lands, the Superfund Federal Facilities Docket lists AMLs relative to other federal facilities on the docket.¹⁸⁵ A separate prioritization scheme for AMLs on public lands is unnecessary and usurps EPA authority.

2. *An Integral Approach*

CERCLA establishes an integral approach to the cleanup of AMLs where the EPA is ultimately in charge of environmental protection and is authorized to oversee the FLM cleanup actions.¹⁸⁶ The EPA

risk assessments are case-by-case, (2) the unintended damage is increasing, and (3) the funds are not available for even the largest and most harmful AML sites. *Id.* at A-160 to A-161.

¹⁸⁰ Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) § 105, 42 U.S.C. § 9605 (2006).

¹⁸¹ See U.S. EPA, Abandoned Mine Lands, NPL Sites, <http://www.epa.gov/superfund/programs/aml/amlsite/npl.htm> (last visited Mar. 5, 2010). One half of these national priority list sites were active mines in the past ten to fifteen years. *Id.*

¹⁸² See Press Release, U.S. Env'tl. Prot. Agency, EPA Adds Nine Hazardous Waste Sites to Superfund's National Priorities List / EPA Also Proposes to Add an Additional 13 New Sites to the NPL (Apr. 8, 2009) (listing three mining and mineral processing sites: U.S. Smelter Lead Refinery Site, East Chicago, Indiana; Ore Knob Mine Site, Ashe County, North Carolina; and Raritan Bay Slag, Sayerville, New Jersey).

¹⁸³ *Cf. id.*; Press Release, U.S. Env'tl. Prot. Agency, EPA Proposes Adding Flat Creek Iron Mountain Mine and Mill to List of Superfund Sites (Apr. 8, 2009). For example, an abandoned mine in South Carolina under consideration is the Barite Hill Site, a former gold and silver mine, operated from 1989 to 1994 that went bankrupt in 1999, leaving 135.5 acres of contamination and insufficient financial assurances for cleanup. See U.S. EPA, Barite Hill / Nevada Goldfields, McCormick, South Carolina, <http://epa.gov/superfund/sites/npl/nar1784.htm> (last visited Mar. 5, 2010).

¹⁸⁴ See 42 U.S.C. § 9605 (establishing the NPL and prioritizing sites by a hazard ranking system).

¹⁸⁵ See 42 U.S.C. § 9620(c) (establishing the federal agency hazardous waste compliance docket); *id.* § 9620(d) (setting forth "assessment and evaluation" and ranking federal facilities using the same criteria as non-federal facilities).

¹⁸⁶ See *id.* § 9620.

and FLM agencies have established joint policies to protect the environment and manage mineral development.¹⁸⁷ Moreover, CERCLA guidance coordinates the cleanup of AMLs at federal facilities where private parties and FLM agencies share liability as a result of situations including mixed ownership or shared repositories.¹⁸⁸ Moreover, the EPA's new 2008 mine site cleanup guidance provides FLM agencies and private parties with expert technical resources for standardizing CERCLA cleanup protocols.¹⁸⁹

3. *Compliance with Other Laws and Good Governance*

John Seymour, an attorney at the DOI, has noted that "CERCLA's breadth is particularly important at mining sites, where contamination commonly extends to soils, sediments, groundwater, surface water, and air."¹⁹⁰ The Superfund addresses these multimedia contamination problems by requiring that cleanup actions comply with applicable or relevant and appropriate requirements (ARARs) mandated by other environmental laws such as the CWA and RCRA. Therefore, a new

¹⁸⁷ INTERAGENCY AGREEMENT AMONG THE EPA, BLM AND NATIONAL PARK SERVICE AND US FOREST SERVICE (1995) (establishing policies to manage the Nation's mineral resources in an environmentally-sound manner).

¹⁸⁸ Memorandum from the Federal Facilities Enforcement Office, U.S. Env'tl. Prot. Agency to its Regional Docket Coordinators (June 24, 2003) (setting forth EPA "Policy on Listing Mixed Ownership Mine or Mill Sites Created as a Result of the General Mining Law of 1872 on the Federal Agency Hazardous Waste Compliance Docket"); *see also* Memorandum from Office of Solid Waste & Emergency Response, U.S. Env'tl. Prot. Agency to Regional Administrators (Apr. 26, 2005) (communicating "Policy on Joint Repositories at Mixed-Ownership Hardrock Mine Sites"). The EPA and FLM agencies utilize CERCLIS/NPL/HRS process and not the Federal Facilities Docket for AML sites that have mixed private and federal ownership due to operation of the General Mining Law of 1872.

¹⁸⁹ ABANDONED MINE LANDS TEAM, U.S. ENVTL. PROT. AGENCY, ABANDONED MINE SITE CHARACTERIZATION AND CLEANUP HANDBOOK 10-1 to 10-13 (2008). It is not true that cleanup of hardrock mining sites is in its infancy, as Mr. Seymour suggested six years ago. *See Seymour, supra* note 19, at 819. The truth is that the EPA and FLM agencies have ample experience in remediation technology and are coordinating their responses.

¹⁹⁰ Seymour, *supra* note 19, at 802. For example, at the Madison County Mines Site in Missouri, the "[s]urface water sampling revealed concentrations of arsenic, cadmium, copper, chromium, lead, mercury, nickel, and zinc above Ambient Water Quality Criteria (AWQC). Specifically, lead was detected in surface water up to 12 micrograms per liter (ug/L) and sediment up to 11,000 mg/kg. Soil sampling in residential yards revealed lead at concentrations as high as 10,000 mg/kg. Air sampling revealed filter concentrations of arsenic, cobalt, copper, lead, and nickel at greater than three times background concentrations." U.S. EPA, NPL Site Narrative for Madison County Mines, <http://www.epa.gov/superfund/sites/npl/nar1679.htm> (last visited Mar. 5, 2010).

RCRA special waste program, like the one suggested above, would provide ARARs for cleanup of AMLs on private property and public lands, bringing national consistency to CERCLA cleanups. In fact, CERCLA policy and guidance documents anticipate that the EPA will promulgate a new special waste management program under RCRA at some time in the future.¹⁹¹ Until then, the CERCLA guidance recommends that only RCRA solid waste regulations be considered ARARs.

Furthermore, CERCLA and its implementing regulations, the National Contingency Plan,¹⁹² together have ample administrative procedures that provide the hallmarks of good governance, sound science, accountability, transparency, and consistency for cleanup of AMLs.

D. Reforms Beyond Superfund

Some scholars suggest that the Superfund program functions well without the Superfund tax and that AMLs are best addressed by changing federal natural resource laws.¹⁹³ Stories that the EPA has enough money or that the Superfund taxes are onerous are nothing more than myths with a slim relationship to history or reality.¹⁹⁴ Furthermore, for decades, Congress has failed to address needed mining law reform.¹⁹⁵

Some reformers urge the EPA to promulgate new financial assurance regulations to protect human health and the environment using authority granted by CERCLA.¹⁹⁶ Recently, the EPA announced its intention to develop financial assurance regulations for

¹⁹¹ National Oil and Hazardous Substance Pollution Contingency Plan, 59 Fed. Reg. 47,384 (Sept. 15, 1994) (codified at 40 C.F.R. pt. 300); *see also* U.S. ENVTL. PROT. AGENCY, CERCLA COMPLIANCE WITH OTHER LAWS MANUAL: PART II. CLEAN AIR ACT AND OTHER ENVIRONMENTAL STATUTES AND STATE REQUIREMENTS 6-4 (1989) (“When promulgated, the revised [RCRA] regulations may be ARARs . . .”).

¹⁹² *See* 40 C.F.R. pt. 300 (2009).

¹⁹³ Seymour, *supra* note 19, at 944. Mr. Seymour suggests that CERCLA is not a preferred approach because Superfund is not available for public land cleanups. *Id.* The reform suggested herein solves this problem.

¹⁹⁴ SUPERFUND NEGLECT, *supra* note 151, at 3.

¹⁹⁵ Dale Bumpers, *Capitol Hill's Longest-Running Outrage, Congress Winks While the Mining Companies Shaft the Taxpayers*, WASH. MONTHLY, Jan. 1998, at 14.

¹⁹⁶ U.S. EPA, *EPA Resists GAO Calls for Urgent Reforms on Financing Cleanups*, INSIDE EPA, Aug. 30, 2005 (on file with author). Section 108(b) of CERCLA may be used to require financial assurance at Superfund sites, but the EPA has not taken action. Such regulations would impact all Superfund sites.

the hardrock mining industry pursuant to section 108 of CERCLA; the rule will be proposed in 2011.¹⁹⁷ However, as described in Part I, *supra*, it is easier to promulgate new RCRA regulations to provide financial assurance requirements at hardrock mining and mineral processing facilities.

E. Summary of Superfund Legislative Renewal

The Superfund Program involves an integral approach to environmental regulation of AMLs based on the polluter pays principle.¹⁹⁸ The Superfund tax is essential to this scheme. Reinstating and expanding the tax to include the mining and mineral processing industry promotes sustainable development while also encouraging the mining industry to take responsibility for AMLs. In addition, allowing limited use of Superfund monies for abandoned mines on public lands could expedite cleanup. An entirely new trust fund for AMLs is unnecessary, duplicative, usurps EPA authority, adds turmoil to federal agency responsibilities, and conflates federal natural resource law with environmental law.

IV

SUSTAINABLE MINING PRESERVES AND PROTECTS PUBLIC GOODS

[W]e can't have mines everywhere, and we shouldn't have mines that threaten our national treasures.

~ Bill Clinton¹⁹⁹

If we aren't willing to pay a price for our values, then we should ask ourselves whether we truly believe in them at all.

~ Barack Obama²⁰⁰

¹⁹⁷ Press Release, U.S. Env'tl. Prot. Agency, EPA Publishes Notice Identifying Hardrock Mining Industry for Financial Responsibility Requirements / EPA Plans to Propose Rule by Spring 2011 (July 13, 2009), available at <http://yosemite.epa.gov/opa/admpress.nsf/a883dc3da7094f97852572a00065d7d8/90a65f473216e941852575f2004807eb!OpenDocument>.

¹⁹⁸ Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) § 107, 42 U.S.C. § 9607 (2006).

¹⁹⁹ Alison Mitchell, *President Designates a Monument Across Utah*, N.Y. TIMES, Sept. 19, 1996, at B11.

²⁰⁰ Quotes of Barack Obama, <http://www.barackobama.net/barack-obama-quotes.html> (last visited Mar. 5, 2010).

A. Reforms to Preserve National Landscapes

Hardrock mining and mineral processing locations must be limited to preserve our national treasures. The preservation and protection of these locations reflect modern social values; people appreciate natural beauty and ecosystem services and are willing to pay for their preservation. An essential component of the proposed Hardrock Mining Reclamation Act of 2009 (HMRA)²⁰¹ is the protection of national landscapes from environmental harm due to mineral activities.²⁰² These protected places would include wilderness areas, locations of critical environmental concern, national conservation system units, wild and scenic rivers, and U.S. Forest Service roadless areas.²⁰³ Sacred sites on federal lands should also be considered protected places. An Executive Order issued by President Clinton provides, *inter alia*, that federal action shall avoid affecting the integrity of sacred tribal lands.²⁰⁴ Although the proposed HMRA does not explicitly list sacred sites, it does allow tribal governments to petition the federal government to review and withdraw sacred sites from consideration as a location for mineral activities.²⁰⁵ One small hurdle in the proposed HMRA is that a withdrawal is “subject to valid existing rights,”²⁰⁶ which means property rights are protected in existing mining claims. Thus, the modern valuation of these special

²⁰¹ Hardrock Mining and Reclamation Act of 2009, S. 796, 111th Cong. § 307 (2009) (amending the Federal Land Policy and Management Act of 1976, 43 U.S.C. § 1712(e) (2006) to provide for the preservation of special places).

²⁰² *Id.*

²⁰³ *Id.*; see also, David O. Williams, *Salazar Flooded with Support for Ban on Grand Canyon Uranium Mining*, COLO. INDEP., Nov. 6, 2009, <http://coloradoindependent.com/41656/salazar-flooded-with-support-for-ban-on-grand-canyon-uranium-mining> (describing temporary ban on mining).

²⁰⁴ See Exec. Order No. 13,007, 61 Fed. Reg. 26,771 (May 24, 1996); see also Scott Sandlin, *Group Challenges Mt. Taylor Listing*, ALBUQUERQUE J., Nov. 19, 2009 (describing a court challenge to the state’s listing of seven hundred square miles of the Mount Taylor area on the New Mexico Register of Cultural Places). The Laguna and other pueblos nominated the area for listing under criteria showing significance from time immemorial to the present. *Id.*

²⁰⁵ S. 796, § 307 (proposing to allow states, tribes, and local governments to petition federal land management agencies for such withdrawals); see also *Navajo Nation v. U.S. Forest Service*, 535 F.3d 1058, 1067 (9th Cir. 2008) (en banc) (rejecting Native American tribe’s claim that use of treated sewage effluent for snow making on San Francisco Peaks, a sacred site located on federal lands that was used as a ski resort, violated the Religious Freedom Restoration Act).

²⁰⁶ S. 796, § 307(5)(A), (B).

places includes the cost of government compensation to the mineral rights owners.

Preserving special places as “islands within the river of growth” may be more inconvenient or expensive than mining minerals elsewhere.²⁰⁷ However, if the dominant culture truly values preservation, we must be willing to pay added costs for mineral products collected in harmony with these modern social values.

The proposed HMRA requires FLM agencies to review withdrawal submissions from states and tribes, but does not articulate a standard for evaluating the economic costs of withdrawal compared to the environmental and social costs of not withdrawing certain treasured national landscapes.²⁰⁸ The natural capital approach is a new combined economic and ecological theory for evaluating the sustainability of mineral activities and could be useful to FLM agencies as a standard to consider in conducting reviews. The natural capital approach is especially useful as a “bridging concept between effective environmental management and sustainable development” in places where this industry is allowed to proceed or not.²⁰⁹

The natural capital approach identifies and quantifies the natural environment and associated ecosystem services²¹⁰ and characterizes hardrock mining and mineral processing operations as “[p]rovisioning services.”²¹¹ Theoretically, the natural capital approach leads to better decision making for managing, preserving, and restoring natural environments.²¹² This approach also understands and manages the biophysical and socioeconomic interactions with ecosystems; local environments are “viewed as a functioning whole where all living and non-living entities are interconnected and in constant interaction.”²¹³ While quantification issues are apparent in the natural capital approach, the modern economist faced with an issue of ore valuation needs a system to evaluate ecosystem services. When considering

²⁰⁷ Ragsdale, *supra* note 2, at 915 n.48 (citing CHARLES WILKINSON, *THE EAGLE BIRD: MAPPING A NEW WEST* 41 (revised ed., Johnson Books 1992) (1999)).

²⁰⁸ S. 796, § 307 (amending the Federal Land Policy and Management Act of 1976 to provide for the preservation of special places).

²⁰⁹ VIVEK ANAND VOORA & HENRY DAVID VENEMA, *INT’L INST. FOR SUSTAINABLE DEV., THE NATURAL CAPITAL APPROACH: A CONCEPT PAPER* 12 (2008).

²¹⁰ *Id.* at 4.

²¹¹ *Id.* at 11.

²¹² *Id.* at 12.

²¹³ *Id.* at 15.

withdrawal of a special place from mineral activities the ecosystem services may be monetized. Thus, the natural capital approach relies on traditional economic principles by reducing value comparisons to that which is measurable by humankind. Although not perfectly suited for recognizing the esoteric value of nature, the natural capital approach is a significantly better model than the gross domestic product approach, where the limits of exponential growth within a finite system are completely misunderstood.²¹⁴

The value systems of indigenous peoples provide another model that could be used by FLM agencies. Vine Deloria, Jr., an American Indian author and activist, said that “[w]ithin the traditions, beliefs, and customs of the American Indian people are the guidelines for society’s future.”²¹⁵ Decisions about whether ore can be extracted economically and whether the land can be withdrawn from development could be informed by taking value of the place, the whole biotic community, into consideration. For example, decision making by many traditional American Indians considers the impact seven generations into the future and the interrelation and mutual dependence of humans and nature, a concept sometimes called the principle of universal reciprocity.²¹⁶ “Indigenous knowledges offer insights into living well on Mother Earth because they are fundamentally cooperative and collaborative constructions.”²¹⁷ Modern ecologists distinguish this as a holistic, reciprocating possession—a community of people, soils, water, plants, and animals, or collectively, the land.²¹⁸ Mining economists should include the

²¹⁴ *Id.* at 9–13.

²¹⁵ VINE DELORIA, JR., *GOD IS RED* 295 (Fulcrum Publ’g 2003) (1973); see also Mary Christina Wood & Zachary Welcker, *Tribes as Trustees Again (Part I): The Emerging Tribal Role in the Conservation Trust Movement*, 32 HARV. ENVTL. L. REV. 373, 428 (2008).

²¹⁶ Ragsdale, *supra* note 2, at 915.

²¹⁷ DANIEL R. WILDCAT, *RED ALERT! SAVING THE PLANET WITH INDIGENOUS KNOWLEDGE* 77 (2009). Mr. Wildcat posits that “[i]ndigenous knowledges . . . are emergent from the nature-culture nexus. Consequently, indigenous knowledges are a set of relations and relationships situated in our life experiences, which vary as we move through what physicists would call space-time.” *Id.* at 73–74.

²¹⁸ Ragsdale, *supra* note 2, at 917 (quoting Aldo Leopold, who said, “‘a thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise’”). Aldo Leopold was one of the greatest ecologists of the twentieth century. Professor Ragsdale suggests Leopold’s ideal land ethic is “probably impossible as a political matter . . . leav[ing] humans with few economic options other than subsistence-level hunting, gathering, and dry farming.” *Id.* at 917. Leopold’s land ethic is susceptible to such radical interpretations. However, the land ethic includes an

natural capital approach and traditional American Indian value judgments in their practice to help inform FLM agency decision makers. Nevertheless, ethical land valuations cannot ignore classical economic considerations; sustainable mining must internalize prosperity for the miners and the local mining communities, protect international marketability, and address the control, reuse, and disposal of mining wastes.

B. Protect Natural Capital: Reform the General Mining Law of 1872 and Rely on Environmental Laws and Federal Indian Law

The nation behaves well if it treats the natural resources as assets which it must turn over to the next generation increased, and not impaired, in value.

~ Theodore Roosevelt²¹⁹

The proposed HMRA²²⁰ is a new iteration of a perennial effort to reform the General Mining Law of 1872, an antiquated law in need of major reform. Created during the industrial revolution era, it simply prolongs “[i]ndustrial behavior [that] routinely causes natural

important preface, a cautionary particular truth that economic theory alone is insufficient to solve land use problems. The whole paragraph includes economics, i.e., measuring human prosperity, in the problem-solving ethic. *See* ALDO LEOPOLD, *A SAND COUNTY ALMANAC AND SKETCHES HERE AND THERE* 224–25 (1949) (“The ‘key-log’ which must be moved to release the evolutionary process for an ethic is simply this: quit thinking about decent land-use as solely an economic problem. Examine each question in terms of what is ethically and esthetically right, as well as what is economically expedient. A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise.”).

²¹⁹ U.S. EPA, Sustainability, <http://yosemite.epa.gov/r10/oi.nsf/sustainability/sustainability> (last visited Mar. 5, 2010).

²²⁰ Hardrock Mining and Reformation Act of 2009, S. 796, 111th Cong. (2009). In addition to the proposed Senate Bill 796, Senator Feinstein proposed a mining reform bill focused on collection of royalties, fees and development of a reclamation fund. *See* Abandoned Mine Reclamation Act of 2009, S. 140, 111th Cong. (2009). Senator Feinstein’s bill is less comprehensive than the Senate Bill 796 because while it addresses mineral development and sets up a trust fund for abandoned mines, *see id.* §§ 101–104, 201–206, it does not contain any provisions for withdrawal of treasured national landscapes. *Compare id. with* S. 796, § 307. Also, equally troubling, Senate Bill 140 would allow reclamation and restoration activities with the mere concurrence of the EPA to qualify as a Superfund removal or remedial action. *See id.* § 203(e); *see also infra* note 228 and accompanying text.

imbalance resulting in extinctions, pollution, deforestation, and global climate change.”²²¹

The HMRA proposes to protect natural capital based on a conservation, preservation, and restoration (CPR) land ethic.²²² For example, the HMRA would collect royalties; charge access and permit fees; terminate the General Mining Law of 1872 fee land patent scheme, the sale of federal mineral lands for \$2.50 per acre; and require financial assurances based on the full cost of reclamation and restoration.²²³ Hardrock mining and mineral processing operations take irreplaceable natural capital and destroy nature in the process. A CPR land ethic manages such exploitation of natural capital by: “(1) building societies based on conservation, not waste, (2) preserving what we can’t replace, and (3) working with nature to help restore what we have degraded or destroyed.”²²⁴ The new fees, royalties, and financial assurance in the HMRA protect natural capital, including subsurface ore bodies and surface real estate, in a manner consistent with a CPR land ethic by conserving ore and reclaiming and restoring nature in the aftermath of mining. Moreover, this proposed law would generate an estimated \$1.6 billion for the government in royalties and fees over the next ten years.²²⁵

²²¹ Wood & Welker, *supra* note 215, at 389. In addition, the EPA has quantified the contribution of greenhouse gases from the mining sector. See U.S. ENVTL. PROT. AGENCY, QUANTIFYING GREENHOUSE GAS EMISSIONS FROM KEY INDUSTRIAL SECTORS IN THE UNITED STATES 11-1 to 11-2, tbl.11-1 (2008), available at <http://www.epa.gov/ispd/pdf/greenhouse-report.pdf>. In 2002, the total green house gas emissions from the mining sector was estimated to be ninety-nine million metric tons carbon dioxide equivalent emissions, which is five percent of the U.S. industrial emissions. *Id.* at 11-1.

²²² David Brower, one of the founding elders of the twentieth century American environmental movement coined the term “CPR” for environmentalists. Cf. PLATER ET AL., *supra* note 3, at 20.

²²³ See S. 796.

²²⁴ PLATER ET AL., *supra* note 3, at 20.

²²⁵ Cf. THE PEW CAMPAIGN FOR RESPONSIBLE MINING, REFORMING THE U.S. HARDROCK MINING LAW OF 1872: THE PRICE OF INACTION 2 (2009), http://www.pewminingreform.org/pdf/cost_of_inaction.pdf. Senate Bill 796 proposes a royalty rate ranging between two and five percent, see section 201(a), while the House version proposes eight percent. Hardrock Mining and Reclamation Act of 2009, H.R. 699, 111th Cong. § 102(a)(1) (2009). Senator Feinstein’s bill also proposes eight percent. Abandoned Mine Reclamation Act of 2009, S. 140, 111th Cong. § 101(a)(1) (2009). A higher rate would be better for the taxpayers. However, determining an appropriate royalty rate is difficult because the federal government needs information on the relationship between ore production and royalties. See U.S. GOV’T ACCOUNTABILITY OFFICE, HARDROCK MINING: INFORMATION ON STATE ROYALTIES AND TRENDS IN MINERAL IMPORTS AND EXPORTS 1–5 (2008), <http://www.gao.gov/new.items/d08849r.pdf>.

The proposed HMRA supports sustainable development of this industry and protects natural capital from unnecessary and undue degradation.

The proposed HMRA also reflects essential government responsibilities that stem from the public trust doctrine, which is a foundational principle for good governance of public lands and public goods, such as forests, water, and minerals.²²⁶ This doctrine is based on ancient Western social traditions where the government is accountable for vital resources and essentially places public land, water, and minerals in trust for the public benefit now and in the future.²²⁷ Because the General Mining Law of 1872 allows the mining industry free and open access to public lands and minerals, it externalizes the costs of reclamation and gives away public goods for free. The proposed fees and royalty provisions are fair and simply codify the government's public trust responsibilities. In summary, the proposed law enhances federal natural resources law by recognizing the public trust doctrine.

In stark contrast, the proposed HMRA does not enhance, but rather confounds environmental laws and federal Indian law. Certain provisions in the HMRA conflict with environmental protections guaranteed under federal environmental laws including CERCLA, the CWA, and federal Indian law.

1. CERCLA

The proposed HMRA creates a potential loophole in the CERCLA federal facility cleanup program. Deceptively harmonious, the proposed HMRA states that any activities specified in the reclamation plan "that constitute removal or remedial action under section 101 of

²²⁶ See WILLIAM H. RODGERS, JR., ENVTL. LAW: AIR AND WATER, § 2.20, (1986) (setting forth the contours of the doctrine and seminal works and cases discussing its scope). Most famous among the cases dealing with the ecological protections is the 1983 Mono Lake case, *National Audubon Society v. Superior Court of Alpine County*, 658 P.2d 709 (Cal. 1983), in which the California Supreme Court pronounced the foundations of the doctrine as it applies to issues of water quality and quantity, and equally compelling is the United States Supreme Court's precedent setting case, *Illinois Central Railroad Co. v. Illinois*, 146 U.S. 387 (1892).

²²⁷ Wood & Welker, *supra* note 215, at 385. Nevertheless, for several centuries, especially after the Industrial Revolution, the dominant society in the United States suffered from a kind of "industrial thinking," characterized by consumption and rewards through accumulation. *Id.* at 389.

[CERCLA]” shall only be conducted in concurrence with the EPA.²²⁸ Furthermore, the DOI and the EPA would enter into a memorandum of understanding to assure “[r]eclamation or restoration activities under this [Act] shall not be conducted in a manner that—(A) increases the costs or likelihood of removal or remedial actions under [CERCLA]; or (B) to the maximum extent practicable, avoids oversight by multiple agencies.”²²⁹ The HMRA also states that existing environmental laws are not superseded.²³⁰ Nevertheless, these provisions create ambiguity and conflict between FLM agencies and the EPA and, most disturbing, imply a repeal of CERCLA for AMLs.²³¹

CERCLA requires FLM agencies comply with its implementing regulations and the National Contingency Plan²³² when evaluating federal facilities where hazardous substances are located (with minor exceptions).²³³ Federal facility Superfund remedial actions investigations and studies must be reviewed by the EPA, and “[w]ithin 180 days thereafter, the [FLM agencies] shall enter into an interagency agreement with the [EPA] for the expeditious completion . . . of all necessary remedial action at such facility.”²³⁴ The concurrence of the EPA Administrator and a memorandum of understanding between the FLM agency and the EPA provide no guarantee that the cleanup of AMLs will be conducted in a manner consistent with CERCLA’s federal facility provisions. The EPA’s oversight of the FLM agency is essential. It is not a duplication of effort. The lax provisions of the HMRA do not guarantee that the FLM agency’s actions will be consistent with CERCLA. The confounding language in section 402(g) should be omitted or revised to insure compliance with CERCLA and eliminate any potential loopholes, conflicts, or implied repeal of CERCLA.

²²⁸ See S. 796, § 402(g); see also S. 140, § 203(e) (proposing similar language).

²²⁹ S. 796, § 402(g).

²³⁰ *Id.* § 506(c)(2).

²³¹ Compare Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) § 120(e)(2), 42 U.S.C. § 9620(e)(2) (2006) (requiring an interagency agreement for federal facility cleanups), with S. 796, § 402(g)(2) (requiring only a memorandum of understanding for such cleanups).

²³² 40 C.F.R. pt. 300 (2009).

²³³ 42 U.S.C. § 9620(a)(2)–(3).

²³⁴ *Id.* § 9620(e)(2).

2. CWA

The HMRA proposed surface water cleanup standards conflicts with the CWA. A mining permittee's operations plan need only demonstrate that "the formation of acid mine drainage will be avoided to the maximum extent practicable" ²³⁵ Although the proposed HMRA explicitly states that existing environmental laws are not superseded by that Act, ²³⁶ the phrase "to the maximum extent practicable" would effectively circumvent CWA restrictions. For example, permitting agencies would not be able to require compliance with applicable water quality standards when compliance would be impractical for the facility. The proposed HMRA standard should instead state that any acid mine drainage discharge shall be avoided to the maximum extent practicable and shall be in compliance with the CWA and any other applicable state, tribal, and federal environmental laws.

In summary, the DOI and the U.S. Forest Service are FML agencies that develop natural capital, while the EPA protects human health and the environment. The proposed HMRA needs revision where it authorizes the DOI and the U.S. Forest Service to supervise environmental management of mining wastes to avoid creating a sectoral approach to government oversight of this industry. ²³⁷ The proposed HMRA usurps the authority given to FML agencies under existing environmental laws, which creates conflict and ambiguity. The EPA oversees waste management and environmental protections and should be entrusted with this responsibility. The HMRA should reflect an integral approach to governing mining waste management practices.

3. *Conflict with Federal Indian Law*

Mining and mineral processing operations impact significant numbers of native people. Worldwide, three million indigenous people are directly impacted by mining. ²³⁸ Recognizing and

²³⁵ See S. 796, § 303(b)(2)(B); see also *id.* § 302(c)(1)(B) (requiring the same demonstration for an exploration plan).

²³⁶ See *id.* § 506(c)(2).

²³⁷ WORLD BANK REPORT, *supra* note 14, at 6.

²³⁸ INT'L INST. FOR SUSTAINABLE DEV., MINING MINERALS AND SUSTAINABLE DEVELOPMENT NORTH AMERICA: TOWARDS CHANGE, THE WORK AND RESULTS OF MMSD—NORTH AMERICA I (2002).

supporting tribal sovereignty²³⁹ is an important component in modernizing federal natural resource laws, especially in light of the disproportionate impact the mining industry has on the health and environment in Indian country.²⁴⁰ For example, the Navajo Indian people suffer a painful legacy as a result of the uranium mining on their reservation.²⁴¹

The HMRA recognizes tribal sovereignty over Indian land, but not Indian country as defined in federal Indian law statutes. The term “Indian country” means:

(a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation, (b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state, and (c) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.²⁴²

In contrast, the HMRA uses the term “Indian land” and defines it narrowly as “land that is—(A) held in trust for the benefit of an Indian tribe or member of an Indian tribe; or (B) held by an Indian

²³⁹ The sovereignty of Indian tribes is an established principle in federal statutes and common law precedents. See *Cherokee Nation v. Georgia*, 30 U.S. (5 Pet.) 1, 17 (1831) (denominating tribes as “domestic dependent nations”); *Worcester v. Georgia*, 31 U.S. (6 Pet.) 515, 559–60 (1832) (“The Indian nations had always been considered as distinct, independent political communities, retaining their original natural rights, as the undisputed possessors of the soil, from time immemorial The words ‘treaty’ and ‘nation’ are words of our own language We have applied them to Indians, as we have applied them to the other nations of the earth. They are applied to all in the same sense.”); see also DAVID H. GETCHES ET AL., *CASES AND MATERIALS ON FEDERAL INDIAN LAW* 124–25 (4th ed. 1998) (discussing the *Worcester* decision and Justice Marshall’s emphasis on the tribe’s “retained powers of ‘self-government’”).

²⁴⁰ Cf. U.S. EPA, *Waste Management in Indian Country*, Publications, <http://www.epa.gov/epawaste/wycd/tribal/resource.htm> (last visited on Mar. 5, 2010).

²⁴¹ See BENALLY MORONI ET AL., *DINÉ POLICY INST., URANIUM AND DINÉ BITITSEKES, AN ANALYSIS OF THE DIRECT AND IN-DIRECT CONSEQUENCES OF URANIUM USING NAVAJO PRINCIPLES 2* (undated) (“The legacy uranium mining left on the Navajo Nation has been one of gloom and darkness. It has been estimated that from 1994–1986, 3.9 million tons of uranium ore was mined from the Navajo Nation. The consequence of this uranium mining has been felt locally and internationally. As of 1990, 500–600 uranium miners on Navajo Nation have succumbed to death because of lung cancer and other illnesses associated with radon exposure. It has been estimated that at the end of 2000 another 500–600 miners have died.”).

²⁴² 18 U.S.C. § 1151 (2006) (defining “Indian country”).

tribe or member of an Indian tribe, subject to a restriction by the United States against alienation.”²⁴³

In addition, the HMRA creates an Abandoned Mine Land Trust Fund and a Hardrock Reclamation Program, which FML agencies, states, and tribes may use “for the reclamation and restoration of land and water resources adversely affected by past hardrock minerals and mining and related activities in *abandoned hardrock mine States* and on *Indian land located within the exterior boundaries of abandoned hardrock mine States*.”²⁴⁴ States and Indian tribes may establish reclamation programs when “mined land that is eligible for reclamation under this [statute]” is located “within the borders of the State, or . . . within the borders of the reservation of the tribe.”²⁴⁵ Reading the definitions provided in HMRA sections 401 and 402 together, the proposed HMRA could authorize a state reclamation program on patent or fee lands within the borders of an Indian reservation or on dependent Indian communities. This would be in blatant disregard of tribal sovereignty over Indian country.

The federal government and tribal sovereigns exercise power and jurisdiction to protect human health and the environment in Indian country, including all land within the borders of their reservations.²⁴⁶

²⁴³ Hardrock Mining and Reclamation Act of 2009, S. 796, 111th Cong. § 2 (2009).

²⁴⁴ *Id.* § 402(a)(1) (setting forth permissible uses of the Hardrock Minerals Reclamation Fund) (emphasis added); *see also id.* § 2 (“The term ‘abandoned hardrock mine State’ means each of the States of Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming.”).

²⁴⁵ *Id.* § 401(e).

²⁴⁶ It is well established that federal laws can apply to Indians and Indian country. *E.g.*, *Fed. Power Comm’n v. Tuscarora Indian Nation*, 362 U.S. 99, 116 (1960); *see also* Judith V. Royster & Rory SnowArrow Fausett, *Control of the Reservation Environment: Tribal Primacy, Federal Delegation, and the Limits of State Intrusion*, 64 WASH. L. REV. 581, 591–93 (1989) (discussing the application of the *Tuscarora* rule to general federal laws including environmental laws). The early nineteenth century Supreme Court generally held that federal laws, like state laws, were not applicable to natives within Indian country; however, in *Tuscarora*, the Court held that absent a treaty or federal statute to the contrary, federal laws of general applicability apply to natives and to native tribes, stating that “we must hold that Congress, by the broad general terms of [section] 21 of the Federal Power Act, has authorized the Federal Power Commission’s licensees to take lands owned by Indians, as well as those of all other citizens, when needed for a licensed project, upon the payment of just compensation; that the lands in question are not subject to any treaty between the United States and the Tuscaroras” *Fed. Power Comm’n*, 362 U.S. at 123–24. Many federal environmental laws acknowledge tribal sovereignty, for example, the Federal Insecticide, Fungicide, and Rodenticide Act of 1972, 7 U.S.C. § 136u (2006), and most authorize the EPA to treat Indian tribes in a manner similar to states. *E.g.*, Clean

Thus, the HMRA should recognize that tribal governments are the appropriate governing body to implement a reclamation program within Indian country and not the states.

In general, state governments lack authority over environmental regulatory matters in Indian country absent an express grant from Congress.²⁴⁷ Nevertheless, the federal judiciary has divested tribes of some jurisdiction in Indian country.²⁴⁸ For example, tribes, depending on a number of factors, may not have jurisdiction over non-Indians and their activities.²⁴⁹ Despite this judicial encroachment on tribal sovereignty, the body of federal Indian law supports tribal authority over land within the exterior boundaries of a reservation when an activity impacts tribal sovereign interests by threatening, or having

Water Act § 518, 33 U.S.C. § 1377(e) (2006); Safe Drinking Water Act, 42 U.S.C. § 300j-11 (2006); Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 U.S.C. § 9626; Clean Air Act, 42 U.S.C. §§ 7474, 7601; *cf.* *Menominee Tribe of Indians v. United States*, 391 U.S. 404, 413 (1968) (holding that the intent to abrogate or modify a treaty is not to be lightly imputed to Congress).

²⁴⁷ The role of state governments in environmental regulatory programs in Indian country is essentially a very limited one. Absent an explicit authorization from Congress granting a state regulatory authority, which rarely occurs, state environmental regulatory programs are not valid in Indian country whether aimed at Indians or non-Indians, on tribal lands or fee lands. *See Royster & Fausett, supra* note 246, at 613–59; *Cal. v. Cabazon Band of Mission Indians*, 480 U.S. 202, 207 (1987) (“[S]tate laws may be applied to tribal Indians on their reservations if Congress has expressly so provided.”); William D. Ruckelshaus, U.S. Env’tl. Prot. Agency, Policy for the Administration of Environmental Programs on Indian Reservations 2 (Nov. 8, 1984) (emphasis added), <http://www.epa.gov/indian/pdf/indian-policy-84.pdf> (setting forth the EPA’s Indian Policy to encourage tribal self-determination, to “work directly with Indian Tribal Governments on a one-to-one basis,” to “recognize[] Tribal Governments as sovereign entities with primary authority and responsibility for the reservation populace,” and “[u]ntil Tribal Governments are willing and able to assume full responsibility for delegable programs, the Agency will retain responsibility for managing programs for reservations (*unless the State has an express grant of jurisdiction from Congress sufficient to support delegation to the State Government*)”) [hereinafter EPA Indian Policy].

²⁴⁸ *See Montana v. United States*, 450 U.S. 544, 560 (1981); *see also Strate v. A-1 Contractors*, 520 U.S. 438 (1997); *Atkinson Trading Co. v. Shirley*, 532 U.S. 645 (2001); *Nevada v. Hicks*, 533 U.S. 353 (2001); *Plains Commerce Bank v. Long Family Land & Cattle Co.*, 128 S. Ct. 2709 (2008).

²⁴⁹ In *Montana v. United States*, the Court crafted a new general rule that states may exercise authority over nonmembers within Indian country *unless* nonmembers “enter any agreements or dealings with the [Tribe] so as to subject themselves to tribal civil jurisdiction” or when “conduct threatens or has some direct effect on the political integrity, the economic security, or the health or welfare of the tribe.” *See* 540 U.S. at 566. These two exceptions are known as the *Montana* test exceptions. *E.g., Plains Commerce Bank*, 128 S. Ct. at 2720 (These rules have become known as the *Montana* exceptions, after the case that elaborated them. By their terms, the exceptions concern regulation of “the activities of nonmembers” or “the conduct of non-Indians on fee land.”).

some direct effect on, the political integrity, the economic security, or the health or welfare of the tribe.²⁵⁰ In other words, the limitation on tribal jurisdiction over non-Indian activities is generally overcome by the second *Montana* test exception in circumstances where the activities involve environmental protection.²⁵¹ For example, the EPA has generalized findings that establish tribal environmental regulatory programs may address serious and substantial impacts on human health and welfare.²⁵²

The proposed HMRA limits tribal authority by distorting well-known terminology. The HMRA changes the phrase “within the exterior boundaries of reservations,” into the unrecognizable “Indian land located within the exterior boundaries of [14] abandoned hardrock mine States,”²⁵³ and defines Indian lands narrowly.²⁵⁴ Potentially, tribal authority to implement the reclamation program over dependent Indian communities could be limited, where state authority would be allowed. Also, a state reclamation program could possibly apply in a checkerboard pattern within Indian reservations, depending on the land status (e.g., trust land, public land, or patent and fee lands). The proposed statutory language conflicts with the

²⁵⁰ *Montana*, 450 U.S. at 565–66.

²⁵¹ *Id.* Additionally, the courts have upheld the EPA’s decision to approve tribal environmental programs within Indian country based on the serious and substantial impacts of pollution on the health and welfare of the tribes. *See Montana v. EPA*, 137 F.3d 1135, 1141 (9th Cir. 1998); *Wisconsin v. EPA*, 266 F.3d 741, 750 (7th Cir. 2001).

²⁵² *See* Amendments to the Water Quality Standards Regulation That Pertain to Standards on Indian Reservations, 56 Fed. Reg. 64,877, 64,877–78 (Dec. 12, 1991) (codified at 40 C.F.R. pt. 361) (discussing in-depth the application of the *Montana* test with respect to EPA regulations on tribal eligibility to implement CWA programs in the same manner as states). This rule states that “the ultimate decision regarding Tribal authority must be made on a Tribe-by-Tribe basis,” and clarifies that the EPA reads the second *Montana* exception as requiring “a showing that the potential impacts of regulated activities on the tribe are serious and substantial.” *Id.* at 64,878. The EPA stated further that “activities regulated under the various environmental statutes generally have serious and substantial impacts on human health and welfare” and, accordingly, “tribes will usually be able to meet the Agency’s operating rule.” *Id.* EPA also observed that because of the mobile nature of pollutants, non-Indian activities on fee land is very likely to affect tribal lands. *Id.* Furthermore, at least three federal circuit courts have upheld the Agency’s generalized findings, the tribes’ inherent authority, and that states were not authorized to implement the program. *See Albuquerque v. Browner*, 97 F.3d 415, 426–27 (10th Cir. 1996); *Montana*, 137 F.3d at 1141; *Wisconsin*, 266 F.3d at 750.

²⁵³ Hardrock Mining and Reclamation Act of 2009, S. 796, 111th Cong. § 402(a)(1) (2009).

²⁵⁴ *Id.* § 2(1).

principle that tribal governments are “sovereign entities with primary authority and responsibility for [their] reservation” environments, as illustrated in EPA policies.²⁵⁵ Even the Surface Mining, Control, and Reclamation Act of 1977 provides for tribal programs within the exterior boundaries of reservations.²⁵⁶ The HMRA is antithetical to this fundamental precept of federal Indian law. Perhaps, the proposed HMRA language limiting tribal authority to trust lands is simply a result of avant-garde interpretations of the Supreme Court’s trend towards greater judicial divestiture of tribal sovereignty.²⁵⁷

On the other hand, perhaps, the tortured language in the proposed HMRA came at the behest of the uranium mining industry. Hydro Resources, Inc. is seeking to mine uranium within a Navajo Nation dependent Indian community, known as the Church Rock Chapter, located just outside the reservation boundaries.²⁵⁸ Hydro Resources, Inc. lost a lawsuit against the EPA, where the company alleged that land it owned within Church Rock Chapter was not Indian country and therefore, was regulated by the State of New Mexico.²⁵⁹ This case was about the definition of Indian country and dependent Indian communities, and not the *Montana* test exceptions.²⁶⁰ Nevertheless, the court held that the land in question is Indian country.²⁶¹ Thus, the EPA has regulatory control unless and until the Navajo Nation obtains

²⁵⁵ See EPA Indian Policy, *supra* note 247, at 2 (“EPA recognizes Tribal Governments as sovereign entities with primary authority and responsibility for the reservation populace.”).

²⁵⁶ Surface Mining Control and Reclamation Act, 30 U.S.C. § 1291(9) (2006) (“‘Indian lands’ means all lands, including mineral interests, within the exterior boundaries of any Federal Indian reservation, notwithstanding the issuance of any patent, and including rights-of-way, and all lands including mineral interests held in trust for or supervised by an Indian tribe . . .”).

²⁵⁷ See Sarah Krakoff, *Undoing Indian Law One Case at a Time: Judicial Minimalism and Tribal Sovereignty*, 50 AM. U. L. REV. 1177, 1178 (2001) (discussing the Supreme Court’s trend “of divesting tribes of jurisdiction over non-tribal members and permitting increasingly onerous forms of state regulation within tribal territorial boundaries”).

²⁵⁸ *Hydro Res. Inc. v. EPA*, 562 F.3d 1249, 1267 (10th Cir. 2009) (upholding the EPA decision that the agency, and not the State of New Mexico, is the proper authority to issue any underground injection permit under the Safe Drinking Water Act).

²⁵⁹ *Id.* at 1258. The planned mining activity included the need for an Underground Injection Control Permit for waste disposal. *Id.* Possibly, as a result of this decision, the Navajo Nation ban on all uranium mining could apply to the mining activity planned by HRI. Cf. Kathy Holms, *Navajo Celebrates HRI Ruling*, INDEPENDENT (Gallup, N.M.), Apr. 22, 2009, <http://www.gallupindependent.com/2009/04April042209navajocelbrates.html>.

²⁶⁰ See *Hydro Res.*, 562 F.3d at 1258–68.

²⁶¹ See *id.* at 1267–68.

authorization to implement environmental programs. If the HMRA definition of Indian land, which excludes dependent Indian communities, ever becomes law, the HMRA could provide New Mexico with the authority necessary to regulate hardrock mining within the Church Rock Chapter and exclude the Navajo Nation.

In summary, the proposed HMRA definitions of Indian lands and limitations on uses of the reclamation fund need to be consistent with the federal Indian law definitions of Indian country. When possible, statutory consistency avoids confusion in Indian country, where real property ownership is a checkerboard pattern of Indian trust lands, non-Indian fee lands, and individual Indian allotments.²⁶² Using the term “Indian lands” is imprecise and could limit federal and tribal authority. Specifically, the proposed HMRA should replace the term “Indian lands” with “Indian country” and define it by reference to the legal definition that appears in the U.S. criminal code.²⁶³ Further, the bill should delete the phrase, “Indian land located within the exterior boundaries of abandoned hardrock mine States.”²⁶⁴

V

SUSTAINABLE MINING PROMOTES GLOBAL PROSPERITY

Sustainable development of the mining and mineral processing industry is an international goal. The concept is entirely consistent with the ambitious Agenda 21 developed at the U.N. Conference on Environment and Development held in Rio de Janeiro, Brazil, in 1992.²⁶⁵ Agenda 21 moves the international community to comprehensive planning for the twenty-one ways in which humans impact the environment.²⁶⁶ For example, Agenda 21 promotes

²⁶² See generally *Brendale v. Confederated Tribes and Bands of the Yakima Indian Nation*, 492 U.S. 408 (1989) (illustrating of this checkerboard pattern of land use within a reservation and the confusion it creates).

²⁶³ 18 U.S.C. § 1151 (2006).

²⁶⁴ See Hardrock Mining and Reclamation Act of 2009, S. 796, 111th Cong. § 402(a)(1) (2009).

²⁶⁵ See U.N. Dep't of Econ. & Soc. Affairs, Div. for Sustainable Dev., Agenda 21, <http://www.un.org/esa/dsd/agenda21/> (“Agenda 21 is a comprehensive plan of action to be taken globally, nationally and locally by organizations of the United Nations System, Governments, and Major Groups in every area in which human impacts on the environment.”).

²⁶⁶ See Agenda 21: Programme of Action for Sustainable Development, Rio Declaration on Environment and Development; Statement of Forest Principles: The Final Text of Agreements Negotiated by Governments at the United Nations Conference on

sustainable mining through an “integrated approach to the planning and management of land resources.”²⁶⁷ The international community is committed to an integrated management approach and a conservation, preservation, and restoration ethic for land development decisions in conjunction with an open multilateral trading system.²⁶⁸ Nevertheless, international trade regimes, such as the World Trade Organization (WTO), resist their responsibility to protect human health and the environment on a global scale.²⁶⁹ Each nation is responsible for integrating environmental protections into global trading systems. For example, the U.S. government could promote free and fair trade rules that protect the environment and govern natural resources such as heavy metals and mineral commodities.

Environmental and international trade policy makers could carefully craft natural resource protection trade measures and barriers without compromising global economic objectives like antiprotectionism. WTO members from developing countries may challenge resource protection schemes as a restriction on free trade; however, WTO rules allow members to protect the environment and their natural resources.²⁷⁰ These trade measures are necessary

Environment and Development, 3–14 June, 1992, Rio De Janeiro, Brazil, ch. 17.1, U.N. Sales No. E.93L.11 (1993).

²⁶⁷ See *id.* at ch. 10, § 10.2.

²⁶⁸ *Id.* at ch. 2, § 2.19 (“Environment and trade policies should be mutually supportive. An open, multilateral trading system makes possible a more efficient allocation and use of resources and thereby contributes to an increase in production and incomes and to lessening demands on the environment. It thus provides additional resources needed for economic growth and development and improved environmental protection. A sound environment, on the other hand, provides the ecological and other resources needed to sustain growth and underpin a continuing expansion of trade. An open, multilateral trading system, supported by the adoption of sound environmental policies, would have a positive impact on the environment and contribute to sustainable development.”).

²⁶⁹ Whether or not the WTO members want this added responsibility, it is part of their agreements. See *id.*; see also Andrew Green, *Climate Change, Regulatory Policy and How Constraining Are Trade Rules?*, 8 J. INT’L ECON. L. 143 (2005) (“[E]xisting WTO rules provide members with some scope to take action on climate change. However, they do constrain domestic regulatory policy, and the debate about future institutional changes will be central to how effectively global environmental issues such as climate change will be addressed.”); Andrew Green & Tracey Epps, *The WTO, Science, and the Environment: Moving Towards Consistency*, 10 J. INT’L ECON. L. 285 (2007) (providing an in-depth discussion on the interconnection between environmental challenges and the WTO).

²⁷⁰ For example, WTO rules provide general exceptions that allow discriminatory measures provided they fall under a listed category in Article XX (a) through (j) and withstand the requirements of the chapeau (introductory clause) to Article XX. See JOHN H. JACKSON ET AL., 2002 DOCUMENTS SUPPLEMENT TO LEGAL PROBLEMS OF INTERNATIONAL ECONOMIC RELATIONS 45 (4th ed. 2002) (“Subject to the requirement

because mining law reforms may lead to legislative and regulatory changes that charge permitting fees, collect royalties, require financial assurances, institute taxes, and generally force this industry to internalize the costs of pollution control, natural capital depletion, and loss of access to minerals in preserved special places.²⁷¹ Utilizing cost internalization to protect the environment and natural capital should not place the U.S. economy at a competitive disadvantage in the international marketplace. The U.S. government should balance the objectives of free trade and environmental protectionism.

Multinational corporations operating mines and mineral processing facilities inside the United States must comply with federal environmental, health and safety regulations, and similar state requirements.²⁷² Some industrialists claim that such requirements are unfair trade measures.²⁷³ A Canadian corporation, Glamis Gold Ltd. and Glamis Imperial Corporation (Glamis), submitted a fifty million dollar compensation claim to arbitration under NAFTA rules alleging injuries related to a proposed cyanide heap leach gold mine in California.²⁷⁴ Glamis claimed the BLM actions and California measures regulating open-pit mining operations (1) failed to accord its investments fair and equitable treatment and full protection and security in accordance with international law, and (2) expropriated its

that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures: (a) necessary to protect public morals; (b) necessary to protect human, animal or plant life or health . . . (g) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption . . .”).

²⁷¹ Cf. Hardrock Mining and Restoration Act of 2009, S. 796, 111th Cong. tit. I, II, III (2009).

²⁷² E.g., Clean Water Act § 306, 33 U.S.C. § 1316 (2006); 40 C.F.R. § 440.100–105 (2009) (including technology limitations and NPDES permits for copper, lead, zinc, gold, silver, and molybdenum ores subcategory); see also Surface Mining and Reclamation Act of 1975, Cal. Pub. Resources Code §§ 2710–3948 (requiring plan of operations and backfilling open pit mines under California laws).

²⁷³ For example, certain barriers to free trade under the North American Free Trade Agreement. See JACKSON ET AL., *supra* note 270, at 45.

²⁷⁴ See U.S. Dep’t of State, Cases Filed Against the United States of America, Glamis Gold Ltd. v. United States of America, <http://www.state.gov/s/l/c10986.htm> (last visited Mar. 5, 2010); see also Jack Caldwell, *Glamis Gold v. Schwarzenegger: Tackling the Terminator via NAFTA*, Aug. 13, 2007, <http://ithink.mining.com/2007/08/13/glamis-gold-v-schwarzenegger-tackling-the-terminator-via-nafta/>.

investments in contravention of specific provisions of NAFTA.²⁷⁵ California and the BLM were not only concerned with protecting the environment, but also protecting an historic and sacred site located in the project area.²⁷⁶ The protections they sought involved backfilling mine wastes and regrading after mining to return the land to relatively normal contours. As one group has suggested, “[T]he Glamis case study dramatically demonstrates the way in which international investment agreements can undercut efforts to protect the public interest in the mining sector. . . .”²⁷⁷

The NAFTA tribunal held a hearing on the merits and, in June 2009, determined that regulating hardrock mining to protect the environment and a sacred site does not violate NAFTA, upholding the U.S. position.²⁷⁸ The tribunal agreed with the United States that “[c]ustomary international law recognizes that, as a general matter, States are not liable to compensate aliens for economic loss incurred as a result of nondiscriminatory environmental regulatory measures to protect, *inter alia*, the public health.”²⁷⁹ In general, hardrock mining and mineral processing operations inside the United States must

²⁷⁵ See Notice of Arbitration of Glamis Gold Ltd. at 3–4, *Glamis Gold Ltd. v. United States of America* (Dec. 9, 2003), available at <http://www.state.gov/documents/organization/127320.pdf>; see also North American Free Trade Agreement, U.S.-Can.-Mex., Dec. 17, 1992, 32 I.L.M. 605, 639–40 (1993).

²⁷⁶ The U.S. Advisory Council on Historic Preservation concluded that the Glamis mine “would result in irreparable degradation of the sacred and historic values” of the land, which the Quechan Indian people consider a sacred site. See Memorandum from the Solicitor, U.S. Dep’t of the Interior, to the Secretary 5 (Oct. 23, 2001), available at <http://www.doi.gov/solicitor/opinions/M-37007.pdf> (quoting Letter from Cathryn Buford Slater, Chairman, Advisory Council on Historic Preservation, to Bruce Babbitt, Secretary, Dep’t of the Interior 3 (Oct. 19, 1999)). The Council advised the Bureau of Land Management to “take whatever legal means available to deny the proposal for the project.” *Id.*

²⁷⁷ OXFAM AMERICA ET AL., *GLAMIS GOLD: A CASE STUDY OF INVESTING IN DESTRUCTION 1* (2003), available at http://www.oxfamamerica.org/files/OA-Glamis_Gold_English.pdf.

²⁷⁸ See Press Release, U.S. Dep’t of State, NAFTA Tribunal Dismisses Glamis Case (June 9, 2009), <http://www.state.gov/r/pa/prs/ps/2009/06a/124527.htm>; see also Indian Law Resource Center, *NAFTA Tribunal Recognizes Sacred Places of Quechan Tribe, Denies Glamis Gold’s Claim In Full*, June 9, 2009, <http://www.indianlaw.org/node/424>.

²⁷⁹ Statement of Defense of Respondent U.S.A. at 20 ¶ 56, *Glamis Gold Ltd. v. United States of America* (Apr. 8, 2005), available at <http://www.state.gov/documents/organization/45118.pdf>.

comply with federal and state environmental laws that apply regardless of the nationality of the owner/operator.²⁸⁰

The United States should seek WTO reforms that incorporate environmental protections and develop meaningful environmental provisions in regional free trade agreements to protect the domestic mining industry from cheap imported mineral commodities from countries where the mining industry is not regulated. Multilateral international agreements and treaties could establish international standards for waste management at mining and mineral processing operations. In addition, Congress could enact a fair trade measure or tariff on mineral commodities imported to the United States from noncompliant countries. This would be an appropriate response to countries that fail to establish and enforce environmental protection standards and export inferior products that allow companies to externalize costs through pollution of the commons. A trade measure can level the playing field, provided it does not promote discrimination, unfair trade, or protectionism.

The obstacles to a level playing field are considerable because trade measures or tariffs are frowned upon in the international commercial law community.²⁸¹ Yet, a trade measure designed to encourage countries to protect human health could also protect fair trade. A trade measure enacted for the hardrock mining and mineral

²⁸⁰ *E.g.*, Clean Water Act § 301(a), 33 U.S.C. § 1301(a) (prohibiting the discharge of pollution into waters of the U.S. by any person); *id.* § 1362(5) (defining a “person” to include any “individual, corporation, partnership, association . . .”). Additionally, a foreign person who owns or operates a facility or causes pollution inside the United States may be liable under U.S. laws. *See Pakootas v. Teck Cominco Metals, Ltd.*, 452 F.3d 1066, 1079 (9th Cir. 2006) (“We hold that applying CERCLA here to the release of hazardous substances at the Site is a domestic, rather than an extraterritorial application of CERCLA, even though the original source of the hazardous substances is located in a foreign country.”).

²⁸¹ *See* MITSUO MATSUSHITA ET AL., *THE WORLD TRADE ORGANIZATION: LAW, PRACTICE, AND POLICY* 440–47 (2003). “[T]he WTO is sensitive to uncovering measures that purport to be for environmental reasons but are a subterfuge for serving other interests, such as protection of domestic producers. *Id.* at 441. However, in the case of ore and mineral processing industries, the WTO recognizes the need to protect exhaustible natural resources. *See* JACKSON ET AL., *supra* note 270, at 45 (“[T]his Agreement shall be construed to prevent the adoption or enforcement by any contracting parties of measures: . . . (g) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption . . .”).

processing industry would have to avoid protectionism that discriminates unfairly against imported products.²⁸²

A successful trade measure could control or limit importation of hardrock metals that are produced using environmentally unsound methods. Such trade restrictions on nonproduct related process and production methods may be achieved with tariffs or an ecolabel on the product; such measures are necessary for a complex world market.²⁸³

By designing successful trade measures or tariffs, U.S. leadership could enhance international acceptance of environmental and natural capital safeguards for the mining and mineral processing industry.²⁸⁴ International traders value free trade almost as much as they value a level playing field where exporters, or importers by trade measures, internalize the externalities such as pollution controls. Trade measures are simply a cost that monetizes the value of a level playing field. Trade can't be free at all costs.²⁸⁵

The United States can renew its position as a world leader in environmental protection law and policy and establish its presence in the worldwide sustainable development movement by preserving natural landscapes, developing hardrock waste management standards, reforming old mining laws and seeking agreement among global trading partners to control and manage toxic wastes from the mining and mineral processing industry. Internationally, sustainable development of this industry means establishing environmental and social policies and technical compliance standards within the international community that inspire the industry to transform eighteenth century industrial behavior into twenty-first century

²⁸² The trade measure should not violate the "no less favorable treatment" principle of Article III; commonly known as the "most favorable nation" or "MFN" principle. See JACKSON ET AL., *supra* note 270, at 20 ("*National Treatment on Internal Taxation and Regulation* . . . 4. The products of the territory of any contracting party imported into the territory of any other contracting party shall be accorded treatment no less favourable than that accorded to like products of national origin in respect of all laws, regulations and requirements affecting their internal sale . . .").

²⁸³ Douglas A. Kysar, *Preferences For Processes: The Process/Product Distinction and the Regulation of Consumer Choice*, 118 HARV. L. REV. 526, 624 (2004) ("Rather than being scientifically unfounded, nakedly protectionist, or ethically inconsistent, consumer process preferences instead offer an important vehicle through which individuals influence the world, express their views on public issues, and fashion their moral identity in an era of extraordinary interconnectedness, complexity, and dynamism in the market.").

²⁸⁴ DOUGLAS A. IRWIN, *FREE TRADE UNDER FIRE* 202 (2d ed. 2005).

²⁸⁵ *Id.* at 243.

sustainable development and put an end to many atrocious mining practices. International trade regimes and future investments, whether from private capital, the U.S. government, the International Monetary Fund, or the World Bank, should support only those hardrock mining and mineral processing facilities that abide by sustainable development principles that will protect the environment and cultivate social behaviors that support local and indigenous populations.²⁸⁶

VI CONCLUSION

Developing a sustainable hardrock mining industry requires society to consider the relative value of the environment, social equity, and economic prosperity. Deciding where, when, and how to allow mining and mineral processing operations should no longer be based solely on the location of ores. The gospel of unlimited growth can no longer dominate important decisions about the exploitation of the earth's mineral wealth, our natural capital. Many other considerations must guide the siting, operation, and closure of mining and mineral processing facilities. Additional considerations include the sustainability principles described in United Nations Agenda 21, which include the public trust doctrine, the principle of reciprocating procession derived from indigenous knowledge of the traditional Native American Indian cultures (fundamentally cooperative and collaborative),²⁸⁷ the conservation, preservation and restoration land ethic, and the principles of free and fair trade described in the world trade systems. Adapting modern principles to ancient doctrines and traditions will guide the sustainable development of hardrock mining and mineral processing in appropriate locations with adequate protections for human health and the environment, including not only preservation of natural landscapes, but significantly mitigate the horrible pollution and human health disasters at mining sites worldwide.²⁸⁸

Reforming RCRA, the CWA, and CERCLA promotes an integral approach, ensuring that environmental regulation remains in the

²⁸⁶ WORLD BANK REPORT, *supra* note 14, at 6; *see also* OXFAM AMERICA ET AL., *supra* note 277, at 1 (describing challenge under NAFTA in Glamis's attempt to mine gold in a sacred place for the local indigenous people).

²⁸⁷ *See* WILDCAT, *supra* note 217, at 75, 136–37.

²⁸⁸ *See supra* notes 8–14 and accompanying text.

hands of the United States' primary environmental agency, the EPA. Updating these laws is necessary to provide resources, authority, and programs that facilitate the EPA's regulation of pollution from active and inactive mineral operations and the cleanup of AMLs. The most urgent regulatory action is for the EPA to propose new RCRA regulations under section 3004(x). A regulatory initiative to promulgate a new hardrock mining and mineral processing waste management program is needed to protect human health, the land, surface water, and groundwater. This program may be part of a larger Special Waste Regulatory Initiative to address other special wastes. The EPA has not promulgated regulations to control special wastes despite over twenty-five years of planning. And while some facilities may believe they are permanently relieved from regulation of toxic mining wastes,²⁸⁹ a new special waste program would reverse decades of underregulation and decrease the abandonment of mining and mineral processing sites, which frequently become Superfund sites.

The Superfund Program is one of the most effective regulatory programs for cleanup of abandoned mine lands; however, the single most compelling impediment to the cleanup of these lands "is not regulatory but financial."²⁹⁰ The U.S. government does not need an entirely new Abandoned Mine Trust Fund as proposed in the HMRA. Instead these cleanups can be readily financed by taking advantage of an existing, successful regulatory program—the Superfund. Congress should reinstate the Superfund tax and expand it to include mining and mineral processing facilities. This tax supports the Superfund Program, which as a whole supports the integral approach to environmental regulation and upholds the polluter pays principle.

In addition, Congress should amend CERCLA to provide FLM agencies with limited access to the Superfund Trust Fund for abandoned mine waste cleanup at sites on public lands with no other viable responsible party, which would speed cleanups on public lands. The Superfund program offers procedural advantages as well. For example, the EPA and the FLM agencies must coordinate on cleanups where the EPA is ultimately in charge of remediation and the FLM agencies control reclamation and restoration. Such coordination manifests the integral approach where the EPA protects human health

²⁸⁹ Barringer, *supra* note 32, at 155.

²⁹⁰ *Senate Oversight Hearing*, *supra* note 31, at 64 (statement of Velma M. Smith, Senior Policy Associate, National Environmental Trust).

and the environment while the FLM agencies assist in development of natural capital.

Further, the government should modernize the General Mining Law of 1872. Reforming natural resource laws will protect natural capital and preserve natural landscapes by (1) collecting royalties, permit fees, and financial assurances for reclamation and restoration, and (2) withdrawing protected locations from mineral activities. These reforms should not undermine environmental protections otherwise guaranteed under federal environmental laws such as RCRA, CERCLA, and the CWA. Reform of mining laws should not duplicate a new special waste management program under RCRA or a new Superfund tax. Finally, the reforms to mining laws need not attack tribal sovereignty. Instead, regulatory authority of sovereign tribal governments should be recognized as it is in other laws, such as the Federal Land Policy and Management Act, the Superfund, and the CWA. Protecting international free and fair trade will also be a vital component of sustainable hardrock mining. The government should protect U.S. positions in the international market for heavy metals and mineral commodities. The U.S. mining and mineral processing industry should not lose a competitive edge to South America, Canada, Africa, or other regions or nations that may be unfettered by natural capital protection and environmental regulation. Mining law reforms may lead to legislative and regulatory changes that allow regulatory agencies to charge permitting fees, collect royalties or taxes, require financial assurances, and generally require this industry to internalize the costs of pollution control and natural capital depletion. Again, these costs should not put U.S. industry at a competitive disadvantage in the international marketplace.

The members of the WTO should reform their agreements to incorporate environmental protections and develop meaningful environmental provisions in regional free trade agreements like NAFTA. Such agreements and provisions would establish international standards for the mining and mineral processing industries similar to a RCRA hardrock waste management program. A trade measure on metal goods imported to the United States from noncompliant countries (e.g., countries that do not establish and enforce similar waste management standards) could level the playing field.

Sustainable development of the mining and mineral processing industry means using an integral approach and establishing

environmental and social policies and specific compliance standards that achieve a triple bottom line goal of protecting and preserving people, the planet, and prosperity. Transformation of eighteenth century industrial behavior into twenty-first century sustainable development is essential for preserving the environment and protecting public health and welfare.

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