SUPERFUND AT 30

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INTRODUCTION

Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or "Superfund" as it is more commonly known)[1] in the waning hours of the 96th Congress to address contamination of land and water by hazardous substances dumped, spilled, or otherwise released into the environment.[2] Prior to CERCLA such contamination was addressed, if at all, by common law causes of action such as nuisance,[3] trespass,[4] and strict liability for ultra-hazardous activities.[5] Congress drew on this history to authorize the cleanup and the recovery of costs associated with responding to releases of hazardous substances into the environment.[6] A lame-duck President, Jimmy Carter, signed the bill into law during the final hours of the session on December 11, 1980.[7]

Two sites regularly featured on the television news and in news magazines in the late 1970s and early 1980s set the stage for passage of Superfund and provide a context for our understanding of the goals of the statute.[8] One site, "Valley of the Drums," imprinted on the screen and in the minds of the American public colorful images of erupting, smoking,

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1. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, Pub. L. No. 96-510, 94 Stat. 2767 (codified as amended at 42 U.S.C. §§ 9601–9675 (2006)).

2. The contamination at Love Canal, N.Y. is frequently cited as the site that spurred Congress to act. *See, e.g.*, Metro. Water Reclamation Dist. v. N. Am. Galvanizing & Coatings, Inc., 473 F.3d 824, 826–27 (7th Cir. 2007). For a discussion of the history of that site, see United States v. Hooker Chems. & Plastics Corp., 850 F. Supp. 993 (W.D. N.Y. 1994) (providing an in-depth examination of the contamination at Love Canal Channel, N.Y.).

3. *E.g.*, Boomer v. Atl. Cement Co., 257 N.E.2d 870 (N.Y. 1970).

4. *E.g.*, Martin v. Reynolds Metals Co., 342 P.2d 790 (Or. 1959).

5. *See* Atl. Research Corp. v. United States, 459 F.3d 827, 830 (8th Cir. 2006) ("CERCLA effectively transformed centuries of real property and tort liability law by making those who contaminate a site strictly liable for the costs of subsequent cleanup by others,"); Ronald G. Aronovsky, *Federalism and CERCLA: Rethinking the Role of Federal Law in Private Cleanup Cost Disputes*, 33 ECOLOGY L.Q. 1, 9–10 (2006) (stating that strict liability for ultra-hazardous activity was a common law action for private claims before CERCLA).

6. ROBERT V. PERCIVAL ET AL., ENVIRONMENTAL REGULATION: LAW, SCIENCE, AND POLICY 366–67 (5th ed. 2006).

7. The Daily Diary of President Jimmy Carter, December 11, 1980, www.jimmycarterlibrary.gov/documents/diary/1980/d121180t.pdf.

8. James Bruggers, *Valley of the Drums 30 Years Later*, COURIER-JOURNAL (Louisville, KY), Dec. 14, 2008, at A1, *available at* 2008 WLNR 26348599.

seeping, and corroding drums. News of the other site, "Love Canal," featured a brief hostage-taking of government officials by a charismatic housewife turned activist named Lois Gibbs. Gibbs and others in her community were concerned for their children and their suburban homes after government officials issued test results suggesting "damaged chromosomes" in some of her neighbors. The industrial waste site that surrounded the community and on which the school was built became the villain in the drama that ensued.[9] Prior to the passage of CERCLA, state and federal authorities struggled to respond to these events but found that many of the environmental statutes passed earlier in the 1970s failed to authorize remedial action that involved prior contamination of land or non-navigable waters.

The goals of the Superfund law were to identify contaminated sites, assure cleanup by either the federal government or private parties, make those connected to the contamination pay for cleanup, and enlist private interests in the identification and prevention of further hazards. While these goals are not explicitly stated in the statute, courts infer CERCLA's goals from the legislative history and text of the statute. "The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) is designed to promote the cleanup of hazardous waste sites and to ensure that cleanup costs are borne by those responsible for the contamination."[10] "CERCLA's dual goals are to encourage quick response and to place the cost of that response on those responsible for the hazardous condition;"[11] "CERCLA was enacted both to provide rapid responses to the nationwide threats posed by the 30[,000]–50,000 improperly managed hazardous waste sites in this country as well as to induce voluntary responses to those sites."[12] Others involved in the early years, such as Philip Cummings, the chief counsel of the Senate Environment Committee at the time of CERCLA's passage, interpreted the goals even more broadly:

> CERCLA is not primarily an abandoned dump cleanup program, although that is included in its purposes . . . . The main purpose of CERCLA is to make spills or dumping of

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9. *See* MARTIN LINSKY, CTR. FOR PRESS, POLITICS AND PUB. POLICY AT THE INST. OF POLITICS, JOHN F. KENNEDY SCH. OF GOV'T, HARVARD UNIV., SHRINKING THE POLICY PROCESS: THE PRESS AND THE 1980 LOVE CANAL RELOCATION (1985) (chronicling the events of Love Canal and Lois Gibbs's involvement).

10. Burlington N. & Santa Fe Ry. Co. v. United States, 129 S. Ct. 1870, 1872 (2009).

11. Control Data Corp. v. S.C.S.C. Corp., 53 F.3d 930, 936 (8th Cir. 1995).

12. United States v. Chem-Dyne Corp., 572 F. Supp. 802, 805 (S.D. Ohio 1983) (citing 5 U.S.C.C.A.N. 6119, 6119–6120 (1980)).

> hazardous substances less likely through liability, enlisting business and commercial instincts for the bottom line in place of traditional regulation. It was a conscious intention of the law's authors to draw lenders and insurers into this new army of quasi-regulators, along with corporate risk managers and boards of directors.[13]

These goals are evident in CERCLA's provisions giving the President sweeping powers to respond to actual and threatened environmental contamination of ambient air, surface and ground water, and land. CERCLA empowered the President to clean up or otherwise respond to releases of hazardous substances and releases of pollutants and contaminants when these latter releases cause an imminent and substantial endangerment.[14] The President delegated most of his authority to the U.S. Environmental Protection Agency (EPA).[15]

One of EPA's first tasks was to amend the National Contingency Plan to effectuate the statute's purposes and to provide priorities, procedures, and protocols for site identification, spill reporting, and emergency and long-term cleanup.[16] The National Oil and Hazardous Substances Pollution Contingency Plan (commonly referred to as the "National Contingency Plan" or the "NCP") was amended again in 1994 and serves to guide EPA (and in some circumstances private party) actions related to CERCLA.[17] EPA may clean up sites itself,[18] and, if necessary, compel responsible parties to undertake and to pay for site cleanups.[19] The majority of cleanups are the result of negotiated agreements whereby the parties reimburse EPA for its costs ("cost recovery"), pay for and conduct site cleanups themselves ("work agreements"), or both.[20]

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13. PERCIVAL ET AL., *supra* note 6, at 367–68 (quoting Philip Cummings, *Completing the Circle*, ENVTL. F. 11 (Nov–Dec. 1990)).

14. 42 U.S.C. § 9604(a)(1) (2006).

15. Exec. Order No. 12,580, 52 Fed. Reg. 2923 (Jan. 23, 1987).

16. *See* 42 U.S.C. § 9605(a)–(b) (2006) (requiring the National Contingency Plan to be revised and republished to "specify procedures, techniques, materials, equipment, and methods to be employed in identifying, removing, or remedying releases of hazardous substances . . . .").

17. 59 Fed. Reg. 47,384 (Sept. 15, 1994) (codified at 40 C.F.R. §§ 300.1–300.3 (2008)).

18. *See* § 9604(a)(1) (stating that the President is authorized to "remove or arrange for removal of, and provide for remedial action related to such hazardous substance, pollutant, or contaminant").

19. *See* 42 U.S.C. § 9606(a) (2006) ("[T]he President may . . . issu[e] such orders as may be necessary to protect public health and welfare and the environment.").

20. U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-09-656 SUPERFUND: LITIGATION HAS DECREASED AND EPA NEEDS BETTER INFORMATION ON SITE CLEANUP AND COST ISSUES TO ESTIMATE FUTURE PROGRAM FUNDING REQUIREMENTS, GAO-09-656, at 27 tbl.5 (2009) [hereinafter GAO-09-656].

CERCLA also created a dedicated trust fund, financed primarily by excise taxes on petroleum and chemical feedstocks, to enable the government to pay for cleanups when the parties responsible either could not be found, or were recalcitrant.[21] While the title of the law includes the word "compensation," CERCLA does not, in fact, require compensation for health damages.

CERCLA's expansive liability scheme both preserves trust fund resources (any site study or cleanup paid for and conducted by potentially responsible parties (PRPs) is money saved) and also restores monies to the trust fund through cost recovery actions and revenues from penalties.[22] The liability scheme provides a strong incentive for PRPs to negotiate settlements with EPA,[23] and it also provides incentives for pollution prevention and voluntary cleanup of sites not listed on the National Priorities List (NPL) or subject to federal enforcement.[24] An August 2009 Government Accountability Office (GAO) report valued these contributions to the trust fund and cleanup at near thirty billion dollars from all EPA enforcement activities, including the recovery of past and future costs, private party work commitments, and penalties.[25]

Superfund liability is retroactive,[26] strict, and often joint and several. Liability is retroactive because it applies to contamination that occurred before CERCLA was enacted in 1980. Liability is strict because a responsible party is liable even if it was not negligent. As in other forms of tort law when the harm is not divisible, liability is joint and several; that is, the government may hold one or more parties liable for the full costs of cleanup, even if there are other parties at the site.[27]

In 1980, Congress gave the President considerable leverage to make sure sites are cleaned up and costs are paid by private parties. In addition to the broad liability provisions and presidential authority to compel private

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21. TAX POLICY CTR., URBAN INST. AND BROOKINGS INST., REINSTATE SUPERFUND TAXES, http://www.taxpolicycenter.org/taxtopics/2010_budget_superfund.cfm.

22. GAO-09-656, *supra* note 20, at 79.

23. *Id.* at 27. Nearly eighty percent of all EPA enforcement actions end in settlement. *Id.* at 27, tbl.5. After 1994 on average over half of the cases the government files against private parties have pre-negotiated consent decrees that greatly decrease the time in litigation. *Id.* at 40 fig.6. Only twenty percent of EPA enforcement actions at NPL sites involved judgments or unilateral administrative orders. *Id.* at 25 tbl.4. Generally, though not always, unilateral administrative orders authorized by CERCLA section 106 are reserved for recalcitrant parties. *Id.* at 29.

24. *Id.* at 10 n.7.

25. *Id.* at 31 tbl.7.

26. United States v. Olin Corp., 107 F.3d 1506, 1511–12 (11th Cir. 1997); United States v. Mottolo, 695 F. Supp. 615, 622 (D.N.H. 1988).

27. Burlington N. & Santa Fe Ry. Co. v. United States, 129 S. Ct. 1870, 1881 (2009).

party cleanup, Congress provided only three narrow defenses to CERCLA.[28] In the early years, the government's powers of persuasion were all the clearer because the ease of proving liability required evidence as little as a deed showing who owned the contaminated property.[29] Over time, amendments to CERCLA,[30] judicial decisions,[31] and, in some cases, administrative reforms[32] have softened CERCLA's hard edges by providing more clarity about the innocent landowner defenses,[33] adding limited exemptions,[34] creating more opportunity to spread costs among parties,[35]

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28. Congress set CERCLA's cost recovery and liability provisions apart from other statutes and defenses when it began section 107 as follows: "Notwithstanding any other provision or rule of law, and subject only to the defenses set forth in subsection (b) of this section . . . ." 42 U.S.C. § 9607(a) (2006). Section 107(b) protected parties from releases caused solely by acts of God or acts of war (onsite), and protected innocent landowners that looked for contamination and found none but somehow ended up owning contaminated property through no fault of their own. § 9607(b). This last defense encompasses protection from actions by unaffiliated third parties as long as the landowner took steps to prevent such contamination from those who inherited contaminated property, and from governments that acquire property involuntarily or through eminent domain authorities. *Id.* Few of these defenses were particularly effective to shield potentially liable parties, because even the innocent landowner defenses were narrowly written to require an extensive (and ambiguous) pre-purchase investigation into prior site contamination that almost no one could meet and also have hazardous substances on the property.

29. § 9607(a)(1).

30. Superfund Amendments and Reauthorization Act (SARA) of 1986, Pub. L. No. 99-499, 100 Stat. 1613 (codified at 42 U.S.C. § 9601 (2006)); Asset Conservation, Lender Liability, and Deposit Insurance Protection Act of 1996, Pub. L. No. 104-208, § 107, 110 Stat. 3009–462 (codified at 42 U.S.C. §§ 9601, 9607(n) (2006)); Superfund Recycling Equity Act of 1999, Pub. L. No. 106-113, 113 Stat. 1536 (codified at 42 U.S.C. § 9627 (2006)); Small Business Liability Relief and Brownfields Revitalization Act of 2002, Pub .L. No. 107-118, 115 Stat. 2356 (2002) (codified as amended in scattered sections of 42 U.S.C. §§ 9601, 9604, 9605, 9607, 9622(g)) (amending CERCLA to add additional circumstances wherein parties may avoid liability if certain conditions are met (e.g., the *de micromis* exemption, section 107(o), and contiguous landowner exemption, section 107(q)).

31. *See, e.g.*, United States v. Best Foods, 524 U.S. 51, 68–71 (1998) (holding that a parent corporation cannot be held liable as an operator under CERCLA for the actions of its subsidiary without evidence of actual control of the facility).

32. *See* GAO-09-656, *supra* note 20, at 11–12 (summarizing the sixty-two administrative reforms, many of which were enacted in the Small Business Liability Relief and Brownfields Revitalization Act).

33. Superfund Amendments and Reauthorization Act; Small Business Liability Relief and Brownfields Revitalization Act (amending CERCLA to add additional circumstances wherein parties may avoid liability if certain conditions are met, e.g., contiguous landowner exemption, section 9607(q)); 40 C.F.R. § 312 (2008) (establishing regulations, required by the Small Business Liability and Relief and Brownfields Revitalization Act section 223, to clarify all appropriate inquiry sufficient to protect owners from liability).

34. Asset Conservation, Lender Liability, and Deposit Insurance Protection Act of 1996, Pub. L. No. 104-208, § 107, 110 Stat. 3009–462 (codified at 42 U.S.C. §§ 9601, 9607(n) (2006)); Superfund Recycling Equity Act of 1999, Pub. L. No. 106-113, 113 Stat. 1536 (codified as 42 U.S.C. § 9627 (2006)); Small Business Liability Relief and Brownfields Revitalization Act § 102(a) (amending CERCLA to add additional circumstances wherein parties may avoid liability if certain conditions are met (e.g., *de micromis* exemption, § 9607(o); municipal solid waste exemption, § 9607(p)).

voiding CERCLA's provisions creating strict liability for states,[36] limiting liability for parent corporations and bankrupt entities,[37] and clarifying the extent of insurance coverage.[38]

While private parties agonized over the stringent liability provisions, the focal point of the Superfund program for the general public, however, was and is the NPL. The NPL is commonly referred to as the list of the highest priority sites in the country. What makes NPL sites unique is that these are the only sites where trust fund monies can be used for long-term cleanups called "remedial actions."[39] In the original legislation, Congress required EPA to "list" 400 NPL sites to get the program up and running.[40] At the end of FY 2009, EPA had listed 1607 final and deleted sites on the NPL[41] of over 47,000 sites that EPA evaluated for potential listing.[42]

While the NPL is a major focus of the Superfund program, EPA can pursue enforcement actions at any site where hazardous substances are releasing or threatening release into the environment, not just NPL sites. It can also implement emergency cleanup or other, usually shorter-term, cleanups called "removal actions" at any site in the country.[43] Removal actions can take many forms: they can be used to provide an alternate source of drinking water where water has been contaminated, to remove

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35. Superfund Amendments and Reauthorization Act of 1986, Pub. L. No. 99-499, § 113, 100 Stat. 1647 (codified as 42 U.S.C. § 9613 (2006)); United States v. Atl. Research Corp., 551 U.S. 128 (2007).

36. *See* Seminole Tribe of Fla. v. Florida, 517 U.S. 44, 62 (1996) (overruling *Pennsylvania v. Union Gas Co.*, 491 U.S. 1, 17 (1989)) (stating that, in situations where states are unable to legislate, neither Congress nor anyone else may obtain money damages from the states).

37. *See* United States v. Best Foods, 524 U.S. 51, 68 (1998) (The Court held that "a participation-and-control test looking to the parent's supervision over the subsidiary, especially one that assumes that dual officers always act on behalf of the parent, cannot be used to identify operation of a facility resulting in direct parental liability."); In re Chateaugay Corp. v. LTV Corp., 944 F.2d 997, 1004, 1008 (2d Cir. 1991) (ruling that EPA's future response costs are dischargeable claims in bankruptcy if the release or threatened release of hazardous substances occurred pre-petition, as are injunctive remedies, to the extent that they impose obligations distinct from any obligations to stop or ameliorate ongoing pollution).

38. *See, e.g.*, Morton Int'l v. Gen. Accident Ins. Co., 629 A.2d 831, 878–79 (N.J. 1993) (limiting insurer liability).

39. 40 C.F.R. § 300.425 (2008).

40. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, Pub. L. No. 96-510, § 105, 94 Stat. 2767.

41. U.S. ENVTL. PROT. AGENCY, NAT'L PRIORITIES LIST: NPL SITE TOTAL BY STATUS AND MILESTONE (Oct. 27, 2009), www.epa.gov/superfund/sites/query/queryhtm/npltotal.htm.

42. GAO-09-656, *supra* note 20, at 13 n.11.

43. 42 U.S.C. § 9604(a)(1) (2006); United States v. W.R. Grace & Co., 429 F.3d 1224, 1227–28, 1237 (9th Cir. 2005) (observing that removal actions are usually "time-sensitive" but then concluding that EPA's several year cleanup of a Libby, Montana asbestos mine and processing site for asbestos-containing vermiculite qualified as a removal action).

barrels of chemicals likely to explode at a site, or to relocate families at imminent risk from the contamination.[44] Removal actions also may take the form of long-term action ("non-time critical") in anticipation of settlement with private parties, listing on the NPL, or in combination with other authorities to address contamination,[45] such as the Resources Conservation and Recovery Act's (RCRA) Corrective Action program.[46] Funding for removal actions implemented by the government is generally restricted to $2,000,000 and 12 months, unless the President has determined that the action is consistent with a remedial action.[47]

Additionally, private parties can agree to conduct an EPA-supervised cleanup of a site that might otherwise be listed on the NPL. Federal funding of the cleanup will not be necessary because private parties are cooperating with the cleanup. Under these circumstances, EPA may decide against listing the site on the NPL since EPA authority (other than funding) extends equally to listed and non-listed sites.[48] The agency often refers to such federally supervised private party response actions on sites that otherwise would be listed on the NPL as "Superfund Alternative" sites.[49] So far, sites officially designated as Superfund Alternative sites are relatively few in number. Only twenty-two sites were so designated as of September 2007, with another forty more sites under consideration for inclusion in the program.[50] EPA may also use its authority under the RCRA Corrective Action program for certain sites rather than listing them on the NPL. Many sites do not receive much EPA attention;[51] however, these sites may also be cleaned up under Superfund authority by Indian tribes, state or local governments, or, most frequently, private parties.[52]

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44. § 9604(a)(1); 42 U.S.C. § 9601(23) (2006).

45. OFFICE OF SOLID WASTE & EMERGENCY RESPONSE, U.S. ENVTL. PROT. AGENCY, CONDUCTING NON-TIME-CRITICAL REMOVAL ACTIONS UNDER CERCLA, PUB. NO. 9360.0-32FS (1993).

46. 42 U.S.C. §§ 6924(a), (u), (v), 6925(c) (2006).

47. § 9604(c)(1)(A)–(C).

48. *See* § 9604(a)(1) ("Whenever . . . any hazardous substance is released or there is a substantial threat of such a release into the environment, . . . the President is authorized to act, consistent with the national contingency plan . . . ."); *see also* 42 U.S.C. § 9605(h) (2006) ("NPL Deferral").

49. *See generally* Memorandum from Susan E. Bromm, Dir., Office of Site Remediation Enforcement (OSRE) & Michael B. Cook, Dir., Office of Superfund Remediation & Technology Innovation (OSRTI), to Superfund Nat'l Policy Managers, Regions I–X & Reg'l Counsel, Regions I–X, Revised Response Selection and Settlement Approach for Superfund Alternative Sites (June 17, 2004), http://www.epa.gov/compliance/resources/policies/cleanup/superfund/rev-sas-04.pdf.

50. GAO-09-656, *supra* note 20, at 52 n.56.

51. *See id.* at 39 tbl.8 (listing CERCLA cases filed by plaintiff: private parties accounting for fifty percent; federal government for thirty-seven percent; and state government for thirteen percent).

52. 42 U.S.C. § 9607(a)(4) (2006).

When the law was first enacted, estimates varied widely about the number of sites that would warrant federal attention, as well as about the likely cost of the program. Some thought that cleanup of contaminated sites would be done after the initial five-year authorization and funding; others estimated that there were thousands of sites that would need to be addressed, with a price tag of fifty billion dollars.[53]

Now, almost thirty years later, Congress has appropriated a total of $33.4 billion to the EPA for the Superfund program.[54] Although a recent GAO report estimated that PRP work at NPL sites was worth $22.5 billion through FY 2007,[55] just how much private parties have spent is unknown, as they are not required to report actual spending, even for actions at NPL sites.

We know now that addressing the risk at Superfund sites is a lengthy, expensive, and complicated endeavor. Many, if not most, sites will require some kind of monitoring and maintenance for decades. Thus, while some would like to see the Superfund program go away, it is likely to be with us for many more years. Therefore, it is worth considering what we knew about the scope of the problem when the program was first begun, how the major elements of the program have evolved, and what issues are on the horizon as the Superfund program enters its fourth decade.

In this article we examine two major areas of the Superfund program: (1) the cleanup program and its accomplishments; and (2) cleanup funding, including both the trust fund and liability provisions as mechanisms to pay for site cleanup. For each of these topics we first provide some background on what the original CERCLA legislation and early program guidance called for, and then describe how litigation, administrative changes, and/or statutory amendments shaped the cleanup of contaminated sites for the next thirty years. Where information is available, we provide data on relevant program accomplishments to date. We close with a discussion of a handful of issues we believe are critical to improving the Superfund program in the future.

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53. David F. Salisbury, *Superfund Set to Start Cleaning Up Abandoned Hazardous Waste Sites*, CHRISTIAN SCI. MONITOR, Dec. 8, 1980, at 7.

54. E-mail from Alan Youkeles, Associate Branch Chief, Budget, Planning and Evaluation Branch, Office of Superfund Remediation & Technology Innovation, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, to authors (Aug. 24, 2009, 2:00 p.m. EST) (on file with authors).

55. GAO-09-656, *supra* note 20, at 30.

I. CLEANING UP CONTAMINATED SITES

Most Superfund stakeholders agree that the cleanup of sites contaminated with hazardous substances is the fundamental objective of the Superfund statute. That said, just what is meant by "cleanup" has been the subject of much debate and disagreement ever since the program's inception.[56]

When Congress enacted CERCLA in 1980, the statute provided only vague guidance regarding the objectives that cleanup was to achieve. Section 104(c)(4) provided that:

> [T]he President shall select appropriate remedial actions determined to be necessary to carry out this section which are to the extent practicable in accordance with the national contingency plan and which provide for that cost-effective response which provides a balance between the need for protection of public health and welfare and the environment at the facility under consideration, and the availability of amounts from the Fund established under Title II of this Act to respond to other sites which present or may present a threat to public health or welfare or the environment, taking into consideration the need for immediate action.[57]

The lack of clarity of this section was one of the reasons why Congress enacted major substantive amendments to CERCLA with the 1986 Superfund Amendments and Reauthorization Act (SARA).[58] Even after these amendments, the Superfund statute does not require national site-specific cleanup standards that apply to all sites. Instead, SARA established certain criteria for EPA to consider in selecting a remedy for each site. The statute gives preference to remedial actions in which treatment

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56. *See, e.g.*, ENVTL. DEF. FUND ET AL., RIGHT TRAIN WRONG TRACK: FAILED LEADERSHIP IN THE SUPERFUND CLEANUP PROGRAM 1 (1988) [hereinafter RIGHT TRAIN] (comparing initial cleanup levels with cleanup levels eight years after enactment of CERCLA and finding them "virtually indistinguishable").

57. Comprehensive Environmental Response, Compensation, and Liability Act of 1980, Pub. L. No. 96-510, § 104(c)(4).

58. Superfund Amendments and Reauthorization Act (SARA) of 1986, Pub. L. No. 99-499, 100 Stat. 1613, § 121(a) (codified at 42 U.S.C. § 9621(a) (2006)).

"permanently and significantly reduces the volume, toxicity or mobility of the hazardous substances, pollutants, and contaminants."[59]

EPA currently establishes cleanup standards at each site based on site-specific risk assessments and requirements under other statutes, commonly referred to as "ARARs" (Applicable or Relevant and Appropriate Requirements). Other criteria used in evaluating a remedy include: overall protection of human health and the environment, compliance with ARARs, short-term effectiveness, implementability, cost, and state and local acceptance.[60] Because these criteria often conflict, EPA developed a complicated method for applying them, which includes categorizing the nine criteria as "threshold," "primary balancing," or "modifying."[61] EPA has considerable flexibility in its selection of a remedy as it attempts to reconcile the criteria with the interests of the affected parties. Based on these somewhat loose criteria, EPA selects a remedy at each site. In sum, section 121 of CERCLA provides some guidance to EPA, but still leaves much room for discretion—and controversy.

Many Superfund cleanup plans in the early years of the program, however, failed to state these cleanup goals clearly or, in some cases, failed to establish cleanup standards.[62] For many years, the remedy selection process was criticized for:

* **Excessive Complexity** — A cumbersome, repetitive, and slow process created by the complexity of evaluating ARARs, risk assessments, and alternative remedies;[63] incompatible and inadequate management of information important to the remedy selection process.[64]

* **Unclear Standards —** Cleanup standards and goals that are determined (if at all) after an in-depth evaluation of all alternative remedies instead of setting the goal first and then studying only the remedies that meet that goal;[65] determination of cleanup remedies based on the available technologies, not the cleanup standards, since some cleanup standards

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59. 42 U.S.C. § 9621(b)(1) (2006).

60. 40 C.F.R. § 300.430(e)(9)(A)–(I) (2008).

61. *Id.* § 300.430(f)(1)(i)(A)–(C).

62. U.S. GEN. ACCOUNTING OFFICE, GAO/RCED-92-138 SUPERFUND: PROBLEMS WITH THE COMPLETENESS AND CONSISTENCY OF SITE CLEANUP PLANS 30 (1992).

63. E. Donald Elliott, *Superfund: EPA Success, National Debacle?*, 6 NAT. RESOURCES & ENV'T 11, 12 (1991–1992).

64. U.S. GEN. ACCOUNTING OFFICE, GAO/PEMD-90-3 HAZARDOUS WASTE: EPA'S GENERATION AND MANAGEMENT DATA NEED FURTHER IMPROVEMENT 2 (Feb. 1990).

65. CLEAN SITES, IMPROVING REMEDY SELECTION: AN EXPLICIT AND INTERACTIVE PROCESS FOR THE SUPERFUND PROGRAM, at iv (1990).

cannot be achieved with present technologies;[66] failure to define clear priorities, such as how current and future risks are to be balanced.[67]

* **Inconsistent Remedy Selection** — Inconsistent application of the statutory criteria, resulting in very different remedies for similar sites;[68] giving too much[69] or too little[70] emphasis to cost in the selection of a remedy; giving too little emphasis to baseline risk assessments of sites where humans are not currently exposed to contamination;[71] inadequate consideration of the risks and damage to human health and the environment posed by the implementation of the selected remedy;[72] infrequent use of treatability studies (laboratory or small-scale tests to determine the effectiveness of technologies on the specific waste at a site) in evaluating remedies and resolving technical disputes among PRPs, EPA, states, and community groups;[73] failure to consider current and future land use at the site when establishing a cleanup standard or selecting a remedy.[74]

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66. *See* Dr. Joel S. Hirschhorn, *Definition and Analysis of Stubborn Superfund Problems*, *in* WORKING PAPERS ON SUPERFUND REFORM: PROBLEM DEFINITION AND POLITICAL MAPPING 55, 69 (1992) (recognizing that cleanup requirements originally set for a site may not determine what is an acceptable cleanup because the cleanup may be limited by the performance of the technology chosen).

67. Carolyn B. Doty & Curtis C. Travis, *The Superfund Remedial Action Decision Process: A Review of Fifty Records of Decision*, 39 J. AIR & WASTE MGMT. ASS'N 1535, 1537–38 (1989).

68. *Id.* at 1538.

69. *See, e.g.*, FRANK R. LAUTENBERG & DAVE DURENBERGER, SENATE SUBCOMM. ON SUPERFUND, OCEAN, & WATER PROT., LAUTENBERG-DURENBERGER REPORT ON SUPERFUND IMPLEMENTATION: CLEANING UP THE NATION'S CLEANUP PROGRAM 63–64 (1989); Doty & Travis, *supra* note 67, at 1538 (studying fifty RODs and finding "cost to be the most significant factor in the selection of remedial alternatives").

70. John Butler, III, *Superfund: Super Costs*, *in* RETHINKING SUPERFUND: IT COSTS TOO MUCH, IT'S UNFAIR, IT MUST BE FIXED 67, 69 (1991).

71. Doty & Travis, *supra* note 67, at 1537 (observing that in this study of thirty-six sites for which a quantitative risk assessment was conducted, all but seven sites had risk levels prior to cleanup that were within the risk range required after cleanup yet remedial action often occurred, suggesting that baseline risk assessments, where no current human exposure exists, does not play a significant role in deciding whether to remediate a site).

72. 1 COMM. ON ENVTL. EPIDEMIOLOGY, NAT'L RESEARCH COUNCIL, ENVIRONMENTAL EPIDEMIOLOGY: PUBLIC HEALTH AND HAZARDOUS WASTES 20 (1991).

73. CLEAN SITES, MAKING SUPERFUND WORK: RECOMMENDATIONS TO IMPROVE PROGRAM IMPLEMENTATION 22 (1989).

74. *Administration of the Federal Superfund Program: Hearings Before the Subcommittee on Investigations and Oversight of the Committee on Pubic Works and Transportation*, 100 Cong. 1 (1991) (statement of Joel Robinson, Director, Environmental Science, Unical, Representing the American Petroleum Institute) (SUDOC: Y4.P96/11:102-44 at 325); Daniel Koshland, Jr., *Toxic Chemicals and Toxic Laws*, 253 SCI. 949, 949 (1991). *But see*, Donald A. Brown, *What Is Wrong with the National Contingency Plan?*, 20 ENVTL. L. REP. NEWS & ANALYSIS 10371, 10373 (1990) (citing 40 C.F.R. § 300.430(a)(1)(iii)(B)–(D) (1990)) (arguing that the new National Contingency Plan allows EPA to use land use controls and other institutional controls for groundwater cleanup when other measures are not practicable).

* **Questionable Results** — Focus on the issue of how to choose cleanup remedies for sites to the detriment of practical consideration of whether the remedies chosen will actually work;[75] inadequate assessment and protection of ecological concerns;[76] inconsistent remedy selection and completeness depending on whether the PRP or the EPA conducts the remedial investigation and feasibility studies;[77] slower cleanup and more frequent selection of lower quality remedies at sites in communities of color;[78] failure to select permanent remedies;[79] failure to consider "treatment trains," consisting of a combination of technologies, which together can clean up the site;[80] over reliance by EPA on incompetent and expensive contractors.[81]

* **Inadequate Public Involvement** — Lack of timely communication about the selection process and opportunity for public input prior to selection of the remedy, essentially closing the public out of the reasoning for and participation in the most important decisions.[82]

In response to the many external studies criticizing these various aspects of the remedy selection process, EPA implemented many reforms to

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75. U.S. GEN. ACCOUNTING OFFICE, GAO/T-RCED-92-15 SUPERFUND: ISSUES THAT NEED TO BE ADDRESSED BEFORE THE PROGRAM'S NEXT REAUTHORIZATION 10 (1991) (discussing problems associated with clay caps for containment, and the problems associated with pump and treat for groundwater); Doty & Travis, *supra* note 67, at 1542 (criticizing the remedy selection process for a lack of explanation or analysis of the effectiveness of selected remedies, including failure to assess the degree of risk reduction provided by remedial alternatives in all but twelve percent of fifty RODs studied).

76. Doty & Travis, *supra* note 67, at 1539; RIGHT TRAIN, *supra* note 56, at 5; ENVTL. DEFENSE FUND ET AL., TRACKING SUPERFUND: WHERE THE PROGRAM STANDS 4–5 (1990).

77. U.S. GEN. ACCOUNTING OFFICE, GAO/T-RCED-92-69 SUPERFUND: PROBLEMS WITH THE COMPLETENESS AND CONSISTENCY OF SITE CLEANUP PLANS 12 (1992).

78. Marianne Lavelle & Marcia Coyle, *Unequal Protection: The Racial Divide in Environmental Law*, THE NAT'L L.J., Sept. 21, 1992, at S2.

79. Doty & Travis, *supra* note 67, at 1541; RIGHT TRAIN, *supra* note 56, at 4; ENVTL. DEFENSE FUND ET AL., *supra* note 76, at 3–4.

80. RIGHT TRAIN, *supra* note 56, at 4; ENVTL. DEFENSE FUND ET AL., *supra* note 76, at 3.

81. U.S. GEN. ACCOUNTING OFFICE, GAO/T-RCED-92-37 FEDERALLY SPONSORED CONTRACTS: UNALLOWABLE AND QUESTIONABLE INDIRECT COSTS CLAIMED BY CH2M HILL (1992); U.S. GEN. ACCOUNTING OFFICE, GAO/RCED-92-45 SUPERFUND: EPA HAS NOT CORRECTED LONG-STANDING CONTRACT MANAGEMENT PROBLEMS (1991); U.S. GEN. ACCOUNTING OFFICE, GAO/T-RCED-91-5 EPA'S CONTRACT MANAGEMENT: AUDIT BACKLOGS AND AUDIT FOLLOW-UP PROBLEMS UNDERMINE EPA'S CONTRACT MANAGEMENT (1990); U.S. GEN. ACCOUNTING OFFICE, GAO/RCED-89-57 SUPERFUND CONTRACTS: EPA'S PROCEDURES FOR PREVENTING CONFLICTS OF INTEREST NEED STRENGTHENING (1989).

82. RIGHT TRAIN, *supra* note 56, at 4; ENVTL. DEFENSE FUND ET AL., *supra* note 76, at 4; Hirschhorn, *supra* note 66, at 72; CLEAN SITES, MAKING SUPERFUND WORK, *supra* note 73, at 23.

the Superfund program.[83] Controversy about the pace and quality of cleanup persists.[84] In the past eight years, however, there has been much less congressional oversight of Superfund cleanups than in the earlier years of the program and a dearth of independent evaluations of this aspect of the program. As a result, it is difficult to ascertain the quality of recent remedy decisions or of the remedy selection process. Notwithstanding these data gaps, the most controversial aspect of Superfund remedies continues to be the basic question: "How clean is clean?" That is, is the goal of site cleanups to: (1) remove all contamination at a site (assuming this is technically possible), or is it to (2) reduce risk to an acceptable level, which can often be accomplished by limiting exposure to contaminants left on-site?

While there are many nuances to this argument, this has been a major issue dividing critics of the Superfund program. Some believe that cleanups are not stringent enough,[85] whereas others say that cleanups are too stringent and not cost-effective.[86] Some have argued that the law, by requiring permanent remedies, requires that contaminated sites be restored to "pre-contamination" conditions; others believe this to be impractical and a waste of money, and argue that risks can be greatly reduced by containing exposure, that is, ensuring that people do not come into contact with any contaminants left on site (or in ground or other waters).[87]

While these disagreements regarding the proper cleanup standards and remedy selection criteria were among the most divisive issues during the early and middle years of the program, in the last decade, focus on this issue has waned at the national level (although this problem still arises at individual sites). This is due to a number of factors. Under the George W. Bush administration there was simply less attention paid to Superfund in general, both in the White House and Congress. In addition, the focus of national environmental organizations shifted to climate and other issues, and few had senior staff following the Superfund program. And, the reality

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83. U.S. Envtl. Prot. Agency, Superfund Reforms, http://www.epa.gov/superfund/programs/reforms (last visited Oct. 27, 2009).

84. *See* RENA STEINZOR & MARGARET CLUNE, THE TOLL OF SUPERFUND NEGLECT: TOXIC WASTE DUMPS AND COMMUNITIES AT RISK (2007) (documenting cleanup and funding failures at fifty toxic waste sites in ten of the most populated states.)

85. *Id.*

86. LISA GREY, CRS REPORT TO CONGRESS: CLEANUP STANDARDS RECONSIDERED (1995).

87. *See, e.g.*, JAMES V. DE LONG, CATO INST., PRIVATIZING SUPERFUND: HOW TO CLEAN UP HAZARDOUS WASTE (1995); JAMES T. HAMILTON & W. KIP VISCUSI, CALCULATING RISKS?: THE SPATIAL AND POLITICAL DIMENSIONS OF HAZARDOUS WASTE POLICY 164 (Nancy L. Rose & Richard Schmalensee eds., 1999).

of the challenges of site cleanup, both in terms of cost and technical feasibility, came into play as well. It became clear that for some sites there simply were not effective technologies to remove contamination, and that for other sites, notably large mining sites and contaminated waterways, cleanup was so expensive that complete cleanup may not be achievable or is decades away.

Also, the types of sites EPA placed on the NPL began to change, and the sites included on the NPL have become more complex and expensive. According to a U.S. GAO report released in July 2009, for sites expected to cost fifty million dollars or more to complete ("mega sites"), the median duration is 14.8 years to reach the "construction complete" phase.[88] For non-mega sites, the average duration of cleanup activities is 10.1 years.[89]

As the program matured, it became clear that contamination would be left at many sites. On-site cleanup techniques include: containing the contamination on sites with soil and textile caps, impermeable landfill liners, underground slurry walls, fences, bioremediation and ground water pump-and-treat, and monitoring of groundwater and other contamination.[90] These on-site remedies often required institutional controls to keep people from coming into contact with contamination both now and in the future. Such controls include: permit restrictions, zoning changes, public notices, advisories and other warnings, and easements and deed restrictions.[91]

A. Program Accomplishments

There are many ways to examine the progress of the Superfund program. For sites on the NPL, one can look at how many sites have been added to the NPL each year, how many sites have been deleted from the NPL, the number of sites where the remedy is actually constructed, or the number of sites where Government Performance and Results Act (GPRA) goals have been achieved. Other milestones are how many site cleanups have been completed, the number and value of settlements reached with responsible parties to compensate EPA for cleanup activities or to agree to undertake various site-specific activities, and the number of unilateral administrative orders issued to force private party cleanup.

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88. GAO-09-656, *supra* note 20, at 70 tbl.15.

89. *Id.*

90. OFFICE OF SITE REMEDIATION AND ENFORCEMENT, U.S. ENVTL. PROT. AGENCY, REVITALIZING CONTAMINATED SITES: ADDRESSING LIABILITY CONCERNS 38 (2008).

91. *Id.* at 39.

In addition, success can be characterized by the number of sites that need never be listed because removal actions alleviated the hazard or because private parties chose to clean up contamination using the liability provisions of the statute to spread the costs to other responsible parties. Other parties chose to settle with EPA and then pursue their own cleanup without listing the site on the NPL. Some of these latter sites became "Superfund Alternative" sites for which information is available, but for many of these sites where EPA took no action or for sites that would not otherwise qualify as NPL sites, information is limited.[92]

It is beyond the scope of this article to report on all the various areas of program performance for the Superfund program, but it is important to give the reader a sense of some of the key elements of the Superfund program and how these accomplishments have changed over time.

B. NPL Listings/Deletions

One of the main indicators used to assess the scope and pace of the Superfund program is the number of sites added to the NPL each year. It is important to note that NPL listing is more of an art than a science, and the EPA Administrator has tremendous discretion in deciding which, and how many, sites should be listed. Typically, sites are brought to EPA's attention by state government representatives or by citizens living or working near a site. While there is a formal system for evaluating whether a site is eligible for the NPL, called the Hazard Ranking System,[93] the final decision is the EPA Administrator's.[94] The only legal requirement related to listing is that a site may not be made a final NPL site (sites are first "proposed" to the NPL, then most, but not all, sites are ultimately named as "final" NPL sites) without the concurrence of the governor of the state where the site is located.[95] Thus, while the number of sites listed each year is telling in terms of the agenda that the EPA is giving to itself, it does *not*, in fact,

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92. Although a measure of private party interest in Superfund can be found by the number of suits filed by private parties, the problem is how to distinguish contribution actions for costs incurred at NPL sites from actions for recovery of costs for voluntary cleanup. *See, e.g.*, GAO-09-656, *supra* note 20, at 39 tbl.8 (breaking out of the number of cases filed by private parties as compared to state and federal government filings).

93. 40 C.F.R. § 300 app. A (2008).

94. For a description of the listing process, see Katherine N. Probst et al., *Superfund's Future: What Will It Cost? A Report To Congress*. KATHERINE N. PROBST ET AL., SUPERFUND'S FUTURE: WHAT WILL IT COST? A REPORT TO CONGRESS 77–81 (2001).

95. Omnibus Consolidated Rescissions and Appropriations Act of 1996, Pub. L. No. 104-134, 110 Stat. 1321 (1996).

provide useful information to the public about the number of sites across the country that need federal attention.

In the original statute, Congress required EPA to place 400 sites on the NPL,[96] which occurred in 1983. At the end of FY 2009, there were 1607 final and deleted NPL sites.[97] NPL sites include not only sites where private parties and state and local government organizations are liable, but also sites owned or operated by the federal government, called "federal facilities." The overwhelming majority of the sites on the NPL are owned and operated by private entities; however, eleven percent, or 173 of the final and deleted NPL sites, are owned and operated by federal agencies.[98] The cost of site studies and cleanups for federal facility sites are paid for out of the budget of the federal agency responsible. The Department of Energy has some of the most costly and complex NPL sites, and the Department of Defense also has many contaminated sites on the NPL. As shown in Figure 1 below, the majority of sites were listed before FY 1991. Since that year, annual listings have numbered fewer than forty-five sites per year. In the last eight years, twenty or fewer sites have been added each year as final NPL sites.

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96. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, Pub. L. No. 96-510, § 105, 94 Stat. 2767.

97. U.S. Envtl. Prot. Agency, NPL Site Totals by Status and Milestone, www.epa.gov/superfund/sites/query/queryhtm/npltotal.htm (last visited Oct. 27, 2009).

98. Some "federal facility" sites are among the most costly in the nation. However, we do not address the many specific issues related to these sites in this article. *See generally* CONG. BUDGET OFFICE, CLEANING UP THE DEPARTMENT OF ENERGY'S NUCLEAR WEAPONS COMPLEX (2004); U.S. OFFICE OF TECH. ASSESSMENT, COMPLEX CLEANUP: THE ENVIRONMENTAL LEGACY OF CLEANING UP NUCLEAR WEAPONS PRODUCTION (1991); U. S. CONG. BUDGET OFFICE, CBO PAPERS: CLEANING UP DEFENSE INSTALLATIONS: ISSUES AND OPTIONS (1995).

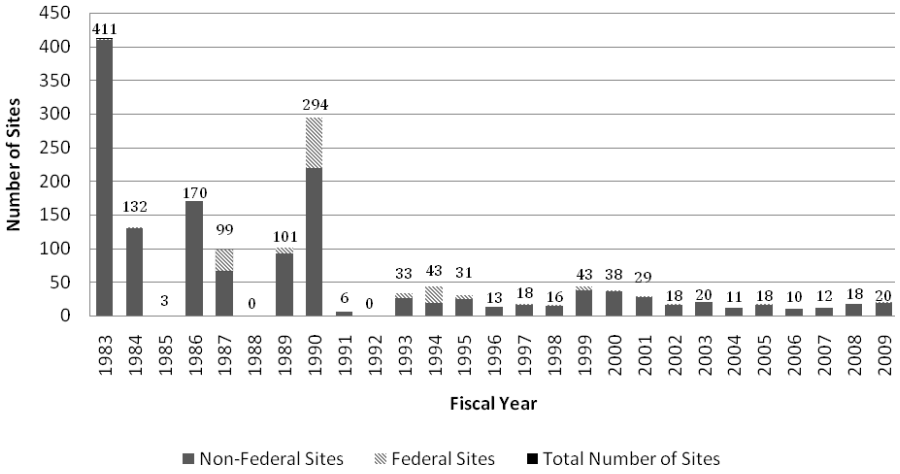

Figure 1: Final NPL Listings, FY 1983–FY 2009[99]

In the early years of the program, EPA developed the notion of "deleting" a site from the NPL as the key measure of progress. According to EPA policy, a site would be formally deleted from the NPL when EPA has determined, in consultation with the state, that no further response action is required to protect human health and the environment. Almost thirty years later, only twenty-one percent of NPL sites have met that goal.[100] As of the end of FY 2009, 338 sites had been deleted, out of a total of 1607 final NPL sites.[101] Some of these sites were sites listed early in the program and required little if any cleanup activity. Interestingly, as of the end of FY 2007, according to GAO, eighty of the sites listed in 1983 were still not construction complete.[102]

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99. E-mail from Alan Youkeles, Associate Branch Chief, Budget, Planning and Evaluation Branch, Office of Superfund Remediation & Technology Innovation, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, to authors (Aug. 21, 2009, 10:45 a.m. EST) (on file with authors); U.S. Envtl. Prot. Agency, Nat'l Priorities List: Number of NPL Site Actions and Milestones by Fiscal Year, www.epa.gov/superfund/sites/query/queryhtm/nplfy.htm accessed (last visited Dec. 16, 2009).

100. E-mail from Alan Youkeles, Associate Branch Chief, Budget, Planning and Evaluation Branch, Office of Superfund Remediation & Technology Innovation, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, to authors (Oct. 27, 2009, 1:25 p.m. EST) (on file with authors).

101. *Id.*

102. GAO-09-656, *supra* note 20, at 68 fig.11.

C. Construction Complete

When it became clear to EPA that many sites would either never be deleted from the NPL, or that attaining that status would take decades, EPA developed a new measure for documenting progress: "construction complete." This new metric was established in 1990 and subsequently clarified in 1993.[103] A site is categorized as "construction complete" when construction of the remedy is complete, that is, all the engineering work at the site has been implemented.[104] A site that is construction complete but has not been deleted has not achieved the cleanup goals set out by EPA in the selected remedy—in other words, more action at the site will be required to achieve or maintain cleanup goals for the site.

Many still consider "construction complete" to be the best measure of NPL site progress, as it indicates when all physical implementation of the remedy is complete. As shown in Figure 2 below, the number of sites categorized as construction complete hit a high of eighty-eight in FY 1992, and then dropped to the sixties for the next few years until again reaching a high of eighty-eight in FY 1997. In FY 2001, the number of sites that attained this status dropped markedly, to forty-seven, and stayed in the forties for the next few years. In FY 2009, the number of construction complete sites reached an all time low—twenty sites—since the measure was introduced.[105]

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103. National Oil and Hazardous Substances Pollution Contingency Plan, 55 Fed. Reg. 8666, 8699 (Mar. 8, 1990) (to be codified at 40 C.F.R. pt. 300); Notification of Policy Change: Federal Register Notice, 58 Fed. Reg. 12142, 12142 (Mar. 2, 1993) (to be codified at 40 C.F.R. pt. 300).

104. U.S. Envtl. Prot. Agency, Superfund: Construction Completions, http://epa.gov/superfund/cleanup/ccl.htm (last visited June 3, 2009).

105. When EPA introduced the "construction complete" measure in the early 1990s, it then "backdated" some sites that had reached that status before the measure was introduced. E-mail from Alan Youkeles, Associate Branch Chief, Budget, Planning and Evaluation Branch, Office of Superfund Remediation & Technology Innovation, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, to authors (Aug. 20, 2009, 3:26 p.m. EST) (on file with authors).

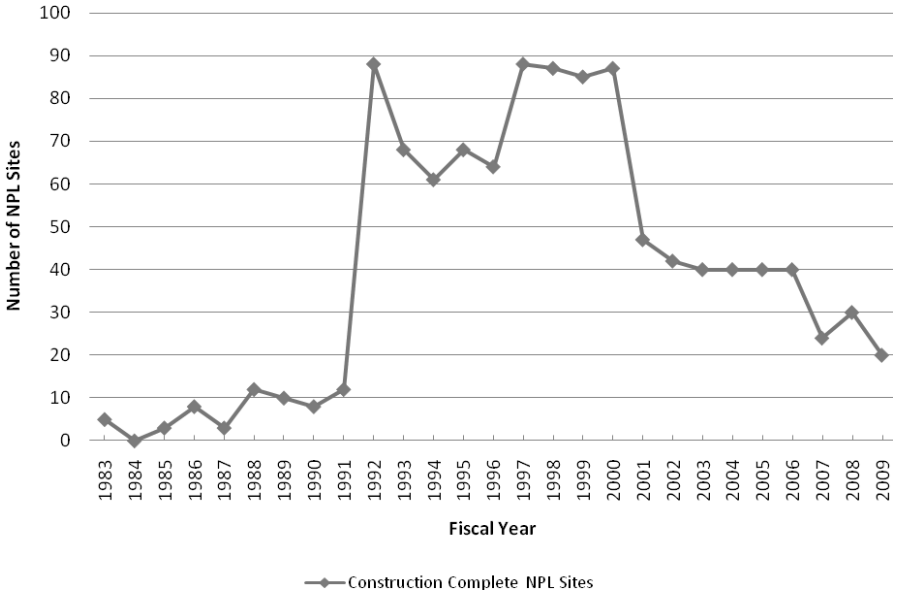

Figure 2: Construction Complete Sites, FY 1983–FY 2009[106]

D. Government Performance Results Act Measures

As the pace of sites reaching "construction complete" has diminished in recent years, EPA has again developed new performance measures to try to provide a more attainable measure of progress for NPL cleanups. Most NPL sites will require some kind of long-term monitoring and maintenance, and many will never be deleted from the NPL. Thus, in the past decade, increasing attention has been paid to the "post-cleanup" period, that is, what is needed to ensure protection at a site after the remedy is fully implemented. A critical element of post-cleanup activities is ensuring that any institutional controls needed to prevent exposure are in fact being implemented and enforced. Under the Government Performance Results Act (GPRA),[107] each federal agency is required to develop performance

106. E-mail from Alan Youkeles, Associate Branch Chief, Budget, Planning and Evaluation Branch, Office of Superfund Remediation & Technology Innovation, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, to authors (Aug. 21, 2009, 10:44 a.m. EST) (on file with authors); U.S. Envtl. Prot. Agency, Nat'l Priorities List: NPL Site Total by Status and Milestone, www.epa.gov/superfund/sites/query/queryhtm/npltotal.htm (last visited Oct. 27, 2009).

107. 5 U.S.C. § 306 (2006).

measures. The Superfund program established three new measures, in addition to construction complete, for its GPRA goals.[108] The EPA definitions for each of these measures are:

Sitewide Ready for Anticipated Use: This measure tracks sites on the NPL where: 1) construction of the remedy is completed, 2) all cleanup goals have been achieved to reduce unacceptable risk that could affect current and reasonably anticipated future land uses of the sites, and 3) all institutional controls at the site have been implemented.

Human Exposure Under Control: This measure tracks sites on the NPL where all identified unacceptable human exposures from site contamination for current land and/or ground water use conditions have been controlled.

Groundwater Migration Under Control: This measure tracks sites on the NPL where either: 1) contamination is below protective, risk-based levels or, if not, 2) where the migration of contaminated ground water is stabilized, there is no unacceptable discharge to surface water, and monitoring will be conducted to confirm that affected ground water remains in the original area of contamination.[109]

What all of these GPRA measures have in common is that they are measures of interim progress: they relate to progress cleaning up a site that is less than achieving the cleanup goals originally determined for the site. Another element of these goals is that they relate directly to another contentious cleanup issue—the question of whether cleanups should be targeted to current or likely future land use or whether cleanups should be aimed at enabling quite different possible future land uses. For example, should an industrial site be cleaned up to a standard that would allow industrial use or should it be cleaned up to a higher standard that would allow residential use, with residents growing tomatoes in their yards and children playing in the soil?

As of the end of FY 2008, EPA had "controlled all identified unacceptable human exposure" at 1306 sites and "controlled the migration of contaminated ground water through engineered remedies or natural

108. A fourth measure, "final assessment decision," does not relate directly to cleanup progress, and is therefore not included here.

109. U.S. Envtl. Prot. Agency, Accomplishments and Performance Measures, www.epa.gov/superfund/accomplishments.htm (last visited Oct. 27, 2009).

processes" at 997 sites.[110] Needless to say, the wording of these measures raises many red flags. It is unclear what constitutes "unacceptable" human exposure as well as how migration of contaminated groundwater can be "controlled through natural processes." Clearly, there is still an opportunity for increased transparency in the measures EPA uses to document progress for the Superfund program.

The third measure, sitewide ready for anticipated use, reflects the agency's increasing focus over the past decade on reuse of contaminated properties. Importantly, a site cannot be considered ready for reuse unless all institutional controls have been implemented. As of the end of FY 2008, 343 sites had met this measure.[111]

E. Removal Actions

The removal program is the understudy to the remedial program's starring role in Superfund. The removal program provides emergency aid and initial cleanup at thousands of sites across the country. Removal actions usually involve short-term actions to limit the immediate hazard at sites.[112] At some sites, however, such as EPA's several-year cleanup of a Libby, Montana asbestos mine and processing site for asbestos-containing vermiculite, EPA implemented major cleanup actions under removal authorities.[113] Removal actions are tailored to the needs of the site and may include a wide range of actions, such as providing alternative sources of drinking water where water has been contaminated, removing barrels of substances likely to explode at a site, or relocating families at imminent risk from the contamination.[114] The statute restricts funding for removal actions funded by the government to $2,000,000 and twelve months, unless the EPA has determined that continued action beyond these limits is necessary to address an emergency, or other immediate risks to public health, welfare, or the environment, or the action is consistent with the remedial action to be taken.[115]

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110. U.S. Envtl. Prot. Agency, Superfund National Accomplishments Summary Fiscal Year 2008, http://www.epa.gov/superfund/accomp/numbers08.htm (last visited Oct. 27, 2009).

111. *Id.*

112. 42 U.S.C. § 9604(a)(1) (2006).

113. United States v. W.R. Grace & Co., 429 F.3d 1224, 1227–28, 1237 (9th Cir. 2005) (observing that removal actions are usually "time-sensitive" but then concluding that EPA's several year cleanup of a Libby, Montana asbestos mine and processing site for asbestos-containing vermiculite qualified as a removal action).

114. § 9604(a)(1); 42 U.S.C. § 9601(23) (2006).

115. § 9604(c)(1)(A)–(C).

As of the end of FY 2007, EPA or private parties had started over 10,000 removal actions, including actions at federal facilities.[116] EPA may implement removal actions at any site in the country. CERCLA's removal program addresses hazardous pollution wherever and whenever it occurs, without concern for whether the site is listed on the NPL.[117] Seventy-two percent of the removal actions through FY 2007 are at sites not listed on the NPL.[118] The majority of removal actions are paid for by EPA, not responsible parties.[119] This is almost certainly the result of the need to move quickly to implement these types of activities.

II. PAYING FOR CLEANUP: TAXES AND LIABILITY

Congress provided two mechanisms for funding the cleanup of contaminated sites: 1) a dedicated trust fund, and 2) a liability scheme that encourages settlement with government authorities, compensates government action, rewards voluntary cleanup, and, in some cases, forces cleanup. The trust fund—officially titled the "Hazardous Substance Response Trust Fund" and the source of the statute's "Superfund" moniker—provides resources for removal actions, site studies and cleanups, and enforcement actions authorized under the liability scheme. Only sites listed on the NPL may receive funding for remedial actions. Program expenses and operating costs are also supported by the trust fund. By giving EPA the resources to pay for cleanups directly, the government can quickly clean up emergency spills and threatened releases, address orphan or abandoned sites where no responsible parties can be found, and accelerate site cleanup activities at those sites where there are responsible parties but these parties fail to conduct sites studies or cleanups themselves.[120] Those activities paid for by the government are called "fund-lead" activities.

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116. GAO-09-656, *supra* note 20, at 52–53 & n.59.

117. § 9604(a)(4) ("[T]he President may respond to any release or threat of release if in the President's discretion, it constitutes a public health or environmental emergency and no other person with the authority and capability to respond to the emergency will do so in a timely manner."). This authority extends even to actions otherwise excluded from federal response by § 9604(a)(3).

118. GAO-09-656, *supra* note 20, at 53.

119. *See id.* at 29 tbl.6, 52–53 (showing 1,838 removal actions taken by PRPs, a small percentage of the over 10,000 removal actions taken over the life of the program).

120. 42 U.S.C. § 9611 (2006).

While the trust fund earned the statute its nickname, the liability provisions earned the statute its reputation as a "polluter pays" statute.[121] Superfund liability extends to owners and operators of a site at the time of disposal,[122] those who arrange for disposal ("generators"),[123] and certain transporters (those who selected the site for disposal).[124] However, Superfund liability, at least as originally enacted and continuing today in some circumstances, extends beyond polluters to include those who benefit from cleaned sites, such as current owners and operators,[125] some of whom may have had little to do with contaminating the site. Parties subject to Superfund liability have come to be known as "potentially responsible parties" (PRPs) rather than "polluters." When PRPs agree through a negotiated settlement to conduct work at the site rather than face a court ruling under the statute's liability provisions, or when EPA uses the provisions provided to force parties to clean up, the effort is said to be "PRP-lead."

The remediation of a site may at various times be fund-lead and then become PRP-lead, or vice-versa, as agreements are reached or orders are issued. Typically, the majority of actions in the early stage of the cleanup process—site studies and remedial designs—are paid for by EPA, with the majority of the latter (and more expensive) actions—the actual remedies—paid for by PRPs, as shown in Table 1 below.

121. OFFICE OF SITE REMEDIATION ENFORCEMENT, U.S. ENVTL. PROT. AGENCY., REVITALIZING CONTAMINATED SITES: ADDRESSING LIABILITY CONCERNS: THE REVITALIZATION HANDBOOK 6 (2008).

122. 42 U.S.C. § 9607(a)(2) (2006).

123. § 9607(a)(3).

124. § 9607(a)(4).

125. § 9607(a)(1).

	Remedial Investigation/Feasibility Study		Remedial Design		Remedial Action	
Period (FY)	Fund-Lead	PRP-Lead	Fund-Lead	PRP-Lead	Fund-Lead	PRP-Lead
1980–1986	76%	24%	63%	37%	67%	33%
1987–1990	52%	48%	49%	51%	54%	46%
1991–1999	54%	46%	28%	72%	27%	73%
2000–2008	66%	34%	51%	49%	36%	64%

Table 1: Comparison of Leads for Remedial Pipeline Actions by Time Period (Percentage)[126]

Both the trust fund and the liability provisions have in some ways been wildly successful—the Superfund taxes raised much-needed revenues for a new federal program and the liability provisions have meant that the majority of cleanups under the law have been conducted by companies connected to contaminated sites. EPA is able to persuade parties to undertake work at sites directly, and to reimburse EPA for work they have already done.[127] Both aspects of the legislation have, however, been quite controversial. Many consider the liability provisions "draconian,"[128] and the taxes unfair.[129] Others feel that both provisions enhance the preventive aspects of the statute by providing an economic incentive to clean up and a deterrent to making more waste or using more hazardous substances in production.[130] We explore the evolution of these two important funding mechanisms below, as well as the accomplishments of each tool for funding cleanups over time.

126. E-mail from Alan Youkeles, Associate Branch Chief, Budget, Planning and Evaluation Branch, Office of Superfund Remediation & Technology Innovation, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, to authors (Sept. 8, 2009, 5:15 p.m. EST) (on file with authors); KATHERINE N. PROBST ET AL., *supra* note 94, at 43 tbl.3-2.

127. *See* GAO-09-656, *supra* note 20, at 26 fig.4 (showing that only ten percent of EPA enforcement actions do not result in either reimbursement of EPA costs, site work, or both).

128. 141 Cong. Rec. E31 (1995) (statement of Hon. Fred Upton).

129. BNA Environmental Compliance Bulletin, 2010 Budget Plan Assumes Superfund Tax Will Be Reinstated, http://subscript.bna.com/pic2/ecln.nsf/id/BNAP-7SAK5P?OpenDocument (last visited Nov. 1, 2009).

130. GAO-09-656, *supra* note 20, at 10 n.7.

A. Superfund Trust Fund

For the first five years of the program, appropriations for the Superfund program totaled $1.6 billion.[131] The majority of these funds came from excise taxes on petroleum and chemical feedstocks, with the remaining funding from general revenues. The balance in the trust fund was replenished over the years from penalties and cost recovery actions, as well as from interest on the fund balance,[132] as shown in Figure 3 with data from a recent GAO report below.

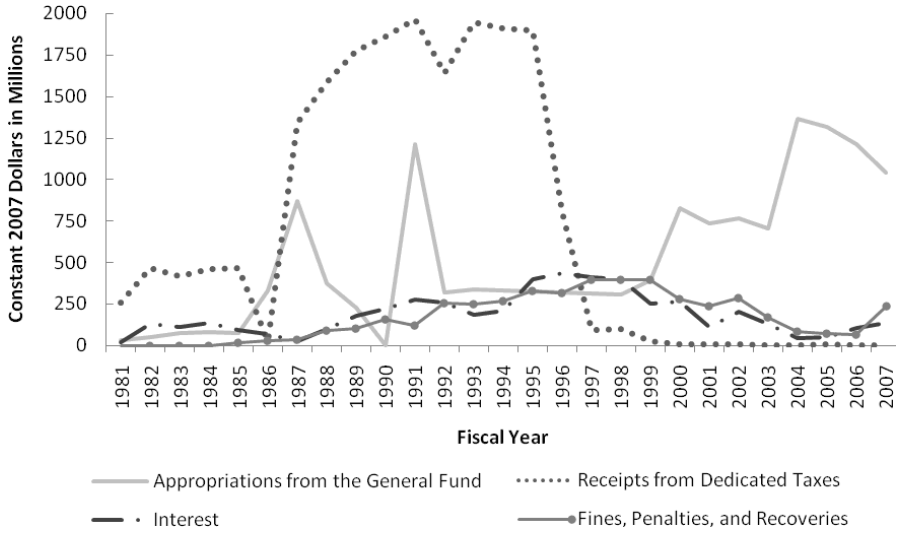

Figure 3: Major Sources of Revenue for the Superfund Trust Fund, FY 1981–FY 2007[133]

At the time of CERCLA's enactment, public attention was on the trust fund and the prospect of federal monies to speed cleanup.[134] The focus on

131. Kate Probst, *Reinstating the Superfund Taxes: Good or Bad Policy?*, RESOURCES FOR THE FUTURE, Aug. 24, 2009, http://www.rff.org/Publications/WPC/Pages/Reinstating-the-Superfund-Taxes.aspx.

132. U.S. GOV'T ACCOUNTABILITY OFFICE, SUPERFUND: FUNDING AND REPORTED COSTS OF ENFORCEMENT AND ADMINISTRATION ACTIVITIES 7 fig.2 (2008) [HEREINAFTER U.S. GOV'T ACCOUNTABILITY OFFICE, SUPERFUND: FUNDING].

133. U.S. GOV'T ACCOUNTABILITY OFFICE, SUPERFUND: FUNDING AND REPORTED COSTS OF ENFORCEMENT AND ADMINISTRATIVE ACTIVITIES, GAO-08-841R (2008), (data obtained from the "accessible text" version available at http://www.gao.gov/htext/d08841r.html).

the use of trust fund resources continued in the form of a scandal that engulfed the program almost as soon as it was established. EPA Administrator Anne Gorsuch Burford and her Assistant Administrator for Solid Waste and Emergency Response, Rita M. Lavelle, became lightning rods for accusations about favoritism, political corruption, and mismanagement of Superfund resources.[135] Questions arose about Lavelle's truthfulness in responding to congressional inquiries about her use of Superfund monies, her alleged harassment of critics within the agency,[136] her willingness to leak government settlement strategies to private parties,[137] and her "sweetheart deals"[138] with private parties that fully released them from significant portions of their cleanup obligations.[139]

Testimony before Congress revealed that Lavelle had issued orders for staff "to speed up a survey of 15,000 hazardous waste sites around the country 'to verify her view that most of them were not a problem.'"[140] The scandal was serious enough to warrant Lavelle's dismissal,[141] indictment in 1983, and later imprisonment. For her part, Lavelle argued that she was following orders.[142] Indeed, Administrator Burford (then Gorsuch) had doubted the need for the trust fund much beyond the statute's then five-year timeframe.[143] Administrator Burford's departure followed soon after

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134. *See* Jonathan Harsch, Waukegan Harbor PCBs: Job For "Superfund," CHRISTIAN SCI. MONITOR, Dec. 3, 1980, http://www.csmonitor.com/1980/1203/120354.html (stating that, if passed by Congress, the Superfund bill would provide 1.6 billion dollars to the federal fund for cleanup).

135. Philip Shabecoff, *Forecast for E.P.A. Was Stormy from the Start*, N.Y. TIMES, Feb. 20, 1983, § 4, at 2.

136. *The Superfund Turned Upside Down*, N.Y. TIMES, Dec. 28, 1982, at A22.

137. Shabecoff, *Forecast*, *supra* note 135; *E.P.A. Administrator Said to Ask Inquiry on Miss Lavelle's Actions*, N.Y. TIMES, Feb. 21, 1983, at A1, *available at* 1983 WLNR 484436 (stating that Lavelle had met, without informing the government, with officials of two companies with which the government was negotiating a hazardous waste cleanup in order to inform them that the E.P.A. would consider a new settlement offer).

138. Shabecoff, *Forecast*, *supra* note 135.

139. *See* N.R. Kleinfield, *$7 Million Settlement for Cleaning Up Hazardous Waste Dump Draws Fire*, N.Y. TIMES, Mar. 3, 1983, at B12, *available at* 1983 WLNR 463387 (referencing political manipulation and favoritism in the cleanup of a contaminated site).

140. Philip Shabecoff, *Toxic Cleanup Delay Laid to 2 Ex-Aides*, N.Y. TIMES, Apr. 9, 1983, § 1, at 7, *available at* 1983 WLNR 477278.

141. Howard Kurtz, *Negotiation Approach Was Dictated By Burford, Lavelle Tells House Unit*, WASH. POST, Feb. 25, 1983, at A2.

142. *Id.*

143. Philip Shabecoff, *418 Toxic Dumps Listed in Cleanup*, N.Y. TIMES, Dec. 21, 1982, at A1 ("Mrs. Gorsuch said in response to a question that she did not believe the fund would have to be reauthorized after 1985 . . . .").

Lavelle's. One headline called the mess a "*Made-for-Washington Epic Starring EPA and Congress*."[144]

Under Administrator Burford's leadership, trust fund dollars accumulated because cleanup and enforcement suits were slow to start.[145] During confirmation hearings for Burford's successor in May 1983, EPA Administrator-designee William Ruckelshaus committed to properly funding the program and re-orienting Superfund to clean up first and negotiate second.[146]

When Congress reauthorized the program in 1986, it increased annual appropriations to $1.6 billion, thus *quintupling* the size of the program.[147] Congress made some minor changes to the existing taxes and added a third tax to generate additional revenues for the trust fund, the corporate environmental income tax. This new tax was a broad-based tax, based on every corporation's modified alternative minimum taxable (AMT) income. Many different types of companies paid the AMT, including not only the same chemical and petroleum companies subject to the excise taxes, but also companies in all major industrial sectors, including mining, insurance, metals, and transportation, to name just a few.

Authorization for the three Superfund taxes expired at the end of 1995. While the Clinton Administration called for reinstatement of the Superfund taxes in its annual budget requests to Congress in subsequent years, little effort was actually made to try to persuade Congress to enact them. Once President George H. W. Bush was elected, the President's budget no longer requested that the taxes be reinstated, although in some years, the President's budget did request a funding increase for cleanup activities. Over the years, various Members of Congress have introduced legislation to reinstate one or more of the Superfund taxes, never with any success.

Since the lapse of the tax, the balance on the Superfund Trust Fund reached its all time high in 1997 but thereafter declined steadily, arriving at a zero balance in 2004, as it did in 1986 prior to passage of the first round of amendments to CERCLA. The balance has rebounded above zero since then—due to revenues from cost recovery, penalties, and interest on the fund balance—but the amount of money in the trust fund remains quite

144. Peter Grier, *Made-for-Washington Epic Starring EPA and Congress*, CHRISTIAN SCI. MONITOR, Feb. 11, 1983, http://www.csmonitor.com/1983/0211/021180.html.

145. Cass Peterson, *Ruckelshaus Promises to Speed Dump Cleanup*, WASH. POST, May 6, 1983, at A3.

146. *Id.*

147. Probst, *Reinstating the Superfund Taxes*, *supra* note 131.

low.[148] General fund appropriations, settlements, and judgments from the cost recovery provisions of the statute slow the drain on the fund as is demonstrated by the 1997 high after expiration of taxing authorities. In fact, annual appropriations, which reached a high of $1.6 billion in FY 1991, decreased to approximately $1.5 billion in FY 1994, where they stayed through FY 1999.[149] In FY 2000, however, annual appropriations began a decline, and funding has leveled off at approximately $1.3 billion annually, as shown in Figure 4 below.[150]

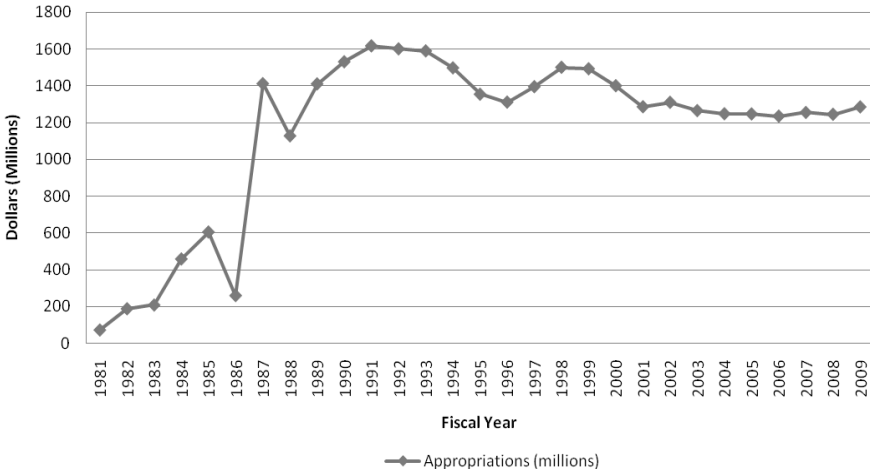

Figure 4: Superfund Appropriations, FY 1981–FY 2009[151]

As the balance in the trust fund decreased, so too did annual appropriations from Congress. With the trust fund balance decreasing, Congress increased funding from general revenues. According to a 2008 report from the Congressional Research Service, annual appropriations from general revenues, which were $250 million a year from FY 1993 through FY 1998, were increased to $634 and $700 million in FY 2000–

148. U.S. GOV'T ACCOUNTABILITY OFFICE, SUPERFUND: FUNDING, *supra* note 132.

149. *Critical Issues Facing the Superfund Program: S. Env't & Pub. Works Comm. Subcomm. On Superfund*, 109th Cong. 4 (2006) (statement of Katherine N. Probst, Senior Fellow, Resources for the Future).

150. Some of this decrease is due to funding for certain accounts, such as the Brownfields program, now receiving appropriations separate from Superfund.

151. E-mail from Alan Youkeles, Associate Branch Chief, Budget, Planning and Evaluation Branch, Office of Superfund Remediation & Technology Innovation, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, to authors (Aug. 24, 2009, 2:00 p.m. EST) (on file with authors).

FY 2002.[152] This amount increased to $1.1 billion in FY 2004, and by FY 2005, 100% of the annual Superfund appropriation came from general revenues.[153] According to data compiled by the U.S. GAO, for FY 1981–FY 1995 (when the taxes expired) the dedicated Superfund taxes accounted for the overwhelming majority (68%) of all trust fund revenues, as shown in Table 2 below. During this period general revenues contributed 17% of revenues, and the remainder of the funding came from interest on the trust fund balance (9%), and fines, penalties, and cost recoveries (6%).[154] For FY 1996–FY 2007, however, with the taxing authority expired, dedicated Superfund taxes accounted for only 7% of all trust fund revenues, a dramatic decrease.[155] During this period, general revenues accounted for the majority (59%) of funds.[156] Again, the remaining funds came from interest on the trust fund balance (16%), and fines, penalties, and cost recoveries (18%).[157]

Fiscal Year	General Revenues	Dedicated Superfund Taxes	Interest on Trust Fund	Fines, Penalties, and Recoveries
1981–1995	17%	68%	9%	6%
1996–2007	59%	7%	16%	18%
Total	**33%**	**45%**	**12%**	**11%**

Table 2: Major Sources of Revenue for the Superfund Trust Fund, FY 1981–FY 2007 (Percentage)[158]

At the same time, by the late 1990s, it was clear that EPA was experiencing a shortfall in funds needed for cleanup. Lacking faith in EPA's estimates of its own funding needs, Congress asked Resources for the Future (RFF) to estimate the future costs of the program to the EPA from FY 2000–FY 2009.[159] RFF identified a shortfall in the funds needed to clean up sites on the National Priorities List. In contrast to "business as usual" annual appropriations of approximately $1.3 billion each year, RFF estimated a "base case" funding need of $15.1 billion over the ten years

152. CONG. RESEARCH SERV. REPORT FOR CONG., SUPERFUND TAXES OR GENERAL REVENUES: FUTURE FUNDING ISSUES FOR THE SUPERFUND PROGRAM 7 (2008).

153. *Id.*

154. U.S. GOV'T ACCOUNTABILITY OFFICE, SUPERFUND: FUNDING, *supra* note 132, at 8 tbl.1.

155. *Id.*

156. *Id.* at 3.

157. *Id.* at 3, 8 tbl.1.

158. *Id.*

159. CONG. RESEARCH SERV. REPORT FOR CONG., *supra* note 152.

from FY 2000 through FY 2009—amounting to a shortfall of just over $2 billion in nominal dollars for the decade.[160] With appropriations of around $1.3 billion for each year since then, subsequent reports by the Congressional Research Service, EPA's Office of the Inspector General, and others have documented funding shortfalls at specific sites in the years since then, with remedial activities ready to go but put on hold for lack of funding.[161] The fact that the Superfund program was able to quickly identify projects for $600 million in cleanup funding received under the American Recovery and Reinvestment Act of 2009 attests to this funding shortfall.[162]

B. Liability as a Funding Mechanism

1. Background

The legacy of the first few years of scandal and bureaucratic infighting tainted the reputation of both the cleanup aspects of the program and its enforcement and liability components.[163] The mantra for the Superfund program under Administrator William Ruckelshaus's second term was "cleanup first," seeking to show a new, more aggressive Superfund program.[164] When this approach was criticized by many because the government—not responsible parties—was paying for most of the cleanups, Ruckelshaus's successor, EPA Administrator William Reilly, revised the Agency's approach and created a new motto, "enforcement first."[165] The Enforcement First Initiative used CERCLA's liability provisions[166] to leverage EPA's fund-lead cleanup efforts. EPA has filed numerous administrative—and through the Department of Justice (DOJ) also

160. PROBST ET AL., *supra* note 94, at xxii-xxiii. The authors also estimate a "low" and "high" funding scenario as well.

161. *See generally* CONG. RESEARCH SERV. REPORT FOR CONG., *supra* note 152; Letter from Nikki L. Tinsley, EPA Inspector General, to Congressman John D. Dingell, Comm. on Energy & Commerce (July 24, 2002) (detailing funding shortfalls and limitations), *available at* http://www.epa.gov/oig/reports/2002/boxer.pdf.

162. American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115, 168; *see* U.S. Envtl. Prot. Agency, Superfund Sites Receiving American Recovery and Reinvestment Act Funding, http://www.epa.gov/superfund/eparecovery/sites.html (last visited Oct. 27, 2009) (listing sites by region).

163. *See supra* notes 134–44 and accompanying text (discussing scandalous beginnings).

164. Peterson, *supra* note 145.

165. WILLIAM K. REILLY, ADM'R, U.S. ENVTL. PROT. AGENCY, A MANAGEMENT REVIEW OF THE SUPERFUND PROGRAM 2–13 (1989).

166. 42 U.S.C. § 9607(a)(4)(A) (2006).

judicial—claims to recover its Superfund costs.[167] Parties also entered agreements to conduct site studies and cleanup as a consequence of these actions.[168]

Congress supported the "enforcement first" initiative when, in 1986, it pressed for even faster cleanup by barring private party challenges to response actions until after the cleanup is complete.[169] Congress had not forgotten, however, that private party agreements to do work and to pay limited sums to clean up—"sweetheart" deals, as they were called[170]—were part of the scandal that unseated the first EPA Administrator to implement Superfund, Administrator Anne Gorsuch Burford.[171] Congress sought to alleviate concerns about such deals by giving EPA clear guidance on their settlement authorities, including specific direction about clauses that may be included with any settlement agreements and specific procedures for settlement.[172] Final approval of settlements in excess of $500,000 requires approval from the Attorney General[173] and lodging of the consent decree in federal district court.[174] Congress's support for settlement went so far as to expressly encourage settlement "whenever practicable and in the public's interest."[175]

After the 1986 amendments to CERCLA, EPA also sought agreements with parties for them to take over cleanup at sites, i.e., to transfer the site from a fund- to a PRP-lead cleanup. If such agreements were not forthcoming, EPA threatened to force parties to clean up and in fact resorted

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167. GAO-09-656, *supra* note 20 (listing between FY 1979 and FY 2007, 1,695 cost recovery related enforcement actions, of which ninety-seven percent were "consensual," i.e., resolved through administrative and judicial settlements, and 1,005 combined cost recovery and PRP work agreements of which ninety-eight percent were listed as consensual)

168. *Id.* (listing 1,473 site-related work enforcement actions of which fifty-four percent were consensual).

169. Superfund Amendments and Reauthorization Act (SARA) of 1986, Pub. L. No. 99-499, 100 Stat. 1613 (codified at 42 U.S.C. § 9613(h) (2006)).

170. Shabecoff, *Forecast*, *supra* note 135.

171. Grier, *supra* note 144.

172. *See* 42 U.S.C. § 9622(b) (authorizing "mixed funding," i.e., fund payment for PRP work under certain circumstances); *see also* § 9622(f) (authorizing "covenants not to sue"); § 9622(h)(4) (authorizing contribution protection); § 9622(a) (granting authority to enter into settlement agreements); § 9622(c) (providing for the scope of the agreement's effect on agency settlement authority); § 9622(d) (detailing the use of consent decrees and the role of DOJ and the federal courts in their review and approval); § 9622(e) (authorizing the President to facilitate settlement agreements); § 9622(i) (requiring a public comment period for cost recovery and *de minimis* settlements); § 9622(j) (encouraging participation of natural resources trustees in settlement negotiations and their approval of settlement provisions related to natural resources damages).

173. § 9622(g)(4), (h).

174. 28 C.F.R. § 50.7 (2008).

175. § 9622(a).

to issuing section 106 orders mandating cleanup in some situations.[176] The enforcement first theme has continued throughout Superfund's maturation.[177] Ironically, given the history of suspicion and scandal that overshadowed the negotiated agreements with private parties during the Burford-Lavelle years,[178] the overwhelming majority of agreements resulting from EPA's enforcement efforts are voluntary. As a recent GAO report documented, "[f]rom fiscal years 1979 through 2007, EPA completed 4,642 enforcement actions at NPL sites, of which 3,682, or 80%, were consensual.[179] Moreover, EPA resolved negotiations with responsible parties through administrative—rather than judicial—actions more than 60% of the time."[180]

Many of these consensual agreements are documented by "consent decrees" which are "lodged" in federal court for final approval.[181] Consent decrees may document a settlement after years of litigation or they may memorialize agreements reached without any litigation. In fact, many Superfund consent decrees are negotiated *before* DOJ files an action in federal court. Pre-negotiated consent decrees make up the majority of CERCLA-related federal court cases filed by the United States. These agreements have increased to seventy-seven percent of the cases related to Superfund filed by the federal government in FY 2007 from fifty-one percent of these types of federal government cases filed in FY 1994.[182] Figure 5 below shows the extent to which pre-negotiated consent decrees make up the docket of cases filed by the federal government and how this differs from the types of claims filed by other parties.[183] Cases with pre-negotiated settlements are faster than other types of CERCLA cases, and, when counted along with the administrative version of these agreements,

176. GAO-09-656, *supra* note 20, at 27–28 ("Only 16 of EPA's 901 unilateral administrative orders issued at NPL sites—less than 2 percent—included requirements related to recovering agency costs.").

177. *See, e.g.*, Memorandum from John Peter Suarez, Assistant Adm'r, Office of Enforcement and Compliance Assurance & Marianne Lamont Horinko, Assistant Adm'r, Office of Solid Waste and Emergency Response, to Regional Administrators, *Enforcement First for Remedial Action and Superfund Sites* (Sept. 20, 2002) (stating that the EPA has a longstanding "enforcement first" policy because such policy promotes the "polluter pays" principle and helps conserve the resources of the Hazardous Substance Trust Fund); OFFICE OF SOLID WASTE & EMERGENCY RESPONSE, U.S. ENVTL. PROT. AGENCY, DIRECTIVE NO. 9208.2 (2006) (making it explicit that the "enforcement first" policy "applies to any actions needed to ensure the implementation and effectiveness of institutional controls").

178. Shabecoff, *Forecast*, *supra* note 135.

179. GAO-09-656, *supra* note 20, at 24.

180. *Id.*

181. 28 C.F.R. § 50.7 (2008); 42 U.S.C. § 9622(d), (g)(4), (h) (2006).

182. GAO-09-656, *supra* note 20, at 39.

183. *Id.* at 111 fig.18 (data found at http://www.gao.gov/htext/d09656.html).

"administrative orders on consent"[184] reflect the pervasive nature of negotiation as a means to funding and cleaning up Superfund sites.[185]

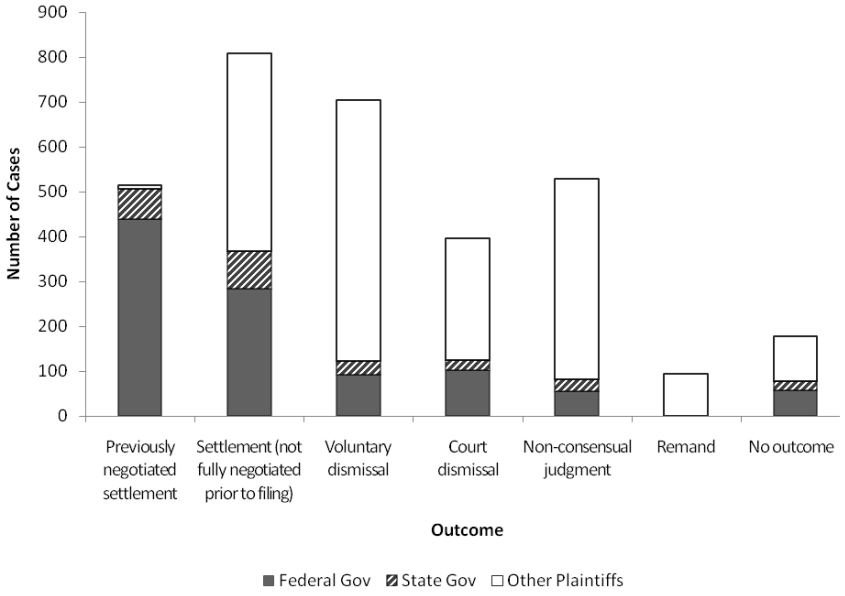

Figure 5: Number of CERCLA Cases, by Outcome and Type of Plaintiff, FY 1994–FY 2007[186]

The discussion that follows describes the relevant liability provisions of the statute in the context of how liability affects funding and cleanup, including liability's role in compensating EPA for past and future costs, enlisting private parties to conduct government-supervised cleanup, and, finally, shifting costs among private parties and rewarding private party voluntary cleanup outside the purview of the NPL.

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184. *Id.* at 22 tbl.3.

185. *Id.* at 39.

186. *Id.* at 111 fig.18 (data found at http://www.gao.gov/htext/d09656.html). Cases that include more than one type of outcome are counted in more than one category. Therefore, this figure over counts the total number of cases. Cases can result in no outcome in the GAO analysis for a number of reasons: the parties may not have reached any final outcomes in a case that was still open as of the end of FY 2007; the parties may have reached only outcomes not relating to liability, such as gaining access to a site; or, a case may have ended by being consolidated with another case before any outcomes were reached.

2. Compensating the Trust Fund for Past and Future Costs at NPL Sites

As described above, when EPA pays for costs for a site study or cleanup (removal and/or remedial actions) at a site, the activity is said to be "fund-lead." There are, however, a number of ways that EPA may be reimbursed for costs they incur at NPL sites. First, states must pay for or reimburse EPA for ten percent of fund-lead costs incurred, and, second, when the state or a political subdivision of a state has a significant role in the pollution of the site, states must pay fifty percent or even more of the costs incurred by the fund.[187] States must also agree to provide all future operations and maintenance of the removal action or remedy for a fund-lead cleanup.[188] Understandably, states no longer viewed the Superfund Trust Fund as "free money" once their obligations for federally funded cleanup became clear. The result is greater state support for EPA's transitioning from fund-lead to PRP-lead cleanup where possible. Part of this transition may include private party compensation of past costs or private party commitments to pay future costs.

The cost recovery provisions of the statute authorize the EPA, State, or a tribe to recover all cleanup costs that are not inconsistent with the National Contingency Plan.[189] The standard of liability under section 107 is the same as that provided for under section 311 of the Clean Water Act.[190] A variety of courts have held that standard to be retroactive,[191] strict, and, pursuant to common law traditions, joint and several where the harm is incapable of divisibility.[192] With the exception of certain defenses and exemptions discussed earlier,[193] EPA may recover these costs from those parties that own or operate the site currently or those that owned or operated the site at the time of disposal of the hazardous substances, as well as from generators of hazardous substances (those who arranged for disposal), and those who transport the substances to a site selected by the transporter. EPA may use its authority anywhere, not just at sites listed on

187. 42 U.S.C. § 9604(c)(3)(C) (2006).

188. § 9604(c)(3)(A).

189. 42 U.S.C. §§ 9605, 9607(a)(4)(B) (2006) (referring to 40 C.F.R. §§ 300.1–300.3 (2008)).

190. *Id.* § 9601(32).

191. United States v. Olin Corp., 107 F.3d 1506, 1511–12 (11th Cir. 1997); United States v. Mottolo, 695 F. Supp. 615, 622 (D.N.H. 1988).

192. Burlington N. & Santa Fe Ry. v. United States, 129 S. Ct. 1870, 1881 (2009); *see, e.g.*, United States v. Chem-Dyne Corp., 572 F. Supp. 802, 805 (S.D. Ohio 1983) (citing 5 U.S.C.C.A.N. 6119, 6119–6120 (1980)).

193. *See supra* notes 30–38 and accompanying text (discussing changes in CERCLA through amendments, judicial decisions, and administrative reform).

the NPL, where hazardous substances release or threaten release into the environment and for which the agency had incurred appropriate costs toward cleanup.[194]

While these liability provisions might suggest that EPA should recover almost 100% of their past costs, PRP reimbursement of EPA's costs for NPL sites has not attained that goal. Although EPA data is incomplete and significant cost recovery cases are still pending, EPA provided GAO with estimates that it has recovered approximately thirty-six percent of its site-specific costs, from government work such as removal actions, site studies, and remedial actions, since Superfund's inception.[195] The total value of EPA's cost recovery efforts, however, has climbed over the years. From 1979 through March 31, 1992, PRPs reimbursed EPA for $415 million of Superfund appropriations spent on government-funded cleanup-related activities at NPL sites.[196] Now, however, total compensation for EPA's costs is counted in the billions of dollars. By the end of FY 2007, EPA had recovered past costs of $5.1 billion and has received future costs of $2.2 billion to total $7.3 billion in cost recovery since the inception of the program.[197] From FY 1999–FY 2007, both past and future cost recovery at NPL sites returned $302 million annually, ranging from a high of $568.5 million in FY 1999 to a low of $161.3 million in FY 2006.[198] During this same period, EPA's total enforcement expenditures have averaged about $199.2 million each year.[199]

The frequency of agreements to reimburse EPA for work done or yet to be done at NPL sites has also increased. EPA obtained some form of monetary compensation for activities at 1141 out of 1160 NPL sites for which EPA provided enforcement data.[200] One reason for the large number of compensation agreements is administrative reform,[201] and later statutory reform, that resulted in EPA authority to offer "cash out" settlements for *de*

194. 42 U.S.C. § 9607(a) (2006).

195. GAO-09-656, *supra* note 20, at 30.

196. U.S. GEN. ACCOUNTING OFFICE, SUPERFUND: CURRENT PROGRESS AND ISSUES NEEDING FURTHER ATTENTION, STATEMENT OF PETER F. GUERRERO BEFORE THE SUBCOMMITTEE ON OVERSIGHT, COMMITTEE ON WAYS AND MEANS, HOUSE OF REPRESENTATIVES 4 (June 11, 1992). This number does not include the costs EPA incurred in trying to recover these costs.

197. U.S. GOV'T ACCOUNTABILITY OFFICE, SUPERFUND: FUNDING, *supra* note 132, at 15 tbl.2.

198. *Id.* at 16.

199. *Id.*

200. *Id.* at 17. EPA took enforcement actions at 243 NPL sites for which compensation was not received, but other results were achieved such as site access or other action to allow EPA or private party cleanup to continue. *Id.*

201. GAO-09-656, *supra* note 20, at 45.

minimis parties.[202] Through FY 2007, at least 438 of 1695 cost recovery agreements were with these *de minimis* parties, and all of these *de minimis* agreements were voluntary.[203] Of the remaining 1257 agreements, only forty-eight were the result of parties involuntarily reimbursing EPA's costs.[204] GAO attributes EPA's success in reaching cooperative settlements in part to the strength of EPA's case against a party if they had chosen not to settle, and greater EPA willingness to cover a portion of the shares attributable to bankrupt parties ("orphan shares") and enter into ability-to-pay settlements and other administrative and statutory reforms.[205]

3. Liability Allows EPA to Obtain Work Agreements from PRPs

Settlements where PRPs voluntarily agree to undertake sites studies and cleanups are significant sources of indirect income for the program.[206] Work done by the PRPs is work that is not paid for by the fund and, thus, preserves trust fund monies. Parties agree to undertake work at sites for many of the same reasons they agree to compensate EPA for its prior costs, with the additional reason that if a party implements site studies or remedies themselves, it has greater control over both the site activities and costs.[207] Private party response actions at NPL sites can take the form of removal actions, site study, remedial action, and other site work.[208]

While the majority of EPA settlements with PRPs relate to payment of past or future costs of response, the greater value is achieved from PRP commitments to conduct work at NPL-listed sites. Out of 4642 enforcement actions from FY 1979 through FY 2007, 799, or seventeen percent, involved voluntary agreements to conduct response actions (cleanup related work), as contrasted with 1647 voluntary agreements (thirty-five percent) to compensate EPA for their costs.[209] Twenty-one percent, or 989 voluntary agreements, cover both site work and

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202. *Id.* at 31 n.33; 42 U.S.C. § 9622(g) (2006).

203. GAO-09-656, *supra* note 20, at 27.

204. *See id.* at 27 tbl.5 (charting 48 nonconsensual cost recovery actions).

205. *Id.* at 45.

206. "Voluntarily" means that the parties did not contest the agreement, and perhaps even sought the settlement with the EPA. The U.S. GAO characterizes these agreements as "consensual" as opposed to those that parties contest, which GAO characterizes as "nonconsensual." *Id.* at 22.

207. EPA acknowledges PRP influence on remedy selection indirectly by its reluctance to enter into site studies with recalcitrant PRPs "because their work can influence the selection of an appropriate remedial action." *Id.* at 28.

208. *See id.* at 29 tbl.6 (providing this list of response actions in the context of EPA enforcement actions at NPL sites organized by types of work sought).

209. *Id.* at 27 tbl.6.

compensation.[210] Figure 6 below compares the number of EPA enforcement actions that result in agreements to reimburse EPA for their response costs ("cost recovery"), agreements to provide site-related work, and agreements to provide both cost recovery and site work. It also demonstrates the significant proportion of these that are consensual or voluntary in nature.

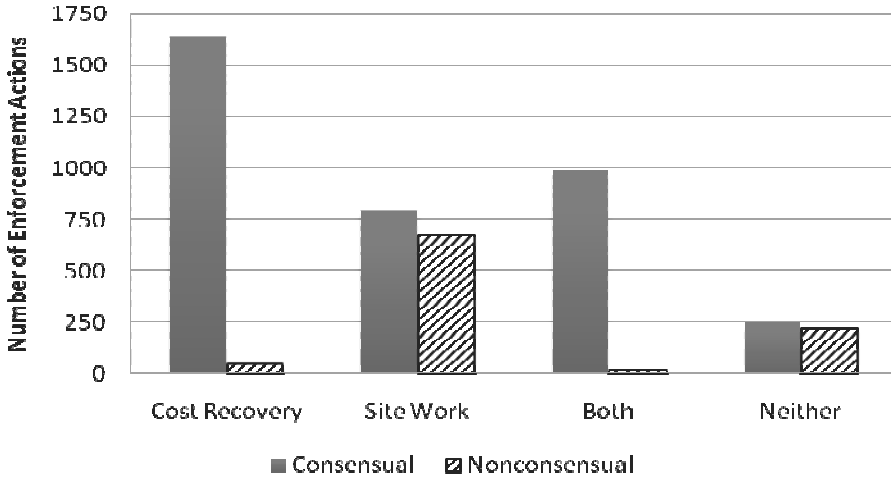

Figure 6: Outcome of EPA Enforcement Actions at NPL Sites, FY 1979–FY 2007[211]

4. Liability Allows EPA to Force Recalcitrant Parties to Conduct Response Actions

Another element of the Enforcement First initiative is federally compelled cleanup. Congress empowered the President (usually acting through the EPA, which is the President's designee) to seek injunctive relief in federal court or with the administrative authority to force responsible parties to clean up when contamination presents an imminent and substantial endangerment to human health or the environment.[212] This provision is bolstered by federal authority to assess treble damages against those who fail to comply with a "106 order," or "Unilateral Administrative Order" ("UAO") as these orders are often called.[213] This can amount to

210. *Id.*
211. *Id.* at 27 tbl.5 (analyzing GAO data).
212. 42 U.S.C. § 9606(a) (2006).
213. *Id.* § 9607(c)(3).

millions of dollars, since many response actions may exceed twenty million dollars with the addition of another sixty million dollars or more if treble damages are assessed.

Between the strict, joint and several liability provided by the cost recovery provisions granted to state, federal, and tribal governments, and the federal authority to force cleanup with the threat of huge damage awards, Congress provided EPA with tremendous leverage. EPA has issued 901 unilateral administrative orders, meaning that cleanup actions conducted by unwilling parties[214] made up nineteen percent of the enforcement actions taken at NPL sites through FY 2007.[215] Most of the time the treble damages are not invoked since most parties will comply with these orders. GAO research indicates, however, that compelled action may not be as effective as one might think since parties are more likely to balk at cleanup requirements under these conditions.[216] Of course, this data may also reflect a propensity among parties unwilling to settle voluntarily to contest EPA orders related to Superfund.

Together both voluntary and federally-mandated private party site-specific study and cleanup actions make up a significant portion of the work to address contamination at NPL sites. Figure 7 below details the nature of the work done as a result of voluntary and mandated private party cleanup actions.

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214. GAO-09-656, *supra* note 20, at 25 tbl.4. GAO characterizes these actions as "nonconsensual" while recognizing, as this article does here, that some parties in fact prefer to receive and comply with a unilateral administrative order or CERCLA section 106 order. *Id.* at 24.

215. *Id.* at 22 n.4.

216. *See id.* at 28 ("When parties deny access or information, it may be less likely that EPA can resolve issues through consensual agreements.").

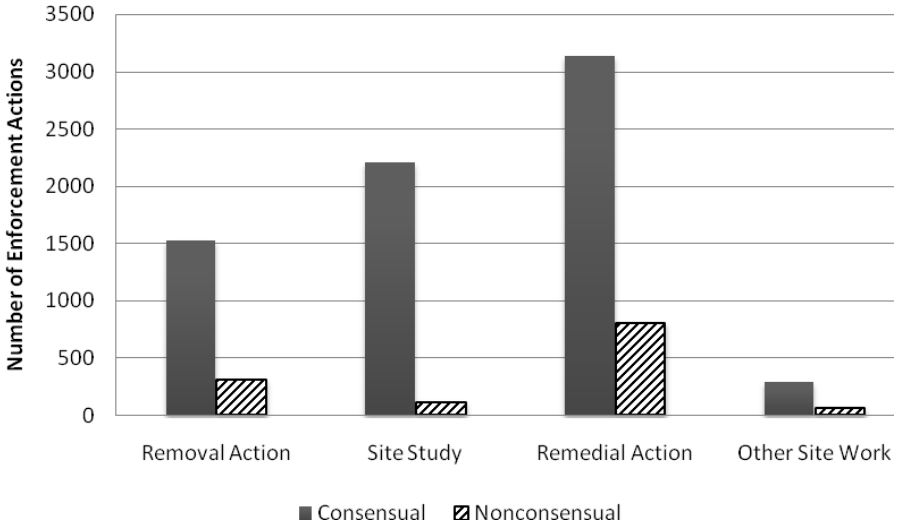

Figure 7: Outcome of EPA Enforcement Actions at NPL Sites, FY 1979–FY 2007, by Type of Site Work Sought[217]

5. Liability Provides Resources to the Superfund Program

Work done by private parties is work that EPA does not have to pay for out of its own budget. In reality, all private party work commitments constitute "additional" funding for the Superfund program, above and beyond annual appropriations from Congress, and are a significant source of cleanup funding. The U.S. GAO estimates the total value of PRP work from FY 1979–FY 2007 at $22.5 billion, seventy-five percent of the value of all EPA's enforcement actions.[218]

C. Spreading Costs Among Private Parties

When private parties reimburse EPA's costs or agree to remediate a NPL site, one of the factors they consider before entering into such an agreement is whether or not they will be able to spread some of their costs to other PRPs.[219] When parties reimburse EPA for its costs, they may file

217. *Id.* at 29 tbl.6 (analyzing GAO data).
218. *Id.* at 30.
219. *Id.* at 33.

claims for contribution.[220] Contribution claims are common law or statutorily provided claims to reallocate costs among parties that have paid more than their fair share as a consequence of joint and several liability.[221] When parties conduct work at the site, they may be able to also file claims for cost recovery from other liable parties.[222] Cost recovery claims may proceed without a prior finding of joint liability.[223] But the distinction between cost recovery and contribution was not always so clear.

Initially, the statute did not include an explicit right to contribution. It did, however, provide language in section 107(a)(4)(B) that some courts studied for authority to resolve claims for contribution[224] and that other courts considered as providing an independent cause of action for cost recovery.[225] SARA resolved the contribution question when Congress added provisions in section 113 to explicitly authorize contribution claims between potentially liable parties.[226]

Over the years, the cost recovery and contribution provisions of the statute have been invoked to compensate parties engaged in cleanup-related activities at sites not listed on the NPL and perhaps not even subject to state or federal oversight, which we characterize as "voluntary cleanup."[227] While the line between the cost recovery provisions, authorized in section

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220. 42 U.S.C. § 9613(f)(1), (f)(3)(b).

221. United States v. Atl. Research Corp., 551 U.S. 128, 138–39 (2007).

222. 42 U.S.C. § 9607(a)(4)(B) (2006); *Atl. Research Corp.*, 551 U.S. at 138; United States v. Kramer, Civil Action Nos. 89-4340 (JBS), 89-4380 (JBS), 2009 WL 2339341, at *8 (D.N.J. July 27, 2009) (granting a settling party's motion to file a claim under 42 U.S.C. § 9607(a)(4)(B) against a non-settling party).

223. *Atl. Research Corp.*, 551 U.S. at 138 n.5.

224. *See* United States v. New Castle County, 642 F. Supp. 1258, 1262 (D. Del. 1986) (noting uncertainty about whether CERCLA originally provided contribution rights and finding a right to contribution under federal common law); Colorado v. Asarco, Inc., 608 F. Supp. 1484, 1486–93 (D. Colo. 1985) (noting federal common law provides a right of contribution); Wehner v. Syntex Agribusiness, Inc., 616 F. Supp. 27, 31 (E.D. Mo. 1985) (finding that a right of contribution implied in section 107(e)(2)); United States v. Westinghouse Elec. Corp., No. IP 83-9-C, 1983 WL 160587, at *3 (S.D. Ind. June 29, 1983) (finding no right of contribution).

225. *See* City of New York v. Exxon Corp., 633 F. Supp. 609, 615–18 (S.D. N.Y. 1986) (holding that the City does not need prior approval from federal or state authorities before bringing a cause of action under section 107(a)(4)(B); Wickland Oil Terminals v. Asarco, Inc., 792 F.2d 887, 890–92 (9th Cir. 1986) (holding section 107(a)(2)(B) to create a cause of action to recover private response costs regardless of whether the government had instituted a cleanup action); Walls v. Waste Res. Corp., 761 F.2d 311, 317–18 (6th Cir. 1985) (same); City of Phila. v. Stepan Chem. Co., 544 F. Supp. 1135, 1140–43 (E.D. Pa. 1982) (same).

226. Superfund Amendments and Reauthorization Act (SARA) of 1986, Pub. L. No. 99-499, 100 Stat. 1613 (codified at 42 U.S.C. § 9613(f)(1), (f)(3)(b) (2006)).

227. We characterized these non-NPL cleanups as "voluntary" although we recognize that parties may be conducting these removal actions or other remedial work at the behest of state Brownfields programs or to limit future liability.

107, and the contribution provisions, authorized in section 113, was not clearly delineated for many years thereafter, many jurisdictions ultimately decided that claims between private parties for reimbursement of voluntary cleanup actions were claims for contribution—not claims for cost recovery—and only allowed parties to pursue their claims under section 113.[228]

And pursue recovery under section 113 they did. Private party claims make up the majority of CERCLA cases filed between FY 1994 and FY 2007.[229] Figure 8 below shows the percentage of CERCLA cases filed by type of plaintiff for FY 1994–FY 2007.

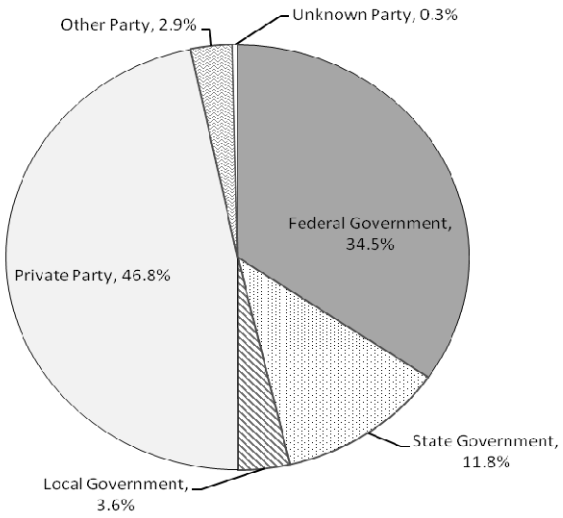

Figure 8: Percentage of CERCLA Cases Filed by Type of Plaintiff, FY 1994–FY 2007[230]

228. *See* Atl. Research Corp. v. United States, 459 F.3d 827, 832–33 (8th Cir. 2006) ("In the pre-*Aviall* analysis, § 113 was presumed to be available to all liable parties, including those which had not faced a CERCLA action."). *See Akzo Coatings*, 30 F.3d at 763 n.4 (liable party's § 113 claim for costs voluntarily incurred held barred by settlement); *Pinal Creek*, 118 F.3d at 1306 (liable party's claim for costs voluntarily incurred governed by both §§ 107 and 113). Accordingly, most courts concluded liable parties could not use § 107. *See Pnuemo Abex*, 142 F.3d at 776 . . . .").

229. GAO-09-656, *supra* note 20, at 39 tbl.8.

230. *Id.* Because of the blurred line between contribution claims for reimbursement of costs paid and voluntary cleanup costs, it is difficult to distinguish contribution claims from voluntary cleanup claims for the purposes of this chart.

This parade of claims and suits to reallocate private party costs paid to EPA or to share costs from a voluntary cleanup has slowed in recent years. GAO estimates that private parties filed 142 cases in FY 1994 as contrasted with forty-four cases filed in FY 2007, a decline of sixty-nine percent.[231] Claims filed against private parties by state and federal governments have remained relatively stable over those same years.[232]

The decline in private party suits may be an anomaly due to an unsettling decision that moved through the ranks of the court system to the U.S. Supreme Court between FY 2000 and the beginning of FY 2004. On December 13, 2004, the U.S. Supreme Court ruled in *Cooper Industries v. Aviall Services Inc.*[233] that contribution claims brought under section 113(f)(1) may only proceed during or following a civil action under section 106 or section 107(a).[234] The decision was contrary to the precedent in nearly every circuit to consider the issue, most of which had directed private parties, even those who had incurred costs voluntarily, to recover their costs *only* under section 113(f)(1)'s contribution provisions rather than under section 107(a)'s cost recovery provisions.[235] Pending contribution

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231. *Id.* at 37.

232. *Id.*

233. Cooper Indus. Inc. v. Aviall Servs. Inc., 543 U.S. 157 (2004).

234. *Id.* at 166.

235. *E.g.*, Dico, Inc. v. Amoco Oil Co., 340 F.3d 525, 527 (8th Cir. 2003) (dismissing the plaintiff's direct cost recovery action); Bedford Affiliates v. Sills, 156 F.3d 416, 423–24 (2d Cir. 1998) (limiting recovery by PRPs to section 113(f) contribution claims); Centerior Serv. Co. v. Acme Scrap Iron & Metal Corp., 153 F.3d 344, 350 (6th Cir. 1998) ("Claims by PRPs, however, seeking costs from other PRPs are necessarily actions for contribution, and are therefore governed by the mechanisms set forth in section 113(f)."); Pneumo Abex Corp. v. High Point Thomasville & Denton R.R. Co., 142 F.3d 769, 776 (4th Cir. 1998) ("As the case before the court involves entirely potentially responsible parties, such parties must seek contribution under [section 113]."); Pinal Creek Group v. Newmont Mining Corp., 118 F.3d 1298, 1301 (9th Cir. 1997) ("Because all PRPs are liable under the statute, a claim by one PRP against another PRP necessarily is for contribution."); New Castle County v. Halliburton NUS Corp., 111 F.3d 1116, 1122 (3d Cir. 1997) ("Thus, section 113 does not in itself create any new liabilities; rather, it confirms the right of a [PRP] under section 107 to obtain contribution from other [PRPs]."); Redwing Carriers, Inc. v. Saraland Apartments, 94 F.3d 1489, 1496 & n.7 (11th Cir. 1996) (distinguishing between section 113(f) contribution claims and section 107(a) cost recovery actions); United States v. Colo. & E. R.R. Co., 50 F.3d 1530, 1539 (10th Cir. 1995) (Holding that "claims between PRPs to apportion costs between themselves are contribution claims pursuant to § 113 regardless of how they are pled . . . ."); United Techs. Corp. v. Browning-Ferris Indus., 33 F.3d 96, 103 (1st Cir. 1994) (prohibiting recovery under section 107 but allowing recovery by and between PRPs for contribution under section 113.). *Cf.* Akzo Coatings, Inc. v. Aigner Corp., 30 F.3d 761, 764 (7th Cir. 1994) (characterizing a section 113(f) claim as a "quintessential claim for contribution," but leaving open the possibility of section 107 recovery under certain circumstances).

claims under section 113(f)(1) brought without the necessary concurrent or prerequisite civil action were dismissed.[236]

Justice Thomas's *Aviall* decision, though clear and direct in its reasoning, confounded private parties seeking recovery of costs for various forms of voluntary—or at least not involuntary—cleanup, such as those involved in brownfields redevelopment, transfer and sale of contaminated properties, and state directed response actions.[237] *Aviall* provided one more excuse for the slow cleanup of facilities contaminated at least in part, but frequently most significantly, by federal government actions because the U.S. government controlled who could file contribution actions by its choice of parties to enforce against in the first instance.[238] By not filing a section 106 or section 107 action, it seemed that no private party could initiate a recovery action against the U.S. government.

Atlantic Research Corp. faced this dilemma when it sought recovery from the United States under theories of cost recovery and implicit contribution for costs it had paid in cleaning up contamination, for which the federal government would have been liable prior to the *Aviall* decision, but for which the United States had not filed a civil action for cost recovery or forced cleanup. When the issue reached the U.S. Supreme Court three years after the *Aviall* decision, Justice Thomas's unanimous decision resolved the problem the Court had created and developed clearer distinctions between private party claims for contribution and cost recovery. In *United States v. Atlantic Research Corp.*, the Court restored the ability of

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236. *See, e.g.*, Major v. Astrazeneca, Inc., Nos. 5:01-CV-618, 5:00-CV-1736, 2006 U.S. Dist. LEXIS 65225 (D.N.Y. Sept. 13, 2006) ("[A] party may only seek contribution pursuant to § 113(f) during or following a civil action brought pursuant to [section 106] or [section 107(a)]."); Kaladish v. Uniroyal Holding, Inc., No. 3:00CV854(CFD), 2005 U.S. Dist. LEXIS 17272 (D. Conn. Aug. 9, 2005) (prohibiting a section 113(f) contribution claim unless that party has been sued under section 106 or section 107); CadleRock Props. Joint Venture, L.P. v. Schilberg, No. 3:01CV896(MRK), 2005 U.S. Dist. LEXIS 14701 (D. Conn. July 18, 2005) (dismissing contribution action for lack of an underlying federal legal claim); Champion Labs., Inc. v. Metex Corp., Civ. No. 02-5284(WHW), 2005 U.S. Dist. LEXIS 37068 (D.N.J. July 8, 2005) (allowing a party to seek a section 113(f) contribution claim during or after a civil action under section 106 or section 107).

237. *See* Richard O. Faulk & Cynthia J. Bishop, *There and Back Again: The Progression and Regression of Contribution Actions Under CERCLA*, 18 TUL. ENVTL. L.J. 323, 337 (2005) (concluding that following the *Aviall* decision there is confusion as to whether responsible parties have a recovery claim under CERCLA if they clean up the contaminated site); Karl S. Bourdeau & W. Parker Moore, *Options for Potentially Responsible Parties in the Wake of the* Aviall *Decision*, 38 ENVTL. REP. 440, 461 (2007) (recognizing that following the *Aviall* decision, both the Second and Eighth Circuit Courts have limited private party recovery claims in certain circumstances).

238. *See* City of Moses Lake v. United States, 472 F. Supp. 2d 1220, 1224 n.4 (E.D. Wash. 2007) (leaving private PRPs without any recourse against potentially liable agencies unless sued by EPA).

PRPs to pursue cost recovery actions under section 107 of CERCLA.[239] PRPs once again were able to recover their costs of cleanup under theories of contribution or cost recovery, or perhaps even both, depending on the procedural circumstances surrounding the cleanup.[240] Nonetheless, *Aviall's* dark cloud of confusion hung over private parties from FY 2004–FY 2007. Private parties were likely hesitant to file either cases for contribution or cost recovery for many of the later years that the GAO studied.[241]

1. Superfund Liability: Powerful and Complex

In addition to serving as a tool to generate revenue for cleanup, there are many other aspects of Superfund liability that have garnered attention over the years. While we cannot address them all, in the section below we provide a brief summary of two concerns most commonly heard during this period. Many of these issues relate to criticisms raised by the insurance industry and many corporations throughout the late-1980s and early-1990s in anticipation of the Superfund reauthorization debates in the mid-1990s. These companies lobbied to end the liability regime. The conundrum was how to fund cleanups if liability were eliminated.

There were many efforts to find a workable proposal. Included among these efforts were those of two groups that each brought together a panoply of stakeholders. Vermont Law School and The Keystone Center organized the first group, the National Commission on Superfund,[242] which brought together CEO's from key industry sectors—including insurance, chemical, petroleum, and waste management—with representatives from state and local governments, citizen groups, tribes, communities of color, and national environmental organizations. The National Commission on Superfund met from 1992 to 1993 and issued a consensus report in 1994.[243]

Later, the EPA Administrator commissioned an advisory panel of experts to advise her on Superfund reforms under the auspices of the Superfund Evaluation Subcommittee of the National Advisory Council for Environmental Policy and Technology (NACEPT). The Superfund Evaluation Subcommittee of NACEPT met from 1993 to 1994 and issued a series of policy recommendations (though no formal final report) in 1994.

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239. United States v. Atl. Research Corp., 551 U.S. 128, 139 (2007).

240. *Id.* at 140.

241. *See* GAO-09-656, *supra* note 20, at 48–50 (discussing unresolved issues that recent cases may or may not have settled).

242. KEYSTONE CTR. & ENVTL. LAW CTR. OF VT. LAW SCH., FINAL CONSENSUS REPORT OF THE NATIONAL COMMISSION ON SUPERFUND 1 (1994).

243. *Id.*

These two efforts, in addition to myriad other reform initiatives, culminated in an Administration Bill, HR 3800, the Superfund Reform Act of 1994, which was introduced by the Clinton Administration in June.[244] While a lot of effort went into trying to find a solution that all could live with, in the end there was no reform of the liability regime and no reauthorization of Superfund in 1994.

The two criticisms raised most frequently during this period of uncertainty in the early to middle years of the Superfund program were complaints about transaction costs and fairness. Some aspects of these issues resolved themselves over time and others were addressed, at least in part, through subsequent amendments to the law.

a. Transaction Costs

Among the most frequent criticisms of the liability system was that too much money was spent on lawyers and consultants and too little on cleanup. Now the transaction cost issue is rarely mentioned, and for good reason: many of the questions about the meaning of certain provisions of the law have been answered by federal courts all the way up to the U.S. Supreme Court and cleanup studies and the construction or remedies are farther along. In the early years of the program, relatively little information was available on the exact nature and extent of the transaction costs involved in a Superfund cleanup. Little was known about the meaning of the statute and little progress had been made toward cleanup.

A study by the RAND Institute for Civil Justice in 1992 attempted to assess the transaction costs for five very large industrial firms (Fortune 100 companies), representing a mix of petroleum, chemical, and manufacturing firms, and four major insurance companies, representing approximately fifteen percent of the 1980 market for Comprehensive General Liability Policies.[245] RAND defined transaction costs as those costs not directly related to cleanup, such as allocating costs among PRPs and litigation issues. In some cases it was difficult to determine whether, for example, some engineering studies of the waste at a site are to assist in cleanup or to identify PRPs and allocate costs.[246]

Researchers found that for the years 1984–89, on average, transaction costs accounted for twenty-one percent of the industrial firms' total

244. Superfund Reform Act of 1994, H.R. 3800, 103rd Cong. (1994).

245. JAN PAUL ACTON & LLOYD S. DIXON, SUPERFUND AND TRANSACTION COSTS: THE EXPERIENCES OF INSURERS AND VERY LARGE INDUSTRIAL FIRMS 15, 33 (1992).

246. *Id.* at 36.

hazardous waste expenditures.[247] Transaction costs decline significantly as a percentage of total costs once cleanup begins. RAND found that transaction costs at sites in the cleanup-ongoing stage averaged twenty-five percent, twenty percentage points lower than transaction cost share for sites in the site-study stage. Transaction costs for sites in the construction-complete stage averaged sixteen percent of total costs, thirty-three percentage points lower than the transaction cost share for sites in the site-study stage.[248] This explains why the transaction cost issue is rarely mentioned now that more sites are farther along in the construction of the remedy.

In contrast, RAND found that insurance company transaction costs averaged eighty-eight percent of total expenditures for the years 1986–89.[249] The large discrepancy in this study between the insurance companies' (eighty-eight percent) and PRPs' (twenty-one percent) average transaction cost shares can partly be explained by the fact that insurers were still litigating whether or not they could be held liable for Superfund costs under Comprehensive General Liability (CGL) policies. The issue for insurance companies is not *per se* liability under Superfund since, in most cases, insurance companies do not fall into any of the categories of PRPs (owner, operator, generator, etc.). The issue for insurance companies is how these CGL policies are interpreted in light of Superfund liability imposed on the policy holders.

Insurance law is determined by each state, so insurance cases are unlike cost recovery claims against PRPs, which are resolved in federal court. PRPs learned comparatively quickly, though many precedents were not fully resolved until the late-1990s or later, that Superfund liability could apply to them. Insurance companies, however, were disputing whether CGL policies cover costs incurred as a result of Superfund liabilities. Most of these disputes related to old CGL policies. Policies now include "pollution exclusion" language. RAND found coverage disputes accounted for about forty percent of the insurers' total hazardous waste cleanup expenditures.[250] Similarly, about forty percent of insurance company transaction costs in the study fell into the category "policy holder

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247. *Id.* at 39. The study included state and voluntary cleanups in addition to those under Superfund.

248. *Id.* at 51, 59.

249. *Id.* at 24.

250. ACTON & DIXON, *supra* note 245, at 24 (showing coverage disputes accounted for forty-two percent).

defense."[251] Many insurance policies obligate the insurer to defend the policy holder in litigation.

An important reflection on insurance company transaction costs is that, given their duty to defend private parties from suits requiring private parties to clean up or to reimburse cleanup costs, high transaction costs may mean that the insurance company succeeded in defending the private party from having to pay *any* cleanup costs. This means that an insurance company with 100% transaction costs paid no cleanup costs because all its costs related to litigation that successfully defended its policy holder from liability.

Still other researchers pointed out that other ways to finance and cleanup hazardous sites, such as taxes and public works programs, would have transaction costs as well,[252] and that there would certainly be significant transaction costs involved in the transition between the current program and the new programs.[253]

b. Fairness

Many critics objected to the inequity of Superfund's liability provisions. There are a variety of ways Superfund is said to be "unfair." One way is through the broad liability provisions. PRPs complain that strict and retroactive liability is unfair because they may be held liable for the costs to clean up waste that was disposed of in what was thought, at the time, to be a responsible manner.

Joint and several liability is also raised in discussions about fairness of the program. The PRPs that are solvent or especially profitable point to the unfairness of being tagged for a greater share of the cleanup than the share allocated to PRPs that are either insolvent or so poor that the legal costs of pursuing them exceeds the value of their likely contribution to the costs of cleanup. In other instances, EPA might have identified several solvent parties, but for a variety of reasons, including reducing their own transaction costs, EPA might pursue only the "deepest pocket." Efforts to address some of the inequities created by strict, joint and several liability

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251. *Id.*

252. Henry L. Diamond, *A Lawyer's View of Superfund Problems: Promote Hazardous Site Cleanup by Increasing Voluntary Private Participation*, *in* WORKING PAPERS ON SUPERFUND REFORM: PROBLEM DEFINITION AND POLITICAL MAPPING 15 (1992).

253. *See generally* KATHERINE N. PROBST & PAUL R. PORTNEY, RESOURCES FOR THE FUTURE, ASSIGNING LIABILITY FOR SUPERFUND CLEANUPS: AN ANALYSIS OF POLICY OPTIONS 14 (1992) (stating that there would be new transaction costs associated with a transition from the existing liability scheme to a new liability and funding approach for Superfund).

initially met with mixed success. As discussed above, in 1986 Congress amended Superfund to authorize parties to seek contribution for their cleanup costs.[254] Any settling party at a site may sue any other non-settling party to recover cleanup costs. This provision was intended to increase the fairness of the program and to create additional incentives for parties to settle with EPA. The only way for a PRP to shield itself effectively from such third party contribution actions is to settle with EPA and as a part of the settlement obtain contribution protection.[255]

As Superfund has matured the role of contribution protection has remained important to balancing equities and to encouraging private party settlements. Due the last three U.S. Supreme Court opinions on CERCLA,[256] contribution protection has also become more complex. Contribution protection has always been limited only to "matters addressed in the settlement."[257] Furthermore, the Court's decision authorizing cost recovery actions under section 107 for private parties in *Atlantic Research Corp.* called into question contribution protection provided by settlements that did not anticipate private party cost recovery actions.[258]

On the other hand, contribution protection may have new benefits for settling parties after *Atlantic Research*. The issue has arisen in the context of a non-settling PRP being sued by a party that settled with EPA and thus has contribution protection.[259] Because the standard of liability in cost recovery claims is joint and several liability, non-settling parties that are unable to meet the burden of showing that the harm is divisible risk being held responsible for *all* the settling PRP's costs.[260] This is because the settling party's contribution protection prevents the non-settling party from successfully making a contribution counter-claim.[261]

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254. Superfund Amendments and Reauthorization Act (SARA) of 1986, Pub. L. No. 99-499, 100 Stat. 1613 (codified at 42 U.S.C. § 9613(f)(1), (f)(3)(B) (2006)).

255. *See* 42 U.S.C. §§ 9613(f)(2), 9622(h)(4) (2006) (Both sections state that "[a] person who has resolved its liability to the United States or a State in an administrative or judicially approved settlement shall not be liable for claims for contribution regarding matters addressed in the settlement.").

256. Cooper Indus. Inc. v. Aviall Servs. Inc., 543 U.S. 157 (2004); United States v. Atl. Research Corp., 551 U.S. 128 (2007); Burlington N. & Santa Fe Ry. Co. v. United States, 129 S. Ct. 1870 (2009).

257. § 9613(f)(2).

258. *Atl. Research Corp.*, 551 U.S. at 139–40. *See, e.g.*, United States v. Kramer, Civil Action Nos. 89-4340 (JBS), 89-4380 (JBS), 2009 WL 2339341, at *8 (D.N.J. July 27, 2009) (granting a settling party's motion to file a claim under 42 U.S.C. § 9607(a)(4)(B) against a non-settling party who will have no counter-claim for contribution because the settling party is shielded from such claims, potentially resulting in the non-settling party being held responsible for all of the settling party's costs).

259. *Id.*

260. *Burlington N.*, 129 S. Ct. at 1881.

261. *See, e.g.*, *Kramer*, 2009 WL 2339341, at *8.

The most recent in the trilogy of U.S. Supreme Court cases to address CERCLA liability and its related fairness issues is the May 2009 decision *Burlington Northern & Santa Fe Railway Co. v. United States*.[262] Justice Stevens's decision went to the heart of many PRPs' fairness concerns—joint and several liability. The Court confirmed that joint and several liability is applicable to sites where the harm is not divisible or otherwise capable of a reasonable basis for division and applied that requirement to the facts presented in a less rigorous manner than had been the case in the past.[263] Whether this decision will increase uncertainty or alleviate fairness issues concerning the role of joint and several liability remains to be seen as the circuit courts resolve future claims concerning joint and several liability under CERCLA.[264]

Others to complain about the liability regime included local governments, lenders, small businesses, real estate developers, property insurance and re-insurance companies, and neighboring landowners. Ultimately many, though not all of these groups, received some relief. Exemptions and defenses from liability were added in amendments to the statute, including protections for lenders that foreclose on contaminated properties[265] and some generators and transporters that recycle certain types of materials.[266] Most significant were the exemptions provided in the Small Business Liability Relief and Brownfields Revitalization Act of 2002.[267] These exemptions provided additional protections to landowners, including those that meet the requirements of "bona fide prospective purchasers,"[268]

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262. *Burlington N.*, 129 S. Ct. at 1881.

263. *Id.* at 1882–84 (affirming a lower court ruling that had voided joint and several liability based on an analysis better suited to contribution allocation than divisibility of harm.) Contrary to precedent, the district court acted on its own initiative to apportion the harm at the site by calculating how long the property was leased and how much of the contaminated property was owned by the railroads, with some consideration of the limited number of hazardous substances, the monitoring nature of the remedy imposed on the railroad's portion of the property, and an allowance for "calculation errors." *Id.*

264. For one example of how courts are interpreting these Supreme Court decisions, see *Kramer*, 2009 WL 2339341, at *8.

265. Asset Conservation, Lender Liability, and Deposit Insurance Protection Act of 1996, § 2502(a) (amending 42 U.S.C. § 9607 by adding § 107(n)).

266. Superfund Recycling Equity Act of 1999, Pub. L. No. 106-113, 113 Stat. 1501A (codified at 42 U.S.C. § 9627 (2000)).

267. Small Business Liability Relief and Brownfields Revitalization Act of 2002, Pub .L. No. 107-118, 115 Stat. 2356 (2002) (codified as amended in scattered sections of 42 U.S.C. §§ 9601, 9604, 9605, 9607, 9622(g)) (amending CERCLA to add additional circumstances wherein parties may avoid liability if certain conditions are met.).

268. 42 U.S.C. § 9607(r) (2006).

"contiguous property owners,"[269] and residential landowners.[270] Municipalities,[271] certain 501(c)(3) certified organizations,[272] home owners and renters,[273] some small businesses,[274] and very small quantity generators,[275] like the kennels and pizza parlors that were once the subject of perhaps over-expansive contribution claims,[276] garnered additional protections from liability associated with sites listed on the NPL.

III. ISSUES ON THE HORIZON

CERCLA, and the Superfund Program it established, was designed to identify contaminated sites, assure cleanup by either the government or private parties, make those connected to the contamination pay for cleanup, and enlist private interests in the identification and prevention of further hazards. In many ways CERCLA has been wildly successful. The EPA has investigated over 47,000 sites suspected of releasing hazardous substances into the environment.[277] Many of these sites have been addressed by removal actions, state authorities, or by private parties.[278] Just over 1600 sites have been placed on the NPL, and cleanups have been fully implemented at more than two-thirds of these sites.[279] Private parties have contributed dollars or work to clean up at an estimated value of nearly thirty billion dollars over the history of the program,[280] averaging twenty-six million dollars per site.[281] In addition, Superfund liability has changed the way many companies handle hazardous substances. Many private parties changed their business practices to prevent or limit future liability once it became clear that liability was real—and expensive—both in terms of dollars and, for many companies, in terms of public relations.

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269. § 9607(q).

270. 42 U.S.C. § 9601(40)(B)(iii) (2006).

271. § 9607(p).

272. § 9607(p)(1)(C).

273. § 9607(p)(1)(A).

274. § 9607(p)(1)(B).

275. § 9607(o).

276. Robert Tomsho, *Pollution Ploy: Big Corporations Hit by Superfund Cases Find Way to Share Bill—They Sue Small Businesses, Others That Put Garbage into the Same Landfills—An Effort to Change the Law?*, WALL ST. J., April 2, 1991, at A1.

277. GAO-09-656, *supra* note 20, at 13 n.11.

278. *Id.*

279. U.S. Envtl. Prot. Agency, National Priorities List: NPL Site Total by Status and Milestone, www.epa.gov/superfund/sites/query/queryhtm/npltotal.htm (last visited Oct. 27, 2009).

280. U.S. GOV'T ACCOUNTABILITY OFFICE, SUPERFUND: FUNDING, *supra* note 132, at 15 tbl.2.

281. *Id.* at 17.

The fact that so much has been accomplished does not mean, however, that Superfund's work is done. Unfortunately, there are still more sites across the country needing cleanup, and some of these sites are technically complex and extremely expensive to address. And questions still remain about the degree to which government and private parties achieve quality cleanups in a reasonable amount of time and whether those sites likely to have long-term contamination are properly monitored. Other questions relate to funding and liability. Below we identify four questions that we believe must be addressed now to ensure that, over the next ten years, the Superfund program achieves steady progress. We end with a plea for increased transparency and an investment in independent program evaluation in order to ensure increased credibility for the Superfund program in the years to come.

A. Can the Quality and Pace of Cleanups Be Improved?

Superfund's ability to advance the goals envisioned by its creators would be much improved by better information about what works and what does not in achieving the fundamental goal of the statute: cleanup. Questions about the pace and quality of cleanup still hound the Superfund program. While it is clear that the challenges of remediating contaminated sites preclude "speedy" cleanup, it can take a decade or longer to address some NPL sites. EPA needs to investigate the pace of cleanup for two important reasons: 1) to evaluate whether there are program reforms that could be implemented that would accelerate high quality cleanups, and 2) to be able to communicate to Congress and the public why, in some cases, cleanup actually cannot be accelerated (or not by much). We recommend an independent study to addresses these issues.

Concern about the quality of Superfund cleanup is not helped by a dearth of information about what cleanups are accomplishing. Through the 1990s, EPA issued annual reports summarizing the remedies selected at NPL sites. During this period there were also many external studies evaluating cleanup remedies. In the past decade, however, there have been few evaluations of Superfund cleanups from either EPA or external experts. Yet, assessing what is—and is not—being accomplished in terms of setting and achieving cleanup goals is crucial to program success. EPA should synthesize information on the selection of remedies and cleanup goals across all NPL sites and make this information publicly available, along with clear information about whether these goals are being achieved.

This is even more of an issue for those voluntary cleanups conducted by private parties without oversight from EPA or states. These cleanups

take place outside of the federal program. Parties use the liability provisions of the law to help them recover costs for their own efforts to clean up or they clean up sites to avoid facing possible enforcement actions. It is unclear to what extent these privately addressed sites really are "clean" or are properly monitored to assure no further exposure to the hazards that remain after a removal or remedial action. Most of the information that is publicly available about private party practices outside federal and state requirements stems from private efforts in court to spread the cost of cleanup to other parties, which until recently usually involved relatively little judicial review of the actual cleanup. Moreover, to the degree parties resolve cleanup and cost allocation issues outside of court or government supervision, no information is available.

B. What Steps Need to Be Taken to Ensure a Robust and Reliable Long-term Stewardship—or Post-cleanup—Program?

It is now generally accepted that at many NPL sites, even after cleanup is completed, the site will not be appropriate for unrestricted use and that some kind of "long-term stewardship"[282] program will be required for years, if not decades, to come. Long-term stewardship typically involves: legal controls over the use of a site (and water and groundwater resources) when contamination remains on site at levels that preclude unrestricted use; site monitoring and maintenance; and mechanisms for ensuring that site restrictions are enforced and that any site risks are communicated to the public.

While the topic of long-term stewardship has garnered increasing attention over the past decade, with reports sponsored by the Department of Energy as well as guidance documents from EPA, there are, in fact, no regulatory requirements governing long-term stewardship. As a result, each site, whether on the NPL or not, is faced with the somewhat daunting task of creating its own stewardship program and requirements. EPA needs to fill this regulatory "hole" and develop regulatory requirements and, equally important, program support for stewardship activities at contaminated sites across the nation.

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282. *See, e.g.*, KATHERINE N. PROBST AND MICHAEL H MCGOVERN, LONG-TERM STEWARDSHIP AND THE NUCLEAR WEAPONS COMPLEX: THE CHALLENGE AHEAD, at viii-ix (1998) (stating that some contaminants at DOE sites will remain a concern for hundreds of years, and outlining the key elements of a long-term stewardship program for contaminated sites).

C. Will Private Parties Continue To Contribute Work and Money to NPL Cleanups, and Will They Continue To Clean Up Sites on Their Own?

In the last few years, the U.S. Supreme Court has shaken the foundations of CERCLA liability, with the possible result that private parties may no longer so willingly settle with government authorities or conduct voluntary cleanup. During the last five years, the U.S. Supreme Court issued three CERCLA opinions, the last of which, *Burlington Northern*, was decided on May 4, 2009 and may be the most troubling.

The first decision, *Aviall*,[283] limited private party contribution claims to work done or paid for as a consequence of a civil action or certain settlement agreements. In effect, the Court concluded that claims for contribution may only be used when a civil action or related settlement has made the claiming party liable for more than its fair share of cleanup costs. This decision demolished the foundation of many private party contribution claims. All such private party claims that related to costs for voluntary, state and federally supervised cleanup without the prerequisite civil action were dismissed because so many circuit courts had restricted all private party efforts to allocate costs, even voluntary cleanup costs, to the contribution provisions of the statute that the Court curtailed in *Aviall*. Cooperating with government authorities or cleaning up on one's own suddenly was not a promising way to spread cleanup costs to non-cooperating parties.

The cracks in the foundation were patched a few years later when the U.S. Supreme Court decided *Atlantic Research Corp*.[284] In this case, Justice Thomas reminded CERCLA advocates and judges that authority for recovering costs for voluntary cleanup resides in the liability provisions originally written into the statute, rather than the contribution provisions drafted later and on which most courts had relied prior to *Aviall*. While this decision seemed to repair the liability regime, it also has called into question the value of the contribution-protection provisions provided in settlement agreements with EPA. Private party claims may—under some circumstances created by private party cost recovery after *Atlantic Research*—pierce these shields from private party suits. On the other hand, contribution protection provisions in settlement agreements may prevent contribution counter-claims when parties that have settled with the U.S.

283. Cooper Indus. Inc. v. Aviall Servs. Inc., 543 U.S. 157 (2004).
284. United States v. Atl. Research Corp., 551 U.S. 128 (2007).

bring subsequent cost recovery claims.[285] Depending on the role of contribution protection clauses in the face of private party cost recovery claims, private parties may have one less reason or one more reason to settle with EPA.

The last decision, however, is the most puzzling one of the triad and the most significant reason why we must ponder whether liability will continue to spur voluntary cleanup and government settlement agreements for cleanup work and compensation. The *Burlington Northern*[286] decision may be a hairline crack in CERCLA's liability regime or it may be an earthquake destroying much that has made the statute successful at spurring private party action. The Court found that joint and several liability is part of the common law of CERCLA, and, as such, its application may be avoided when the harm is divisible. So far, so good, since this principle was well established in CERCLA. The practical application of the principle means that few private parties avoid joint and several liability, since more often than not contamination crosses borders, co-mingles with other hazardous substances, and generally results in cleanup response that cannot be distinguished according to a PRPs role at the site. This means that EPA could recover all its costs from one or more PRPs in these cases.[287]

In *Burlington Northern*, however, the Supreme Court affirmed a district court ruling that voided joint and several liability based on an analysis better suited to contribution allocation than divisibility of harm.[288] Contrary to precedent, the district court acted on its own initiative to apportion the harm at the site by calculating how long the property was leased and how much of the contaminated property was owned by the railroads, with some consideration of: the limited number of hazardous substances, the monitoring nature of the remedy imposed on the railroad's portion of the property, and an allowance for "calculation errors."[289]

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285. *See, e.g.*, United States v. Kramer, Civil Action Nos. 89-4340 (JBS), 89-4380 (JBS), 2009 WL 2339341, at *8 (D.N.J. July 27, 2009) (granting a settling party's motion to file a claim under 42 U.S.C. § 9607(a)(4)(B) against a non-settling party whom will have no counter-claim for contribution because the settling party is shielded from such claims, potentially resulting in the non-settling party being held responsible for all of the settling party's costs).

286. Burlington N. & Santa Fe Ry. Co. v. United States, 129 S. Ct. 1870 (2009).

287. Fairness among private parties was introduced in concurrent or subsequent claims for contribution that allowed district courts to allocate the costs—paid to clean up the site or to reimburse EPA under joint and several liability—among the PRPs after EPA or the private party initiating cleanup had been paid in full. Without the application of joint and several liability, contribution claims are unlikely to succeed.

288. *Burlington N.*, 129 S. Ct. at 1884.

289. *Id.* at 1882.

How disruptive will these decisions be to the frequency and pace of voluntary or other private party cleanup in the future? Specifically, will EPA be able to continue to negotiate cleanup and reimbursement settlements after *Atlantic Research Corp.* and *Burlington Northern*? Will *Atlantic Research Corp.* increase voluntary cleanup because of the possible option of suing parties that had settled with EPA in the past? Will *Burlington Northern* result in more litigation with EPA because of divisibility arguments, and less cleanup because of reluctance to engage in voluntary cleanup for lack of contribution claims after an apportionment? Based on the Court's interpretation of the law alone, nothing should change; but based on the Court's affirmation of *Burlington Northern's* unusual divisibility of harm analysis, the foundation of CERCLA liability may be shattered.

The answers to these questions will affect the continued progress of cleanup and are one factor to consider in how much money the Superfund program will need for the next five to ten years. DOJ and EPA will likely need more money for enforcement until the ramifications of these decisions are known. And, if the result of these cases is that PRPs are much less willing to agree to undertake site studies and cleanups directly, the federal Superfund program could need a lot more money than is currently being appropriated.

D. What Are the Funding Needs for the Superfund Program over the Next Five to Ten Years?

A well-funded Superfund program is critical not only to ensuring that EPA has the funds it needs to evaluate potential sites, move contaminated sites through the cleanup process, and address contamination where private parties cannot be found or are recalcitrant, but it is also a critical element of ensuring that the clout of the government will encourage private parties to come forward. For the threat of EPA action to be credible, the agency must have the funds to remediate sites when responsible parties fail to do so.

But what are the funding needs for the Superfund program over the next five to ten years? The last comprehensive analysis of the future funding needs for the Superfund program was the report to Congress published by Resources for the Future in July 2001. Since that time, while the question of future funding needs has been raised repeatedly and there have been myriad reports documenting funding shortfalls for cleanup activities, there has been no comprehensive, credible estimate of the program's future funding needs, or of the number of sites warranting listing on the NPL in the future. This makes it impossible to ascertain if current

annual appropriations of approximately $1.3 billion are too little, too much, or just the right amount of funding, or whether reinstatement of the Superfund taxes that expired at the end of 1995 is needed. This lack of information needs to be remedied.

Ideally, the EPA Administrator should initiate such a process herself, but, if not, then Congress should again request an estimate of future funding needs. To ensure the credibility of the analysis, the study could either be done by an independent government organization, such as the Congressional Budget Office, or by an independent non-profit research or academic organization. What is critical is that the analysis be independent and credible, and that the methodology used to derive cost estimates be clearly documented for all to see.

E. Improving Superfund Requires Increased Program Evaluation and Greater Transparency

The Superfund program needs to increase the transparency of its operations, accomplishments, and planned activities—both in regards to the cleanup program and to enforcement activities. The agency also needs, as suggested above, to invest in evaluations and studies that will provide the agency the information it needs to improve its effectiveness. A better-informed debate about what works in the Superfund program and what does not work is in the public interest. Without a sound analytical basis for determining program reforms, the result is policy reform by anecdote, something that should be avoided.

The EPA should develop a proactive agenda for evaluating key aspects of the cleanup and enforcement programs, and it should reinstate the annual reports to Congress, required under section 301(c) of CERCLA, that included concise but comprehensive information about annual program accomplishments as well as issues on the horizon. This kind of effort is needed to ensure not only that the program has the information it needs to guide future policy decisions, but it will also serve to improve the credibility of the program.

Chances are the Superfund program will be with us for many years to come. To make sure we spend scarce dollars—whether paid for by the taxpayer or by private companies—wisely and effectively, we need to investigate ways to improve implementation of what is an important environmental program.