Reasonable Bases for Apportioning Harm under CERCLA

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The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) imposes joint and several liability on parties responsible for a single and indivisible incident of hazardous substances contamination. Joint and several liability may be avoided, however, by proving that there is a reasonable basis for determining the contribution of each party to a single harm. While there is no consensus as to what constitutes “a reasonable basis,” courts that have analyzed the “reasonable basis” question have rarely apportioned harm. However, in the Supreme Court's recent decision in Burlington Northern & Santa Fe Railway Co. v. United States, the Court appears to have made it easier to obtain apportionment, and to avoid joint and several liability. Making apportionment easier to justify, and thereby making recovery of cleanup costs harder to obtain, contravenes CERCLA's objective of placing the cost of cleanup on parties whose activities contributed to the contamination. Thus, Burlington Northern sets a bad precedent for future courts. In response, this Note proposes a four-part test as a normative alternative for determining whether a basis for apportionment is "reasonable." Based on this proposed test, this Note concludes that the basis for apportionment in Burlington Northern was unreasonable.

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INTRODUCTION

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)\(^1\) was enacted to compel the cleanup of sites contaminated by hazardous substances.\(^2\) CERCLA imposes strict liability on certain classes of people responsible for contamination. Where two or more persons are liable under CERCLA for a single and indivisible incident of contamination, each person is liable for the full cleanup costs.\(^3\) That is, liability is joint and several. But joint and several liability may be avoided under CERCLA by proving that the harm is capable of apportionment.\(^4\) Apportionment of harm is proper when “there is a reasonable basis for determining the contribution of each cause to a single harm.”\(^5\) While there is no consensus as to what constitutes “a reasonable basis,”\(^6\) courts that have analyzed the “reasonable basis” question have rarely apportioned harm. However, in the Supreme Court’s recent decision in *Burlington Northern & Santa Fe Railway Co. v. United States*, the Court relaxed the level of proof needed to apportion harm by requiring only minimal support for apportionment as compared to prior cases.\(^7\) In short, the Supreme Court appears to have made it easier to obtain apportionment and to avoid joint and several liability.

Making apportionment easier to justify, and thereby making recovery of cleanup costs harder to obtain, contravenes CERCLA’s objective of placing the cost of cleanup on persons whose activities

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3. *See* United States v. Chem-Dyne Co., 572 F. Supp. 802, 810 (S.D. Ohio 1983) (“[E]ach [person] is subject to liability for the entire harm . . . where the conduct of two or more persons liable under [CERCLA] has combined to violate the statute . . . .”).
4. *Burlington N. & Santa Fe Ry. Co. v. United States*, 129 S. Ct. 1870, 1881 (2009) (“Not all harms are capable of apportionment, however, and CERCLA defendants seeking to avoid joint and several liability bear the burden of proving that a reasonable basis for apportionment exists.”).
7. *See* 2 SUsan M. Cooke, *The Law of Hazardous Waste: Management, Cleanup, Liability, and Litigation* § 14.01[6][c][ii], at 14-172.1 (2009) (“Until [the Burlington Northern] decision, few courts had actually found the harm to be divisible.”); id. § 14.01[6][c][iii], at 14-172.22 to 14-172.23 (“[T]he [Burlington Northern Supreme Court majority] upheld the less rigorous standard adopted by the district court in *Burlington Northern* with respect to the level of proof needed to apportion harm.”); *see also* O’Neil v. Picillo, 883 F.2d 176, 178–79 (1st Cir. 1989) (“The practical effect of placing the burden on defendants [to demonstrate that the harm is divisible for apportioned damages] has been that responsible parties rarely escape joint and several liability.”).
contributed to the contamination. Accordingly, Burlington Northern upends prior case law that collectively formed a workable framework for determining whether a basis for apportionment is reasonable. This framework required substantial evidentiary support and was more aligned with CERCLA's objective.

Based on the cases prior to Burlington Northern that analyzed the "reasonable basis" question and the underlying objective of CERCLA, this Note proposes a normative four-part test to determine whether a basis for apportionment is reasonable. Part I provides background on CERCLA and Part II examines case law applying the reasonable basis standard. Part III discusses and critiques the Supreme Court's decision in Burlington Northern. Part IV proposes this new test for determining whether a basis for apportionment is reasonable and applies the proposed test to the basis for apportionment in Burlington Northern. This Note concludes that, based on the proposed test, the basis for apportionment in Burlington Northern was unreasonable.

I. BACKGROUND ON THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980

Congress enacted CERCLA in 1980 in response to widespread public concern about the health and environmental threats posed by abandoned hazardous waste sites and to the perceived inability of existing environmental laws to address this problem. CERCLA had a relatively lengthy and tortuous legislative history, which culminated in the hasty drafting and enactment of a compromise bill. Consequently, CERCLA has numerous "ambiguities, omissions, and poorly drafted provisions." Nevertheless, courts and commentators have uncovered some legislative objectives that pervade CERCLA and help in discerning the statute's meaning. Two such objectives are to facilitate the cleanup

8. See Burlington N., 129 S. Ct. at 1885 (Ginsburg, J., dissenting); see also Marsh v. Rosenbloom, 499 F.3d 165, 178 (2d Cir. 2007) ("CERCLA manifests Congress's intent that hazardous waste sites should be cleaned up and that those responsible for the contamination should bear the costs."); United States v. Aceto Agr. Chem. Co., 872 F.2d 1373, 1380 (8th Cir. 1989) ("The two essential purposes of CERCLA [are] that the federal government be immediately given the tools necessary for a prompt and effective response to the problems of national magnitude resulting from hazardous waste disposal . . . [and] that those responsible for problems caused by the disposal of chemical poisons bear the costs and responsibility for remedying the harmful conditions they created.").

9. COOKE, supra note 7, § 12.02 [1], at 12-12.

10. Id.

11. Id.

12. Id.
of dangerous hazardous waste sites\textsuperscript{13} and to place the cost of cleanup on persons whose activities contributed to the contamination.\textsuperscript{14}

Several key terms shape liability under CERCLA. Specifically, CERCLA premises liability on the existence of a "release" or "threatened release" of a "hazardous substance," if that release or threatened release causes the incurrence of "response costs."\textsuperscript{15} CERCLA broadly defines "release" to include "any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment."\textsuperscript{16} Under that definition, "virtually any discharge . . . of a hazardous substance into the soil, surface water, groundwater, or air constitutes a release."\textsuperscript{17} Further, the definition even covers the abandonment or discard of barrels and "other closed receptacles" containing hazardous substances.\textsuperscript{18}

CERCLA generally defines "hazardous substance" to be any substance that may present substantial danger to the public health or welfare or the environment, with some exceptions.\textsuperscript{19}

Finally, "response costs" generally means "the costs of investigating and remediying the effects of a release or threatened release of hazardous substances."\textsuperscript{20} The definition is expansive,\textsuperscript{21} and encompasses many actions related to protecting the public health or the environment.\textsuperscript{22} Less formally, "response costs" are called "cleanup costs."\textsuperscript{23}

\begin{footnotesize}
\begin{enumerate}[\itemsep=2pt]
\item United States v. CDMG Realty Co., 96 F.3d 706, 718 (3d Cir. 1996).
\item \textit{Id.} § 9601(22).
\item COOKE, supra note 7, § 14.01[3][b], at 14-16.
\item 42 U.S.C. § 9601(22).
\item \textit{Id.} §§ 9601(14), 9602. For instance, the term "hazardous substance" does not include petroleum, natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel. \textit{Id.} § 9601(14).
\item W.R. Grace & Co. v. Zotos Int'l, Inc., 559 F.3d 85, 92 (2d Cir. 2009) ("Generally, response costs are liberally construed under CERCLA.").
\item \textit{Id.} (citing Amoco Oil Co. v. Borden, Inc., 889 F.2d 664, 669 (5th Cir. 1989) ("Response costs are generally and specifically defined to include a variety of actions designed to protect the public health or the environment.").
\end{enumerate}
\end{footnotesize}
A. Section 107 Liability for Cleanup Costs

1. Government Actions

CERCLA gives the U.S. Environmental Protection Agency (EPA) two main tools to force responsible parties to clean up a site. First, EPA may issue an administrative order directing a responsible party to take specific actions to clean up the site under section 106 of CERCLA. Alternatively, EPA may clean up the site itself under section 104(a)(1), and then sue the responsible party to recover the cleanup costs under section 107(a)(4)(A).

Under section 107(a), four classes of persons, collectively called potentially responsible parties (PRPs), are liable for cleanup costs incurred by EPA: (1) current owners or operators of a site at which a release or threatened release of a hazardous substance occurred; (2) owners or operators of the site at the time of the disposal of the hazardous substance; (3) generators who arranged for disposal at the site; and (4) transporters of the hazardous substance to the site.

2. Private Party Cleanup Cost Recovery

Section 107(a)(4)(B) appears on its face to create a private cause of action, whereby any party that has incurred cleanup costs may recover such costs from other PRPs. Permitting recovery of private cleanup costs is relevant where a hazardous waste site implicates multiple PRPs, and where one PRP takes the lead, at its own initiative or at the direction of a regulatory agency, to clean up the site. The lead PRP may spend money exceeding what it perceives to be its fair share of cleanup responsibility. To recover the excess, the lead PRP may attempt to bring a private cost-recovery action against other PRPs.

The text of section 107(a)(4)(B) suggests that any party may recover cleanup costs from other PRPs. Courts agree that innocent parties may

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25. Id.; see also 42 U.S.C. § 9606(a).
28. 42 U.S.C. § 9607(a)(4)(B) ("[PRPs shall be liable for] any other necessary costs of response incurred by any other person consistent with the national contingency plan."); see also Key Tronic Corp. v. United States, 511 U.S. 809, 816 n.7 (1994) ("District Courts 'have been virtually unanimous' in holding that § 107(a)(4)(B) creates a private right of action for the recovery of necessary response costs.").
29. Aronovsky, supra note 24, at 17.
30. Id.
recover private cleanup costs under the section. As for non-innocent parties, i.e., PRPs, the Supreme Court has held that PRPs also may recover costs from other PRPs under the section.

3. **Strict Liability**

CERCLA imposes a strict liability standard on cost-recovery actions under section 107. Accordingly, section 107 focuses on responsibility, not culpability. Once a person is determined to be a PRP under section 107(a), she is liable for cleanup costs. Liability does not depend on whether the PRP intended to cause the contamination, or was unaware of the lawfulness of the acts causing the contamination. The only relevant defenses are those listed in section 107(b), and those defenses do not include ignorance of the law.

**B. Joint and Several Liability under Section 107**

CERCLA's text does not address whether liability under section 107 is joint and several in cases where multiple PRPs are liable for the same cleanup costs. Joint and several liability is relevant where a person is identified as a PRP, but other PRPs are insolvent, unavailable, or not sued. Under joint and several liability, each PRP is responsible for the

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31. See, e.g., Bedford Affiliates v. Sills, 156 F.3d 416, 424 (2d Cir. 1998) ("The language of CERCLA suggests Congress planned that an innocent party be able to sue for full recovery of its costs, i.e., indemnity under § 107(a)." ); Centerior Serv. Co. v. Acme Scrap Iron & Metal Corp., 153 F.3d 344, 350 (6th Cir. 1998) ("Cost recovery actions by parties not responsible for site contaminations are joint and several cost recovery actions governed exclusively by § 107(a)." ); New Castle County v. Halliburton NUS Corp., 111 F.3d 1116, 1120 (3d Cir. 1997) ("Every court of appeals that has examined this issue has come to the same conclusion: a section 107 action brought for recovery of costs may be brought . . . by innocent parties that have undertaken clean-ups.");


33. See Burlington N. & Santa Fe Ry. Co. v. United States, 129 S. Ct. 1870, 1878 (2009) ("CERCLA imposes strict liability for environmental contamination upon four broad classes of PRPs.");

34. United States v. Mexico Feed & Seed Co., 980 F.2d 478, 484 (8th Cir. 1992).

35. See id. ("Ignorance of the lawfulness of the acts of persons causing the contamination are simply not available defenses according to the plain language of this statute.");

36. Id.; see also 42 U.S.C. § 9607(b) (2006). The defenses are (1) an act of God; (2) an act of war; and (3) an act or omission of a third party. 42 U.S.C. § 9607(b).

37. See 42 U.S.C. § 9607(b).


39. Paul Bargren, Comment, Joint and Several Liability: Protection for Plaintiffs, 1994 Wis. L. Rev. 453, 454, 464 (1994) ("Joint and several liability is seen as a way to relieve plaintiffs of the risk of insolvent, unavailable or otherwise protected defendants.").
full cleanup costs, or any unpaid portion of it.\textsuperscript{40} The successful plaintiff may choose to recover cleanup costs from all PRPs, from some, or from one, regardless of the PRPs' comparative culpability.\textsuperscript{41} In contrast to joint and several liability, under severable liability, cleanup costs at a single facility may be apportioned among PRPs on some basis.\textsuperscript{42} When a PRP cannot pay its apportioned cleanup costs, the EPA bears the loss.\textsuperscript{43}

Thus, whether liability is joint and several, rather than severable, is of great importance to PRPs because it determines whether the PRP will be liable for the entire cleanup cost, or just the portion spent in response to her contamination. While the text of CERCLA does not explicitly answer the question, courts agree that they may choose when to impose joint and several liability based on the evolving common law.\textsuperscript{44} Currently, the common law principle holds that when two or more persons acting independently cause a single harm, damages for the harm are to be apportioned among the causes when "there is a reasonable basis for determining the contribution of each cause to a single harm."\textsuperscript{45}

1. \textit{Origin of Joint and Several Liability}

Joint and several liability first was applied in English common law to "joint torts," situations where multiple tortfeasors injured a plaintiff by acting in concert.\textsuperscript{46} Later, joint and several liability was adopted in the

\textsuperscript{40} See id. ("Under joint and several liability, each defendant is responsible for the full judgment or any portion of it."); Burlington \textit{N.}, 520 F.3d at 934 ("Joint and several \ldots mean[s] that each PRP responsible for all cleanup costs at a facility is liable for such costs.").

\textsuperscript{41} See Bargren, \textit{supra} note 39, at 464 ("The successful plaintiff may choose to recover the judgment from all liable defendants, from some, or from one, regardless of the defendants' comparative negligence.").

\textsuperscript{42} Burlington \textit{N.}, 520 F.3d at 934.

\textsuperscript{43} See Bargren, \textit{supra} note 39, at 454 ("[W]hen a liable party cannot pay the damages it caused \ldots \[\text{without joint and several liability, the injured plaintiff bears the loss.}].").

\textsuperscript{44} Burlington \textit{N.} \& Santa Fe Ry. Co. v. United States, 129 S. Ct. 1870, 1880-81 (2009) ("Chief Judge Rubin [in \textit{Chem-Dyne}] concluded that \ldots \text{[CERCLA]} \ldots did not mandate 'joint and several' liability in every case. Rather, Congress intended the scope of liability to 'be determined from traditional and evolving principles of common law.'] The \textit{Chem-Dyne} approach has been fully embraced by the Courts of Appeals." (citations omitted) (quoting United States v. Chem-Dyne Co., 572 F. Supp. 802, 805, 807-08 (S.D. Ohio 1983)); see also In re Bell Petroleum Servs., 5 F.3d 889, 901-02 (5th Cir. 1993) ("We therefore conclude that the \textit{Chem-Dyne} approach is an appropriate framework for resolving issues of joint and several liability in CERCLA cases."); United States v. Alcan Aluminum Co., 964 F.2d 252, 268 (3d Cir. 1992) ("[A]s the court explained in \textit{United States v. Chem-Dyne Corp.}, \ldots at the conclusion of an exhaustive review of statements made by the legislation's sponsors concerning the deletion of joint and several liability, \ldots the term was omitted in order to have the scope of liability determined under common law principles."); O'Neil v. Picillo, 883 F.2d 176, 178 (1st Cir. 1989); United States v. Monsanto Co., 858 F.2d 160, 171 (4th Cir. 1988).

\textsuperscript{45} Restatement (Second) of Torts § 433A(1) (1965); \textit{Chem-Dyne}, 572 F. Supp. at 810.

\textsuperscript{46} Bargren, \textit{supra} note 39, at 455; see also W. PAGE KEETON ET AL., PROSSER AND KEETON ON THE LAW OF TORTS § 46, at 322-23 (5th ed. 1984).
United States and extended by American courts to apply to concurrent
torts, where multiple tortfeasors, rather than acting in concert, commit
independent torts that cause one indivisible injury to a plaintiff.\textsuperscript{47} Each
concurrent tortfeasor is liable for the entire harm caused, so each may be
sued and held responsible for the entire amount of damages.\textsuperscript{48}

2. \textit{Rationale for Joint and Several Liability

Underlying the Common Law}

Joint and several liability relieves plaintiffs from bearing “the risk of
insolvent, unavailable, or otherwise protected defendants.”\textsuperscript{49} This
rationale was summarized by the California Supreme Court in its leading
case supporting the rule, \textit{American Motorcycle Association v. Superior
Court of Los Angeles County}.\textsuperscript{50} The court explained that liability attaches
to a concurrent tortfeasor not because she is responsible for the acts of
other independent tortfeasors, but because she is responsible for all
damage of which her own negligence was a proximate cause.\textsuperscript{51} In the
context of concurrent tortfeasors, “the law is loath to permit an innocent
plaintiff to suffer as against a wrongdoing defendant.”\textsuperscript{52} If liability were
not joint and several, “a completely faultless plaintiff, rather than a
wrongdoing defendant, would be forced to bear a portion of the loss” if
any concurrent defendant were unable to pay.\textsuperscript{53} Even where a plaintiff is
partially at fault for her own injury, the plaintiff’s negligence is not
equivalent to the defendant’s.\textsuperscript{54} Indeed, the plaintiff’s negligence relates
only to a failure to use due care for her own protection, while a
defendant’s negligence relates to a lack of due care for the safety of
others.\textsuperscript{55} Thus, joint and several liability permits an injured plaintiff to
obtain full recovery for her injuries even when one or more tortfeasors
are unable to cover their liability.\textsuperscript{56} The tortfeasors are left to debate
among themselves apportionment of the liability.\textsuperscript{57}

\textsuperscript{47} Bargren, \textit{supra} note 39, at 455.
\textsuperscript{48} \textit{Id.} at 455–56.
\textsuperscript{49} \textit{Id.} at 464.
\textsuperscript{50} Am. Motorcycle Ass’n v. Super. Ct., 20 Cal. 3d 578 (1978). California voters eliminated
the rule of joint and several liability for non-economic damages in a referendum in 1986.
Evangelatos v. Superior Court, 44 Cal. 3d 1188, 1239 (1988) ("[Proposition 51] repeals the joint
and several rule only as applied to noneconomic damages, i.e., pain and suffering, emotional
distress, loss of consortium and the like."); CAL. CIV. CODE § 1431.2 (1986).
\textsuperscript{51} \textit{Am. Motorcycle}, 20 Cal. 3d at 587.
\textsuperscript{52} \textit{Id.} at 588 (quoting Finnegan v. Royal Realty Co., 35 Cal. 2d 409, 433–34 (1950)).
\textsuperscript{53} \textit{Id.} at 589.
\textsuperscript{54} \textit{Id.}
\textsuperscript{55} \textit{Id.}
\textsuperscript{56} \textit{Id.} at 590.
\textsuperscript{57} Summers v. Tice, 33 Cal. 2d 80, 88 (1948).
Critics of joint and several liability argue that the rule encourages plaintiffs to seek redress against the most solvent defendant—the one who has the "deepest pocket"—rather than the one most at fault. The plaintiff may receive the entire award from the one defendant regardless of that defendant's degree of fault. This consequence has spawned tort reform efforts, seeking to limit solvent defendants' liability for damages apportioned to insolvent or otherwise protected defendants.

3. Joint and Several Liability under Section 107

CERCLA's text does not mention joint and several liability. Both the House and Senate versions of the bill that became CERCLA contained language authorizing joint and several liability, but that language was removed shortly before passage. Nevertheless, the removal of the joint and several liability language from the bill has been interpreted not as a rejection of joint and several liability, but as a means to provide courts with flexibility in determining whether to apply it.

Indeed, in the seminal case United States v. Chem-Dyne Corp., the Southern District of Ohio reviewed the legislative history of CERCLA and concluded that the phrase "joint and several liability" was deleted from the final version of CERCLA to allow the scope of liability to be determined under common law principles. Common law principles provide flexibility by allowing a court to assess the propriety of applying joint and several liability on a case-by-case basis after evaluating the complex factual scenarios associated with typical waste sites.

Additionally, the Chem-Dyne court concluded that Congress intended the federal courts to apply "federal common law" when determining whether to impose joint and several liability under

59. Id. at 41-42.
60. See Bargren, supra note 39, at 456 ("The [tort] reform efforts sought to limit solvent tortfeasors' responsibilities for the share of damages apportioned to tortfeasors who were judgment-proof.").
62. Id. The Senate amendments eliminating joint and several liability were passed on November 24, 1980. 126 CONG. REC. S14964 (daily ed. Nov. 24, 1980). The House amendments eliminating joint and several liability were passed on December 3, 1980. 126 CONG. REC. H11787 (daily ed. Dec. 3, 1980).
64. Id. at 808.
65. See id. ("[T]he term [joint and several liability] was omitted in order to have the scope of liability determined under common law principles, where a court performing a case by case evaluation of the complex factual scenarios associated with multiple-generator waste sites will assess the propriety of applying joint and several liability on an individual basis.").
CERCLA. At that time, there was no federal common law on joint and several liability under CERCLA. However, there was well-developed state common law in torts. Thus, to begin developing this new federal common law, the court turned to the Restatement (Second) of Torts, from which it derived the following federal common law principle:

[W]here two or more persons cause a single and indivisible harm, each is subject to liability for the entire harm. Furthermore, where the conduct of two or more persons liable under [section 107] has combined to violate the statute, and one or more of the defendants seeks to limit his liability on the ground that the entire harm is capable of apportionment, the burden of proof as to apportionment is upon each defendant.

After Chem-Dyne, courts generally agreed that liability under section 107 may be joint and several, and that the decision to impose joint and several liability should “be determined from traditional and evolving principles of [federal] common law.” Currently, under federal common law, “[t]he universal starting point for divisibility of harm analyses in CERCLA cases is” section 433A of the Restatement (Second) of Torts. Section 433A provides that when two or more persons acting independently cause a single harm, damages for the harm are to be apportioned among the causes when “there is a reasonable basis for determining the contribution of each cause to a single harm.” But not all harms are capable of apportionment, and CERCLA defendants seeking to avoid joint and several liability bear the burden of proving that there is a reasonable basis for apportionment.

66. See id. at 808–09.
67. Id. at 810 (citing RESTATEMENT (SECOND) OF TORTS §§ 433A, 433B (1976)).
68. Id. (citations omitted); see also John M. Hyson, “Fairness” and Joint and Several Liability in Government Cost Recovery Actions under CERCLA, 21 HARV. ENVTL. L. REV. 137, 151 (1997).
71. RESTATEMENT (SECOND) OF TORTS § 433A(1) (1965); Chem-Dyne, 572 F. Supp. at 810.
II. THE "REASONABLE BASIS" STANDARD FOR THE APPORTIONMENT OF HARM UNDER SECTION 107 PRIOR TO BURLINGTON NORTHERN

There is no consensus among courts as to what constitutes a "reasonable basis" for apportioning harm under section 433A of the Restatement. It is clear that a reasonable basis cannot incorporate equitable considerations, such as comparative fault, so at the very least, a reasonable basis must apportion causation, rather than blame in a normative manner.

The Restatement's analysis of causation does not fit exactly with CERCLA's treatment of causation in assigning liability, so courts have varied in how they have applied the Restatement's criteria for determining when it is appropriate to apportion harm. In the first interpretations of CERCLA, courts strongly presumed that CERCLA harm was not divisible, although some later court decisions leading up to Burlington Northern relaxed that presumption.

A. Text of, and Comments to, Restatement Section 433A

Section 433A of the Restatement is entitled "Apportionment of Harm to Causes," clearly indicating that harm is to be apportioned among "causes." But causation is not analyzed under a strict liability statute like CERCLA. Thus, it can be awkward to apply section 433A, which seeks to apportion liability among multiple causes of harm, to CERCLA's liability scheme, where liability is imposed not because a person has caused harm but because the person falls within the four classes of persons outlined in section 107(a). Courts have resolved this issue by applying section 433A and other sections of the Restatement discriminatingly, and by not following the Restatement to the extent that it contravenes CERCLA's principles.

Further, "harm" under CERCLA may mean either a release of a hazardous substance or the danger that a hazardous substance poses to

74. See Burlington N., 129 S. Ct. at 1881-82 n.9 ("Equitable considerations play no role in the apportionment analysis.").
75. Brighton, 153 F.3d at 319.
76. Gershonowitz, supra note 61, at 230; see also RESTATEMENT (SECOND) OF TORTS § 433A (1965).
77. Hyson, supra note 68, at 157.
78. See, e.g., O'Neil v. Picillo, 883 F.2d 176, 179 n.4 (1st Cir. 1989).
79. See United States v. Burlington N. & Santa Fe Ry. Co., 520 F.3d 918, 939 (9th Cir. 2008), rev'd, 129 S. Ct. 1870 (2009) ("In light of a CERCLA liability suit's central purpose—recovering the cost of eradicating contamination—we conclude that it is most useful for purposes of determining divisibility to view the 'harm' under CERCLA as the contamination traceable to each defendant.").
public health or the environment. Both definitions of "harm" may be relevant when apportioning harm under CERCLA. In that context, section 433A provides,

(1) Damages for harm are to be apportioned among two or more causes where

(a) there are distinct harms, or

(b) there is a reasonable basis for determining the contribution of each cause to a single harm.

(2) Damages for any other harm cannot be apportioned among two or more causes.

Based on the text, apportionment is proper in only two circumstances. The first is where there are distinct harms. Distinct harms are "by their nature . . . more capable of apportionment." An example is provided in Comment (b) to section 433A, which states that if two defendants independently shoot a plaintiff at the same time, and one wounds the plaintiff in the arm and the other in the leg and the ultimate result is a badly damaged plaintiff, it is still possible to regard the two wounds as separate injuries and as distinct wrongs. Similarly, under CERCLA, "distinct harms" exist when there are "separate injuries." Separate injuries may occur where a site consists of non-contiguous areas of soil contamination or where a site consists of distinct subterranean plumes of groundwater contamination.

The second circumstance is where there is a single harm that is "not so clearly marked out as severable into distinct parts," but where the harm is nevertheless divisible "upon a reasonable and rational basis... among the causes responsible." Again, an example is provided in a comment to section 433A. Comment (d) states that where the cattle of two or more owners trespass upon the plaintiff's land and destroy her

80. 42 U.S.C. § 9602(a) (2006) ("The [Environmental Protection Agency] shall promulgate and revise as may be appropriate, regulations designating as hazardous substances . . . elements, compounds, mixtures, solutions, and substances which, when released into the environment may present substantial danger to the public health or welfare or the environment.").
82. Id.
84. See Akzo Coatings, Inc. v. Aigner Corp., 881 F. Supp. 1202, 1210 (N.D. Ind. 1994) ("The court agrees that the harm is divisible based upon geographic location . . . Within the Site as a whole, a number of non-contiguous areas of contamination appear, including seven distinct areas of soil contamination, three distinct areas of groundwater contamination, and two distinct areas of suspected buried drums." (citations omitted)).
85. U.S. Bank Nat'l Ass'n, 563 F.3d at 208. Once contaminants reach groundwater, they move with the flow of groundwater, and this flowing body of contaminated water is called a "plume." ROGER D. GRIFFIN, PRINCIPLES OF HAZARDOUS MATERIALS MANAGEMENT 65 (1988).
86. RESTATEMENT (SECOND) OF TORTS § 433A cmt. d (1965).
crop, the aggregate harm is a lost crop. But, Comment (d) continues, the aggregate harm may nevertheless be apportioned among the cattle owners on the basis of the number owned by each, and the reasonable assumption that the respective harm done is proportionate to that number. The aggregate harm is a lost crop, and that harm does not divide into distinct parts. Nevertheless, portions of the harm are attributable to the cattle owners, after making a simplifying assumption. The example shows that apportionment in this circumstance is an estimate based on reasonable assumptions, and that the estimate need not consider all relevant facts. For example, there is no requirement that the basis consider the age of the cows, as younger cows may be more rambunctious. Under CERCLA, it is unclear whether a single harm—such as a plume containing commingled hazardous substances originating from multiple generators—should be divisible among the PRPs. However, as explained below, few courts have found such a harm to be divisible.

B. Cases Applying the "Reasonable Basis"

Section 107 cost-recovery actions typically cover a single harm that is not clearly severable into distinct parts, as "most CERCLA cost-recovery actions involve numerous, commingled hazardous substances with synergistic effects and unknown toxicity." Therefore, it is difficult to determine how much harm is attributable to each substance. Few courts have found such harm to be divisible upon a reasonable basis. Indeed, courts generally have applied the "reasonable basis" standard quite restrictively, presuming joint and several liability in a section 107 cost-recovery action, and requiring a very high level of proof to justify apportionment.

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87. Id.
88. Id.
89. Gershonowitz, supra note 61, at 231.
90. See id.
91. See United States v. Twp. of Brighton, 153 F.3d 307, 319 (6th Cir. 1998) ("[W]e cannot define for all time what is a reasonable basis for divisibility and what is not . . . .").
92. Cooke, supra note 7, § 14.01[6][c][i], at 14-172.1.
93. In re Bell Petroleum Servs., 3 F.3d 889, 903 (5th Cir. 1993) ("[M]ost CERCLA cost-recovery actions involve numerous, commingled hazardous substances with synergistic effects and unknown toxicity."); RESTATEMENT (SECOND) OF TORTS § 433A cmt. d (1965) ("There are other kinds of harm which, while not so clearly marked out as severable into distinct parts, are still capable of division upon a reasonable and rational basis.").
94. Bell Petroleum, 3 F.3d at 903.
95. See Cooke, supra note 7, § 14.01[6][c][i], at 14-172.1.
96. Id. § 14.01[6][c][iii], at 14-172.7.
1. Early Cases

Two early examples of restrictive application of the reasonable basis standard are Chem-Dyne\textsuperscript{97} and United States v. South Carolina Recycling & Disposal, Inc. (SCRDI).\textsuperscript{98} In Chem-Dyne, the Southern District of Ohio suggested that apportionment would not be available in a complex section 107 action.\textsuperscript{99} Specifically, in denying summary judgment to the PRPs, the court stressed that the site in question contained 608,000 pounds of material from 289 generators or transporters, that some of the wastes had commingled, and that many sources of those wastes had not been identified.\textsuperscript{100} The court suggested that, given the complex facts, evidence of the volume of waste contributed by each generator was insufficient by itself to justify apportionment.\textsuperscript{101} The court reasoned that the volume of waste contributed by a generator does not estimate accurately the health or environmental harm caused by that generator, because different generators contributed different types of hazardous substances, and because hazardous substances vary in toxicity and migratory potential.\textsuperscript{102} By inference, the toxicity and migratory potential of a hazardous substance is relevant in determining the substance’s harm to public health or the environment, and in turn the harm caused by the PRP who disposed of the substance.

In SCRDI, the District Court of South Carolina even more explicitly suggested that apportionment was not available in a complex section 107 action.\textsuperscript{103} The court stated that because “[t]here were thousands of corroded, leaking drums at the site not segregated by source or waste type,” and because “[u]nknown, incompatible materials comingled [sic] to cause fires, fumes, and explosions,” it was “impossible to divide the harm in any meaningful way.”\textsuperscript{104} Moreover, the court followed Chem-Dyne by declining to apportion response costs among the PRPs by calculating their relative volumetric contributions from shipping documents.\textsuperscript{105} SCRDI was affirmed by the Fourth Circuit in United States v. Monsanto.\textsuperscript{106} There, the Fourth Circuit agreed with the district court

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99. See Chem-Dyne, 572 F. Supp. at 811; COOKE, supra note 7, § 14.01[6][c][iii], at 14-172.8 (“[The Chem-Dyne] opinion[] emphasized the extreme difficulty of devising a suitable basis for apportionment.”).
101. See id.
102. See id.
103. See SCRDI, 653 F. Supp. at 994.
104. Id.
105. See id.
\end{flushright}
that apportionment based on volume was unreasonable where the PRPs "presented no evidence . . . showing a relationship between waste volume, the release of hazardous substances, and the harm at the site."\textsuperscript{107} However, the court mentioned that under other circumstances, proportionate volumes of hazardous substances may well show contributory harm.\textsuperscript{108} Specifically, the court noted that volumetric contributions provide a reasonable basis for apportioning liability only if it can be reasonably assumed, or it has been demonstrated, that no other factors are relevant in determining the harm caused by each PRP.\textsuperscript{109}

The analyses in \textit{Chem-Dyne} and \textit{SCRDI} seem to eliminate the possibility of apportionment in a typical multi-generator cost-recovery action.\textsuperscript{110} Both cases restrictively apply section 433A, holding that where wastes of varying degrees of toxicity and migratory potential commingle, it is impossible to determine the amount of harm caused by each PRP, and apportionment is therefore not appropriate.\textsuperscript{111} Further, both cases hold that the relative volumes of waste contributed by each generator do not indicate the harm associated with each generator’s waste at a typical site, and thereby suggest that generators cannot demonstrate a reasonable basis for apportionment using volumetric evidence alone.

After \textit{Chem-Dyne} and \textit{SCRDI}, PRPs rarely escaped joint and several liability because of the heavy evidentiary burden to justify apportionment.\textsuperscript{112} Especially where wastes of varying degrees of toxicity and migratory potential commingled, courts regularly found it impossible to determine the amount of harm caused by each PRP.\textsuperscript{113}

2. \textit{Attempts to Introduce Equitable Principles into the Analysis}

A rigid application of the Restatement approach to joint and several liability in CERCLA may be "extremely harsh and unfair" if imposed on a PRP who contributed only a small amount of waste to a site because a PRP may be liable for a disproportionate share of the response costs.\textsuperscript{114}

\begin{itemize}
  \item \textsuperscript{107} \textit{Id.} at 172.
  \item \textsuperscript{108} \textit{Id.}
  \item \textsuperscript{109} \textit{Id.} at 172 n.27.
  \item \textsuperscript{110} \textit{Cooke, supra} note 7, § 14.01[6][c][iii] at 14-172.7 ("Both [\textit{Chem-Dyne} and \textit{SCRDI}] portray the Restatement provisions in a manner that imposed a heavy burden of proof on defendants seeking apportionment and suggested that the circumstances of a multi defendant Section 107 suit would almost always preclude apportionment.").
  \item \textsuperscript{112} \textit{Id.}
\end{itemize}
Thus, some early cases went beyond the language of the Restatement and concluded that equitable considerations should enter into the decision on apportionment. However, this "moderate approach" to joint and several liability has since been rejected by courts. Courts now agree that the apportionment inquiry may not be guided by equity considerations. Rather, the inquiry must be guided by principles of causation alone. Where causation is unclear, courts should not "split the difference" in an attempt to achieve equity.

3. Lowering the Evidentiary Burden Required to Justify Apportionment and Allowing "No Causation" Defenses

While the courts in Chem-Dyne and SCRDI strongly presumed that CERCLA harm is not divisible, some later court decisions have lowered the evidentiary burden required to justify apportionment, or allowed PRPs to escape liability entirely through a "no causation" defense. These approaches are exemplified by four notable federal appellate court decisions: In re Bell Petroleum Services, United States v. Alcan Aluminum Corp. (Alcan-Butler), United States v. Alcan Aluminum Corp. (Alcan-New York), and United States v. Township of Brighton.

In Bell Petroleum, the Fifth Circuit applied a low evidentiary burden to the justification of apportionment, by allowing apportionment based on incomplete and indirect evidence. There, EPA sought to recover response costs for the cleanup of a site contaminated with chromium

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116. See Burlington N. & Santa Fe Ry. Co. v. United States, 129 S. Ct. 1870, 1881-82 n.9 (2009) ("Equitable considerations play no role in the apportionment analysis."); see also United States v. Hercules, Inc., 247 F.3d 706, 718 (8th Cir. 2001) ("The divisibility of harm inquiry, by contrast, is guided not by equity . . . but by principles of causation alone."). United States v. Rohm & Haas Co., 2 F.3d 1265, 1280-81 (3d Cir. 1993) ("[E]quitable considerations are not relevant to the apportionment inquiry under Restatement § 433A . . . .).
117. Hercules, 247 F.3d at 718.
118. Id.
119. Id. (quoting United States v. Twp. of Brighton, 153 F.3d 307, 319 (6th Cir. 1998)).
120. See Gershonowitz, supra note 61, at 213 ("[Four federal courts'] decisions . . . moved away from the Chem-Dyne/Monsanto presumption that environmental harm is not divisible.").
121. In re Bell Petroleum Services, 3 F.3d 889 (5th Cir. 1993).
125. See Bell Petroleum, 3 F.3d at 903-04, 904 n.19; see also Hyson, supra note 68, at 179-80 ("[P]laintiff presented expert testimony to estimate the volumetric contribution of each PRP to the . . . release on the basis of indirect evidence . . . . However, each indirect data source was itself incomplete; and the competing theories of apportionment were not entirely consistent with one another . . . . [N]evertheless, the Fifth Circuit] held that the district court had erred in concluding that the harm at the site was not capable of apportionment.").
waste. The chromium contamination resulted from chrome-plating operations conducted on the site by three successive operators. All three operators were identified as PRPs.

The case involved only one hazardous substance—chromium—and no synergistic effects. The chromium entered the groundwater as a result of similar operations by the PRPs, and the PRPs operated at mutually exclusive times. Given the relatively simple facts, the court held that it was "reasonable to assume that the respective harm done by each of the defendants is proportionate to the volume of chromium-contaminated water each discharged into the environment." Because there was no direct volumetric evidence, one PRP argued that the volumetric contribution of each PRP could be estimated from evidence on the amount of chrome-plating activity done by each PRP during its tenure as operator of the site. The PRP proffered several indicators of chrome-plating activity, including electrical usage during each PRP's tenure, sales records, and chrome flake purchases. Even though each indirect data source itself was woefully incomplete, the court permitted apportionment. Thus, the court seemingly relaxed "the [requisite] quality of the factual record on which this method of apportionment could operate."

In Alcan-New York and Alcan-Butler, the Second and Third Circuits, respectively, suggested that section 433A not only allows PRPs to avoid joint and several liability, but also allows a PRP to avoid liability entirely. A PRP can avoid liability when (1) a plaintiff sues only one of many PRPs, (2) that single PRP proves that the harm is capable of apportionment, and (3) that single PRP's apportioned harm is zero or negligible. Consequently, that single PRP can avoid liability, such that the plaintiff would recover no response costs from the action. In both Alcan-New York and Alcan-Butler, the government sought to impose joint and several liability on one of numerous PRPs, after the government had

126. Bell Petroleum, 3 F.3d at 892.
127. See id. at 892–93.
128. See id. at 893.
129. Id. at 903.
130. Id.
131. Id.
132. See id. at 903–04.
133. See id. at 911 (Parker, J., dissenting).
134. See id. at 911–12.
135. See id. at 904 (majority opinion).
136. Hyson, supra note 68, at 185.
137. See Alcan-New York, 990 F.2d 711, 722 (2d Cir. 1993); Alcan-Butler, 964 F.2d 252, 270 (3d Cir. 1992) ("[O]ur result thus injects causation into the equation but, as we have already pointed out, places the burden of proof on the defendant instead of the plaintiff."); see also Gershonowitz, supra note 61, at 220–21, 224.
settled with the other PRPs. In both cases, the non-settling PRP had arranged the disposal of oil emulsion containing hazardous substances. The courts held in both cases that if “a responsible party . . . can demonstrate that its pollutants, when mixed with other hazardous wastes, did not contribute to the release or the resulting response costs,” the responsible party should not be responsible for any response costs. This holding injects causation into CERCLA through the “backdoor... after being denied entry at the frontdoor.... “ In other words, while causation is irrelevant at the “frontdoor” in determining liability under section 107(a), causation is relevant at the “backdoor” in determining joint and several liability under federal common law. If causation is absent, and a court declines to impose joint and several liability, the PRP will avoid liability entirely.

In Brighton, the Sixth Circuit followed the lead of the Alcan decisions, stating that in cases involving multiple generators, a generator can avoid joint and several liability by showing a lack of causal connection between the disposal of its hazardous waste and a portion of the harm. Further, the court carved out a new acceptable basis for apportionment for operators. In Brighton, a township operated a dump on part of a site. The site was later found to contain hazardous substances. The township operated the dump for only part of the period during which disposal occurred at the overall site. To avoid liability, the township argued that the dump comprised only three acres in the southwest corner of the fifteen-acre site, and that those three acres contained no hazardous substances. Alternatively, the township argued that the hazardous substance at the dump was contributed by non-township sources after the township stopped its operations.

The Brighton court first stated that “the distinction between operator liability and other forms of liability is very important to consider when determining divisibility.” Then the court acknowledged two ways an operator can show divisibility, and therefore that the harm is capable

138. See Alcan-New York, 990 F.2d at 717; Alcan-Butler, 964 F.2d at 257.
139. See Alcan-New York, 990 F.2d at 717; Alcan-Butler, 964 F.2d at 256.
140. Alcan-New York, 990 F.2d at 717 (following Alcan-Butler, 964 F.2d at 267-71).
141. Id. at 722.
142. Hyson, supra note 68, at 174 (discussing Alcan-New York, 990 F.2d at 722).
144. See id. at 320.
145. See id. at 312.
146. See id. at 311-12.
147. See id. at 317.
148. Id. at 312.
149. Id.
150. Id. at 320.
of apportionment. First, as in *Bell Petroleum*, the operator may present sufficient evidence from which the court can determine the portion of harm caused by the hazardous substances disposed of during the time of its ownership or operation of the facility. Second, the operator may present sufficient evidence showing that its "operating" activities were completely confined to a discrete section of the property, and that the releases were confined to the discrete section. Ultimately, the *Brighton* court remand the case to the lower court, which was to examine the possible bases of apportioning operator liability, consistent with the guidelines set forth in the opinion.

C. Summary

 Generally, early cases applying the Restatement's reasonable basis standard to CERCLA presumed joint and several liability under section 107, and required a very high level of proof to justify apportionment. Because application of joint and several liability may be unfair to some PRPs, a few early cases attempted to introduce equitable considerations into the decision on apportionment. The use of equitable considerations has since been rejected by courts. More recent court decisions have lowered the evidentiary burden required to justify apportionment, or allowed PRPs to escape liability entirely through a "no causation" defense. Thus, the trend prior to *Burlington Northern* appeared to be the relaxation of the presumption of joint and several liability.

III. BURLINGTON NORTHERN

 The Supreme Court in *Burlington Northern* further relaxes the evidentiary burden for a PRP trying to demonstrate a reasonable basis for apportionment. In an 8-1 ruling, the Court upheld a basis for

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151. *See id.* at 320. If the harm is divisible, then it is capable of apportionment. *Burlington N. & Santa Fe Ry. Co. v. United States*, 129 S. Ct. 1870, 1876 (2009).


153. *See id.* at 320 (majority opinion) ("[I]f [the operator] could show (as it tried to do here) that its 'operating' activities were completely limited to a discrete and measurable section of the property, and that the releases onto or from that section represented a discrete and measurable harm, this would provide a reasonable basis for apportionment."); *see also* United States v. *Vertac Chem. Corp.*, 364 F. Supp. 2d 941, 963-64 (E.D. Ark. 2005) ("[Defendant] also relies on 'geographic considerations' as a basis for limiting its harm [citing *Brighton*] . . . . The non-contiguous areas, according to [defendant], are the north and south sides of the . . . landfill, areas which were divided by a natural gas pipeline and opened for use at different times. It contends that it only deposited waste on the north side of the landfill, and it is therefore not responsible for the response costs associated with the waste on the south side of the landfill. . . . [But defendant] . . . cannot demonstrate that it is not the source of the contamination at the . . . [south sides of the] landfill.").

154. *See Brighton*, 153 F.3d. at 320 (majority opinion).
apportionment that relied on the simplest of considerations.\textsuperscript{155} Based on prior case law, those considerations alone were insufficient to support apportionment.\textsuperscript{156} Further, there are strong policy reasons for not relaxing the level of proof needed to apportion harm under CERCLA.

A.  An 8-1 Ruling Favoring Apportionment

The controversy in \textit{Burlington Northern} arose out of the spilling and leaking of hazardous substances from an agricultural chemical distribution business.\textsuperscript{157} Brown & Bryant, Inc. (B&B) operated the business, purchasing pesticides and other chemical products from suppliers such as Shell Oil Company (Shell).\textsuperscript{158} In 1960, B&B opened its business on a 3.8-acre parcel of land in Arvin, California, and in 1975, expanded operations onto an adjacent 0.9 acre parcel of land owned jointly by the Atchison, Topeka & Santa Fe Railway Company and the Southern Pacific Transportation Company (now known respectively as the Burlington Northern and Santa Fe Railway Company and Union Pacific Railroad Company) (collectively, "Railroads").\textsuperscript{159} Over the course of B&B's 28 years of operation, delivery spills, equipment failures, and the rinsing of tanks and trucks allowed hazardous substances, some purchased from Shell, to seep into the soil and groundwater of the Arvin facility.\textsuperscript{160} In 1991, EPA issued an administrative order to the Railroads directing them, as owners of a portion of the property on which the Arvin facility was located, to perform certain remedial tasks in connection with the site.\textsuperscript{161} The Railroads did so, incurring expenses of more than $3 million in the process.\textsuperscript{162} Seeking to recover some of their response costs, the Railroads brought suit against B&B in 1992.\textsuperscript{163} In 1996, that lawsuit was consolidated with two recovery actions brought by the California Department of Toxic Substances Control ("DTSC") and EPA against Shell and the Railroads.\textsuperscript{164}

The district court held that both the Railroads and Shell were PRPs under section 107(a) of CERCLA and thus subject to CERCLA

\begin{thebibliography}{99}
\bibitem{155} See United States v. Burlington N. & Santa Fe Ry. Co., 520 F.3d 918, 946 (9th Cir. 2008).
\bibitem{156} See id. at 943–46.
\bibitem{158} Id. at 1874.
\bibitem{159} Id.
\bibitem{160} Id. at 1875.
\bibitem{161} Id. at 1875.
\bibitem{162} Id.
\bibitem{163} Id.
\bibitem{164} Id.
\end{thebibliography}
liability. Although the district court held that both the Railroads and Shell were liable for contamination at the Arvin site, the court did not impose joint and several liability on the two parties for the total site response costs incurred by the government. The court held that although the site contamination created a single harm, the harm was capable of apportionment.

To calculate the portion of harm attributable to the Railroads, the court looked at three numbers. First, the court noted that the portion of the Arvin site owned by the Railroads constituted only 19 percent of the surface area of the overall site. Second, the court noted that the Railroads had leased their parcel to B&B for 13 years, which was only 45 percent of the time that B&B operated the Arvin facility. Finally, because only spills of two hazardous substances, Nemagon and dinoseb, occurred on the Railroads' parcel, and because those two hazardous substances plus a third, D-D, constituted all the contamination at the overall site, the court found that two-thirds of the contamination at the overall site was attributable to activities on the Railroads' parcel. In other words, the contamination of the overall site attributable to the Railroads' parcel was approximated using the fraction of hazardous-substance types attributable to the Railroads' parcel. There was no evidence that the three substances were present in equal proportion or necessitated equal response costs. Nevertheless, the court then multiplied 0.19 by 0.45 by 0.66 (two-thirds) and rounded up to determine that the Railroads were responsible for 6 percent of the remediation costs. Then, to account for "calculation errors," the court assumed a 50 percent maximum error rate and raised the Railroads' proportion of the total liability to 9 percent. In other words, the court found the


166. Burlington N., 129 S. Ct. at 1876; see also Atchison, 2003 WL 25518047, at *84 ("This is a classic 'divisible in terms of degree' case, both as to the time period in which defendants' conduct occurred, and ownership existed, and as to the estimated maximum contribution of each party's activities that released hazardous substances that caused Site contamination.").


169. Id.

170. Id.


172. Burlington N., 129 S. Ct. at 1883 ("[T]he evidence adduced by the parties did not allow the court to calculate precisely the amount of hazardous chemicals contributed by the Railroad parcel to the total site contamination or the exact percentage of harm caused by each chemical ....").

173. Id. at 1882.

174. Id.
Railroads liable for 9 percent of the response costs, using the following calculation:

Railroads' Liability = (A × B × C) × 1.5, where

A = percentage of the overall site that was owned by the Railroads, based on surface area;

B = percentage of time that the Railroads leased their parcel to B&B relative to the total time period that B&B operated its business; and

C = fraction of hazardous-substance types attributable to the Railroad parcel.\(^{175}\)

Additionally, based on estimations of chemicals spills of Shell products, the court held Shell liable for 6 percent of the total site response costs.\(^{176}\)

The Court of Appeals for the Ninth Circuit reversed.\(^{177}\) The Ninth Circuit found "no dispute" on the question of whether the harm caused by the Railroads and Shell was capable of apportionment.\(^{178}\) Nevertheless, the court held that the district court erred in finding that the record established a reasonable basis for apportionment, for both the Railroads and Shell.\(^{179}\) For the Railroads, the Ninth Circuit held that the district court "relied on the simplest of considerations"—percentages of land area, time of ownership, and types of hazardous substances—and that those considerations alone were insufficient to support apportionment.\(^{180}\) For Shell, it was "a closer call," but ultimately the court held that the evidence was insufficient to support apportionment.\(^{181}\) Thus, the Ninth Circuit reversed the district court's apportionment of liability and held the Railroads and Shell jointly and severally liable for the government's cost of responding to the contamination of the Arvin facility.\(^{182}\)

The Supreme Court reversed the Ninth Circuit.\(^{183}\) For the Railroads, the Supreme Court held that the size of the leased parcel, the time period during which lessee B&B's conduct occurred relative to the duration of the lease, and the fraction of all disposed substances that actually required remediation, could serve collectively as a reasonable basis for apportioning liability,\(^{184}\) rendering joint and several liability was
unnecessary. The Supreme Court also held that Shell was not a PRP under section 107(a), and was thus not subject to CERCLA liability.

B. Relaxing the Evidentiary Burden of Proof of a Reasonable Basis for Apportionment

The Supreme Court in Burlington Northern relaxed the level of proof needed to apportion harm under CERCLA. Specifically, it adopted the standard used by the district court, which, as stated by the Ninth Circuit, relied on the “simplest of considerations”: percentages of land area, time of ownership, and types of hazardous substances. Those considerations alone should have been insufficient to support apportionment according to cases before Burlington Northern.

The Supreme Court applied an extremely relaxed standard even relative to the more recent cases that cut back on Chem-Dyne's strong presumption that CERCLA harm is not divisible. Those cases all required evidence tracing a specified portion of the harm to a PRP's conduct or land. Such evidence was generally sophisticated. For example, in Bell Petroleum, the Fifth Circuit allowed apportionment based on volumetric evidence, but noted that generally volumetric evidence must be supplemented with additional evidence, such as synergistic effects of the hazardous substances. Similarly, in Brighton, the Sixth Circuit stated that an operator may show divisibility by presenting sufficient evidence showing that its operating activities, and the releases from those activities, were completely confined to a discrete section of the property. But the Railroads in Burlington Northern did not present evidence of the quantity of waste spilled on the two parcels, or even the quantity of hazardous substances stored, but not necessarily

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185. Id. at 1883.
186. Id. at 1880.
187. Cooke, supra note 7, § 14.01[6][c][iii] at 14-172.22 to 14-172.23 ("The Court upheld the less rigorous standard adopted by the district court in Burlington Northern with respect to the level of proof needed to apportion harm.").
189. See id. at 943-46.
191. See, e.g., In re Bell Petroleum Servs., 3 F.3d 889, 903 (5th Cir. 1993).
192. See, e.g., id. at 900 ("[U]nder [simple] circumstances, volume could be a reasonable basis for apportioning liability, in a situation in which independent factors had no substantial effect on the harm to the environment.").
193. Id. at 903 ("[T]his case involves only one hazardous substance-chromium-and no synergistic effects. The chromium entered the groundwater as the result of similar operations by three parties who operated at mutually exclusive times. Here, it is reasonable to assume that the respective harm done by each of the defendants is proportionate to the volume of chromium-contaminated water each discharged into the environment.").
spilled, on the Railroad parcel relative to the other parcel. The Railroads also failed to show that the releases from activities on their land were confined to their land.

Finally, the district court implicitly acknowledged that its basis for apportionment was not well-grounded in evidence when it applied a 50 percent error rate. Yet, the Supreme Court still apportioned the harm. As a result of the Court’s decision, DTSC and EPA will be unable to recover the vast majority of their response costs.

Because Burlington Northern has not been interpreted by the lower courts, its impact is unclear. The language of the holding, however, is sufficiently vague to allow a broad or narrow interpretation. If Burlington Northern is read broadly, future parties may not need to present sophisticated scientific evidence to demonstrate a reasonable basis for apportionment. Under this broad interpretation, parties may more easily apportion liability and avoid joint and several liability. A narrow interpretation of Burlington Northern suggests that, because each apportionment analysis will depend on the specific facts in the record, a simple equation to apportion liability will work only for very simple fact patterns. Thus, while the Supreme Court upheld a simple apportionment analysis in Burlington Northern, which involved three parties and three chemicals, another court may not consider such an equation “reasonable” for more complex CERCLA sites.

C. Policy Reasons against Apportionment, and for Imposing Joint and Several Liability under CERCLA

First, by precluding recovery of the vast majority of the response costs, the Supreme Court’s decision in Burlington Northern contravenes the legislative objective of CERCLA: “to place the cost of remediation on persons whose activities contributed to the contamination rather than on the taxpaying public.” Congress intended those responsible for the

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196. Id. (“After the 1978 windstorm, tanks were stored all over the facility, including on the Railroad parcel. A simple calculation of land ownership does not capture any data that reflect this dynamic, unitary operation of the single Arvin facility.”).
197. See David R. Berz & Annemargaret Connolly, Supreme Court Reins in the Reach of Superfund, METROPOLITAN CORP. COUNSEL, June 2009, at 34.
198. Misiorowski & Eagle, supra note 175.
199. Id.
200. Id.
201. Id.
202. Id.
203. Id.
release to bear the costs of, and responsibility for, remedying the condition. In cases where some defendants are insolvent, unavailable, or otherwise protected, apportioning harm may require the government to bear the response costs attributable to the protected defendants. This result directly contravenes congressional intent.

Second, recovering response costs is necessary to finance EPA’s future cleanup activities. To pay for EPA cleanups, CERCLA established the Superfund. Superfund monies initially came from a tax on the petroleum and chemical industries. The tax expired in December 1995, and Congress has not renewed the tax. However, the Superfund continues to receive revenue from interest accrued on the invested Superfund balance, the recovery of response costs from responsible parties, and the collection of fines and penalties. The Superfund also receives revenue from Congressional general fund appropriations. Despite the numerous sources of revenue, though, the Superfund balance is dwindling. Historically, EPA’s principal source of funding for cleanup activities in a given year was the Superfund balance carried over from the previous year. But with a dwindling Superfund balance, EPA has relied less on the Superfund balance, and more on general fund appropriations. Thus, because the Superfund balance is dwindling, and because the Superfund derives significant revenue from the recovery of response costs from responsible parties, it is critical that EPA recovers

208. Id.
209. Id.
210. Id.
211. See id. at 8 (“The balance of the Superfund trust fund available for future appropriations has significantly decreased since fiscal year 1996 and at the end of fiscal year 2002 stood at $564 million. Further, revenues into the Superfund trust fund from taxes, cost recoveries, fines, penalties, and interest have steadily decreased, from over $2 billion in fiscal year 1995 to less than $370 million in fiscal year 2002, when presented in constant 2002 dollars.”).
212. See id. at 26 (“[T]he balance of the Superfund trust fund available for future appropriations . . . historically [has been] the program’s principal source of funding . . . . In previous years, funds remained in this balance to carry over into the next year.”).
213. See id. at 7 (“[T]he Superfund program has increasingly relied on revenue from the general fund appropriations to supplement its trust fund . . . .”).
response costs.\textsuperscript{214} Otherwise, EPA’s ability to address hazardous waste sites in the future will depend heavily on uncertain general fund appropriations.\textsuperscript{215}

Third, the threat of joint and several liability is necessary for CERCLA’s successful operation.\textsuperscript{216} To respond to a hazardous waste site, EPA may (1) clean up the site itself and then pursue a cost-recovery action, (2) order PRPs to undertake the cleanup, or (3) compel a PRP to settle its liability by agreeing either to undertake the cleanup or to help pay for the cleanup costs.\textsuperscript{217} For CERCLA to work successfully, EPA must be able to obtain settlements in all three situations.\textsuperscript{218} When EPA settles disputes with PRPs, it avoids lengthy litigation and expenditures of public funds on such litigation.\textsuperscript{219} Consequently, settlements save time and money that would otherwise be devoted to litigation, and this time and money can be allocated to the cleanup of hazardous waste sites.\textsuperscript{220} Additionally, if the settlement requires PRPs to clean up a site themselves, EPA avoids expending public funds on the cleanup. Alternatively, if the settlement requires PRPs to help pay for the cleanup costs incurred or anticipated to be incurred by EPA, EPA is assured that some money is recovered from the PRPs, and immediately receives that money.\textsuperscript{221} The money is then available for any EPA cleanup activities. The threat of joint and several liability, and hence the threat of disproportionate liability, helps EPA obtain settlements by making it more risky for sued PRPs to challenge EPA’s allegations in litigation.\textsuperscript{222} With more settlements, more hazardous waste sites will be cleaned up.

Finally, the \textit{Burlington Northern} decision is a significant departure from well-developed case law. Under prior case law, if a strict application of section 433A of the Restatement and its “reasonable basis” standard justified apportionment, but directly contravened CERCLA’s objective,
the Restatement likely would not be followed. This rational approach mandated that the “reasonable basis” standard should be applied while minding CERCLA’s objective. Not doing so misses the forest for the trees.

In summary, the Supreme Court in Burlington Northern, by apportioning harm, (1) contravenes the legislative objective of CERCLA, (2) decreases the money available to finance future cleanup activities, (3) hinders the successful operation of CERCLA by reducing the likelihood that responsible parties will settle, and (4) ignores prior well-developed case law. These four shortcomings suggest that there should be an alternative approach to apportioning harm.

IV. PROPOSED FOUR-PART TEST FOR ASSESSING REASONABLENESS OF THE BASIS FOR APPORTIONMENT

Because of the shortcomings of the Supreme Court decision in Burlington Northern, the decision sets a bad precedent for future courts. Accordingly, this Note proposes a four-part test as a normative alternative in determining whether a basis for apportionment is “reasonable”: (1) whether apportionment will preclude recovery of a significant fraction of the cleanup costs; (2) whether the records, or other evidence, upon which the basis for apportionment relies are substantially complete; (3) whether the evidence shows the quantity, or discrete sections, of released hazardous substances attributable to a responsible party’s conduct, or to the activities on that party’s land; and (4) whether the evidence shows the amount of harm caused by the attributable release. Each element of the four-part test must be met for the basis for apportionment to qualify as reasonable. The application of this test would result in holdings consistent with the legislative objective of CERCLA and the prior case law, increase the amount of cleanup costs that may be recovered, and promote settlement of cost recovery suits.

A. Element One: Whether Apportionment Will Preclude Recovery of a Significant Fraction of the Cleanup Costs

The first step is to determine whether apportioning harm will preclude the government from recovering a significant fraction of the cleanup costs. CERCLA classifies PRPs as persons responsible for the

223. Cf. O’Neil v. Picillo, 883 F.2d 176, 179 n.4 (1st Cir. 1989) (“Even assuming that a strict application of the Restatement rule would allow appellants to escape joint and several liability in a situation such as this—something which is far from clear . . . —we would nonetheless decline to place this . . . burden on the government in CERCLA actions. . . . While courts generally have looked to the Restatement for guidance, they have declined to place the burden of showing that defendants are ‘substantial’ contributors on the government, recognizing Congress’ concern that cleanup efforts not be held hostage to the time-consuming and almost impossible task of tracing all of the waste found at a dump site.”).
release of hazardous substances. If apportioning harm causes the government to bear a significant fraction of the costs of remedying the condition of a site, the apportionment directly contravenes legislative intent. Contravening legislative intent should be avoided, and may be accomplished by holding that the apportionment fails the “reasonable basis” standard. In sum, the “reasonable basis” standard should be applied in a manner that effectuates legislative intent.

Because the term “significant” is fuzzy, this Note suggests applying a numerical threshold of 10 percent of cleanup costs. Some threshold is necessary for clarity, and a threshold on the lower end of the scale ensures almost complete cost recovery in section 107 actions by EPA, thereby increasing revenue for the Superfund. This increased revenue will help curb the dwindling of the Superfund balance and the Superfund’s consequent reliance on general fund appropriations.

Of course, any bright-line threshold will be arbitrary and lead to unfair results at the margins. For example, if apportionment precludes recovery of 11 percent of the cleanup costs, apportionment is barred, even if PRPs meet the other three elements of the proposed test. Conversely, if apportionment precludes recovery of 9 percent of the cleanup costs, apportionment may be permitted. Nevertheless, explicitly setting a low, bright-line threshold will make clear that EPA should bear only a small fraction of the cleanup costs.

226. Cf. United States v. Katz, 271 U.S. 354, 357 (1926) (“All laws are to be given a sensible construction; and a literal application of a statute, which would lead to absurd consequences, should be avoided whenever a reasonable application can be given to it, consistent with the legislative purpose.”).
227. U.S. GEN. ACCT. OFFICE, supra note 208, at 7 (“The Superfund trust fund revenues from taxes, cost recoveries, interest, fines, and penalties have decreased . . . . [Thus] the Superfund program has increasingly relied on revenue from the general fund appropriations to supplement its trust fund . . . .”).
228. See In re McDonald, 205 F.3d 606, 613 (3d Cir. 2000) (“Bright-line rules that use a seemingly arbitrary cut-off point are common in the law. A day beyond the statute of limitations and the plaintiff must lose, even if the claim was otherwise unquestionably a winning one. If the evidence is just over a preponderance, the plaintiff wins full damages; just under, the plaintiff gets nothing.”).
229. Numerical thresholds have been implemented to clarify the term “significant” in other areas of environmental law. For example, under the Kyoto Protocol to the United Nations Framework Convention on Climate Change (“Kyoto Protocol”), signatory countries commit to limiting their greenhouse gas emissions to their assigned amounts. See Kyoto Protocol to the United Nations Framework Convention on Climate Change, Conference of the Parties, Dec. 10, 1997, 3d Sess., art. 3, U.N. Doc. FCCC/CP/1997/L.7/Add.1 (Dec. 10, 1997), reprinted in 37 I.L.M. 22 (1998), which are set individually for each country. See id. at Annex B. To limit emissions, a signatory country may engage in domestic action, or by offsetting emission credits from the
B. Element Two: Whether the Records, or Other Evidence, upon Which the Basis for Apportionment Relies Are Substantially Complete

Because apportionment is inherently a quantitative task—220—the goal is to assign a percentage of liability to the defendants—quantitative evidence is necessary to justify apportionment. Quantitative evidence relevant to CERCLA apportionment includes records of the volume of waste of a particular operator or generator, amount of time (of ownership or operation), or surface area (owned or occupied).231

Records and other evidence may be incomplete, however, because they are lost or destroyed, or because PRPs refuse to produce them. Relying on incomplete records may distort or underestimate a PRP's contribution, and, correspondingly, using complete records would result in more accurate estimates.232

The issue of incomplete records arose in Bell Petroleum, where the Fifth Circuit allowed apportionment on a volumetric basis, although the volumetric records were substantially incomplete.233 The dissent retorted

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220. See In re Bell Petroleum Servs., 3 F.3d 889, 903 (5th Cir. 1993) ("Essentially, the question whether there is a reasonable basis for apportionment depends on whether there is sufficient evidence from which the court can determine the amount of harm caused by each defendant." (emphasis added)); id. at 910 (Parker, J., concurring in part and dissenting in part) ("[T]o evade joint and several liability, Farmer A or B must meet the burden of proving that [quantitative] apportionment is reasonable on some basis, such as the number of cows in the field belonging to each farmer or the amount of time each farmer's cows were in the field." (emphasis added)).


231. See United States v. Kramer, 19 F. Supp. 2d 273, 281-82 (D.N.J. 1998) ("It is the nature of the allocation process that reasonable parties may disagree about the facts and assumptions underlying the assigned shares, especially where . . . many records were lost or destroyed. Although [the third-party defendant] is the only party to object to the allocation process, one suspects many settling parties also may believe they are being asked to pay too much, given other plausible views of their potential liability.").

232. See Bell Petroleum, 3 F.3d at 904.
that allowing apportionment meant that "a standard of proof of less than a preponderance of the evidence" was sufficient to substantiate a reasonable basis for apportionment. In line with the dissent, where a basis for apportionment relies on records, such records should be substantially complete for the basis to be reasonable. Accordingly, if records have been lost, destroyed, or unproduced, apportionment should be less likely to be reasonable. Otherwise, the incomplete records may distort or underestimate a PRP's contribution, making the apportionment inherently unfair and unreasonable.

C. Element Three: Whether the Evidence Shows the Quantity, or Discrete Sections, of Released Hazardous Substances Attributable to a Responsible Party's Conduct, or to the Activities on That Party's Land

The apportionment inquiry ultimately seeks to apportion harm. "Harm" means the danger that a hazardous substance poses to the public health or the environment. The harm associated with one hazardous substance relative to another is not determined solely by the quantity of each hazardous substance released into the environment, as hazardous substances vary in toxicity or migratory potential. Thus, the quantity of hazardous substances attributable to a PRP is a starting point in determining the amount of harm attributable to that PRP, but quantity alone may be insufficient to determine the harm.

Accordingly, as a preliminary threshold, whether there is a reasonable basis for apportionment depends on whether there is sufficient evidence to identify hazardous substances released by a PRP. For generators and transporters, it is sufficient to present evidence on the quantity of hazardous substances such persons disposed of or transported. Similarly, operators may present evidence on quantity of hazardous substances produced. Alternatively, operators may present

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234. Id. at 912.
235. See RESTATEMENT (SECOND) OF TORTS § 433A(1) (1965) ("Damages for harm are to be apportioned . . .").
236. See 42 U.S.C. § 9602(a) (2006) ("The [Environmental Protection Agency] shall promulgate and revise as may be appropriate, regulations designating as hazardous substances . . . elements, compounds, mixtures, solutions, and substances which, when released into the environment may present substantial danger to the public health or welfare or the environment.").
237. See United States v. Chem-Dyne Corp., 572 F. Supp. 802, 811 (S.D. Ohio 1983) ("[T]he volume of waste of a particular generator is not an accurate predictor of the [health or environmental] risk associated with the waste because the toxicity or migratory potential of a particular hazardous substance generally varies independently with the volume of the waste.").
238. Cf. United States v. Hercules, Inc., 247 F.3d 706, 719 (8th Cir. 2001) ("[I]t is also possible to prove divisibility of single harms based on volumetric . . . evidence.").
239. Cf. Bell Petroleum, 3 F.3d at 903 ("Here, it is reasonable to assume that the respective harm done by each of the [operators] is proportionate to the volume of chromium-contaminated water each discharged into the environment.").
evidence showing that their "operating" activities were completely limited to a discrete section of the overall site, and that the releases were confined to the discrete section.  

A wrinkle arises where there is an owner PRP who is not concurrently an operator, generator, or transporter, otherwise known as an "innocent owner." In such situations, because hazardous substances do not appear spontaneously, but rather from operating, generating, or transporting activities, the direct cause of the released hazardous substances necessarily must be an operator, generator, or transporter. Unlike this operator, generator, or transporter, the innocent owner may be described as an indirect causer of harm. For example, the innocent owner may have rented her land to an operator or failed to prevent a generator from disposing of hazardous substances onto the land.

Where only innocent owners are sued, it may be that each defendant sequentially owned the same land, or concurrently owned a percentage of the overall hazardous waste site, or some combination of the two circumstances. Regardless, the defendants are all innocent owners and hence not directly responsible for the hazardous substances on, or originating from but migrating beyond, their land. Those directly responsible for the hazardous substances, such as generators, likely possess the evidence on the quantity of hazardous substances disposed of on or transported to the land. Conversely, because the defendants are innocent owners, and not directly responsible for the hazardous substances, they likely do not possess evidence on quantity, and may have difficulty producing such evidence. Nevertheless, each innocent owner should be required to produce the evidence on quantity even though the operator, generator, or transporter responsible for the hazardous substances on, or originating from, the innocent owner's land has not been sued and is more capable of producing the necessary evidence.

D. Element Four: Whether the Evidence Shows the Amount of Harm Caused by the Attributable Release

Essentially, the question of whether there is a reasonable basis for apportionment depends on whether there is sufficient evidence to determine the amount of harm caused by, or attributable to, each PRP. Attributing harm—here, the danger the release of a hazardous substance

241. United States v. Burlington N. & Santa Fe Ry. Co., 520 F.3d 918, 938 (9th Cir. 2008), rev'd, 129 S. Ct. 1870 (2009) ("PRP status premised on ownership of a facility does not require any involvement in the disposal of hazardous substances. Thus, to speak of a PRP 'causing' contamination of its land simply by owning land on which someone else disposes of hazardous wastes is to indulge in metaphor." (emphasis added)).
242. Bell Petroleum, 3 F.3d at 903.
poses to the public health or the environment—is generally difficult, because most section 107 cost-recovery actions involve numerous, commingled hazardous substances with varying toxicity, migratory potential, and synergistic effects.\textsuperscript{243}

For example, "[c]ommon sense counsels that a million gallons of certain substances could be mixed together without significant consequences, whereas a few pints of others improperly mixed could result in disastrous consequences."\textsuperscript{244} In such situations, much of the harm is attributable to the person responsible for the "few pints." But to reach that result, the court needs evidence on synergistic effects, not merely evidence on the volume of waste contributed by each person. The volume of waste of a particular generator says nothing about a hazardous substance's synergistic effect, toxicity, or migratory potential.\textsuperscript{245} Such characteristics are necessary to distinguish the portion of harm associated with a hazardous substance that has mixed with other hazardous substances. Of course, where the hazardous substances are identical, or where they have not mixed, knowledge of a hazardous substance's synergistic effect, toxicity, and migratory potential is superfluous. In such situations, it is acceptable to attribute harm simply using volumetric evidence.\textsuperscript{246} Further, where the hazardous substances are not mixed, but rather confined to discrete sections, it is acceptable to attribute harm using geography.\textsuperscript{247}

Where the hazardous substances are commingled with varying toxicity, migratory potential, or synergistic effects, cases prior to \textit{Burlington Northern} required evidence showing the individual and interactive qualities of the substances deposited at the site.\textsuperscript{248} Such evidence is necessary to estimate accurately the amount of harm caused by, or attributable to, each PRP. Indeed, because the typical section 107 action is factually complex, it is usually difficult to estimate the amount of

\begin{itemize}
\item \textsuperscript{243} Id.
\item \textsuperscript{244} Id. at 900.
\item \textsuperscript{245} See United States v. Manzo, 279 F. Supp. 2d 558, 572 (D.N.J. 2003) ("[V]olumetric apportionment is . . . inappropriate where independent factors, such as relative toxicity, migratory potential, or synergistic capacities of hazardous substances, might have had a substantial effect on the harm to the environment."); see also United States v. Odabashian, No. 95-2361 GIBRE, 1999 U.S. Dist. WL 33944059, at *9 (W.D. Tenn. May 18, 1999) ("In the present case, the court finds that volume is not an adequate indicator of harm. An allocation on the basis of volume fails to take into account the relative toxicity, migratory potential, or effect of commingling of different hazardous substances.").
\item \textsuperscript{246} See United States v. Vertac Chem. Corp., 966 F. Supp. 1491, 1504 (E.D. Ark. 1997) ("Where . . . hazardous substances are commingled, a defendant cannot rely on merely volumetric evidence.").
\item \textsuperscript{248} See, e.g., United States v. Monsanto Co., 858 F.2d 160, 172 (4th Cir. 1988).
\end{itemize}
harm caused by, or attributable to, each PRP. Consequently, PRPs rarely escaped joint and several liability prior to Burlington Northern.

When applying this part of the test, a problem occurs where operators, generators, or transporters are sued along with "innocent owners." If an operator's business activities cause spills of hazardous substances, those spills will be attributable to the operator, because the operator's conduct directly caused the spills. But when the operator rents the land from an owner, and the operator's conduct occurred on the owner's land, the spills will be attributable to the owner as well. In such situations, where there is a direct cause—either an operator, generator, or transporter—and an indirect cause—a uninvolved owner—and a harm concurrently is attributable to both the direct and indirect cause, the direct cause ideally should bear the entire apportioned harm if the direct cause can pay. Thus, to satisfy this element, a preponderance of the evidence must show the amount of harm attributable to each PRP's conduct, or to the activities on that party's land.

E. The Basis for Apportionment in Burlington Northern Was Unreasonable

Based on this normative test, the basis for apportionment in Burlington Northern was unreasonable. The basis failed to meet three of the test's four elements. The first element was unmet because the apportionment precluded recovery of a significant fraction of the cleanup costs. Specifically, the apportionment allowed EPA to recover only 9 percent of its cleanup costs, and consequently precluded recovery of 91 percent of those costs. Ninety-one percent is clearly a significant fraction, regardless of whether the 10 percent threshold is used.

There was not an issue of incomplete records in Burlington Northern, so the second element was satisfied. The basis relied on three numbers: percentages of land area owned by the Railroads, time of ownership, and types of hazardous substances attributable to the Railroad parcel. Those numbers were ascertainable and complete. Generally, such numbers are easily ascertained, and not susceptible to loss, unlike volumetric evidence.

The third element of the test was unmet, because the three numbers did not indicate the quantity of released hazardous substances

249. See United States v. Chem-Dyne Co., 572 F. Supp. 802, 810–11 (S.D. Ohio 1983) ("Typically ... there will be numerous hazardous substance generators or transporters who have disposed of wastes at a particular site ... The question of whether the defendants are jointly or severally liable for the clean-up costs turns on a fairly complex factual determination.").


252. See id. at 1883.
attributable to the activities on the Railroads’ parcel. Only volumetric evidence could do this. Similarly, the Railroads presented no evidence showing that the releases attributable to activities on the Railroads’ parcel were confined to the parcel. The releases may have migrated beyond the parcel, rather than remained confined to that discrete section of the property.

Finally, the apportionment basis in Burlington Northern failed the fourth element of the test, because the Supreme Court required very little evidence tracing a specified portion of the harm at the site to the activities occurring on the portion of the site owned by the Railroads. There were multiple hazardous substances on the Railroad parcel which may have mixed, and the basis did not consider whether such mixing would have synergistic effects. Such effects, among other characteristics of the substances, are necessary to distinguish the portion of harm associated with a hazardous substance that has mixed with other hazardous substances. Indeed, while tracing harm generally requires volumetric evidence, the Court did not require such evidence. In doing so, the Court may have allowed a standard of proof of less than a preponderance of the evidence.

CONCLUSION

Adopting the proposed test would amount to overruling Burlington Northern, a Supreme Court case. Because the lower courts are unable to overrule a Supreme Court decision, and because the Supreme Court is reluctant to overrule itself, it is unlikely that the courts will adopt the proposed test without action from the one of the political branches. In contrast, because Congress can amend CERCLA and has done so in

253. See id. at 1882–83.
254. Id. at 1882 (“[O]nly spills of two chemicals, Nemagon and dinoseb (not D-D), substantially contributed to the contamination that had originated on the Railroad parcel.”).
256. See Rodriguez de Quijas v. Shearson/American Exp., Inc., 490 U.S. 477, 484 (1989) (“If a precedent of this Court has direct application in a case, yet appears to rest on reasons rejected in some other line of decisions, the Court of Appeals should follow the case which directly controls, leaving to this Court the prerogative of overruling its own decisions.”).
257. See Sara R. Benson, Reviving the Disparate Impact Doctrine to Combat Unconscious Discrimination: A Study of Chin v. Runnels, 31 T. MARSHALL L. REV. 43, 62 (2005) (“Although the Supreme Court is reluctant to reverse its prior jurisprudence, it occasionally does so when the law so requires.”).
258. See Rivers v. Roadway Exp., Inc., 511 U.S. 298, 313 (1994) (“Congress, of course, has the power to amend a statute that it believes [the courts] have misconstrued.”); United States v. Weaselhead, 36 F. Supp. 2d 908, 914 (D. Neb. 1997) (“It is axiomatic that the legitimacy of a the federal common law is contingent upon the presence of a connection, however tenuous, to a determination of congressional intent. Accordingly, if a judicial body errs in determining congressional intent, Congress can permissibly legislate a correction.”).
the past\textsuperscript{259} Congress could amend CERCLA to adopt the test. The test is superior to current law because the test (1) furthers the legislative objective of CERCLA, (2) increases the money available to finance future cleanup activities, and (3) promotes the successful operation of CERCLA by increasing the likelihood that responsible parties will settle, allowing EPA to avoid lengthy litigation and expenditures of public funds on such litigation. As such, Congress should respond to the Supreme Court's move in \textit{Burlington Northern} and restore apportionment under CERCLA to its rightful role.


We welcome responses to this Note. If you are interested in submitting a response for our online companion journal, \textit{Ecology Law Currents}, please contact ecologylawcurrents@boalt.org. Responses to articles may be viewed at our website, http://www.boalt.org/elq.