September 1992

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American Toxic Tort Law: An Historical Background, 1979-87

Robert F. Blomquist*

American toxic tort law began in earnest in late 1979 when United States District Court Judge George Pratt wrote the first published judicial opinion in what would later become a deluge of further opinions in In re Agent Orange Products Liability Litigation.1 While various reported tort opinions involving potentially dangerous chemical substances antedated the Agent Orange opinion by several years,2 significant pollution control statutes had existed since the 1950s,3

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and scattered scholarly commentary had already been established concerning potential legal remedies for redressing damages from pollution and human exposure to harmful substances, the 1979 Agent Orange opinion marked an important intellectual landmark. Judge Pratt's decision presented the first time that an American court, in a published opinion, used the term of art "toxic torts" to describe what factual and legal issues were at stake. In the decision's aftermath, the phrases "toxic tort" and "toxic torts" proliferated — in judicial decisions, legislation, scholarly analyses, and press reports.


Id. at 1469 n.17.


6. I have explored, elsewhere, the use of another "signal" or "marker" phrase in common law tort opinions. See Robert F. Blomquist, "New Torts": A Critical History, Taxonomy, and Appraisal, 95 Dick. L. Rev. 23 (1990). While "the words have meant different things . . . in different contexts," I concluded that "[t]he phrase 'new tort' appears to be a signal, or marker, for addressing the ramifications and implications of judicial creativity in responding to cases that seek to change existing tort doctrine" and, "[a]s such . . . [a]d become a tool of jurisprudential analysis: 'a form of law . . . seen as a complex of means and goals.'" Id. at 36-37 (citing Robert S. Summers, Instrumentalism and American Legal Theory 71 (1982)).
With this seminal opinion and certain related Agent Orange litigation opinions, I begin my historical sketch of American toxic tort law in Part I of the article. Part II describes the complex litigation in Allen v. United States, which involved exposure by hundreds of people to radioactive fallout released during atomic weapons testing by the U.S. military in the American Southwest. Part III analyzes the variety, scope, and subtleties of toxic tort actions against the asbestos industry. In Part IV, I shift perspective from specific types of toxic substance cases to the conceptual category of toxic substance environmental exposure cases. This functional approach is continued in Part V of the article, with a review of miscellaneous cases involving occupational exposure to harmful substances, and in Part VI with a discussion of assorted key product liability litigation involving toxic materials. Finally, my historical primer ends with Part VII — a brief consideration of some insurance issues in toxic tort cases during the relevant time period.

In order to explore specific cases where courts have encountered, and interpreted, the concept of a "toxic tort," I have concentrated my essay on those decisions expressly utilizing that phrase (in the singular or plural).

I. The Agent Orange Opinions

A. Judge Pratt's Decision to Apply Federal Common Law to Veterans' Toxic Tort Claims

In the plaintiffs' memorandum in opposition to dismissal motions brought by various chemical company defendants, who had allegedly manufactured a defoliant, euphemistically referred to as "Agent Orange," the issues to be considered were poignantly framed:

7. See infra notes 14-146 and accompanying text.
8. See infra notes 147-79 and accompanying text.
9. See infra notes 180-277 and accompanying text.
10. See infra notes 278-391 and accompanying text.
11. See infra notes 392-425 and accompanying text.
12. See infra notes 426-43 and accompanying text.
13. See infra notes 444-52 and accompanying text.
How are soldiers of the United States to be compensated for toxic torts inflicted by multi-national conglomerate corporations? How are principles of "fitness" and "safety" to be applied to the paraphernalia of the battlefield? In the absence of statutory direction, how are the policies enunciated in federal pesticide and toxic substances legislation to be effectuated?¹⁴

In answering these questions, Judge George C. Pratt ruled that federal question subject matter jurisdiction existed because of the need for the court to apply federal common law to mass tort claims brought by an assortment of Vietnam veterans and their families for injuries allegedly caused by the United States military's use of Agent Orange in Vietnam. The court considered three analytical factors in deciding whether to allow the common law tort theories to proceed¹⁵ further, pursuant to a uniform federal approach: "(1) the existence of a substantial federal interest in the outcome of [the] litigation; (2) the effect on this federal interest should state law be applied; and (3) the effect on state interests should state law be displaced by federal common law."¹⁶ Applying these considerations, the court found significant federal interests at stake in the litigation: "the rights of soldiers to be protected from 'harms inflicted by others' and to be compensated for harms already inflicted,"¹⁷ and potentially "broad questions about the conduct of military operations" due to the "unprec-

¹⁶. 506 F. Supp. at 746.
¹⁷. Id. at 747 (quoting United States v. Standard Oil Co., 332 U.S. 301, 305-06 (1947)).
edented number and size of the claims" at bar.\textsuperscript{18} Moreover, Judge Pratt concluded that if the lawsuit were governed by state law, instead of a uniform federal common law tort approach, "different state laws would be applied to essentially similar claims by Vietnam veterans and their families against the five defendant war contractors."\textsuperscript{19} The court found such a prospect undesirable because of the legal uncertainty that would exist for both war veterans and contractors, and the unfairness of according different legal treatment to litigants who, in all relevant respects, had similar claims.\textsuperscript{20} Finally, the court assessed the impact of state interests should state law be displaced by federal common law. Judge Pratt concluded that this impact would be slight on balance, because state tort law had not yet evolved rules to govern war contractor liability, and the use of the toxic chemicals at issue in the litigation was subject to widespread federal standards under comprehensive federal legislation.\textsuperscript{21}

B. Judge Pratt's Preliminary Procedural Rulings

With the advent of the new decade of the 1980s, Judge Pratt faced a deluge of pretrial motions by the plaintiffs, the chemical company defendants, and the United States government. In a series of crisp and proactive decisions, the court made the following significant procedural rulings: that notwithstanding the federal government's document destruction policy and the general stay of discovery in the case, the "Veterans Administration and other departments and agencies

\textsuperscript{18. Id. at 748 n.6.}

\textsuperscript{19. Id. at 748. The plaintiffs sought relief under a variety of traditional tort theories: negligence, strict product liability, "breach of warranty, intentional tort, equity, and nuisance." Id. at n.8. Yet, the court crafted federal common law for only negligence and strict product liability because it concluded that at the early point in the litigation, "it [was] unnecessary to decide whether the other claims should be governed by federal common law, or rather should be treated as pendent state law claims." Id.}

\textsuperscript{20. As noted in the opinion: "An extreme example would be the application of different state statutes of limitation to claims by veterans who were injured together in Vietnam but who lived in different states before or after service." Id. at 748.}

\textsuperscript{21. Id. at 749.}
likely to have relevant records"\textsuperscript{22} should preserve records linked to the claims in the litigation; that one of the plaintiffs' videotaped deposition should proceed as scheduled with possible limitations on its use at trial;\textsuperscript{23} that special problems and issues resulting from the claims by Australian veterans should be resolved at a pretrial conference;\textsuperscript{24} and, in light of the jurisdictional nature of the written notice requirement of the Federal Torts Claim Act, the 2.4 million veterans (and members of their families) who were potential plaintiffs against the U.S. government would be required to file separate forms with the government.\textsuperscript{25} Significantly, in deciding the latter issue, the court expressed frustration with procedures that were poorly adapted to the unique nature of the Agent Orange controversy:

It is apparent that the notice of claim procedures and requirements are neither designed for nor well adapted to a situation like the case at bar for many reasons: the large number of claimants possible here, the uncertain scientific basis for the potential claims, the difficulty of determining the presence and nature of injuries alleged, the uncertainty of knowing whether federal or state law principles will apply, and the often misleading media attention given to the scope of this action and the protection afforded potential claimants in this court.\textsuperscript{26}

Despite Judge Pratt's frustration with existing tort claim procedures, he asserted lack of judicial authority to change the rules. He opined that:

However poorly adapted the procedures may be, the court is bound by the statutory requirements for administrative review and is without authority to order the alternative procedures suggested by plaintiffs. Were the court empowered to rewrite the statute to suit the unusual circum-

\begin{enumerate}
\item Id. at 761.
\end{enumerate}
stances here presented, the court might provide for a simplified procedure which would permit the filing of a single notice of claim in satisfaction of the administrative notice requirement for the claims of all potential plaintiffs against the government. But the court is not so empowered, and plaintiffs are thereby left to address their equitable arguments to Congress, the source of the burdensome requirements . . . .

C. Interlocutory Reversal by the Second Circuit: Diversity is the Sole Basis for Subject Matter Jurisdiction

In late November 1980, a panel of the United States Court of Appeals for the Second Circuit, by a vote of two to one, reversed Judge Pratt's 1979 decision to apply federal common law to the case. Writing for the panel in a terse opinion, Judge Amalya Kearse held that there was no "identifiable federal policy at stake in this litigation that warrants the creation of federal common law rules." Accordingly, this reversal meant that the federal district court could hear the litigation solely on the basis of diversity jurisdiction. Given Erie Railroad Co. v. Tompkins, this meant that assorted state substantive law rules, such as statutes of limitations and product liability rules, would need to be ascertained and applied by the trial court.

As discussed by Professor Peter Schuck, the Second Circuit decision represents

a classic example of the perils of treating [a toxic tort dispute like] Agent Orange as a larger version of a conventional tort dispute. [This] approach, perfectly defensible in the ordinary case in which one or a few soldiers sue concerning a discrete incident, made no sense at all in a mass action going to the heart of a broad federal policy.

27. Id.
29. Id. at 993.
30. 304 U.S. 64 (1938).
31. PETER H. SCHUCK, AGENT ORANGE ON TRIAL: MASS TOXIC DISASTERS IN THE
D. Judge Pratt’s December 1980 Dispositive, Declaratory and Case Management Rulings

In late December 1980, five weeks after the Second Circuit’s interlocutory order of reversal, Judge Pratt made an important dispositive ruling which dismissed all claims against the United States government. Moreover, his decision also held that while the chemical company defendants could assert a government contractor defense — a shielding of private actions pursuant to governmental sovereign immunity — they still had to prove the necessary factual predicates of the defense in order to escape liability from plaintiffs’ tort claims. Finally, Judge Pratt’s decision also articulated a comprehensive case management plan to govern the further proceedings in the case.

Judge Pratt’s “decision was momentous, profoundly shaping the subsequent course of the litigation.”32 In the course of dismissing all claims against the United States government, he emphasized the importance of a 1950 U.S. Supreme Court case, *Feres v. United States*,33 in construing the Federal Tort Claims Act34 as not waiving sovereign immunity “with respect to claims of servicemen ... arising out of their military service.”35 As part of his analysis, Judge Pratt also noted that “[a]ny doubt as to the validity of the *Feres* doctrine was laid to rest”36 in the 1977 case, *Stencel Aero Engineering Corp. v. United States*,37 which extended *Feres* “to third party claims against the government,” similar to the chemical companies claims in the *Agent Orange* litigation.38 Accordingly, the court ruled that “[t]he *Feres/Stencel* doctrine bars defendants’ at-

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32. SCHUCK, supra note 31, at 67.
35. 506 F. Supp. at 770.
36. Id. at 771.
38. 506 F. Supp. at 771 (citing 431 U.S. 666 (1977)).
tempt to seek contribution or indemnity from the United States based on any recovery plaintiffs may obtain for injuries that arose out of or were suffered incident to service.” Since Judge Pratt concluded that the “incident to military service” standard was to be broadly construed, he held that “[w]hatever the facts surrounding a particular veteran’s claim of exposure may be, each veteran’s presence in southeast Asia resulted solely from [his] military service,” whether or not exposure to Agent Orange occurred while on duty or off duty. This expansive statutory and doctrinal interpretation also led the court to bar contribution suits against the United States by the chemical companies for damages paid to military members’ relatives and offspring. The court also considered the government contractor defense raised by the chemical companies which sought to “avoid manufacturer liability on the ground that the circumstances surrounding Agent Orange’s manufacture and use were controlled and dictated by the United States government acting in a capacity in which the government is protected from liability by sovereign immunity and the Feres/Stencel doctrine.” While recognizing the theoretical validity of this defense, the court denied the chemical companies’ summary judgment motion, concluding the resolution of several factual issues by separate trial was necessary to “determine whether defendants have a complete defense to the claims asserted against them.”

Perhaps the most significant part of this opinion, from the standpoint of toxic tort jurisprudence, was Judge Pratt’s “case management plan.” The plan contained four principal parts: (1) a certification of the case as a class action under Fed. R. Civ. P. 23(b)(3); (2) scheduling for decision of the issue

39. Id. at 774.
40. Id. at 776 (footnote omitted).
41. Id.
42. Id. at 780-81. Upon reconsideration several years later, the government’s motion to dismiss defendants' third party complaints was granted only as to claims made by the veterans and the derivative claims of their family members. The government’s motion to dismiss was denied insofar as it related to the independent claims of the veterans’ wives and children. A.O., 580 F. Supp. 1242 (E.D.N.Y. 1984).
43. Id. at 792.
44. Id. at 796.
of the various applicable state statutes of limitations now governing the dispute in light of the Second Circuit's interlocutory reversal; (3) directing a series of trials, in logical sequence, with respect to issues in common with the class; and (4) ordering limited discovery focused on the government contractor defense. Significantly, Judge Pratt discerned a series of novel characteristics of the Agent Orange case that indicated his appreciation that a toxic tort dispute was not a mere conventional tort case. These unique characteristics included the following exhaustive taxonomy, worthy of full quotation:

1. There are a large number of plaintiffs and potential plaintiffs who claim to have been injured by exposure to Agent Orange. There are now approximately 167 suits pending in the Eastern District of New York involving over 3,400 plaintiffs. The court has been informed that there are many thousands more who have, at the court's request and pending decision of the class action motion, refrained from bringing individual actions.

2. There are numerous chemical companies named as defendants. The fact that they may have had differing degrees of involvement in manufacturing and supplying Agent Orange for the government may or may not cause differing levels of responsibility for the effects of Agent Orange on plaintiffs.

3. Present plaintiffs come from most of the 50 states and from Australia. This may require consideration of varying standards of conduct, rules of causation and principles of damages that may substantially affect the results in individual cases.

4. The causation issues are difficult and complex. Clearly this is not the "simple" type of "disaster" litigation such as an airplane crash involving a single incident, having a causation picture that is readily grasped through conventional litigation techniques and presenting comparatively small variations among the claimants as to the effects upon them of the crash. With the Agent Orange litigation,

45. 506 F. Supp. at 785-86. See generally, id. at 787-92, 796-98 (providing in depth detail of the court's reasoning regarding the case management plan).

injuries are claimed to have resulted from exposure to a chemical that was disseminated in the air over southeast Asia during a period of several years. Each veteran was exposed differently, although undoubtedly patterns of exposure will emerge. The claimed injuries vary significantly. Moreover, there is a major dispute over whether Agent Orange can cause the injuries in question, and there are separate disputes over whether the exposure claimed in each case did cause the injuries claimed. The picture is further complicated by the use in Vietnam of other chemicals and drugs that also claim to be capable of causing many of the injuries attributed to Agent Orange.

5. The litigation presents numerous questions of law that lie at the frontier of modern tort jurisprudence. Among them are questions of enterprise liability, strict products liability, liability for injuries that appear long after original exposure to the offending substance, and liability for so-called genetic injuries.

6. Many of the people exposed to Agent Orange may not even yet have experienced the harm it may cause.

7. Numerous scientific and medical issues are presented, and there are serious questions of whether there is adequate data to reach scientifically sound conclusions about them. There is the further question of whether legally permissible conclusions may nevertheless be reached on data that would not permit "scientific" conclusions.

8. Various agencies of the government have expressed concern but as yet have shown little tangible action about the problems claimed to have been caused by the government's use of Agent Orange.

9. There are important and conflicting public policies that run as crosscurrents through many phases of both the substantive and procedural problems of this litigation.

10. There is a wide choice available among the many procedural devices that could be used for addressing and ultimately deciding this controversy."

Judge Pratt also commented on the human drama of the case by observing:

47. 506 F. Supp. at 783-84.
All of these problems are compounded by the practical realities of having on one side of the litigation plaintiffs who seek damages, but who have limited resources with which to press their claims and whose plight becomes more desperate and depressing as time goes on, and having on the other side defendants who strenuously contest their liability, who have ample resources for counsel and expert witnesses to defend them, and who probably gain significantly, although immeasurably, from every delay that they can produce.

Overarching the entire dispute is a feeling on both sides that whatever existing law and procedures may technically require, fairness, justice and equity in this unprecedented controversy demand that the government assume responsibility for the harm caused our soldiers and their families by its use of Agent Orange in southeast Asia.48

While a variety of opinions in the Agent Orange litigation followed Judge Pratt's December 1980 decision,49 the next significant opinion in the case from the standpoint of toxic tort jurisprudence was rendered nearly four years later by U.S. District Court Judge Jack Weinstein in a September 1984 ruling on a motion for approval of a proposed settlement agreement.50

E. Judge Weinstein's September 1984 Decision Upholding the Fairness of the 180 Million Dollar Settlement

Echoing the twin themes of emotional appeal and factual complexity earlier recognized by Judge Pratt, Judge Weinstein, in a 158-page published opinion (including appendices), approved the fairness of a $180 million settlement between the plaintiffs' class and the chemical companies. The court

48. *Id.* at 784.
50. *Id.* For an interesting description of Judge Weinstein's entry into the case in October 1983, the scheduled trial dates in May 1984, and the judge's role in bringing about the settlement, see *Schuck, supra* note 31, at 111-67.
noted that while "many legal issues [in the case] are unique and the factual issues unresolved by the scientific communities addressing them," it was "the deeply charged emotions that surround and engulf the litigation" that created great difficulty in assessing the fairness of the settlement. Indeed, Judge Weinstein recounted his unique experience in "listening to hundreds of witnesses around the country and reading the poignant letters of many veterans, their wives and parents," making it clear to the court "that more than money [was] at stake" in the lawsuit.

The Agent Orange Fairness Opinion accepted the proposed $180 million class settlement for three basic reasons. In Judge Weinstein's view, "[it] gives the class more than it would likely achieve by attempting to litigate to the death. It provides funds to help at least some men, women and children whose hardships will be reduced in some small degree. It [finally] does represent a major step in the essential process of reconciliation among ourselves." The core of the court's opinion dealt with the numerous factual and legal problems that would have to be overcome if the plaintiffs were to press their claims to trial. With regard to the plaintiffs' factual claims, Judge Weinstein observed that "at best the evidence is inconclusive. This is due in part to the difficulty of proof in any mass toxic tort litigation and in part to the weakness in proof of the causal relationship" in the available studies and data. This weakness in factual proof was particularly striking where so much legal and judicial resources had already been expended in the case. As noted by Judge Weinstein:

This has been one of the most complex litigations ever brought. Some 600 separate cases have been sent to this district from all over the country with an estimated fifteen thousand named plaintiffs. Millions of pages of documents and hundreds of depositions of witnesses have

52. Id.
53. Id. at 747.
54. Id.
been collected. The docket sheet of this court has some 4,000 separate entries respecting these related cases. Hundreds of motions have been heard and hundreds of oral directions given by the court, special masters and magistrate in the course of preparing the case for trial. The court, magistrate and special masters have held meetings with counsel from all over the country on an almost daily basis. Hundreds of scientists, government personnel, private executives, lawyers and others have devoted a great deal of time to this litigation. It is unlikely that further expenditure of time and money will be productive. It is time to bring this dispute to a close. 55

The court characterized plaintiffs' factual theory of causation as being fraught with "logical and practical difficulty."56 On the one hand, plaintiffs argued that: "Agent Orange contained small quantities of dioxin. Dioxin is a potent poison which can cause serious harm to humans. Many plaintiffs suffer from diseases that can be caused by dioxin. Dioxin caused the disease." However, as pointed out by the court, "the diseases referred to may result from causes other than dioxin poisoning."57

Later in the opinion, the court analyzed the plaintiffs' causation problems in a more extensive legal discussion. Dividing the causation problem into two component parts, Judge Weinstein observed that the plaintiffs faced the dual problem of the "[i]ndeterminate [d]efendant"58 as well as the "[i]ndeterminate [p]laintiff."59 In describing the former, the Agent Orange Fairness Opinion asserts that the "case illustrates the inapplicability of burden of proof rules designed for simple two-party cases to mass toxic torts where injury was allegedly caused, but the question of which manufacturer created the harm cannot be answered with precision."60 To alleviate the problem of impossibility as to the identification of

55. Id. at 749-50.
56. Id. at 777.
57. Id.
58. Id. at 819.
59. Id. at 833.
60. Id. at 819.
specific chemical manufacturers, the court concluded that the plaintiffs would be able to establish a type of enterprise liability by showing that each manufacturer's failure to warn was the legal cause of the plaintiffs' injuries even though the cause-in-fact of a particular injury may have been chemicals produced by another manufacturer.\(^\text{61}\)

Moreover, Judge Weinstein concluded that notwithstanding a liberalized causation rule, "[i]t is likely, however, that even if plaintiffs as a class could prove that they were injured by Agent Orange, [and thereby were able to overcome the indeterminate defendant problem] no individual class member would be able to prove that his or her injuries were caused by Agent Orange."\(^\text{62}\) In light of this, latter, indeterminate plaintiff problem, the court drew analogies to employment discrimination cases and consumer class actions, and determined that "a form of proportional liability" based on statistical risk enhancement was appropriate.\(^\text{63}\) In the course of crafting these innovative causation rules, however, the court candidly acknowledged that:

\[\text{[t]he vexing problems of toxic torts probably would be best dealt with by legislation. In the absence of legislative and executive action courts must attempt to devise the most effective and equitable means of dealing with them through approaches that are consonant with present law and reasonable predictions about trends in the law.}\]

Despite the court's innovative discussion of novel causation principles it would apply were the litigation to proceed to trial, and its separate discussion elsewhere in the opinion of the national consensus law it would apply regarding the government contractor defense,\(^\text{64}\) statute of limitations issue,\(^\text{65}\)

\[\begin{align*}
61. & \text{Id. at 829-30.} \\
62. & \text{Id. at 833.} \\
63. & \text{Id. at 842.} \\
64. & \text{Id.} \\
65. & \text{Id. at 843-50.} \\
66. & \text{Id. at 800-16.}
\end{align*}\]
and punitive damage claims, Judge Weinstein concluded that "lack of certainty because of scarcity of legal precedent argues in favor of approving the settlement." In completing the *Agent Orange Fairness Opinion* the court looked to the possibility that plaintiffs could pursue compensation sources other than the chemical company defendants for assistance. After reviewing a number of potentially applicable federal programs that could help compensate the veterans and their families for exposure to Agent Orange, the court concluded that "[t]he government must be considered the source of ultimate protection whether or not there be a satisfactory demonstration of causal relationship to Agent Orange as a result of ongoing or future scientific studies." In closing, the court outlined a set of legal and equitable principles that "may serve to focus the parties' attention on some available options" of distributing the $180 million settlement fund.

F. Judge Weinstein's 1985 Opinions: Summary Judgment and Fund Distribution Orders

In a series of scholarly opinions issued from January through June of 1985, Judge Weinstein decided to dispose of numerous miscellaneous pending Agent Orange cases that were not governed by the September 1984 settlement order. During this same time frame, the court issued opinions dealing with issues regarding distribution of the class action settlement fund, including payment of plaintiffs' attorneys' fees. All of these opinions are important for the insights that they provide in probing the nature and characteristics of toxic tort law.

The court started its opinion granting summary judgment for the seven chemical company defendants who opposed

67. *Id.* at 850-51.
68. *Id.* at 843.
69. *Id.* at 851.
70. *Id.* at 857.
71. *Id.* at 858.
72. *Id.* at 746.
those Vietnam veterans and their family members that opted out of the Rule 23(b)(3) class, by observing: "Plaintiff Vietnam veterans do suffer. Many deserve help from the government. They cannot obtain aid through this suit against private corporations." As the court went on to explain, "[t]he most serious deficiency in plaintiffs' case is their failure to present credible evidence of a causal link between exposure to Agent Orange and the various diseases from which they are allegedly suffering." Specifically, the court was concerned about the fact that all reliable studies of the effect of Agent Orange provided no support for plaintiffs' causation claims. Dividing the extant scientific data into epidemiological studies, on the one hand, and animal studies and industrial accident reports, on the other hand, Judge Weinstein flatly asserted that only the former were "useful studies having any bearing on causation." According to the court's reasoning, while "epidemiological studies rely on 'statistical methods to detect abnormally high incidences of disease in a study population and to associate these incidences with unusual exposures to suspect environmental factors'," toxicity studies of animal and industrial accidents "rests on surmise and inappropriate extrapolations . . . ." Based on this restrictive view of reliability, therefore, the court determined that plaintiffs' expert opinions — which made untenable inferences of causation — would be inadmissible under Rules 703 and 403 of

74. Id.
75. Id. at 1231.
76. Id. (quoting Michael Dore, A Commentary on the Use of Epidemiological Evidence in Demonstrating Cause-in-Fact, 7 Harv. Envtl. L. Rev. 429, 431 (1983)).
77. 611 F. Supp. at 1231.
78. Id. at 1243. Rule 703 provides in pertinent part:
The facts or data in the particular case upon which an expert bases an opinion or inference may be those perceived by or made known to the expert at or before the hearing. If of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject, the facts or data need not be admissible in evidence.
the Federal Rules of Evidence.

In the course of his opinion granting summary judgment to the chemical company defendants against the opt-out plaintiffs, Judge Weinstein frequently referred to the special nature of toxic tort litigation and the types of proof required to establish causation. An important insight, in this regard, was the court's view that "[i]n a mass [toxic] tort case such as Agent Orange, epidemiological studies on causation assume a role of critical importance." Drawing a parallel between the instant litigation and the Swine Flu Immunization Products Liability Litigation, the court noted a growing judicial acceptance of epidemiological evidence in factual contexts where "the exact organic cause of a disease cannot be scientifically isolated . . . " In a related way, however, the court indicated that, in light of the liberalized approach of Federal Rule of Evidence 702 "towards the admissibility of relevant expert testimony whenever it would be helpful to the trier" of fact, 83

FED. R. EVID. 703.

79. 611 F. Supp. at 1243. Rule 403 provides in pertinent part: "Although relevant, evidence may be excluded if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury, or by considerations of undue delay, waste of time, or needless presentation of cumulative evidence." FED. R. EVID. 403.

80. 611 F. Supp. at 1239. Epidemiological evidence was referred to earlier in the opinion in the following terms:

Epidemiological studies rely on "statistical methods to detect abnormally high incidences of disease in a study population and to associate these incidences with unusual exposures to suspect environmental factors." Michael Dore, supra note 76, at 431. In their study of diseases in human populations, epidemiologists use data from surveys, death certificates, and medical and clinical observations.

Id. at 1231. Additionally, the court specifically noted: "A number of sound epidemiological studies have been conducted on the health effects of exposure to Agent Orange. These are the only useful studies having any bearing on causation." Id.


82. 611 F. Supp. at 1240 (quoting In re Swine Flu Immunization Prod. Liab. Litig., 508 F. Supp. at 907 (D. Colo. 1981)). Judge Weinstein pointed out that admission of epidemiological evidence could often take place through Federal Rule of Evidence 803(8), the public records and report exception to the rule against hearsay. 611 F. Supp. at 1240.

83. 611 F. Supp. at 1242.
compared to the more restrictive Frye rule, in those situations "[w]hen either the expert's qualifications or his testimony lie at the periphery of what the scientific community considers acceptable, special care should be exercised in evaluating the reliability and probative worth of the proffered testimony under Rules 703 and 403." According to Judge Weinstein, "'[r]igorous examination' is especially important in the mass toxic tort context where presentation to the trier [of fact] of theories of causation depends almost entirely on expert testimony." In pointing out the unacceptable vagueness and generality of plaintiffs' expert causation evidence, the court excoriated the proof for a failure to provide specific places, dates, and circumstances of exposure. Contrasting the lack of exposure data to two other toxic tort cases decided by federal courts where adequate exposure evidence existed, Judge Weinstein noted that "[g]iven the difficulty of determining dose-response relationships in toxic tort situations," it was necessary for plaintiffs to establish "the amount and existence of exposure to Agent Orange" with detail. "Claims of exposure without detail cannot suffice." In concluding the summary judgment opinion, the court reasoned as follows:

After careful scrutiny of all available evidence in this protracted litigation, there is no doubt that a directed


85. 611 F. Supp. at 1242.
86. Id. at 1244.
88. 611 F. Supp. at 1247.
89. Id.
verdict at the close of each of plaintiffs' cases would be required. Such careful scrutiny of proposed evidence is especially appropriate in the toxic tort area. The uncertainty of the evidence in such cases, dependent as it is upon speculative scientific hypotheses and epidemiological studies, creates a special need for robust screening of experts and gatekeeping under Rules 403 and 703 by the court.90

A few months after the opt-out class summary judgment in favor of defendants, Judge Weinstein decided a similar individual case involving a wrongful death action brought by the surviving wife of John Lilley.91 While the particular diseases and medical conditions focused on a form of lymph cancer and coronary artery disease, the court found its earlier reasoning in dismissing the opt-out class92 germane. At the outset, the court assumed that the plaintiff would probably be able to establish the chemical company's wrongful behavior in violating plaintiff's rights to bodily integrity. "In this respect the case arguably resembles the asbestos litigation where substantial contentions of cover-up and carelessness have been made."93 Yet, plaintiff's evidence floundered for the same overarching reason fatal to the opt-out class: failure to link damages suffered to defendants' wrongful actions and inactions. Thus, based on the available evidence, admissible at trial, the court stated "[a]t this point any analogy to many of

90. Id. at 1260 (citation omitted) (emphasis added).

   In the Agent Orange litigation, it is remotely possible that a causal connection may at some time in the future be proved. As time goes on, proof of connection to Agent Orange becomes less and less likely because the aging Vietnam veterans are continuously exposed to confounding substances and morbidity rises sharply with age from many natural causes. We can say that proof has not been produced to this court sufficient to go to the jury.

   Id. As a separate ground for the granting of the summary judgment in defendants' favor, the court noted that the "plaintiffs are unable to overcome defendants' government contract defense." Id. at 1263.


93. 611 F. Supp. 1267, 1269 (citing Paul Brodeur, Annals of Law-Asbestos, The New Yorker, June 10, 17, 24, July 1, 1985. See also, PAUL BRODEUR, OUTRAGEOUS MISCONDUCT (1985)).
the asbestos or other similar toxic tort cases — where there is a clear linkage between the product and a disease — ends."\(^{94}\)

After ruling on the dispositive motions, Judge Weinstein crafted opinions on the motions regarding attorneys' fees and distribution of the settlement fund. In a typically meticulous fashion, Judge Weinstein set the stage for defining an appropriate fee award from the settlement fund of $180 million that had been in court for about a year. According to Judge Weinstein's opinion, "[a]n informed assessment of the fee petitions requires consideration of the system of toxic tort litigation as well as of the unique circumstances of this case."\(^{95}\)

From the court's perspective, "[p]rivate enforcement of tort law is at best only a third line of defense against the hazards of toxic substances."\(^{96}\) The paramount source of protection, according to the court, "is government and private testing, control and regulation to prevent harm while affording society the benefits of modern chemical products."\(^{97}\) The second systemic safeguard is government-mandated or privately-arranged compensation and treatment programs. Judge Weinstein articulated numerous inefficiencies in toxic tort litigation. These include the following: "its high ratio of transaction costs to recovery; its hit or miss characteristics, in that some receive very high amounts and some nothing; and its

\(^{94}\) Id. at 1269. The court, however, denied defendants' motion for attorneys' fees under Fed. R. Civ. P. 11 since the plaintiffs' attorneys "have made a valuable contribution by discovering and revealing evidence supporting the first leg of their claims — defendants' and the government's knowledge of the dangers of using Agent Orange and their failure to take reasonable precautions." Id. In dicta, the court also observed that separate and independent grounds for granting summary judgment in favor of the defendants were the statute of limitations, the problem of "the inability to demonstrate which defendant caused harm" and the government contractor defense. Id. at 1285. See also A.O., 611 F. Supp. 1290 (E.D.N.Y. 1985) (granting summary judgment for failure of plaintiff to produce sufficient admissible evidence to establish causation; in the alternative dismissal pursuant to Fed. R. Civ. P. 37 for repeated failure to cooperate in defendants' discovery requests).


\(^{96}\) Id. (citing cf. INJURIES AND DAMAGES FROM HAZARDOUS WASTES — ANALYSIS AND IMPROVEMENT OF LEGAL REMEDIES, A REPORT TO CONGRESS IN COMPLIANCE WITH SECTION 301(e) OF THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT OF 1980 (PL-96-510) by the "Superfund Section 301(e) Study Group," 97th Cong., 2d Sess. (Comm. Print 1982)).

\(^{97}\) 611 F. Supp. at 1303.
questionable deterrent value in preventing the harm in the first place." In spite of these problems, Judge Weinstein concluded that private toxic tort suits had merit as a backup compensation system with limited value as a deterrent against human exposure to [harmful chemicals] when (1) the [other] two defenses fail through government and private neglect or (2) strict liability is the basis of recovery and the failure occurs through ignorance of the effects of actions taken by manufacturers and others in reasonable reliance on then current knowledge.

Based on the foregoing background analysis, the court proceeded to delineate in considerable detail the specific standards for attorneys' fees and expense claims by over one hundred attorneys who had represented the veterans or their families. The court awarded $9.3 million for these purposes.

In late spring of 1985, the court ruled on distributing the balance of the settlement fund — less attorneys' fees and expenses. Judge Weinstein opined that "[t]here is no entirely satisfactory answer to the distribution problem" because of the indeterminate plaintiff and indeterminate defendant causation problems. Thus, he decided to follow the proposal offered by a Special Master. This distribution scheme involved "a combination of insurance type compensation to give as much help as possible to individuals who, in general, are most in need of assistance, together with a foundation run by veterans with the flexibility and discretion to take care of individuals and groups most in need of help." This opinion is fascinating for its extensive discussion of the "Veterans' Dioxin and Radiation Exposure Compensation Standards Act," passed by Congress in 1984, and the proposed regulations to

98. Id.
99. Id.
100. Id. at 1303-95 (including Report and Recommendation of United States Magistrate regarding reconsideration and supplementation of fee application).
102. Id. See supra notes 58 to 68 and accompanying text.
103. 611 F. Supp. at 1400.
104. Id. at 1404 (citing Pub. L. 98-542, 98 Stat. 2725 (1984)).
implement the federal statutory scheme. While hopeful that the federal government would begin to provide a substantial source of compensation for class members, Judge Weinstein expressed a pragmatic need for judicial action:

"So far as a distribution plan is concerned, it clearly is not possible to wait for the government and others to make further funds and resources available. We are dealing with a scarce resource. Many class members have immediate needs, and much of the value of a settlement lies in the ability to make funds available promptly. The hard choices that must be made in distribution must be made by the court now."

The exhaustive analysis of the proposed distributional options and priorities is analogous to a bankruptcy court's review of a reorganization plan under the Bankruptcy Code. After deciding upon the general structure and purpose of the distribution scheme, the court spelled out in considerable detail the specific elements of its order: (1) awards based on compensable death or disability, (2) determining total disability, (3) proof of death and eligible survivorship, (4) demonstration of exposure to Agent Orange during military service in Vietnam, (5) payment program time limits, (6) structure and amount of disability and death benefits, (7) means test and impact of payment on public and private assistance, (8) implementation and operation of the payment program, (9) private attorney fee arrangements, (10) establishment of a class assistance foundation, and (11) guidelines for Australian and New Zealand claimants.

In June of 1985, Judge Weinstein issued another significant opinion in the Agent Orange litigation, in response to a motion to set aside the plaintiff's management committee's

105. Id. (citing 50 Fed. Reg. 15, 848-55 (1985) (to be codified at 38 C.F.R. §§ 1.17, 3.102, 3.11a-3.11b, 3.813)).
106. Id. at 1405-06 (emphasis added).
107. Id. at 1403-10.
109. See supra note 103 and accompanying text.
110. 611 F. Supp. at 1410-51.
agreement to pay certain attorney members a 300% return on funds advanced during the litigation.\textsuperscript{111} The court noted that the issues presented by the motions “present new and difficult questions in the financing of major toxic tort litigations.”\textsuperscript{112} In Judge Weinstein’s view, “[i]mplicated are the boundaries of legal ethics and the legality of fee arrangements among attorneys in class actions.” Concluding on equitable grounds not to set aside the plaintiffs’ attorneys’ agreement for fee arrangements, the court indicated that “[i]n any future case in this district such an agreement must be revealed to the court and members of the class as soon as possible” because “[a] ‘sunshine’ rule is essential to protect the interests of the public, the class and the honor of the legal profession.”\textsuperscript{113}

G. The Second Circuit Opinions: April 1987

In the first of nine consecutive opinions issued in the spring of 1987, the United States Court of Appeals for the Second Circuit opened its multifaceted review with a trenchant observation about the Agent Orange litigation: “[b]y any measure, this is an extraordinary piece of litigation.”\textsuperscript{114} The court specifically labeled several aspects of the case as “extraordinary” including its “procedural aspects,”\textsuperscript{115} “size of the settlement,”\textsuperscript{116} and the scheme “to distribute the class settlement award.”\textsuperscript{117} The key issue in this particular case was the reasonableness of the settlement. In reaching its conclusion that the $180 million class action settlement was, indeed, fair,\textsuperscript{118} the court of appeals rejected arguments that the district court lacked diversity jurisdiction, that the class action was not properly certified, that notice to the class was inadequate, and that the court was required to hold a fairness hearing before giving notice of the settlement to the class

\begin{itemize}
\item A.O., 611 F. Supp. 1452 (E.D.N.Y. 1985).
\item Id. at 1453.
\item Id. at 1453-54.
\item A.O., 818 F.2d 145, 148 (2d Cir. 1987), cert. denied, 484 U.S. 1004 (1988).
\item Id. at 150.
\item Id. at 151.
\item Id.
\item Id. at 170-74.
\end{itemize}
Despite its affirmance of the district court’s jurisdiction, procedure, and settlement approval, the Second Circuit expressed “skepticism over the usefulness of class actions in so-called mass tort cases and, in particular, claims for injuries resulting from toxic exposure.” In this regard, the appellate court discounted the utility of dividing the causation issue between “generic causation — whether Agent Orange is harmful at all, regardless of the degree or nature of exposure, and what ailments it may cause — and individual causation — whether a particular veteran suffers from a particular ailment as a result of exposure to Agent Orange,” with the former issue being tried by the class action. According to the Second Circuit, the questions of general causation in this toxic tort case were irrelevant. Rather,

[t]he relevant question ... is not whether Agent Orange has the capacity to cause harm, the generic causation issue, but whether it did cause harm and to whom. That determination is highly individualistic, and depends upon the characteristics of individual plaintiffs (e.g. state of health, lifestyle) and the nature of their exposure to Agent Orange. Although genetic causation and individual circumstances concerning each plaintiff and his or her exposure to Agent Orange thus appear to be inextricably intertwined, the class action would have allowed generic causation to be determined without regard to those characteristics and the individual's exposure.

Moreover, the court of appeals was skeptical of the existence of any common questions of law in the case, with the possible “exception of the military contractor defense.” Similarly, in its comments on the different interests of potential plaintiffs in toxic tort cases stemming from variations in the strength of their claims, the court noted that “the dynam-

119. Id. at 164.
120. Id.
121. Id. at 165.
122. Id.
ics of a class action in a [similar toxic tort] case... may either impair the ability of representative parties to protect the interests of the class or cause the inefficient use of judicial resources.\textsuperscript{123}

In the second appellate opinion following the Agent Orange settlement, the court generally upheld the main features of Judge Weinstein's distribution plan.\textsuperscript{124} Noting that "the distribution plan adopted by the district court does not entirely disregard traditional tort principles of causation,"\textsuperscript{125} that the plan was "governed by criteria that are relatively easy and inexpensive to apply,"\textsuperscript{126} and that the plan dealt with the dilemma of allocating an inadequate fund among competing claimants, the Second Circuit approved — with one exception — the district court's exercise of its discretion. The aspect of the district court's distribution scheme, which the appellate court found objectionable, was the proposed manner of establishing "a class assistance foundation... to fund projects and services that will benefit the entire class."\textsuperscript{127} While the court of appeals found it appropriate for a district court to set aside designated funds for specific purposes, the reviewing court found it wrong to delegate judicial supervision of this purpose to a foundation's board of directors.\textsuperscript{128}

The third opinion by the Second Circuit following the Agent Orange settlement addressed the opt-out plaintiffs' appeal of the district court's summary judgment in favor of the chemical company defendants.\textsuperscript{129} Choosing to affirm based on the existence of the military contractor defense, the court of appeals did not address the alternative causation grounds that the district court had postulated for granting the summary

\textsuperscript{123} Id.
\textsuperscript{124} A.O., 818 F.2d 179 (2d Cir. 1987), cert. denied, 487 U.S. 1234 (1988).
\textsuperscript{125} Id. at 184.
\textsuperscript{126} Id. at 183. The district court adopted the Social Security Act's definition of "disability" and used this as the basis for distributing individual claims "unless the disability was predominantly caused by a traumatic, accidental or self-inflicted injury." 611 F. Supp. at 1413.
\textsuperscript{127} 818 F.2d at 184 (quoting 611 F. Supp. at 1432).
\textsuperscript{128} Id. at 185.
\textsuperscript{129} A.O., 818 F.2d 187 (2d Cir. 1987).
judgment. Stating that "the information possessed by the government at pertinent times was as great as, or greater than, that possessed by the chemical companies," the court went on to add a further ground for affirmance: that the chemical companies could not have breached a duty to inform the government because "[e]ven today, the weight of present scientific evidence does not establish that Agent Orange injured personnel in Vietnam . . . ." At its foundation, the court of appeals' opinion was concerned about the military procurement process and the disincentives for private enterprise to provide war material if the prospect for liability was substantial.

The fourth 1987 Agent Orange court of appeals decision affirmed the district court's dismissal of the opt-out plaintiffs' claims against the United States government based on the Feres doctrine and the discretionary function exemption to the Federal Tort Claims Act. According to the Second Circuit, "[b]oth [doctrines] preclude judicial 'second-guessing' . . . of discretionary legislative and executive decisions such as those that were made concerning Agent Orange" where the decision to use the jungle defoliant was made by high level military and political officials and "designed to help the veterans in fighting the armed conflict in which they were engaged."

The Second Circuit's fifth opinion in this line affirmed in part the district court's dismissal of the direct claims by spouses and children of Vietnam veterans against the United States government arising out of spraying of Agent Orange. While the district court had dismissed these claims by way of summary judgment for lack of proof of medical causation, the Second Circuit concluded that the claims had to be dismissed.

130. Id.
131. Id. at 190.
132. Id.
133. A.O., 818 F.2d 194 (2d Cir. 1987).
134. Id. at 199 (citation omitted).
135. Id. at 200.
136. A.O., 818 F.2d 201 (2d Cir. 1987).
for lack of subject matter jurisdiction.\textsuperscript{137} This determination was based on the court's expansive reading of the \textit{Feres} doctrine and the policy implications of the judiciary's second-guessing of the military and executive branch.\textsuperscript{138}

In the sixth opinion, the Second Circuit upheld Judge Weinstein's dismissal of the third party indemnity claims by the chemical companies against the United States government.\textsuperscript{139} In large measure, the court's opinion was motivated by its assessment that the \textit{Feres} doctrine is particularly compelling in "massive tort claims" against the government.\textsuperscript{140} In the court's view, "[t]he greater the scope of a military decision and the more far-reaching its effect, the more it assumes the aspects of a political determination, which, in and of itself, is not subject to judicial second-guessing."\textsuperscript{141}

In the seventh 1987 \textit{Agent Orange} court of appeals opinion, the court affirmed the district court's dismissal of various individual claims based on a variety of different theories including failure to comply with a discovery order, exceedance of the appropriate statute of limitations, the discretionary function exception to the Federal Tort Claims Act, and the military contractor defense.\textsuperscript{142}

The eighth Second Circuit opinion reversed Judge Weinstein's order upholding the fee sharing agreement between the lead counsel in the \textit{Agent Orange} case.\textsuperscript{143} The court of appeals held that this agreement was invalid and would not be enforced in view of its potential for creating conflict between counsel and the class.\textsuperscript{144} Finally, the Second Circuit Court of Appeals completed its set of opinions in the \textit{Agent Orange} case by substantially upholding the district court's multi-million dollar attorneys' fee award.\textsuperscript{145} In a revealing analysis of

\begin{itemize}
\item 137. \textit{Id.} at 204.
\item 138. \textit{Id.}
\item 139. \textit{A.O.}, 818 F.2d 204 (2d Cir. 1987).
\item 140. \textit{Id.} at 206 (quoting \textit{Feres}, 340 U.S. at 135).
\item 141. \textit{Id.} (citation omitted).
\item 142. \textit{A.O.}, 818 F.2d 210 (2d Cir. 1987).
\item 143. \textit{A.O.}, 818 F.2d 216 (2d Cir. 1987).
\item 144. \textit{Id.} at 225.
\item 145. \textit{A.O.}, 818 F.2d 226 (2d Cir. 1987).
\end{itemize}
one aspect of the lower court decision — the denial of a risk multiplier for counsel — the court of appeals wrote:

A court . . . in adjudging whether to award a risk multiplier, should examine closely the nature of the action in order to determine whether, as a matter of public policy, it is the type of case worthy of judicial encouragement. In our view, the case here clearly is not . . . . From the outset, the factual and legal difficulties hindering the successful prosecution of plaintiffs' case have been staggering. Factual evidence of causation has been at best tenuous and, if not for the last-minute settlement, the military contractor defense would have prevented class members from realizing any recovery at all. When these significant weaknesses in plaintiffs' case are viewed in light of the sheer magnitude of the action and the thousands of hours of court time that this type of action requires, it becomes clear that the federal courts should not actively encourage the bar to file such dubious actions in the future.146

During the first part of the 1980s, following and in some cases contemporaneously with the Agent Orange Litigation, other courts grappled with a variety of issues in the burgeoning area of toxic tort litigation. One of the most poignant cases involved human exposure to "downwind" radiation from atomic bomb tests.

II. Radiation Exposure "Downwind": Allen v. United States

In a dramatic toxic tort case brought in federal district court in Utah, twenty-four "bellwether cases" out of a total of 1,192 consolidated individual claims were tried in Allen v. United States.147 The theory of the case was that the United States had negligently caused death and injuries stemming from radioactive fallout released during atomic weapons test-

146. Id. at 236.
ing in the American desert during the 1950s. From the outset of the litigation, the government took the position that the United States was not liable for three reasons: (1) because of the "discretionary function" exception to the Federal Tort Claims Act, which made the government immune; (2) because the applicable federal statute of limitation barred the bringing of claims such as were involved in the case, since the claims accrued more than two years before the filing of an appropriate claim notice; and (3) because the claims against the Atomic Energy Commission (AEC) were in the nature of claims "for giving false assurances as to the safety of exposure to radioactive fallout" and were barred by the "misrepresentation" exception to the Federal Tort Claims Act. In rejecting these challenges at the threshold, U.S. District Court Judge Bruce S. Jenkins characterized the "proceeding [as being] far from the ordinary case." Distinguishing between policy formulation "at a presidential level" or at the level of a head of an agency, on the one hand, and "the exercise of judgment at a regional level, or at a site level, by a [government] manager, a scientist, an engineer, a public affairs or information officer, and auxiliary personnel," on the other hand, the court provided an apt overview of the entire case:

Proceeding down the descending ladder of abstraction, from the general policy formulated on the highest level to the concrete implementation of that policy, one must understand that the case here is not footed on the fact that high level policy decisions were made — but is footed on the alleged, inappropriate manner in which such policy decisions were carried out. The distinction cries out.

151. 527 F. Supp. at 492.
152. Id. (citing 28 U.S.C. § 2680(h) (1992)).
153. Id. at 486.
154. Id. at 485.
155. Id.
Eschewing a formalistic approach, the district court also took a functional approach to interpreting the government’s statute of limitations and misrepresentation exception arguments. 156

Nearly three years later, after holding a thirteen-week bench trial and deliberating for seventeen months on the case, Judge Jenkins issued a 225-page printed opinion which provided substantial relief for many of the bellwether plaintiffs. 157 From the standpoint of toxic tort jurisprudence, the district court opinion is notable for several reasons. First, like Judge Weinstein in the Agent Orange Litigation, 158 Judge Jenkins used a touch of the dramatic in seeking to describe the emotional and human dimensions in the case. At the beginning of the decision on the merits, in a passage worthy of full quotation, the district court observed:

In a sense this case began in the mind of a thoughtful resident of Greece named Democritus some twenty-five hundred years ago. In response to a question put two centuries earlier by a compatriot, Thales, concerning the fundamental nature of matter, Democritus suggested the idea of atoms. This case is concerned with atoms, with government, with people, with legal relationships, and with social values.

This case is concerned with what reasonable men in positions of decision-making in the United States government between 1951 and 1963 knew or should have known about the fundamental nature of matter.

It is concerned with the duty, if any, that the United States government had to tell its people, particularly those in proximity to the experiment site, what it knew or

156. Id. at 489-92.
157. Allen v. United States, 588 F. Supp. 247. According to the trial court: The trial transcript . . . extends to more than 7,000 pages. The exhibits now in evidence . . . amount to over 54,000 pages of written material contained in 19 cardboard boxes. Depositions filed with the court in this action fill an additional 5 boxes. In addition, the court has deemed additional material submitted by the parties to have been offered and received . . . [pursuant to the judicial notice provisions of Rule 201(b)(2) of the Federal Rules of Evidence]. Id. at 258-59, n.3.
158. See supra notes 52 - 114 and accompanying text.
should have known about the dangers to them from the government's experiments with nuclear fission conducted aboveground in the brushlands of Nevada during those critical years.

This case is concerned with the perception and the apprehension of its political leaders of international dangers threatening the United States from 1951 to 1963. It is concerned with high level determinations as to what to do about them and whether such determinations legally excuse the United States from being answerable to a comparatively few members of its population for injuries allegedly resulting from open air nuclear experiments conducted in response to such perceived dangers.

It is concerned with method and quantum of proof of the cause in fact of claimed biological injuries. It is concerned with the passage of time, the attendant diminishment of memory, the availability of contemporary information about open air atomic testing and the application of a statute of repose.

It is concerned with what plaintiffs — laymen, not experts — knew or should have known about the biological consequences that could result from open air nuclear tests and when each plaintiff knew or should have known of such consequences.

It is ultimately concerned with who in fairness should bear the cost in dollars of injury to those persons whose injury is demonstrated to have been caused more likely than not by nation-state conducted open air nuclear events.159

Second, the district court entered the technical thicket by assembling mini-primers on basic principles of radiation and nuclear physics,160 nuclear fallout,161 and health physics.162 Candidly observing that “[e]valuation of the risks and consequences of exposure to atomic radiation” demands some familiarity with basic scientific concepts, Judge Jenkins con-

159. 588 F. Supp. at 257.
160. Id. at 260-87.
161. Id. at 287-311.
162. Id. at 311-29.
tended that "[s]uch familiarity is a prelude to the knowledgeable application of rules of law." Almost philosophical on this point, the court noted that "[i]t does not come easily. It did not come easily for the court." Third, the district court reasserted its earlier decision in rejecting the government's discretionary function exception argument concerning the Federal Tort Claims Act. Resorting to another classical description, the court reasoned as follows:

'The United States misperceives the intent of the act. For example, we choose the objective: Rome. We choose the road: the Appian Way. Discretionary choices both. We make such choices as a matter of power and as a matter of right.

The manner in which we drive from our location to Rome, carelessly or carefully, is also a matter of choice. But, it is not a matter of discretion as used in the Tort Claims Act. It is not a matter of discretion because such a choice is subject to a standard, a limitation. It is subject to a limitation imposed by a civilized society as to appropriate conduct. Thus, according to the court, "such operational conduct" of performing open air atomic bomb tests "was not a matter of discretion because such operational conduct was subject to a . . . standard of conduct," a duty called "due care, reasonable care under the circumstances . . . ."

Fourth, Judge Jenkins rejected the government's alternative argument that the statute of limitations should bar the plaintiffs from bringing their tort suit. Reiterating the unique aspects of the litigation, the court opined:

'The considerable time spent reviewing the record and exhibits relating to the causal relationship between cancer and ionizing radiation has awakened this court's concern as to whether any layman could reasonably be said to

163. Id. at 260.
164. Id.
165. Id. at 336.
166. Id.
have the requisite knowledge of the causal relationships — particularly during the years prior to the commencement of this action. The cause-in-fact issues in this lawsuit are extraordinary and complex. . . . Cancer induction by ionizing radiation is a far more technical problem than the simple A-collides-with-B chain of causation found in most tort actions.\textsuperscript{167}

Accordingly, the court concluded that "[a]t best some of these plaintiffs could be said to have information of a very general nature, essentially a suspicion, that there may be some connection between radiation and cancer";\textsuperscript{168} therefore, plaintiffs were held to have filed their actions in a timely fashion.

Fifth, the district court resolved the duty and breach of duty questions in plaintiffs' favor by discerning a protective legislative scheme promulgated by Congress, the superior knowledge of the federal government regarding risks from radiation exposure, and the standards of care followed by the government at other nuclear laboratories apart from the Nevada test site.\textsuperscript{169}

Sixth, Judge Jenkins wrestled with the causation issue by analyzing the unique problems facing toxic tort plaintiffs. These problems, according to the court, included a long latency period between exposure to a toxic substance and observable injury;\textsuperscript{170} the "non-specific nature of the alleged injury" which cannot be readily traced back to specific causes\textsuperscript{171} and, therefore, creates the "indeterminate plaintiff" problem;\textsuperscript{172} and a failure of Congress to enact statutory procedures to ameliorate these proof problems.\textsuperscript{173}

In resolving the merits of the dispute, the district court entered final judgment in favor of the government on fourteen

\textsuperscript{167} Id. at 341. See also id. at 343 (discussing knowledge requirements).
\textsuperscript{168} Id. at 346.
\textsuperscript{169} Id. at 347-404.
\textsuperscript{170} Id. at 405.
\textsuperscript{171} Id. at 406.
\textsuperscript{172} Id. at 413 (citing Palma J. Strand, Note, The Inapplicability of Traditional Tort Analysis to Environmental Risks: The Example of Toxic Waste Pollution Victim Compensation, 35 Stan. L. Rev. 575, 582 (1983)).
\textsuperscript{173} Id. at 414.
claims, and against the government on nine claims, while leaving one claim outstanding. It then granted a Fed. R. Civ. P. 54(b) motion allowing the government to immediately appeal those claims resolved against it.

On appeal, the United States Court of Appeals for the Tenth Circuit reversed, basing its decision solely on the legal point "that the discretionary function exception precludes government liability." The court of appeals noted that after the district court judgment, the Supreme Court had decided United States v. S.A. Empresa de Viacao Aerea Rio Grandense (Varig Airlines) — a case involving a suit against the Federal Aviation Administration ("FAA") for negligence in implementing airplane inspection and design certification programs, "allowing improper flammable materials and a defective heater system" to be used on certain aircraft. The Varig Airlines Court held that the United States was immune from suit because the FAA's actions constituted the performance of a "discretionary function," which was exempt from potential Federal Tort Claims Act liability. Comparing the atomic testing program to the FAA program found to be a discretionary function in Varig Airlines, the Tenth Circuit undertook the following analysis:

In the case before us, as in Varig, the government actors had a general statutory duty to promote safety; this duty was broad and discretionary. In the case before us, it was left to the AEC, as in Varig it was left to the Secretary of Transportation and the FAA to decide exactly how to protect public safety.

174. Id. at 429-47.
175. 816 F.2d 1417, 1419 (10th Cir. 1987), cert. denied, 484 U.S. 1004 (1988).
177. Id.
178. Id. at 819-21.
179. 816 F.2d at 1421.
III. The Asbestos Industry on Trial

A. Seminal Fifth Circuit Decisions

It is accurate to observe that serious asbestos litigation in the United States began during the 1970s in the deep south states comprising the Court of Appeals for the Fifth Circuit with the decision in *Borel v. Fibreboard Paper Products Corp.* Yet, it was not until the remarkable series of Fifth Circuit opinions in *Jackson v. Johns-Manville Sales Corp.*, during the early to mid-1980s, that the court probed deeply and started to grapple with a variety of serious issues in toxic torts jurisprudence.

It is important to seek context. As stated by the Fifth Circuit, in a broad and comparative historical sketch of American asbestos litigation during the time period of the 1970s to the early 1980s:

No other category of tort litigation has ever approached, either qualitatively or quantitatively, the magnitude of claims premised on asbestos exposure. By 1981, only eight years after the decision in *Borel*... it had become the largest area of product liability litigation, far surpassing the number of cases generated by the controversies over Agent Orange, the drug DES, the Dalkon Shield, intrauterine device, or even automobile defects. Between the early 1970s and 1982 the asbestos... companies and their insurers expended over $1 billion in litigation expenses, damage awards and settlements. This figure does not include the costs incurred by state or federal governments, expenses and compensation and workers' compensation claims, or the costs resulting from the Chapter 11 proceedings initiated by Johns-Manville,


181. See *Jackson v. Johns-Manville Sales Corp.*, 727 F.2d 506 (5th Cir. 1984), vacated and question certified, 750 F.2d 1314 (5th Cir. 1985) (en banc), cert. denied, 469 So. 2d 99 (Miss. 1985), decision after cert., 781 F.2d 394 (5th Cir. 1986) (en banc) (upholding admission of cancer evidence in an asbestosis case and ruling that punitive damages are available in a mass tort case), cert. denied, 478 U.S. 1002 (1988).
Indeed, the Fifth Circuit’s *Borel* opinion — written by Judge John Wisdom and discussing Texas tort law in a diversity action — had extended the theory of strict liability to occupational diseases, while reviewing the disease mechanisms caused by human inhalation of asbestos dust. Moreover, the *Borel* court also analyzed a number of significant legal issues that, at the time, presented novel questions of tort law including the following: a manufacturer’s duty to warn in a product liability context, the applicability of joint and several liability for numerous exposures to toxic substances, and whether a worker’s knowledge of exposure hazards should limit their right to obtain damages.¹⁸³

Over a decade later, in the summer of 1984, the Fifth Circuit wrote its initial opinion in *Jackson v. Johns-Manville Sales Corp.*¹⁸⁴ Jackson, a former shipyard worker, brought a strict liability action against manufacturers and sellers of asbestos products used at his workplace. Jackson was able to settle with some of the defendants before trial. At trial, he obtained a jury verdict against two of the three remaining defendants. The trial court entered a judgment based on the jury’s assessment of actual damages of $391,500 and punitive damages of $500,000 against Manville, and $125,000 against Raybestos-Manhattan.¹⁸⁵ Affirming in part, and reversing in part, a panel of the Court of Appeals for the Fifth Circuit upheld, among other rulings, the validity of the strict liability cause of action, found punitive damages inappropriate, and held that it was improper for the trial court to allow the plaintiff to introduce evidence of his probability of contracting cancer following the onset of asbestosis.¹⁸⁶ The court’s treatment of the last issue was particularly important for several reasons. First, the panel was forced to rethink the traditional “all

¹⁸³. 493 F.2d at 1087-1104.
¹⁸⁴. 727 F.2d 506 (5th Cir. 1984).
¹⁸⁵. *Id.* at 511.
¹⁸⁶. *Id.* at 532.
or nothing" rule of tort law, albeit under Mississippi law, "whereby the plaintiff becomes entitled to full compensation for those prospective damages that are proved to be 'probable' . . . but is not entitled to any compensation if the proof does not establish a greater than 50 percent chance."187 Second, in resolving the applicability of the "all or nothing" approach to tort damages, the Fifth Circuit focused on what it considered "[t]he real question": "whether, when Jackson's cause of action accrued for asbestosis injuries, a cause of action accrued simultaneously for cancer injuries, even though Jackson had not developed cancer at the time of trial."188 Third, in answering the question of the accrual date of Jackson's cause of action, the court of appeals waxed philosophical:

Causality as an operation of physical events which may culminate in future harm must be distinguished from causality as an operation of law which may culminate in a claim for future harm. In the context of a latent disease case, causality poses a novel question whether the accrual of a claim based on the manifestation of one disease results in the simultaneous accrual of claims based on "probable" future manifestations of physically separate diseases. The ultimate question is how abstractly to characterize the wrong that underlies the cause of action.189

Holding that accrual of a strict liability cause of action for causing cancer would not occur from the time an offending substance merely invaded the body, the court interpreted past Mississippi judicial decisions to conclude that accrual would not occur until the disease became physically manifest.190 Finally, the panel bolstered its decision that a cause of action did not accrue until actual physical manifestation of the disease by reasoning that otherwise "massive dislocations in the rights of parties" would occur.191 Thus, "[a] doctrinaire appli-

187. Id. at 516 (footnote omitted).
188. Id. at 517.
189. Id. at 517-18.
190. Id. at 518-19.
191. Id. at 520.
cation of the reasonable certainty rule would result in a mismatching of entitlement, liability, and compensation. 'Persons who contract the first, but not the second, disease will receive a windfall and, in the aggregate, the defendant will overcompensate the injured class.' \(^{192}\) Indeed, distributional equity considerations were also germane to the court's interpretation of Mississippi law as disallowing punitive damages in the context of a mass tort case of unprecedented scope. As stated by the court, "[i]n the mass catastrophe . . . [arising] from pervasive asbestos exposure, the allowance of punitive damages could destroy the marginally viable system of loss distribution in strict liability" \(^{193}\) because of the "portent of overkill as [a threat to] future claimants." \(^{194}\)

The entire Fifth Circuit in Jackson II, however, decided to review the panel decision en banc. On rehearing, the court of appeals en banc upheld the panel decision on the viability of the strict liability claim but superseded the remainder of the opinion. Although conceding that, due to the great number of cases and the perplexing issues at stake, asbestos litigation had assumed a "unique nature," the court rejected the explicit or implicit fashioning of federal common law in asbestos cases. \(^{195}\) Drawing an analogy, among others, to one of the Second Circuit's opinions in In re Agent Orange Product Liability Litigation, \(^{196}\) the court concluded that "ensuring the availability of compensation for injured [asbestos] plaintiffs is predominantly a matter of state concern and, in the absence of congressional enactments, state law, both as to the extent

\(^{192}\) Id. (quoting Wilson v. Johns-Manville Sales Corp., 684 F.2d 111, 120 n.45 (D.C. Cir. 1982)).

\(^{193}\) Id. at 526.

\(^{194}\) Id.

\(^{195}\) 750 F.2d 1314, 1323-24 (5th Cir. 1985). See also 781 F.2d. 394, 397 (5th Cir. 1986) (the court of appeals' later interpretation of the meaning of Jackson I and Jackson II in its later en banc ruling, following the Mississippi Supreme Court's declining certification of state law issues). As noted by the court in Jackson III: "In Jackson II we expressly held that state tort law must govern the outcome of this case, yet the basis of Jackson I . . . was, in retrospect, less Mississippi tort law than it was federal common law." Id. at 397 n.3.

\(^{196}\) 750 F.2d at 1325 (citing In re Agent Orange Prod. Liab. Litig. 635 F.2d 987, 993 (2d Cir. 1980)).
of compensation available and punitive damages, must apply."\(^\text{197}\) Moreover, the court detected a broader policy reason to reject a federal common law of asbestos approach:

The simple fact is that, once the need to limit plaintiffs' recoveries is used to justify the creation of federal substantive rules precluding the recovery of punitive damages and narrowing the scope of the actionable injury, there would be no principled means of restricting the application of federal common law to other matters, either in the context of asbestos litigation or in relation to similar legal problems. As a consequence, federal courts would become increasingly responsible for establishing a general federal tort law in a manner we think is inconsistent with the teachings of \textit{Erie} and the logic behind our federal system.\(^\text{198}\)

Yet, the \textit{en banc} court declined to follow the route of its panel, which had attempted to predict how the Mississippi Supreme Court would resolve the issues of state tort law. Instead, the court decided to certify two key questions to the Mississippi Supreme Court pursuant to Mississippi procedure: (1) whether Mississippi regarded as an actionable injury the risk of incurring future cancer from past exposure to a substance, and (2) whether Mississippi would allow recovery of punitive damages in asbestos litigation.\(^\text{199}\)

Five judges on the court of appeals dissented from the Jackson \textit{en banc} decision. The dissenters viewed the problems of mass toxic tort suits for asbestos injuries as a threat to the continued purpose of the court system. They observed: "[W]e confront a sequence of massive tort claims that has unparalleled geographic and financial dimensions. We confront cases where the application of divergent governing principles can destroy the rights of similarly situated claimants. We confront no less than a challenge to our purpose as courts."\(^\text{200}\)

\(^{197}\) Id.
\(^{198}\) Id. at 1326-27 (citation omitted).
\(^{199}\) Id. at 1327-29.
\(^{200}\) Id. at 1330 (dissent).
Accordingly, the dissent urged the need for a uniform common law approach crafted by the Supreme Court of the United States instead of an "inferior appellate court."\textsuperscript{201} While agreeing with the majority that "legislation [by Congress] would be the preferred solution to the dilemma of providing an adequate scheme for the proper distribution of compensation" in asbestos suits,\textsuperscript{202} practical reality required the intervention of the Supreme Court. In the dissent's view, the Supreme Court was "the only institution other than Congress capable of imposing the uniformity necessary to resolve this problem in a just manner" since that "Court has the power to formulate federal common law which will ensure equitable compensation for all claimants."\textsuperscript{203} The dissent, therefore, urged certification to the Supreme Court of federal common law questions on punitive damages and accrual of latent causes of action in asbestos litigation.\textsuperscript{204}

Less than two months later, the Mississippi Supreme Court declined certification of the questions posed by the Fifth Circuit.\textsuperscript{205} Thereafter, in \textit{Jackson v. Johns-Manville Sales Corp.}, ("Jackson III")\textsuperscript{206} — another \textit{en banc} opinion issued in 1986 — the Fifth Circuit decided to resolve the underlying issues of state tort law in the case. In large measure, these rulings reversed the panel decision which had predicted more circumscribed tort principles. The court of appeals held that: (1) Mississippi law would permit punitive damages in product liability actions, including mass tort cases where the evidence indicated a gross disregard for workers' rights, (2) recovery could occur for the reasonable medical probability of contracting cancer in the future, and (3) damages could be obtained for mental distress resulting from the plaintiff's knowledge of an increased risk of contracting cancer.\textsuperscript{207}

\textsuperscript{201} Id.
\textsuperscript{202} Id. at 1332.
\textsuperscript{203} Id. at 1333.
\textsuperscript{204} Id. at 1335 (citing 28 U.S.C. § 1254(3)).
\textsuperscript{206} 781 F.2d 394 (5th Cir.), cert. denied, 478 U.S. 1022 (1986).
\textsuperscript{207} Id. at 415.
In a spirited and comprehensive dissenting opinion, five
circuit judges articulated their profound concern with the wis-
dom of the majority's disposition in *Jackson III*. The dissent-
ers began their critique by asserting that "[t]he learned,
lengthy opinion of the majority is the wrong response by the
wrong court." 208 The dissident judges viewed the majority's
opinion as the wrong response for a variety of reasons. "First,"
they contended, "looking backward to the signposts of *stare
decisis* has turned the court away from the road to justice be-
cause this case exceeds the limits of ordinary case and contro-
versy litigation in our complex, interrelated society." 209 A sec-
ond criticism in the dissenting opinion was that "the court
[inappropriately] respond[ed] to innovative lawyers pressing
for immediate financial recovery" in the course of "case-by-
case adjudication." 210 The minority considered this case to en-
compass problems outside their jurisdiction, and refrained
from faulting the attorney's case-by-case approach in order to
require them "to anticipate the impact of [the] judgment on
the host of [future] claimants . . . who deserve to share in the
finite proceeds which a limited group of defendants can pro-
vide to compensate mass tort victims." 211 Third, the dissent-
ers in *Jackson III* partially attributed the sweep of the major-
ity's rulings to the court's "frustra[tion] by lack of
congressional action." 212 As a fourth reason for their disagree-
ment with the majority, the dissenting judges opined that the
majority did not properly perceive the true question
presented in the case. As more fully stated in the dissenting
opinion:

This seminal case concerns much more than James Leroy
Jackson's individual claim against some companies that
may have furnished an unsafe product to a shipyard in
which he worked. We know better.

Our dockets tell us so — dockets in the Southern
District of Mississippi, dockets in the Eastern District of Texas, dockets in the Eastern District of Louisiana, dockets in the Southern District of Texas, dockets throughout the state and federal courts across this nation. Tens of thousands of similarly situated claimants are already seeking relief against the same defendants, and a legion of other potential plaintiffs stand in the wings, awaiting the predictable manifestation of their identical exposure. Other public and private plaintiffs seek recovery from the same defendants for costs incurred in removing asbestos materials from structures in every area of the country.\

Indeed, in an expansive textual footnote, the dissent referred to the "[n]umerous [recent] texts and articles [which] define the dimensions of asbestos litigation, litigation costs, and the resulting fiscal problems created for plaintiffs and defendants" in these toxic tort cases. To the dissenting judges, the Jackson litigation seemed to be an archetype of emerging toxic tort cases in asbestos disputes and other types of mass torts. The closing portions of the dissenting opinion support this conclusion and indicate that the dissenters thought the better approach to a difficult judicial problem was to ask the Supreme Court of the United States to craft uniform federal common law on key questions that were likely to reappear in future toxic tort cases. As argued in the dissenting opinion:

[T]he court fails to take into account that what we say here creates new precedent. We are not passing a milepost along a known path leading to a chosen goal. Instead, the court, without a goal, chooses a new path which will compel the way of all litigants who come later. Given this situation, the proper judicial response should be one based on a broad view of the whole question.

The wrong court gives this wrong response. We do not say this because the majority opinion is structured as a prediction of what the Mississippi Supreme Court

213. Id. at 416.
214. Id. n.2. The literature referenced by the dissenters was extensive. Footnote 2 of the dissenting opinion is a veritable annotated bibliography on the subject of asbestos litigation up to the date of the decision.
would decide about the novel issues fixed in our jurisprudence by today's decision. We say so because a national problem has been adjudicated as though it were a state problem after the concerned state court wisely refused to accept our certification of the issues to it.

Sadly the majority chose to certify these issues to that court rather than to the Supreme Court of the United States. The United States Supreme Court could have given us proper responses ....

The problems we face in this litigation are ones of national public policy. To respond to such policy is beyond the ability of this diversity-based court. Such policy cannot be subject to the whims of individual states because matters of national public policy have nationwide application. Since Congress has not provided a solution, the Supreme Court of the United States should have been asked to provide one. 215

Jenkins v. Raymark Industries, Inc. 216 was another bedrock Fifth Circuit decision addressing questions arising from asbestos litigation. In affirming a decision by the United States District Court for the Eastern District of Texas to certify a class of plaintiffs in personal injury cases arising from exposure to asbestos insulation products under FED. R. CIV. P. 23(a), 217 a panel of the Court of Appeals for the Fifth Circuit rebuffed the interlocutory appeal and affirmed the lower court on utilitarian grounds. The Court of Appeals reasoned as follows:

Courts have usually avoided class actions in the mass accident or tort setting. Because of differences between individual plaintiffs on issues of liability ... as well as damages, it has been feared that separate trials would overshadow the common disposition for the class .... The courts are now being forced to rethink the alternatives and priorities by the current volume of litigation

215. Id. at 416-17.
216. 782 F.2d 468 (5th Cir. 1986).
and more frequent mass disasters.\textsuperscript{218}

The \textit{Jenkins} court went on to opine that "[i]f Congress leaves us to our own devices, we may be forced to abandon repetitive hearings and arguments for each claimant's attorney to the extent enjoyed by the profession in the past."\textsuperscript{219}

B. Other Federal Decisions

In addition to the seminal asbestos decisions decided by the Fifth Circuit during the late 1970s and the first part of the 1980s,\textsuperscript{220} other federal courts resolved significant asbestos injury claims while helping to further conceptualize toxic tort law during this time period.

In the 1985 opinion, \textit{Lee v. Celotex Corp.},\textsuperscript{221} an Eleventh Circuit panel held that an executrix failed to show that the decedent had actually been exposed to the defendant manufacturer's products. While the plaintiff's decedent had died from mesothelioma — an asbestos-related disease — the trial court judge granted the defendant manufacturer's summary judgment motion based on a lack of causation. A majority of the panel affirmed. The appellate court noted the growing volume of asbestos litigation and concluded that there was a need for innovative "grouping" techniques in these cases to "systematically mov[e] a group of similar lawsuits through court" in order to conserve scarce resources, facilitate settlements, and allow parties their day in court.\textsuperscript{222} In observing that the instant case was one of several other similar asbestos cases consolidated for oral argument, the court indicated as follows: "Brought on theories of negligence (failure to warn), breach of implied warranty, fraudulent concealment, conspiracy, and strict liability, toxic tort litigation . . . has many elements which must be proven by a plaintiff to obtain recov-

\textsuperscript{218} Jenkins v. Raymark Indus. Inc., 782 F.2d at 473.
\textsuperscript{219} Id. See also 109 F.R.D. at 281 ("Failure to formulate new procedures now for addressing the problems in asbestos litigation will only augment problems in future toxic tort litigation.").
\textsuperscript{220} See supra notes 180-219 and accompanying text.
\textsuperscript{221} 764 F.2d 1489 (11th Cir. 1985).
\textsuperscript{222} Id. at 1490.
Moreover, the court wrote that “[t]he major factual issue at the summary judgment stage in asbestos litigation is whether plaintiff was exposed to the products of the defendant,” and added that “[t]he major legal issue is the degree of evidence necessary to show that exposure.” The court of appeals, with one judge dissenting, determined that “[t]he allegation that plaintiff was exposed to defendant’s asbestos-containing product is not supported by reasonable inferences arising from the undisputed facts, but is based on speculation and conjecture that renders them mere guesses or possibilities.”

Taking an opposing view of logic and of the evidence, the dissenting judge on the Lee panel reasoned that since the plaintiff’s decedent had testified that he had seen defendant’s asbestos products at his various work sites, a reasonable inference sufficient to overcome a motion for summary judgment should be available to the plaintiff notwithstanding defendant’s argument that the “asbestos-containing product would not have been used in the manner described . . . i.e., as a sealant on pipes and for patchwork on sleeves, but . . . for a different use, i.e., finishing wallboard joints.”

In Menne v. Celotex Corp. — another mesothelioma case involving alleged workplace exposure to asbestos products — the plaintiff overcame causation hurdles to win a $2.5 million jury verdict against several asbestos manufacturers and to rebuff the defendants’ post-trial motions to obtain a judgment notwithstanding the verdict, or in the alternative, a new trial. Defendants vigorously contested liability based on lack of causation. Some of the defendants’ arguments focused on plaintiff’s tobacco smoking, lack of exposure by plaintiff to asbestos, and lack of exposure by plaintiff to defendants’ particular products. Judge Patrick Kelly, in formulating his as-

223. Id.
224. Id.
225. Id. at 1491 (citations omitted).
226. Id. at 1493 (Anderson, J. dissenting).
228. Id. at 1430.
sessment of how Nebraska substantive law would resolve the causation issue in the diversity suit at bar, concluded that the doctrine of alternative liability as contemplated by section 433B of the Restatement (Second) of Torts, would govern. 229 According to the district court judge, the “plaintiff’s evidence shows [that] the asbestos products of each of [the] defendants were present and used in his vicinity at the shipyard job site.” 230 Viewing Judge Weinstein’s earlier analysis in the Agent Orange case to be “most instructive,” 231 Judge Kelly quoted extensively from that opinion’s handling of causation issues in toxic tort cases, 232 while also referring to the Fifth Circuit’s use of the doctrine of alternative liability “in appropriate and very similar asbestos cases where all the defendants are before the court.” 233 On appeal to the Tenth Circuit, 234 however, the plaintiff’s sweeping victory was partially curtailed. Initially, the court of appeals corrected the district court’s Erie guess: Nebraska law would view the concomitant liability of the asbestos manufacturers as joint rather than joint and several, resulting in prorated liability by the various defendants. 235 Moreover, as an additional reason for remanding the case, the Tenth Circuit construed the jury instructions and special interrogatories concerning causation and burden shifting as ambiguous enough to constitute significant and prejudicial error. 236

In 1986, the United States District Court for the Western District of Louisiana in Johnson v. Armstrong Cork Co. 237 made a pair of important pre-trial rulings in an asbestos case which: (1) prevented the plaintiff from introducing “state of the art” evidence under a strict liability theory, and (2) allowed the plaintiff to introduce evidence concerning his fears

229. Id. at 1431.
230. Id. at 1435 (emphasis omitted).
231. Id. (citing In re Agent Orange Prod. Liab. Litig., 597 F. Supp. 740 (E.D.N.Y. 1984)).
232. Id.
233. Id. at 1438.
234. 861 F.2d 1453.
235. Id. at 1469.
236. Id. at 1470.
of contracting cancer and probabilities of contracting cancer in the future.\textsuperscript{238} The court justified its first ruling by noting that “the sheer volume, complexity and special burdens upon the judicial system caused by asbestos cases dictates [exclusion of plaintiff’s state of the art evidence] under Fed. R. Evid. 403,” Fed. R. Civ. P. 1, and Fed. R. Evid. 102.\textsuperscript{239} The district court reasoned that its ruling would reduce the costs of litigation and the dangers of overcompensating the plaintiffs.\textsuperscript{240} Relying on a line of earlier Fifth Circuit decisions applying analogous state law on the second issue, the district court emphasized that in order to overcome the inequities of the single cause of action rule whereby “the plaintiff cannot prove a future probability of his contracting cancer when his initial trial is conducted but thereafter does contract the disease” and damage evidence, when available, is often “highly speculative,” the judiciary has “had to develop rules to deal with cancer evidence in latent disease cases involving toxic torts.”\textsuperscript{241} These rules attempt to strike a balance between admitting fear of cancer proof when there is evidence of “serious mental distress” from “an actionable injury,” while limiting the evidence when the plaintiff is unable to show that it is medically more probable than not that he will contract cancer.\textsuperscript{242}

In a miscellany of other asbestos-related cases litigated in the federal courts during the mid-1980s, courts upheld New York City’s asbestos removal training and certification requirements, noting that “future prevention of asbestos-induced diseases represents the optimal solution to the difficult legal and policy issues” raised in toxic tort suits;\textsuperscript{243} and, applied state toxic tort discovery rules to, respectively, deny defendant’s summary judgment motions in two asbestos cases

\textsuperscript{238} Id. at 766-70.
\textsuperscript{239} Id. at 768.
\textsuperscript{240} Id.
\textsuperscript{241} Id. at 769.
\textsuperscript{242} Id.
governed by Indiana substantive law, while dismissing plaintiff's asbestosis claim under Virgin Islands law.

C. State Court Decisions

During the first portion of the 1980s, a number of state courts crafted opinions that addressed toxic tort issues in the context of asbestos litigation. In *Celotex Corp. v. Copeland*, for example, the Supreme Court of Florida ruled on two important issues. First, the court held that a market share theory of products liability was unnecessary where an asbestos worker and his wife were able to identify a majority of manufacturers which supplied the material to which the worker was exposed. Parenthetically, the court observed, however, that asbestos products are fundamentally different from substances like DES which is "produced by hundreds of companies pursuant to one formula." According to the court's reasoning, "[a]sbestos products, on the other hand, have widely divergent toxicities, with some asbestos products presenting a much greater risk of harm than others." Indeed, "[t]his divergence is caused by a combination of factors, including: the specific type of asbestos fiber incorporated into the product; the physical properties of the product itself; and the percentage of asbestos used in the product. There are six different asbestos silicates used in industrial applications and each presents a distinct degree of toxicity in accordance with the shape and aerodynamics of the individual fibers." The court supported its reasoning by review of a majority of other decisions which had rejected the application of a market share

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246. 471 So. 2d 533 (Fla. 1985).
247. *Id.* at 539.
248. *Id.* at 537 (emphasis omitted).
249. *Id.* at 538 (citation omitted).
250. *Id.*
theory to asbestosis cases. Second, the Celotex court also
ruled that the questions of when asbestosis and cancer mani-
manifest themselves were questions of fact not subject to resolu-
tion by summary judgment motion.

In Bernier v. Raymark Industries, Inc., the Supreme
Judicial Court of Maine answered three legal questions which
had been certified to it by the United States District Court for
the District of Maine: (1) state-of-the-art evidence may be in-
roduced in a failure to warn case under the state products
liability statute, when a manufacturer seeks to show that it
neither knew nor reasonably could have known of the danger-
ous characteristics of the product; (2) individuals can re-
cover under the Maine wrongful death statute in an action
against a manufacturer based on defectiveness of a product if
the decedent could have brought such action; and (3)
Maine's statute imposing liability on a manufacturer for mar-
keting a defective, unreasonably dangerous product may be
applicable when inhalation of asbestos dust giving rise to dis-
eases and deaths occurred prior to the effective date of the
statute, but diseases were diagnosed and deaths occurred after
the date because the diseases did not manifest themselves un-
til that time. In reaching its conclusions, the Maine court
relied extensively on judicial authorities characterized as
"helpful because they provide insights into the elements that
make up judicially cognizable 'toxic tort' causes of action."

The Supreme Court of Michigan in Larson v. Johns-
Manville Corp. also faced timing problems in discerning
when wrongful death causes of action for asbestosis and can-
cer arose. The court, after discussing the complex nature of
mass toxic tort actions, held that actions for deaths of dece-
dents resulting from decedents' exposure to asbestos products,

251. Id. (citing cases).
252. Id. at 539 (citing cases).
253. 516 A.2d 534 (Me. 1986).
254. Id. at 540.
255. Id. at 540-41.
256. Id. at 544.
257. Id. at 542-43 n.7.
258. 399 N.W.2d 1 (Mich. 1986).
were barred by Michigan's three-year limitations period for products liability actions. However, the court also ruled that the personal representatives of decedents' estates, who prior to their deaths had developed cancer and had not brought earlier actions for asbestosis, could bring wrongful death actions to recover for cancer damages within three years of discovering, or the time the decedents should have discovered, the cancer. 269

In its 1985 opinion in Nelson v. Flintkote Co., 260 a panel of the California intermediate appellate court had the occasion to review the fairness of applying a special, more generous, statute of limitations for asbestos-related injuries instead of the generic one-year limitation period. Initially, the court emphasized that "[t]he state certainly has an interest in protecting innocent asbestosis victims from toxic tortfeasors" since "[a]sbestosis may take up to 35 years to develop from first exposure." 261 Moreover, the court found the special asbestosis statute of limitations — which provided that the limitation period did not begin to run until a victim discovers a disease link with earlier asbestos exposure and actually suffers a "disability" — to be justified based on "[p]rinciples of fairness and social utility." 262 In addition, the California court noted that "traditional justifications for statutes of limitations do not apply here since there is no real problem of loss of witness' memories" because "[a]n asbestosis manufacturer's defense necessarily rests on documentary evidence which is typically kept in the course of business." 263 In a related way, the court concluded that the "alleged toxic tortfeasors [cannot] claim they were entitled to psychological protection from surprise suits when most knew or should have known back in the 1950s of the toxic nature of the materials they were supplying." 264

259. Id. at 9.
261. Id. at 566 (citation omitted).
262. Id. at 567.
263. Id. (citation omitted).
264. Id. (citing Note, The Fairness and Constitutionality of Statutes of Limitations for Toxic Tort Suits, 96 Harv. L. Rev. 1683, 1685 (1983)).
In *Burns v. Jaquays Mining Corp.*265 — a 1987 opinion by a panel of the Arizona intermediate appellate court — a variety of interesting damages issues were resolved. The case involved residents of land adjacent to an asbestos-producing mill. The residents brought suit against the mill owner for alleged injuries resulting from exposure to the asbestos. The Arizona court made four significant holdings. First, subclinical asbestos-related injuries were deemed insufficient to constitute actual loss or damage required to support a cause of action. Second, the court concluded that there can be no claim for damages for fear of contracting asbestos-related diseases in the future without manifestations of bodily injury. Third, despite the unavailability of other damages remedies, residents could recover damages for inconvenience, discomfort and annoyance, and for property damage resulting from asbestos contamination. Finally, in the most interesting and significant part of the opinion, the *Burns* court held that residents were entitled to obtain compensation for medical surveillance of development of cancer and other asbestos-related diseases. However, the court ordered that this payment should be made by the mill owner into a court-supervised fund rather than a lump sum award to the plaintiffs. Agreeing with the reasoning of the New Jersey Supreme Court in *Ayers v. Township of Jackson*,266 the Arizona court concluded that "mass exposure toxic tort cases involve public interests not present in conventional tort litigation."267

D. Bankruptcy Decisions

In two federal bankruptcy decisions decided during the mid-1980s, bankruptcy court judges provided a fascinating glimpse at the emerging intersections between bankruptcy law and toxic tort liability. In the first case, *In re UNR Industries, Inc.*,268 the United States Bankruptcy Court for the Northern District of Illinois concluded that circumstances

266. 525 A.2d 287 (N.J. 1987). *See infra* notes 278 to 322 and accompanying text.
267. 752 P.2d at 34 (quoting *Ayers*, 525 A.2d at 314).
warranted the appointment of a legal representative for putative victims of asbestos disease, in the context of an asbestos manufacturer's proposal to convert a Chapter 11 reorganization case into a Chapter 7 liquidation. In stark and shocking terms, the bankruptcy court described the reasons for the bankruptcy filings:

The expense involved in defending the 17,000 asbestos-related tort and wrongful death suits pending against Debtors on July 29, 1982, had much to do with Debtors' institution and maintenance of these bankruptcy proceedings. The disposition of Debtors' potential liability to the 30,000 to 120,000 people who may contract asbestos disease through the early part of the next century could have a decisive impact on Debtors' ability to successfully reorganize.

The liquidation of the Debtors or the failure of Debtors to make provision for its potential liability to these 30,000 to 120,000 putative asbestos disease victims in a plan or plans of reorganization, might leave these parties without private remedy with which they, or their estates, could obtain recovery from these debtors for their personal injuries or their wrongful death.

Concluding that the asbestos victims "in equity, should be heard" and that the provisions of the Bankruptcy Code were "flexible enough to permit [the court] to provide these victims with a means to be heard," the bankruptcy court authorized the appointment of a legal representative in the bankruptcy litigation for the asbestos victims. Rejecting the argument of the Creditors' Committee that federal Bankruptcy law "was not designed to address the complex problems posed by mass toxic tort disasters," the bankruptcy court reasoned that it was "charged with the responsibility of applying the Bankruptcy Code under which Debtors are attempting to reorganize, while endeavoring to insure that

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269. Id. at 672-73.
270. Id. at 675.
271. Id.
parties in interest receive fair and equitable treatment of their claims and interests.” 272 Basing its decision on section 105(a) of the Bankruptcy Code, 273 which affords a bankruptcy court the ability to issue appropriate orders to carry out the provisions of the bankruptcy laws, and section 101(4)(A) of the Code, 274 which allows expansive “claim[s]” to be filed against bankruptcy debtors, the bankruptcy court reasoned that “[i]n this unique case, with its unique circumstances, it is necessary for the [c]ourt to exercise its equitable authority to fashion some kind of procedural relief for these putative asbestos disease victims.” 275

In the 1987 case In re Johns-Manville Sales Corp., 276 the United States District Court for the Southern District of New York affirmed an order of the bankruptcy court which had confirmed the Chapter 11 reorganization plan of the asbestos manufacturing Debtor. The district court provided the pertinent procedural background of the case in compelling language:

On August 26, 1982 Johns-Manville Corporation and affiliated entities filed petitions for reorganization pursuant to Chapter 11 of the Bankruptcy Code. At that time Manville faced massive toxic tort liability, arising principally from asbestos related health and property claims, as well as the certainty of many, many more such claims in the future. In the ensuing nearly five years, the parties and [the] Bankruptcy Judge . . . have worked with skill and ingenuity to fashion a suitable plan of reorganization. Such a plan must provide for the compensation of today’s asbestos victims without exhausting the resources necessary to care for tomorrow’s victims. It must simultaneously account to the different types of potential tort plaintiffs, to creditors of Manville and to its shareholders.

274. Id. § 101(4)(A).
275. 46 B.R. at 675.
And it must do so within the framework of Chapter 11, since no other vehicle exists to deal with what is said to be the largest and most complex bankruptcy reorganization in history.\(^{277}\)

Based on its view of the serious tradeoffs and difficult balancing of interests required under the circumstances, the district court affirmed the bankruptcy court's approval of the Chapter 11 reorganization plan.

IV. Environmental Exposure Cases

In a variety of cases decided during the mid-1980s, plaintiffs sued defendants based on allegations that they suffered personal or property injuries from exposure to toxic substances in the ambient environment. Unlike workplace exposure to potentially harmful substances\(^{277}\) or product liability disputes involving a manufacturing or marketing problem leading to injuries from toxic products,\(^{279}\) environmental exposure cases encompass an ambiguous and amorphous frame of reference. Rather than confined to the proximity of a work site (with regular days, hours, and places of exposure and some expectancy of what types of substances one might encounter), or focused on a discernible product (with labeling, instructions and some semblance of warning), environmental exposure cases are usually without identifiable borders or objects. Occasionally, however, these spatial categories tend to overlap or merge\(^{280}\) — for example, an asbestos worker may have a claim against product manufacturers for workplace exposure to asbestos dust; his family members may also have an environmental exposure claim against product manufacturers for their separate, residential exposure to asbestos residues on the worker's clothing.

To further complicate attempts at classification, environmental exposure cases can involve statutory and administra-
tive policies in juxtaposition with common law liability issues. This is particularly true with respect to releases of hazardous substances into the soil or water that may subject a wide class of potentially responsible parties to what has come to be known as "Superfund" liability under the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended.281

Without a doubt, however, the most prominent and important environmental exposure case decided during this time period was the Supreme Court of New Jersey's decision in *Ayers v. Township of Jackson*282—a case involving massive groundwater contamination of a residential drinking water supply.

*Ayers* involved "claims for damages sustained because plaintiffs' well water was contaminated by toxic pollutants" which had allegedly leached into a subterranean aquifer from a landfill established and operated by Jackson Township.283 Following an extensive trial, the jury returned a verdict which was entered as a judgment by the trial court in an amount in excess of $15.8 million. This award provided compensation for three distinct claims of injury: emotional distress stemming from the plaintiffs’ knowledge that they had ingested water contaminated by toxic chemicals; deterioration in the plaintiffs’ quality of life during the time that they were deprived of running water; and, the future costs of regular medical surveillance because of the plaintiffs’ increased susceptibility to cancer and other diseases. Liability was predicated on a finding that the township had created "a 'nuisance' and a 'dangerous condition' by virtue of its operation of the landfill," while acting in a "palpably unreasonable" manner, sufficient to allow plaintiffs' recovery under the New Jersey Tort Claims Act.284

In reviewing the decision of the intermediate appellate

283. *Id.* at 291.
284. *Id.* (citing various statutes to include the New Jersey Tort Claims Act, N.J.S.A. § 59:4-2 (West 1992)).
court, the Supreme Court of New Jersey held that: (1) damages for the residents' emotional distress based on a possible exposure to cancer-causing substances in other chemicals was not recoverable against the township under the tort claims statute; (2) the residents were, however, entitled to recover damages for disruption of their "quality of life" caused by the absence of potable water at their homes for a period of twenty months; and (3) the residents were entitled to obtain damages for the cost of medical surveillance based on enhanced, albeit unquantified, risk of future diseases as a result of past exposure to toxic chemicals. In the course of the majority opinion, Justice Stein, writing for the court, engaged in a far-ranging and probing analysis of the nature of toxic tort law, principles, and policies. First, by way of implication, the court highlighted the importance of experts in toxic tort litigation by summarizing the testimony of four expert witnesses employed by the plaintiff leading to the substantial verdict below: a groundwater expert who "described the probable movement and concentration of the chemicals as they migrated from the landfill toward plaintiffs' wells"; a toxicologist who summarized the harmful characteristics of twelve chemical wastes found in the groundwater (which included cancer-causing chemicals and chemicals that tended to cause liver and kidney damage); "[a]n expert in the diagnosis and treatment of diseases caused by exposure to toxic substances"; and "[e]xpert psychological testimony" addressing the impact of the plaintiffs' knowledge that they had ingested toxic chemicals over a substantial period of time.285

A second distinctive aspect of the Supreme Court of New Jersey's opinion in Ayers is its description of quality of life damages with respect to invasions of an interest in land. Relying upon section 929 of the Restatement (Second) of Torts, the court referred to three distinctive categories of compensation in these cases:

(a) the difference between the value of the land before the harm and the value after the harm, or at [plaintiff's] elec-

285. 525 A.2d at 292.
tion in an appropriate case, the cost of restoration that has been or may be reasonably incurred;
(b) the loss of use of the land, and
(c) discomfort and annoyance to him as occupant.\textsuperscript{286}

Thus, as reasoned by the Supreme Court of New Jersey, the third component of damages was designed to "compensate[] the plaintiff for his personal losses flowing directly from such an invasion."\textsuperscript{287}

Third, in trenchant language that cut to the heart of the matter, the Ayers court noted that its "evaluation of the enhanced risk and medical surveillance claims requires that [it] focus on a critical issue in the management of toxic tort litigation: at what stage in the evaluation of a toxic injury should tort law intercede by requiring the responsible party to pay damages?"\textsuperscript{288} The court provided an overview of the problems posed by the temporality question by stating:

At the outset, we must recognize that the issues presented by this case and others like it will be recurring. We note the difficulty that both law and science experience in attempting to deal with the emerging complexities of industrialized society and the consequent implications for human health. One facet of that problem is represented here, in the form of years of inadequate and improper waste disposal practices. However dimly or callously the consequences of those waste management practices may have been perceived, those consequences are now upon us. According to the [United States] Senate Committee on Environment and Public Works, more than ninety percent of all hazardous chemical wastes produced in the United States have been disposed of improperly.\textsuperscript{289}

Upon closer examination of the question, the Supreme Court of New Jersey lamented the absence of "a comprehensive governmental [approach] to the problem of compensating

\textsuperscript{286} Id. at 294 (quoting RESTATEMENT (SECOND) OF TORTS § 929 (1977)).
\textsuperscript{287} Id. (citations omitted).
\textsuperscript{288} Id. at 298.
\textsuperscript{289} Id. (citing S. Rep. No. 848, 96th Cong., 2d Sess. 3 (1980)).
victims of toxic exposure.” The court noted that “[i]n addition to the staggering problem of removing — or at least containing — the hazardous remnants of past practices, there remains the moral and legal problem of compensating the human victims of past misuse of chemical products.” Indeed, as observed by the court, “[g]overnmental response to the problem [has been] slow” with “Congress deliberately ma[king] no provision for the recovery of damages for personal injury and property damage resulting from exposure to hazardous waste.” Notwithstanding its statutorily-mandated study group’s recommendation that a no-fault victims compensation fund be established, similar to workers’ compensation laws in the states — with a right to sue in tort in extraordinary cases where victims “could overcome the numerous problems of proving injury and causation” — the court opined that none of the federal study group’s proposals had been adopted by Congress. Accordingly, the Ayers tribunal reluctantly concluded that “[i]n the absence of statutory or administrative mechanisms for processing injury claims resulting from environmental contamination,” the only reliable recourse was a judicially-driven response.

Fourth, and related to the third notable feature of the Ayers opinion discussed above, the New Jersey Supreme Court provided an extended and scholarly exposition of “the array of complex practical and doctrinal problems that confound litigants and courts in toxic-tort” cases. According to the Ayers majority, these problems stem from attempting “to accommodate common-law tort doctrines to the peculiar characteristics of toxic-tort litigation.” Referencing a variety of influential law review articles that had been published during

290. Id. at 299.
291. Id. at 298.
294. 525 A.2d at 299 (citing Zazzali and Grad, supra note 292, at 464-65).
295. Id.
296. Id. at 302.
297. Id. at 299.
the first part of the 1980s,\textsuperscript{298} the court synthesized these scholarly writings by observing that:

\begin{quotation}
[t]he overwhelming conclusion of the commentators who have evaluated the result is that the accommodation has failed, that common-law tort doctrines are ill-suited to the resolution of such injury claims, and that some form of statutorily-authorized compensation procedure is required if the injuries sustained by victims of chemical contamination are to be fairly addressed.\textsuperscript{299}
\end{quotation}

The court noted the following specific difficulties inherent in toxic tort litigation: "identification of the parties responsible for environmental damage; the risk that responsible parties are judgment-proof; the expense of compensating expert witnesses in specialized fields such as toxicology and epidemiology; and the strong temptation for premature settlement because of the cost and complexity of protracted multi-party litigation."\textsuperscript{300} Moreover, the court viewed state statutes of limitations as a potential procedural obstacle to toxic tort litigation "[b]ecause of the long latency period typical of illnesses caused by chemical pollutants [whereby] victims often discover their injury and the existence of a cause of action long after the expiration of the personal-injury statute of limitations, where the limitations period is calculated from the date of the exposure."\textsuperscript{301} The court pointed out, however, that this problem had been mitigated by the "discovery rule," adopted in New Jersey and a few other states as a matter of state tort


\textsuperscript{299} 525 A.2d 299 (citations omitted; see supra note 292).

\textsuperscript{300} Id. (citations omitted).

\textsuperscript{301} Id.
law, "that tolls the statute until the victim discovers both the injury and the facts suggesting that a third party may be responsible," coupled with the federal preemption rule under CERCLA similar to the state-law discovery rule. Citing the Fifth Circuit Court of Appeals precedent in the Hagerty v. L & L Marine Services, Inc. asbestos case to resolve a related procedural problem in toxic tort cases, the Supreme Court of New Jersey agreed "that neither the statute of limitations nor the single controversy rule should bar timely causes of action in toxic-tort cases instituted after discovery of a disease or injury related to tortious conduct, although there has been prior litigation between the parties of different claims based on the same tortious conduct." The court, also, identified the "difficulty encountered by plaintiffs in proving negligence" as another "commonly identified obstacle to judicial resolution" of toxic tort cases. In this regard, the court stated that "[i]t is frequently argued that a negligence standard unfairly imposes on plaintiffs the difficult burden of establishing by a cost-benefit analysis that the cost to defendant of taking precautionary measures is outweighed by the probability and gravity of harm," accordingly, "[a] frequent proposal [to overcome this problem in toxic tort cases] involves the substitution of strict liability doctrine in place of a negligence standard." In a similar vein, the Ayers court identified proof of causation as a recurring difficulty to judicial resolution of toxic tort disputes. Quoting extensively from the opinion of U.S. District Court Judge Jenkins in the Allen v. United States radiation exposure case, the Supreme Court of New

302. Id. at 299-300.
303. Id. at 300 (citing 42 U.S.C.A. § 9658 (West Supp. 1987)).
304. 788 F.2d 315, 320-21 (5th Cir.), modified on other grounds, 797 F.2d 256 (5th Cir. 1986).
305. 525 A.2d at 300 (citation omitted).
306. Id.
307. Id.
308. Id. at 301 (citation omitted).
309. Id. (citation omitted).
Jersey complained that "[i]n toxic tort cases, the task of proving causation is invariably made more complex because of the long latency period of illnesses caused by carcinogens or other toxic chemicals."\(^{311}\)

A fifth notable component of the Ayers opinion is the Supreme Court of New Jersey's treatment of "whether . . . proof of an unquantified enhanced risk of illness or a need for medical surveillance" is compensable.\(^{312}\) In addressing this issue, the court observed that "[i]n view of the acknowledged difficulties of proving causation once evidence of disease is manifest, a determination of the compensability of post-exposure, pre-symptom injuries is particularly important in assessing the ability of tort law to redress the claims of plaintiffs in toxic-tort litigation."\(^{313}\) In the course of reaching its decision on this issue, the court reviewed a number of significant cases that had ruled on the compensability of a claim for enhanced risk. Among the decisions considered, the Supreme Court of New Jersey noted that the federal diversity-based toxic tort case *Anderson v. W.R. Grace & Co.*, had rejected liability,\(^{314}\) in a dispute involving alleged chemical contamination in the area of Woburn, Massachusetts. The district court in *Anderson* was mindful of "the inevitable inequity which would result if recovery were allowed" where the award "would significantly undercompensate those who actually do develop cancer and would be a windfall to those who do not".\(^{315}\) Among competing decisions considered by the Ayers court,

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311. *Id.* at 301.

The fact that ten or twenty years or more may intervene between the exposure and the manifestation of disease highlights the practical difficulties encountered in the effort to prove causation. Moreover, the fact that segments of the entire population are afflicted by cancer and other toxically induced diseases requires plaintiffs, years after their exposure, to counter the argument that other intervening exposures or forces were the "cause" of their injury.

*Id.*

312. *Id.* at 302.

313. *Id.* at 302-03.

314. *Id.* at 306 (citing 628 F. Supp. 1219 (D. Mass. 1986)).

315. *Id.* (quoting 628 F. Supp. at 1232).

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the justices cited Hagerty v. L & L Marine Services, Inc.316 and Sterling v. Velsicol Chemical Corp.317 as precedent for allowing a cause of action for enhanced risk of disease based on toxic exposure where the enhanced risk could be established with reasonable probability. Importantly, the Ayers court recognized "that the overwhelming weight of the scholarship on this issue favors a right of recovery for tortious conduct that causes a significantly enhanced risk of injury."318 However, in reconciling these divergent cases and opposing policy concerns, the court concluded that "the speculative nature of an unquantified enhanced risk claim, the difficulties inherent in adjudicating such claims, and the policies underlying the [state] Tort Claims Act argue persuasively against the recognition of this cause of action."319

A sixth feature of the Ayers decision — distinct but related to the question of actionability for enhanced risk — is the Supreme Court of New Jersey's treatment of the plaintiffs' claim for medical surveillance. As characterized by the court, "[t]he claim for medical surveillance expenses stands on a different footing from the claim based on enhanced risk."320 A medical surveillance claim "seeks to recover the cost of periodic medical examinations intended to monitor plaintiffs' health and facilitate early diagnosis and treatment of disease caused by plaintiffs' exposure to toxic chemicals."321 After an exhaustive analysis of contending policy considerations, the court concluded by "hold[ing] that the cost of medi-

316. Id. (citing Hagerty, 788 F.2d at 319).
317. Id. at 307 (citing 647 F. Supp. 303, 321-22 (W.D. Tenn. 1986), rev'd in part, 855 F.2d 1188 (6th Cir. 1988)).
319. Id. at 308.
320. Id.
321. Id.
surveillance is a compensable item of damages where the proofs demonstrate, through reliable expert testimony predicated upon the significance and extent of exposure to chemicals, the toxicity of the chemicals, the seriousness of the diseases for which individuals are at risk, the relative increase in the chance of onset of disease to those exposed, and the value of early diagnosis, that such surveillance to monitor the effect of exposure to toxic chemicals is reasonable and necessary."\textsuperscript{322} Significantly, the court found that "this holding is thoroughly consistent with our rejection of plaintiffs' claim for damages based on their enhanced risk of injury."\textsuperscript{323} Yet, in scrutinizing the advisability of a lump-sum damage award for medical surveillance, the court found it advisable to employ a "court-supervised fund," as had been utilized in the \textit{Agent Orange Litigation}.

Justice Handler filed a separate opinion in \textit{Ayers}, concurring in part and dissenting in part. According to the dissent, the majority in \textit{Ayers} "afford[ed] the victims of tortious toxic exposure significantly less protection than it would plaintiffs in other tort actions,"\textsuperscript{325} by "exaggerat[ing] the difficulties of recovering [a] cause of action [for enhanced risk] and minimiz[ing] the imperative to provide fair compensation for seriously injurious wrongs."\textsuperscript{326} In Justice Handler's view, exposure to toxic chemicals had already caused actual injury to plaintiffs since "exposure to highly toxic chemicals [constitutes] the 'infliction of . . . harm', 'an invasion of a legally protected interest'," as provided in the \textit{Restatement (Second) of Torts}.

Indeed, he concluded his dissent by emphasizing that "[t]he citizens of Jackson Township endured extended exposure to serious toxic chemicals because of the township's palpably unreasonable misconduct. Their injuries

\begin{footnotes}
\item[322] Id. at 312.
\item[323] Id. at 312-13.
\item[325] 525 A.2d at 316 (Handler, J., concurring in part and dissenting in part).
\item[326] Id. at 317.
\item[327] Id. (citing \textit{Restatement (Second) of Torts} § 7(1) and comment a (1965)).
\end{footnotes}
are substantial — as real and as readily measurable as other injuries for which the courts allow compensation . . . . The majority's decision to grant only a limited portion of full compensation disrespects what the plaintiffs have had to go through.\textsuperscript{328}

Judge Richard Posner wrote the panel opinion for the United States Court of Appeals for the Seventh Circuit in the 1986 decision, \textit{Backes v. Valspar Corp.}\textsuperscript{329} — another groundwater contamination case involving a suit by a father against a paint manufacturer, which had stored chemical wastes on adjoining land. The father alleged that these hazardous substances had caused a variety of medical problems to be suffered by his three children, who had consumed well water tainted by paint wastes. The children's medical problems included: abnormal levels of lead in the bloodstream of one child; an ovarian condition and abscessed appendix in another; and, learning disabilities by a third child. Interestingly, "[t]he children's health and mental acuity improved after they moved away."\textsuperscript{330} Dennis Johnson — a chemist formerly employed by the Illinois Environmental Protection Agency — submitted an affidavit on behalf of the plaintiff indicating that phenolic wastes, from drums stored by the paint manufacturer, had polluted the plaintiff's drinking well beneath his land. Among other information before the district court, prior to its decision to grant summary judgment in favor of Valspar, the paint manufacturer, revealed that the stored paint wastes on defendant's property contained "phenols, lead, mercury, and other materials hazardous to human health."\textsuperscript{331}

Basing its decision to grant summary judgment in the paint manufacturer's favor on a dearth of competent evidence about the probable origin of the children's diseases, the trial court judge reasoned that Johnson's affidavit was legally insufficient to create a triable issue of fact. In reversing, the court of appeals stressed the burden on the paint manufac-

\textsuperscript{328} 788 F.2d at 321.
\textsuperscript{329} 783 F.2d 77 (7th Cir. 1986).
\textsuperscript{330} Id. at 78.
\textsuperscript{331} Id. (citations omitted).
turer “to show that the outcome of a trial would be a foregone conclusion.”332 Concluding that the proper showing had not been made by the defendant, the Seventh Circuit made a number of significant observations about the nature of causation proof in toxic tort litigation. First, the appellate court noted that nonphysicians were as competent as physicians to testify about the effects of harmful substances or forces on the human body.333 Indeed, the court pointed out that in the case at bar, plaintiff’s chemist “may . . . be more competent to give such an opinion than [a] doctor” because a treating physician would have been unaware of the children drinking contaminated water and — once the children stopped drinking the bad water — it would be useless to obtain a medical examination because any toxic substances would probably “have been metabolized and have disappeared” after causing health injury.334 A second significant point articulated by Judge Posner for the court, was the persuasiveness of circumstantial causation evidence in toxic tort litigation — at least at the summary judgment stage. In a portion of the opinion worthy of full exposition, the court reasoned as follows:

If Dennis Johnson’s affidavit were incredible, this would be grounds for deeming him unqualified to give an opinion. But it is not incredible. Although unscientific people (judges and jurors for example) may give too much weight to mere coincidence, see e.g., Tversky & Kahneman, Judgment Under Uncertainty: Heuristic and Biases, in JUDGMENT UNDER UNCERTAINTY 3 (Kahneman, Slovic & Tversky eds. 1982), the [plaintiff’s] children did experience an unusual concentration of ailments while drinking water from wells that may well have been contaminated; and though it may all just be a giant coincidence, Dennis Johnson’s affidavit, plausibly, suggests not. Although the wording of the affidavit is rather mealy-mouthed, it attests to a causal relationship with enough

332. Id. at 79.
333. Id. (citing see, e.g., Gideon v. Johns-Manville Sales Corp., 761 F.2d 1129, 1136 (5th Cir. 1985); Jenkins v. United States, 307 F.2d 637, 644 (D.C. Cir. 1962) (en banc)).
334. Id. at 79-80.
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definitiveness to resist summary judgment.335

Finally, the court of appeals in Valspar contrasted the relatively lax summary judgment standard with the more rigorous quality of causation evidence — "a reasonable certainty" — the plaintiff would have to meet at trial. Pointing out that "a reasonable certainty is not a certainty," the court went on to warn "of the formidable difficulties of proving causation in toxic-waste cases,"336 concluding that it was "skeptical" that the plaintiff could persuade a jury that Valspar was a cause of the children's illnesses "without mounting a more formidable scientific . . . case than he seems prepared to do . . . ."337

The U.S. magistrate's recommended decision to the United States District Court for the Southern District of Texas in Chaplin v. Exxon Co.338 illustrates how environmental regulatory issues stemming from federal statutory law intersect with common law causes of action in many toxic tort cases. The scope of the Chaplin litigation was broad, combining allegations of environmental exposure with occupational exposure. As referenced in the class action complaint, plaintiffs consisted of "all individuals and business entities who or which reside, work, use, or own property or do business, or in the past have resided, worked, used, or owned property or did business in or about the eastern half of Harris County, Texas . . . ."339 The action named forty-four defendants which consisted of generators and transporters of allegedly "highly dangerous noxious, frightening and toxic substances at various waste disposal sites and dump sites in the eastern half of Harris County," in addition to various governmental entities.340 The first four counts of the complaint alleged violations by

335. Id. at 80.
336. Id. (citing, e.g. Rosenberg, supra note 292, at 855-59; Ginsberg & Weiss, supra note 292, at 922-23 (emphasis omitted)).
337. Id. (citing Bert Black & David E. Lilienfeld, Epidemiologic Proof in Toxic Tort Litigation, 52 FORDHAM L. REV. 732 (1984)).
339. Id. at 2010.
340. Id. at 2010-11.
defendants of seven federal environmental statutes: the Comprehensive Environmental Response, Compensation, and Liability Act,341 the Solid Waste Disposal Act,342 the Federal Water Pollution Control Act,343 the Clean Air Act,344 the Safe Drinking Water Act,345 the Toxic Substances Control Act,346 and the Federal Insecticide, Fungicide, and Rodenticide Act.347 Subsequent far-flung counts alleged a panoply of state law claims "including negligence in the conduct of an ultra-hazardous activity, negligence per se, reckless and wanton misconduct, strict liability or nuisance per se in the operation of an ultra-hazardous or abnormally dangerous activity, nuisance, trespass, manufacturer and distributor product liability, assault and battery, taking of plaintiffs' property and health by eminent domain and/or inverse condemnation and a general allegation under 'state and federal common law.'"348

The magistrate's opinion in Chaplin viewed the linchpin of the defendants' motion to dismiss as whether plaintiffs had properly alleged any viable claims under federal statutory law. Focusing on the CERCLA private cause of action allegations, the court concluded that since the plaintiffs had not "affirmatively demonstrate[d] that [they] ha[d] incurred necessary costs of response,"349 and had failed to adequately allege response costs that were consistent with the National Contingency Plan,350 dismissal was appropriate. Regarding the six remaining statutory claims which were asserted as "citizen suit" complaints in the nature of private attorneys general actions,351 the court concluded that since requisite notice had

348. 25 Env't Rep. Cas. (BNA) at 2011.
349. Id. at 2013 (citations omitted).
350. Id.
not been afforded of these claims, plaintiffs had failed to allege specific statutory violations and ongoing violations.\textsuperscript{352} Accordingly, these counts were also dismissed. With the federal claims cleared out of the way, the Chaplin court dismissed the various pendent common law tort theories.\textsuperscript{353} In the course of making this determination, the magistrate noted that “plaintiffs will suffer no prejudice from this dismissal as remedies are available to them in state court under state law” and “[i]n deed, plaintiffs [in fact] have instituted an action in state court . . . which has many of the same parties.”\textsuperscript{354} Contrasting the “much-publicized ‘toxic tort’ case Anderson v. W.R. Grace”\textsuperscript{355} — then pending in federal district court in Boston — the Chaplin court observed that the diversity basis of Anderson was unavailable to the plaintiffs in the case at bar.

In the 1987 opinion in Brown v. Southeastern Pennsylvania Transportation Authority,\textsuperscript{356} the federal district court judge denied plaintiffs’ motion for class certification “on a variety of theories for personal and economic injuries arising from defendants’ handling, use, and storage of polychlorinated biphenyls (“PCBs”) at the Paoli railyard in Paoli, Pennsylvania.”\textsuperscript{357} In a factual context which combined alleged environmental exposures by surrounding residences and businesses with occupational exposures by railroad workers, the court — quoting Judge Weinstein’s dictum in a 1984 Agent Orange opinion\textsuperscript{358} — characterized plaintiffs’ request

\begin{itemize}
\item \textsuperscript{352} 25 Env't Rep. Cas. (BNA) at 2014-15.
\item \textsuperscript{353} Id. at 2015.
\item \textsuperscript{354} Id.
\item \textsuperscript{357} 1987 WL 9273, at *1.
\item \textsuperscript{358} A.O., 597 F. Supp. 740, 842 (E.D.N.Y. 1984), aff’d, 818 F.2d 145 (2d Cir. 1987), cert. denied, 484 U.S. 1004 (2d Cir. 1988). See supra notes 14-179 and accom-
for class treatment of suits as "[i]n a broad sense . . . represent[ing] the latest frontier in the emerging area of law dealing with 'the vexing problems of toxic torts.'"\textsuperscript{359} The court continued its analysis by stating that "[c]ourts faced with mass tort class actions must address two obstacles": (1) the provisions of "Rule 23 are at odds with the individual causation and damage issues that arise in a mass tort context";\textsuperscript{360} and (2) "establishing a fair and efficient method of adjudicating these claims is a task peculiar to the legislative branch."\textsuperscript{361} Acknowledging that "in special circumstances, the judiciary must devise effective and equitable means for adjudicating mass tort claims,"\textsuperscript{362} the court heeded scholarly caution that it should "hesitate before attempting to 'shoehorn mass-tort cases into Rule 23 requirements.'"\textsuperscript{363} In reaching its decision to deny class certification in the PCB contamination case, the federal district court recited the complex factual background of the case which included EPA surveillance and testing for contamination at the site and the surrounding area, proposed listing of the site on the Superfund's National Priorities List, and a variety of proposed classes entailing an economic harm class, medical monitoring class, nuisance abatement class, and a punitive damages class.\textsuperscript{364} Contrasting the common factual issues raised in the \textit{Agent Orange Litigation}, asbestos cases,\textsuperscript{365} and the \textit{In re Three Mile Island Litigation},\textsuperscript{366} the court raised "causation problems and other related factors [that] render [the PCB case] unsuitable for class treatment."\textsuperscript{367} As noted by the court, "plaintiffs can point to no single set of operative

\begin{footnotes}
\footnote{359. 1987 WL 9273, at *1 (citation omitted).}
\footnote{360. Id. (footnote omitted).}
\footnote{361. Id. (case citation omitted; citing Linda S. Mullenix, \textit{Class Resolution of the Mass-Tort Case: A Proposed Federal Procedure Act}, 64 Tex. L. Rev. 1039, 1044 (1986)).}
\footnote{362. 1987 WL 9273, at *1 (case citations omitted; citing Spencer Williams, \textit{Mass Tort Class Actions: Going, Going, Gone}, 98 F.R.D. 323, 325 (1982)).}
\footnote{363. Id. (citing Mullenix, \textit{supra} note 361, at 1049).}
\footnote{364. Id. at *2.}
\footnote{365. See generally \textit{supra} notes 180 to 271, and accompanying text.}
\footnote{366. 87 F.R.D. 433 (M.D. Pa. 1980).}
\footnote{367. 1987 WL 9273, at *10.}
\end{footnotes}
facts to establish liability. This case is unlike an airplane crash, a hotel disaster, or a cruise ship food poisoning. The alleged harm from PCBs occurred over a period of at least ten years under a variety of circumstances and to various degrees." Of further concern to the court in granting class certification was that "each plaintiff will bring a unique medical history that will provide the basis for his or her individual claim." 

In *Stites v. Sundstrand Heat Transfer, Inc.*, various residents of Dowagiac, Michigan alleged that they had "suffered severe injuries from exposure to various toxic chemicals leaked from a manufacturing plant," operated in their town by the defendant manufacturer. "Since the 1950s," according to the plaintiffs' allegations, "defendant has been operating a plant in Dowagiac that manufactures copper and aluminum air conditioning coils and condenser units. During the manufacturing process, defendant uses various industrial chemicals. One of these chemicals is trichloroethylene ("TCE"), which defendant employs as a metal degreasing agent." According to the evidence in the summary judgment record before the court, large quantities of TCE had entered plaintiffs' drinking water due to the defendant's failure to properly dispose of waste substances. Referring to exposures to TCE in excess of the U.S. Environmental Protection Agency's recommended limitation, plaintiffs contended that they suffer[ed] 'a depreciation in the market value of their property, loss of the use and enjoyment of their property and severe and permanent injury and damage to their physical health, severe depression over a fear of cancer, as well as humiliation, anxiety, mortification, anguish, emotional distress, outrage and a loss of society and companionship from fellow family members . . . '
On the defendant's motion for a partial summary judgment, the Stites court held that: (1) the residents failed to demonstrate the existence of sufficient facts showing a triable issue that they had an increased risk of acquiring cancer in the future, but (2) the residents could, however, proceed to trial on their claim for emotional distress due to their fear of incurring cancer in the future. The principal basis for the court's granting the defendant's partial summary judgment on the increased risk claim was that "none of plaintiffs' experts were able to quantify the enhanced cancer risk plaintiffs face because of their exposure to TCE." Referring to Michigan's standard for judging enhanced risk claims, the district court stated that it "appreciates the difficulty of quantifying plaintiffs' enhanced risk of cancer, particularly given that plaintiffs were exposed to several other chemicals that also may be carcinogenic. Yet plaintiffs were unable to establish that they have anything near a reasonable certainty of getting cancer in the future." Indeed, plaintiffs' experts had discussed a general concern about plaintiffs' future susceptibility to cancer. However, the most specific diagnosis afforded by any of the plaintiffs' experts was limited to the assertion by Dr. Bertram Carnow — an expert in the fields of occupational and environmental medicine — who had stated that, based on his examination of plaintiffs, the plaintiffs were "'suffering from chronic systemic chemical poisoning as a result of absorption into their bodies of trichloroethylene (TCE) and other halogenated hydrocarbons with damage to and dysfunction of major organs and organ systems resulting in many cases in serious medical problems.'" But, in the court's view, even the Carnow affidavit was insufficient proof for the plaintiffs to meet the "reasonable certainty" standard required by Michigan law. Moreover, notwithstanding plaintiffs' apparent exposure to TCE levels in excess of EPA's drinking water standards, the court concluded that it was "not concerned with

374. Id. at 1524.
375. Id. at 1524-25.
376. Id. at 1521 (quoting Carnow Affidavit at 4).
377. Id. at 1525.
regulatory standards . . . important as they are, but rather must base its decision on the Michigan legal standard."378 In reaching its conclusion that partial summary judgment on the enhanced risk of cancer claims should be decided against plaintiffs, the court relied on the persuasive reasoning contained in two opinions decided by the United States Court of Appeals for the Fifth Circuit: Hagerty v. L. & L. Marine Services, Inc.379 and Jackson v. Johns-Manville-Sales Corp.380

The Stites court's disposition of the plaintiffs' fear of cancer claim was more indulgent. Noting that this claim was "more difficult to resolve" than the enhanced risk claim,381 the federal trial court judge articulated the appropriate standard under Michigan law in this diversity suit to be as follows: "Plaintiffs can recover for physical injury 'produced as a result of emotional distress proximately caused by defendant's negligent conduct' if such injury is 'definite and objective.' "382 The court concluded that plaintiffs' proof in the summary judgment record was "sufficient to create a genuine factual issue on the extent and definiteness of plaintiffs' fears and resulting physical injuries."383 Similarly, relying on Anderson v. W.R. Grace & Co., the Stites court held that "whether plaintiffs' fears are reasonable, and whether they are proximately linked to plaintiffs' exposure to TCE [trichloroethylene], also are issues for the jury to decide."384 Therefore, the court al-

378. Id. (citing GARY Z. NOTHSTEIN, TOXIC TORTS: LITIGATION OF HAZARDOUS SUBSTANCE CASES § 16.06 (1984)). In the course of the court's analysis, it also referred to the indeterminacy of various TCE epidemiological studies, including the Woburn, Massachusetts study involved in Anderson v. W.R. Grace, supra note 349, which found "a 'positive association between . . . exposure [to water containing TCE] and the incidence rate of childhood leukemia,' but indicated that such exposure did not account entirely for the increased number of leukemia cases in Woburn and that the study could not quantify the enhanced risk of cancer Woburn's residents face due to their exposure to TCE." Id. at 1526 (citing Woburn Epidemiological Study).
379. 788 F.2d at 319.
380. 781 F.2d 394, 413 (5th Cir. 1986) (en banc), cert. denied, 478 U.S. 1022 (1986).
381. 660 F. Supp. at 1526.
382. Id. (citations omitted; quoting Michigan case law).
383. Id.
lowed the plaintiffs' fear of cancer claim to stand for trial.

Artesian Water Co. v. New Castle County involved a suit by a private water company against the county government. The water company sought to recover costs it claimed had been or would be incurred as a result of the release or threatened release of hazardous substances from a landfill owned by the county, on the ground that such costs were "response costs" under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). In the course of ruling on cross-motions for summary judgment, joined with the county's motion to dismiss, the district court judge held that — consistent with section 107(a) of CERCLA — the water company could recover against the county for $60,000 worth of monitoring and evaluation expenses incurred, which were consistent with the National Contingency Plan. However, all other costs were not covered by CERCLA, according to the court's reasoning. Artesian's unrecoverable costs included claims for: (1) $600,000 as compensation for the loss of capacity of its wells since pumping restrictions were imposed by the state in 1973; (2) $1 million, representing the differential cost of obtaining alternative water; and (3) $9 million, representing the cost of obtaining permanent alternative water supplies. In an important and trenchant concluding paragraph to its opinion, the Artesian Water Company court compared and contrasted the limited congressional policies underlying CERCLA private cost recovery actions with the expansive potentialities of toxic tort suits:

I am aware the result of this case presents a superficial anomaly: the County, responsible for a release of hazardous substances that causes Artesian to suffer significant economic losses, nevertheless is not required to pay full compensation. This outcome, however, amply demon-

386. Id. at 1274.
388. Id. § 9607(a) (1988).
390. Id. at 1276.
strates the difference between an action for response costs under CERCLA and an action for damages in tort. Limiting recovery of the costs of providing alternative water supplies to cases of actual or threatened contamination of the existing water supply ensures that responsible parties will be liable under CERCLA only for necessary costs of response. Permitting recovery in any other circumstances would invite suits for a broad range of economic losses and ultimately transform CERCLA into a toxic tort statute. Congress did not intend for CERCLA, a narrowly drawn federal remedy, to make injured parties whole or to be a general vehicle for toxic tort actions. Unless Congress sees fit to provide such a remedy, full compensation for hazardous waste harms will in most instances remain the province of state law. 391

V. Occupational Exposure Cases

During the early to mid-1980s, a variety of toxic tort cases revolved around occupational exposure fact patterns. In Bennett v. Mallinckrodt, Inc., 392 for example, a class of workers at a business adjacent to a radiopharmaceutical processing plant brought negligence, assault and battery, and strict liability claims against the plant operator based on injuries they allegedly suffered as a result of exposure to radioactive emissions released by the plant. In reviewing a broad-based dismissal order entered by the trial court, the Missouri intermediate appellate court reversed and substantially reinstated the lawsuit, holding that: (1) the suit was not barred by the federal preemption doctrine; (2) the political question doctrine was inapplicable to the controversy; and (3) a theory of strict liability could be applicable to claims based on radiation damage. 393 However, the court also dismissed portions of the complaint that alleged emotional distress from the prospect of in-

391. Id. at 1299-1300 (emphasis added).
393. Id. at 857.
curring cancer due to exposure to radiation. In dismissing this part of the suit, the court criticized the plaintiffs' vague allegations while obliquely alluding to the "complex and formidable problems of proof" entailed in toxic tort actions for emotional distress due to exposure to harmful substances.

The heart of the legal questions presented in Bennett was the issue of federal preemption. Citing a body of United States Supreme Court decisions, the court observed that the pertinent legislative history indicated that "Congress had no intention of forbidding states from providing tort remedies for injuries caused by nuclear radiation." Focusing on the specific facts at bar, the court concluded, in poignant terms, that "[o]n the present record, payment of damages and compliance with federal [nuclear] standards are clearly possible. Mallinckrodt can continue to meet federal standards, and, if found wanting by state standards, [can] simply pay the piper." Acknowledging that "there is tension between the conclusion that safety regulation is the exclusive concern of the federal law and the conclusion that a state may nevertheless award damages based on its own law of liability," the court noted that "Congress intended to stand by both concepts and to tolerate whatever tension there was between them."

Turning to the political question doctrine, the court, while recognizing that "[t]he propriety of nuclear related activities is a political question properly committed to the legislative and executive branches of our government," also concluded that "individual tort recoveries stemming from those activities normally are not precluded by the political question doctrine." With regard to strict liability, the Missouri appellate court, in a case of first impression in that jurisdiction, decided to adopt the principles of abnormally dangerous ac-

394. Id. at 866-67.
395. Id. at 867 (citing Nothstein, supra note 378, § 16.05-.11).
397. Id. at 860.
398. Id.
399. Id. at 864.
tivities addressed in sections 519 and 520 of the Restatement (Second) of Torts and to apply these principles "to claims based on radiation damage." Accordingly, the court concluded that plaintiffs properly pleaded a claim for relief based on strict liability, while noting in passing that "[t]heories of liability other than strict liability may serve society better in resolving issues between parties when normal danger is involved [but] [t]hese theories are not equally effective in the nuclear industry."

In its 1986 decision in Beauchamp v. Dow Chemical Co., the Supreme Court of Michigan wrestled with the issues of whether the state workers' compensation statute barred an employee from "commencing a civil action against his employer where the employee alleges (1) that the employer committed an intentional tort against the employee, and (2) that the employer breached its contract to provide a safe workplace." Beauchamp involved a plaintiff who was employed for two years as a research chemist by Dow. After applying for workers' compensation benefits, "alleging impairment of normal bodily functions caused by exposure to tordon, 2, 4-D, and 2, 4, 5-T ('agent orange')," Ronald Beauchamp and his wife brought a civil suit against Dow, alleging personal injuries and loss of consortium, respectively. The complaint alleged that Dow had intentionally misrepresented and fraudulently concealed potential damages of plaintiff's chemical workplace and that Dow had, also, intentionally assaulted Beauchamp, intentionally inflicted emotional distress, and breached its contract to provide a safe workplace.

In partially reversing a summary judgment entered by the trial court in Dow's favor on all counts of the complaint, the Supreme Court of Michigan concluded that "actions for intentional torts are not barred" since the Michigan legislature "did not intend 'that the exclusive remedy sanction of the

400. Id. at 867.
401. Id. at 868.
403. Id. at 883.
404. Id.
405. Id.
[workers' compensation] act be construed to preclude a plaintiff's recovery for injuries suffered in an intentional tort."

Notwithstanding its ruling, the Beauchamp court was concerned with the problems of proving intent in the unique setting of toxic tort injuries suffered in the workplace. In explaining this difficulty, given the "substantial certainty" test of intent, the court stated:

The problem with the substantial certainty test is that it is difficult to draw the line between substantial certainty and substantial risk. In applying the substantial certainty test, some courts have confused intentional, reckless, and even negligent misconduct, and therefore blurred the line between intentional and accidental injuries. The true intentional tort standard keep [sic] the distinction clear.

In a footnote amplifying this observation, the court continued its analysis as follows:

Still a further complication is the possible difference between the standard or definition of intentional tort and the evidence that would constitute a prima facie case.

The question presented is a subset of a larger problem which the Legislature has failed to address, namely, compensation for a nondisabling injury, that is, an injury that does not affect the employees' ability to work — for example, sterilization, impotency, disfigurement. It would be appropriate for the Legislature to address this larger problem and general liability for toxic tort injury which is different in kind from a punch in the nose. The intentional tort standards governing liability for punches in the nose are not readily transferred to toxic torts.

Alluding to a recent Illinois criminal case, People v. Film Recovery Systems, Inc., where corporate officers had been

406. Id. at 886-87 (citation omitted).
407. Id. at 893 (footnote omitted).
408. Id. n.69 (emphasis added).
409. Id. at 892 (citing Gareth C. Leviton, Policy Considerations in Corporate Criminal Prosecutions After People v. Film Recovery Systems, Inc., 1986 Nat'l Insti-
convicted of involuntary manslaughter for exposing foreign-speaking workers to hydrogen cyanide gas used in the process of recovering silver from film negatives, the Beuchamp court opined that in such toxic substance fact patterns, where a worker seeks to pursue an intentional tort remedy, a strict interpretation of the "intent" requirement would "allow [ ] employers to injure and even kill employees and suffer only workers' compensation damages so long as the employer did not specifically intend to hurt the worker." This was unacceptable to the court, for social policy reasons, because "[p]rohibiting a civil action in such a case 'would allow a corporation to 'cost-out' an investment decision to kill workers.'" Accordingly, the Supreme Court of Michigan stressed that in "an effort to avoid the misapplication of [the substantial certainty] test," the meaning of "substantial certainty should not be equated with substantial likelihood."

The United States District Court for the Eastern District of Michigan in Allor v. Amicon Corp. partially remanded an action that had been removed by the defendants to federal court. The litigation involved a suit by numerous employees against their employers, charging that the employers had made fraudulent misrepresentations as to the safety of the workplace. Other defendants included the manufacturers and distributors of various toxic substances to which the plaintiffs were allegedly exposed. The district court held that the portion of the complaint alleging that the plaintiffs' employers had tortiously exposed their employees to toxic substances required interpretation of the contractual terms of a collective bargaining agreement and was, thereby, preempted by federal labor law, and properly removable to federal court. However, the court remanded the remaining allegations against

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410. 398 N.W.2d at 893.
411. Id. (footnote omitted; citations omitted).
412. Id.
414. Id. at 328-29.
415. Id. at 328-31.
the toxic substances manufacturers, deeming it inappropriate to exercise pendent jurisdiction where complete diversity did not exist.\textsuperscript{416} In support of its decision to remand the counts directed at the manufacturers, the court reasoned that a "mix of federal and state claims, with different standards and law being applied depending upon who the defendant is would certainly be confusing to the jury. In addition, the area of mass toxic tort litigation is a new and unsettled area of state law, and it is prudent to leave the development of this law to the state courts."\textsuperscript{417}

In \textit{Brewer v. Monsanto Corp.},\textsuperscript{418} employees and family members brought suit against successive owners of an electronic component plant, based on allegations of contamination of the plant site by toxic chemicals. The key issues faced by the district court, on motions to dismiss filed by two of the three defendants, were whether the action was barred by Tennessee's workers' compensation exclusivity provision and whether the plaintiffs stated a cause of action against the prior owner of the site for nuisance. On the first major issue, the court determined that a civil tort action was not precluded by the state workers' compensation statute. On the second major question, the court held that the employees and family members stated a nuisance cause of action against the prior plant owner, referencing a book on toxic torts for the proposition that "[a] prior owner who has created a nuisance does not escape liability simply by selling the property."\textsuperscript{419} As additional policy support for this ruling, the court cited CERCLA whereby "past owners may be held liable if they were partially responsible for hazardous substance contamination."\textsuperscript{420}

\begin{itemize}
\item \textsuperscript{416} Id. at 331-35.
\item \textsuperscript{417} Id. at 334. In a footnote in support of this assertion, the court noted "[f]or example, Michigan law is conflicting as to the accrual date of toxic tort causes of action for the purpose of the running of the statute of limitations." Id. n.8 (noting split in Michigan decisions between date of injury and date of discovery).
\item \textsuperscript{418} 644 F. Supp. 1267 (M.D. Tenn. 1986).
\item \textsuperscript{419} Id. at 1278 (citing GARY Z. NOTHSTEIN, \textit{Theories of Liability in Toxic Torts: Litigation of Hazardous Substances Cases} 326 (1984)).
\item \textsuperscript{420} Id. (citing 42 U.S.C. § 9601).
\end{itemize}
The Supreme Court of New Jersey addressed an intentional occupational exposure toxic tort case in *Vispisiano v. Ashland Chemical Co.* That case involved a former toxic-waste disposal site employee who brought an action against suppliers, processors, manufacturers, and distributors of toxic waste materials. John Vispisiano alleged personal injury from exposure to these substances. The trial court issued summary judgment for the defendants on the basis of the statute of limitations; the intermediate appellate court affirmed. On certification, the Supreme Court of New Jersey held that, given Vispisiano's history of migraine headaches, the role of stress in causing these ailments, the fact that the medication played a part in the cure, and that his migraines stopped after he left employment at the toxic waste facility was insufficient to place him on notice that exposure to chemicals might have caused his symptoms.

In examining the dynamics of the "discovery rule" in toxic tort litigation, the New Jersey Supreme Court engaged in the following probing and comprehensive analysis:

Among the factors to which courts look in deciding whether a plaintiff is equitably entitled to the benefit of the "discovery rule" are the nature of the injury and the difficulty inherent in discovering certain types of injuries. ... *In the typical toxic tort situation those obviously interrelated factors may radically alter the balance of interests.*

*Toxic tort victims do not become aware of their injuries until decades after the tortious act.* Thus, not simply the occasional plaintiff, but instead an entire class of plaintiffs is deprived of its claims by a toxic tort statute of limitations that bars suit before injuries so much as manifest themselves. Such a deprivation cannot be justified on the traditional ground that the victims "slept on their rights," until after their claims were barred. *Nor can a toxic tortfeasor demand psychological protection from "surprise" suits brought against him decades after the tortious act when, like many asbestos manufacturers in*

the 1950s, he was or should have been aware that he was exposing others to a substance that would cause a statistically predictable incidence of latent disease.\textsuperscript{423}

From a policy standpoint, the Vispisiano court went on to observe that "[n]ot the least reason for difficulty in determining the nature and source of toxic tort injuries is the fact that there are approximately 5,000,000 organic chemicals and 500,000 inorganic substances used today, with another 10,000 new chemicals synthesized in the research labs each year, of which about 1000 enter commerce."\textsuperscript{428} Moreover, "[i]n a standard accident tort action, the injury, its cause, and its origin are easy to identify. In the toxic tort arena, the medically diagnosed injury is the first in a series of difficult facts to discover and allege. The latency period associated with many toxic substance diseases is a major hurdle in the causation chain."\textsuperscript{424} In reinstating the plaintiff's cause of action, the Vispisiano court concluded that "the courts below attached insufficient weight to the inherent difficulty in diagnosing an injury caused by toxic chemicals as well as in discovering the cause of such an injury."\textsuperscript{426}

VI. Product Liability Cases

\textit{Nigh v. Dow Chemical Co.}\textsuperscript{426} — a 1986 federal diversity case lodged in the United States District Court for the Western District of Wisconsin — combined factual elements of both an occupational exposure dispute and a product liability action. Lawrence Nigh, among other plaintiffs, sought personal injury damages against manufacturers of liquid grain fumigants to which he was exposed while employed at Cargill Grain Elevator. At trial, Nigh prevailed against two manufacturers, Weevil-Cide and Research Products, in the total

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423. \textit{Id.} at 73 (citing Nothstein, \textit{supra} note 378, § 1.01).
424. \textit{Id.} at 73 (quoting Nothstein \textit{supra} note 378, §§ 4.01, 13.04).
425. \textit{Id.} at 77.
\end{footnote}
\end{footnotesize}
amount of $104,000. Other plaintiffs recovered nothing; remaining defendants, including Dow Chemical Co., were dismissed.\textsuperscript{427} In the course of ruling on the parties’ post-trial motions, the trial court focused on two aspects of chemical poisoning. Initially, the court rejected the arguments of Weevil-Cide and Research Products in support of their motions for a judgment n.o.v., that Nigh’s injuries were entirely due to workplace exposures in the 1960s, prior to the time that the defendants had sold fumigants to Nigh’s employer. The court supported its decision on this point by referring to “second collision” automobile cases whereby indivisible causation is attributed to a later tortfeasor.\textsuperscript{428} The court also rejected Nigh’s motion for a new trial as to Dow, basing its conclusion on a prediction that the Supreme Court of Wisconsin would adopt the toxic tort “bulk supplier doctrine.”\textsuperscript{429} According to the court’s reasoning, while Dow originally manufactured the fumigant, this product was incorporated into the final product sold to Nigh’s employer under Weevil-Cide’s label. The bulk supplier doctrine, as construed by the court, “is basically a recognition of the fact that a manufacturer . . . may be unable to control the packaging, and therefore the warning communicated to the ultimate user, when the labels of an intermediate seller are affixed to the product.”\textsuperscript{430} Thus, the court concluded that “[a] manufacturer who cannot control the content of the warning past to the ultimate user can hardly be guilty of failing to exercise ordinary care with respect to such warnings or of producing an unreasonably dangerous product, the dangerousness of which is caused by inadequate warnings that it did not give and could not improve.”\textsuperscript{431}

The United States Court of Appeals for the Ninth Circuit decided \textit{In re Swine Flu Products Liability Litigation}\textsuperscript{432} in 1985. Consistent with the holdings of other toxic tort cases decided during the first part of the 1980s — which had

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\textsuperscript{427} Id. at 1514.
\textsuperscript{428} Id. at 1515.
\textsuperscript{429} Id. at 1516 (citing Nothstein, \textit{supra} note 378, § 14.09).
\textsuperscript{430} Id.
\textsuperscript{431} Id. at 1517.
\textsuperscript{432} 764 F.2d 637 (9th Cir. 1985).
crafted accrual rules recognizing the difficulty of plaintiffs knowing when their latent injuries commenced — the Ninth Circuit held that a husband’s cause of action against the U.S. Public Health Service accrued at the time when he discovered, or should have discovered, the cause of his wife’s death. In a case involving a husband’s wrongful death claim for his wife’s death due to Guillain-Barre Syndrome (GBS), allegedly contracted from an inoculation for Swine Flu, the court observed the policy for a discovery rule in a statutory tort claim against the government: “On the date of [the wife’s] death the medical and general communities were still ascertaining whether a GBS victim even had any rights against the . . . administrator of the swine flu vaccine. We do not ignore the traditional concerns that a claim be time-barred when ‘evidence has been lost, memories have faded, and witnesses have disappeared’. . . . But under the facts, fundamental fairness concerns must prevail.”

Two federal district court cases decided in 1986 resolved questions of the use of expert testimony in toxic tort product liability litigation. Ramirez v. Richardson-Merrell Inc. — another pharmaceutical case — rejected the manufacturer’s motion for summary judgment. The manufacturers’ motion was based on an assertion that plaintiff’s proposed expert testimony on the causative link between her mother’s ingestion of the prescription drug Bendectin was inadmissible because — like the district court’s approach in the Agent Orange toxic tort litigation — “the material upon which plaintiffs’ experts” would base their opinions is inadmissible under Federal Rules of Evidence 703 and “not of a type reasonably relied on by

433. Id. at 639-40 (citations omitted) (footnote citing The Fairness and Constitutionality of Statute of Limitations for Toxic Tort Suits, supra note 422, at 1684-90 (1983)). Cf. Engel v. Merrell Dow Pharmaceuticals, Inc., 1987 WL 4769 (W.D.N.Y. Apr. 20, 1987) (inapplicability of state toxic tort discovery and retroactivity statute of limitation to pharmaceutical product liability suit); Greene v. Abbott Lab., 521 N.Y.S.2d 382, 137 Misc. 2d 424 (1987) (partial summary judgment grants to drug manufacturer where (1) the wrongful death claim “could have been brought” within the meaning of the exclusion in the toxic tort statutory revival provision and (2) allegations concerning manufacturers’ misleading consumers and breaching their duty to warn of risks associated with DES were insufficient to extend statute of limitations).

experts in the field." The United States District Court for the Eastern District of Pennsylvania, in *Ramirez*, however, found the defendant’s argument unpersuasive because the Third Circuit had “established a liberal approach to determining what constitutes evidence reasonably relied upon by experts.”

Conversely, in *Viterbo v. Dow Chemical Co.*, a herbicide toxic tort dispute, the federal trial court held that summary judgment should be granted to the herbicide manufacturer because the plaintiff’s proffered expert testimony was so lacking in probative weight or value that exclusion was required. Citing one of Judge Weinstein’s opinions applying Federal Rules of Evidence 703 in the *Agent Orange Litigation*, the *Viterbo* court reasoned that it:

must determine whether the data relied upon by [plaintiffs’ experts] is of a type reasonably relied upon by experts in the particular field in forming opinions, or inferences upon a subject. A rigorous examination is especially important in the toxic tort context, where presentation to the trier of theories of causation depends almost entirely upon expert testimony. This examination is required because courts have afforded experts wide latitude in picking and choosing the sources on which to base opinions. Rule 703 nonetheless requires courts to examine the reliability of those sources.

In 1987, a New Jersey intermediate appellate court issued an opinion in *Shackil v. Lederle Laboratories*. This case involved a suit by a child and her parents against the manufacturers of the pertussis antigen component of a diphtheria, per-
tussis and tetanus toxoid vaccine. The plaintiffs asserted four legal theories — negligence, breach of warranty, misrepresentation, and strict liability — based on the child's seizure disorder in reaction to the vaccine, which led to her chronic encephalopathy and severe mental retardation. In reversing the trial court's dismissal order, the New Jersey intermediate appellate court imposed a risk-modified market-share collective liability standard on the DPT vaccine manufacturers. Citing the Supreme Court of New Jersey's "recent toxic tort case" in Ayers v. Jackson Township, the appellate court noted in dictum that in mass exposure litigation where identification of the culpable defendant presents a causation problem, resort might be had to the alternative liability theory expressed in [the Supreme Court of California's decision in] Summers v. Tice . . . a case in which plaintiff could not prove which defendant was responsible for his injury, and under those special facts the burden of proof was placed upon defendants to disprove causation.

On certification to the Supreme Court of New Jersey, however, the appellate court's decision was reversed on grounds that imposing collective responsibility on DPT manufacturers was inappropriate where each manufacturer used a different manufacturing process and there was no indication of a tacit common plan to produce the vaccine among the defendants.

VII. Insurance Issues

In a few cases decided during the early to mid-1980s, courts addressed insurance law issues in the context of what they viewed as toxic tort litigation. For example, in CPS Chemical Co., Inc. v. Continental Insurance Co., a New Jersey trial court rendered a summary judgment for an in-

441. Id. at 1298 (citing 525 A.2d 287 (N.J. 1987)).
442. Id. (citing 199 P.2d 1 (Cal. 1948)).
sured chemical company, which required the insurance company to provide coverage under comprehensive general liability policies. Specifically, the court held that alleged illegal dumping of wastes by a disposal company hired by the insured chemical company was an "accident" within the generally accepted definition of that term; that there was an "occurrence" within the policy periods, notwithstanding actual discovery of environmental damage after expiration of the policy; and, that no exclusions applied to coverage. In the course of reaching its determination, the court cited an article on the intersection between toxic tort actions and insurance coverage, while "recogniz[ing] the considerable controversy respecting the date when duty to indemnify is triggered when long periods of time pass between the initial accident or exposure, manifestation, and ultimate or long-continued damages." Indeed, this controversy in interpreting the duty led to a reversal of the court's decision on appeal to the intermediate appellate court.

Claussen v. Aetna Casualty & Surety Co. was a factually similar case to the CPS Chemical case. The federal trial court in Claussen, however, interpreted the relevant insurance policies as precluding coverage under general comprehensive liability policies, because of a pollution exclusion clause contained in each policy. Noting a Harvard Law Review analysis that discussed "'the sharp increase in environmental litigation and the court's broad construction of insurance policies [which] have combined to shock the insurance industry,'" the court went on to construe the relevant insurance policy at bar. The court emphasized that "'[o]nly where the release, escape or dispersal of contaminants is 'sudden and accidental' would the insurance policies issued by Aetna apply.'" Yet, the facts precluded coverage since plaintiff's "trucks were pouring toxic waste into . . . [the contaminated area] for . . .
proximately nine years,” far from “sudden and accidental.”

In a similar factual context, the federal district court in *CTS Printex, Inc. v. American Motorists Insurance Co.* interpreted the applicability of an insurance policy to “a series of toxic tort lawsuits filed against plaintiff.” Since the plaintiff’s insurance suit, however, alleged wrongful conduct by a number of unknown parties — designated as “Doe defendants” in the complaint, in addition to wrongful denial of coverage by the insurance company — the court remanded the case to state court because the pertinent pleading rules destroyed federal diversity jurisdiction.

**Conclusion**

During the time period of 1979-87, American courts in a wide variety of cases referred to the term “toxic tort” in the course of their opinions. Starting with the seminal *Agent Orange Litigation,* courts employed “toxic tort” terminology to discuss a variety of disputes entailing environmental exposure cases, occupational exposure disputes, product liability actions, and cases involving insurance claims. Moreover, because of their resolution in the early 1980s and the widely publicized nature of the underlying facts, toxic tort cases involving Agent Orange, asbestos and atomic radiation received special emphasis.

During this nascent period of judicial interpretation of the meaning of toxic tort law, courts made their decisions in a context characterized by tension between two varying approaches: the tendency to treat toxic tort cases as involving just another application of traditional principles of tort law, on the one hand, and the propensity to use or develop special rules, principles, or doctrines because of the perceived unique nature of toxic tort cases, on the other hand. As toxic tort law continues to develop in the 1990s, it appears unlikely that this

450. Id.
452. Id. at 1273.
453. See supra notes 14-179 and accompanying text.
basic jurisprudential tension will be resolved by the courts anytime soon.