

SUPERFUND SETTLEMENTS PROJECT

Comments of the Superfund Settlements Project On EPA's Draft "Superfund Benefits Analysis"

The Superfund Settlements Project ("SSP") is pleased to submit these comments on the Draft Superfund Benefits Analysis ("the Draft Analysis") prepared by EPA's contractor, E² Inc., and now undergoing review by a panel of the Science Advisory Board ("SAB"). 70 Fed. Reg. 6436 (Feb. 7, 2005). In addition, the SSP also respectfully requests the opportunity to submit additional written comments within a reasonable period of time.

Executive Summary

There is no question that the Superfund program provides significant benefits. Because those benefits are purchased at a high price,¹ with annual aggregate resource commitments of several billion dollars by the private and public sectors combined, it is important to look closely at those benefits. Thus, the SSP strongly supports EPA's stated goals of (1) improving public understanding of the various benefits provided by the Superfund program and (2) where possible, quantifying those benefits.

Unfortunately, we believe the Draft Analysis does not advance those goals. There are four principal reasons for this failure.

First, the Draft Analysis is purely retrospective. It seeks to quantify the "sunk" benefits that the Superfund program provided over the past 25 years, rather than assessing the benefits Superfund currently provides or the benefits it is expected to provide in the future. This purely retrospective focus seems to disregard the Science Advisory Board's recent comment (in the context of a benefits assessment of the RCRA and UST programs) noting the SAB's "skepticism about the value of a retrospective analysis and its accuracy."² It would be far more useful to analyze Superfund's current and future benefits, because the results of that analysis could directly influence policy decisions about the future of the program.

¹ See J. Quarles & M. Steinberg, "The Superfund Program at its 20th Anniversary," 31 Env'tl L. Rptr. News & Analysis (ELI) 10706, 10708 (June 2001) ("it must be recognized that the [Superfund] mechanism is inherently highly inefficient.") (footnote omitted).

² Underground Storage Tanks (UST) Cleanup & Resource Conservation & Recovery Act (RCRA) Subtitle C Program Benefits, Costs, & Impacts (BCI) Assessments: An SAB Advisory at p. 23 (2002). The SAB's prior observation is actually quoted in the Draft Analysis, but apparently not taken to heart. Draft Analysis at p. 2-12.

Second, the Draft Analysis attempts to describe the benefits produced at over 1,000 Superfund NPL sites without obtaining actual data about those sites. For example, the author notes that “it would be prohibitively expensive to purchase [actual home sales data] for any large number of [NPL] sites,” Draft Analysis at p. 4-2, but does not explain the decision not to obtain any home sales data for any NPL sites at all. This decision makes the Draft Analysis a highly conjectural document, with little empirical support for its estimates.

Third, perhaps because the author had no real data to work with, the 236-page Draft Analysis includes a considerable amount of text that is of questionable relevance. The Draft Analysis is also unnecessarily repetitive. Moreover, it is so laden with jargon from the field of economics that most members of the public will be unwilling to read it and unable to understand it. As a result, the document fails to comply with EPA’s *Guidelines for Preparing Economic Analyses*, § 10.2, (2000), which states in pertinent part: **“Presentations of economic analyses should strive for maximum clarity and transparency of all aspects of the assessments.”**

Fourth, and last, the numerical point estimate of benefits lacks the rigor and transparency that are essential if the public is to have any confidence in the Draft Analysis. For example, the \$63 billion “best” point estimate is derived from an assumed 7.4% increase in property values at over six million single-family homes estimated to be near one thousand Superfund sites. No data are presented that support a claim of this magnitude.

For all of these reasons, the SSP believes that unless the Draft Analysis is substantially revised based on real data, it cannot be held out to the public as an accurate or reliable assessment of the benefits provided by the Superfund program. Moreover, it would be most productive for the revised analysis to focus on Superfund’s current and future benefits, where data collection should be easier and where policy decisions can still be altered based on the results of the analysis, rather than on past benefits.

Background

The SSP is a not-for-profit association of major companies from various sectors of American industry. It was organized in 1987 in order to help improve the effectiveness of the Superfund program by encouraging settlements, streamlining the settlement process, and reducing transaction costs for all concerned.

The members of the SSP share an extraordinary degree of practical, hands-on experience with the Superfund program. These companies have been involved at hundreds of Superfund sites across the country over the last 25 years, and have spent well over \$6 billion for site studies and cleanup work.

Representatives of the SSP have testified before Congress on numerous occasions regarding various aspects of the Superfund program. The SSP has also played an active

leadership role in the national policy debate over many Superfund issues, including participation in the NACEPT process from 2002 to 2004, and it has been a strong supporter of EPA's Superfund Administrative Reforms since they were first announced in 1995.

Introduction

After 25 years of implementation, it is timely and important to describe, clearly and with defensible quantification, the benefits provided by the Superfund program. It is also important that the benefits described be those related to the statutory goals, i.e., protection of human health and the environment, and that the benefits quantified be fairly attributable to Superfund and not to other causes. The Draft Analysis therefore must be reviewed carefully by the Board.

Unfortunately, the Draft Analysis does not provide a clear description of Superfund's benefits. At 236 pages, the Draft Analysis is verbose, discursive, and largely anecdotal. It is brimming with extraneous and overtly flattering descriptions of Superfund activities, with seemingly ad hoc "case examples" unrelated to the quantification of benefits ostensibly being illustrated, and with policy discussions only vaguely related to articulation or estimation of Superfund benefits. It would be far better to have a 20-page report with a clear and concise presentation of Superfund's benefits.

Nor does the Draft Analysis provide a defensible quantification of the benefits that it describes. The \$63 billion point estimate may or may not be the right number, but the Draft Analysis fails to make the case that it is. The Draft Analysis "assumes" that Superfund produced price increases of 7.4% at some six million single-family homes that are estimated to exist near some one thousand NPL sites, all based on a handful of studies that found modest effects at a handful of actual NPL sites,

We are not economists by training. We may well have misunderstood some important aspects of the Draft Analysis, in part because it is not clearly presented. Perhaps there is a persuasive case to be made in plain English that Superfund has actually raised the value of millions of American homes by some \$63 billion. But if so, the Draft Analysis fails to make that case, and gives no reason to believe that the authors will be able to obtain the real data needed to provide a reliable analysis.

In the body of these comments, we first address a global issue having to do with the composition of the review panel. We then turn to a chapter-by-chapter analysis.

Need for Expansion of the Review Panel

Superfund is a complex program, with a high degree of variability because of its lack of centralized decisionmaking and its site-specific approach to solving problems. Despite

EPA's issuance of hundreds of guidance documents over the last 25 years, much of how Superfund actually functions simply isn't written down anywhere.

As a result, in order to conduct an effective review of the Draft Analysis, the panel must have expertise not only in such fields as risk assessment and benefit-cost analysis, but also in the site-specific operation of the Superfund program. While non-Superfund expertise is helpful, it is not sufficient. And while knowledge of such issues as Superfund budgeting and funding is helpful, it cannot substitute for experience at the project level. Given that 70% of all cleanups are performed by PRPs, the necessary experience rests largely within the PRP community, which at present is not represented on the panel.

In this case, most of the panel members come from the academic community. Two others are employed by a nonprofit organization that engages in research on environmental issues. Apparently only one panel member – Timothy Thompson – has done site-specific work, and it appears that he has not worked on any Superfund site from start to finish, including implementation of the remedy.

The panel is therefore lacking members who have actual first-hand experience with the benefits (and the costs) of Superfund at actual sites. To remedy this deficiency, the SAB should add to the panel at least one experienced member of the PRP community before any further steps are taken with regard to the Draft Analysis.

Chapter-by-Chapter Comments on the Draft Analysis

We now turn to comments on the individual chapters of the Draft Analysis.

Chapter 1: INTRODUCTION

Original research: The author states early on in Chapter 1 that “[o]riginal research was conducted for the current study,” Draft Analysis at p. 1-2, but does not say what that research was, or who conducted it, or what conclusion(s) it reached. Two hundred and thirty-six pages later, at the end of Chapter 7, the reader still does not know what “original research” was performed and so has no ability to evaluate the results of that research. This is symptomatic of the document's lack of clarity and transparency.

Health benefits: The prefatory discussion in Chapter 1 contains some sweeping statements about Superfund reducing cancer and other human health effects. No evidence is offered that these health benefits were actually achieved at any identified sites, or that the Superfund program was the cause of those benefits. Instead, the tone is set for uncritical acceptance of the claim that Superfund has achieved massive benefits by reducing threats to human health.

For example, the Draft Analysis states:

[T]he Superfund program has led to many benefits. These include reduced human health risks for cancer, lead poisoning, acute injuries involving hazardous substances, and probably birth defects.

Draft Analysis at p. 1-2.

This kind of broad and unsupported generalization is unexpected and unprofessional in a document reviewed by the SAB, particularly when the document itself later goes on to acknowledge that very little meaningful information is available about health risk reductions at Superfund sites. *See, e.g.*, Draft Analysis at p. 3-13 (site-specific risk assessments “not readily accessible to researchers, nor is detailed information [from those risk assessments] available in any centralized location”).

“Fundamental” benefits: Not only are Superfund’s risk reduction benefits not well-documented in the literature, but most of the benefits described in the Draft Analysis are not the benefits that Superfund was intended to provide. Even a quick perusal of CERCLA reveals that Superfund’s statutory goal is protection of human health and the environment. *See, e.g.*, CERCLA §§ 101(14), 104(a)(1), 104(b), 105(a)(8)(A), 105(c), 106(a), 121(a), 121(d)(1). Quantification of human health benefits and ecological benefits from Superfund is therefore a highly appropriate endeavor. It is particularly important to measure Superfund’s benefits by the degree to which it reduces actual risks to health and the environment, as opposed to “perceived” risks.

On the other hand, Superfund is not intended as a federal economic development program. The modest benefits to community redevelopment, such as those under the 2002 brownfields amendments, are decidedly tangential to the statutory goal of Superfund.³

Unfortunately, the main quantification of benefits in the Draft Analysis looks at increases in housing prices that may be associated with Superfund action at NPL sites. This focus is out of step with the statutory purpose of Superfund, which is the protection of health and environment, not the enhancement of real estate values.

Moreover, this aspect of the Draft Analysis can have a distorting effect on how the Superfund program operates in the future. If the easiest way to get credit for “benefits” is

³ Indeed, those benefits are achieved primarily through grants and loans to state and local governments, which encourage and oversee the cleanups, rather than through direct federal action. These benefits are likely claimed by state and local government as benefits of their own brownfields and voluntary cleanup programs. To count them as Superfund benefits would thus be double-counting.

by causing property values to rise, this would encourage the Superfund program to focus on sites with the highest economic development potential, rather than those posing the highest risks to human health. This would be contrary to the express direction of Congress, CERCLA § 104(a)(1) (“The President shall give primary attention to those releases which the President deems may present a public health threat.”).

“Embedded” benefits: The Draft Analysis appropriately relegates “embedded” benefits to indirect benefit status. But some of the embedded benefits tallied here are more appropriate than others.

Superfund’s harsh and unfair liability scheme and its unpredictable remedy selection criteria certainly act as a deterrent to waste production and an incentive to good waste handling. Also, Superfund staff are well trained in emergency response.

But it is not clear why Superfund – as opposed to zoning hearings or local educational initiatives – is deemed valuable as an “empowerment” tool. The same community dialogue and understanding can be developed when a new road or park is built or a variance is given for a high-rise apartment. It is inappropriate to credit Superfund with a quantified “benefit” because it is one of the many things that people in a community talk about.

The discussion of international benefits is highly attenuated at best. No other countries have adopted legal schemes similar to Superfund, and overseas response training focuses on response to physical circumstances, not the extravagantly expensive Superfund apparatus.

Finally, the discussion of Homeland Security must be pondered very carefully in order to avoid exploitation of a popular topic. There is some technology and some staff expertise transferable from Superfund project work to Homeland Security response, but it is limited and usually equally attributable to other programs (e. g., Army Corps and Coast Guard response work, and other statutes like RCRA and the Clean Water Act).

“Approaches”: With regard to Superfund’s activities and benefits, the Draft Analysis considers six “approaches,” of which response actions is only one, and it distinguishes between fundamental benefits and embedded benefits. But this list of “approaches” again seemingly ignores the fact that Superfund’s statutory goal is protection of health and the environment. *See, e.g.*, CERCLA §§ 101(14), 104(a)(1), 104(b), 105(a)(8)(A), 105(c), 106(a), 121(a), 121(d)(1).

This statutory goal is achieved through response actions. Other so-called “approaches,” such as enforcement (to help obtain a response), community involvement (to help understand the response), training (to help EPA oversee the response), and research (presumably to improve future responses) are all inherently ancillary. As mentioned

above, the categories of “amenities” and “materials” overlap, and they are not Superfund’s mandate.

Other laws and regulations: Chapter 1 also attributes to Superfund various technology, training and community protection benefits that are more directly attributable to other programs, most notably the RCRA Subtitle C hazardous waste program. It is particularly objectionable for the author to attribute to Superfund all of the post-1980 statutory and regulatory advances that were actually achieved by other programs.

Thus, the author writes that “it is necessary to consider a without-Superfund scenario that assumes that no new policies relating to abandoned hazardous waste sites were established in 1980 or subsequently.” Draft Analysis at p. 1-18. In other words, without Superfund, waste management would still be unregulated. This approach ignores such crucial developments as the Hazardous and Solid Waste Amendments of 1984, the 1990 amendments to the Clean Air Act, EPA’s TSCA PCB rulemakings, brownfields legislation, and all post-1980 state laws. Given the vast literature describing each of these enactments and their implementation, it is difficult to understand why the author decided to ignore them and credit Superfund with all of their benefits.

In a similar vein, Chapter 1 loosely references topics such as environmental justice and consultation with state, local, and tribal governments. It then assigns even more benefits to Superfund -- “to the degree that the Superfund program achieves these goals” – without any evidence that the goals are actually achieved, or that they are goals of the Superfund statute in the first place, which they are not. Draft Analysis at p. 1-6.

One aspect of the Chapter 1 discussion is critically important: the acknowledgement that for a hazardous substance to present a health risk, a completed exposure pathway must exist. Draft Analysis at p. 1-5. Unfortunately, this does not prevent the author from later attributing vast benefits to the Superfund program in Chapters 4 and 5, based on proximity as a proxy for actual exposure.

Superfund spending: The Draft Analysis postulates that as much as 90 percent of all resources spent under CERCLA and SARA are for “responses.” Draft Analysis at p. 1-8. Yet there is a well-developed literature documenting the fact that much of EPA’s Superfund budget is actually spent on overhead, administrative support, oversight, transaction costs, and other non-response categories. The author’s claim that EPA spends \$1 billion annually on activities “directly related to response” suggests that the author did not engage in any critical analysis of the actual Superfund budget.

Finally, the author’s brief summary of Hamilton and Viscusi’s work is a good beginning for a cost-benefit discussion about Superfund. It should be expanded. If the expansive definition of benefits is retained, then the costs associated with Superfund should include, at a minimum, the following: response costs, oversight costs (both public and private), transaction costs, negative impacts on business and product development, job loss,

negative impacts of industrial relocation overseas in response to Superfund's disproportionate liabilities, the effects on the national trade deficit, the consequent negative impact on the stock market, etc.

Chapter 2: LITERATURE REVIEW

Chapter 2, entitled "Literature Review," discusses some of the published literature relating to the Superfund program, its costs, and its benefits. It draws few conclusions, and so its significance may be quite limited. Unfortunately, Chapter 2 appears to deal with the existing literature in a somewhat selective and one-sided manner.

National Research Council report: For example, chapter 2 discusses "Environmental Epidemiology," the landmark 1991 report on health effects issued by the National Research Council ("NRC"). But the Draft Analysis gets off on the wrong foot by failing to acknowledge the central finding of the NRC.

The NRC presented its own primary conclusion as follows:

CONCLUSIONS

Whether Superfund and other hazardous-waste programs actually protect human health is a critical question with respect to federal and state efforts to clean up hazardous-waste sites. To answer this question requires information on the scope of potential and actual human exposures to hazardous wastes and about the health effects that could be associated with these exposures. Based on its review of the published literature on the subject, the committee finds that the question cannot be answered.

Environmental Epidemiology at 19 (emphasis supplied).

This clearly stated conclusion by the NRC is distorted almost beyond recognition in the Draft Analysis, which merely notes that "the data then available made it impossible to determine the effect of regulation." Draft Analysis at p. 2-3 (emphasis supplied). The threshold question addressed by the NRC was not "the effect of regulation," but rather the nature and extent of any public health hazard. The Draft Analysis fails to present the NRC's conclusion on that question in an accurate and transparent manner.

Chapter 2 goes on to describe the NRC report as having "an exclusive focus on National Priorities List (NPL) sites." Draft Analysis at p. 2-4. But the NRC report had no such exclusive focus. Neither the question addressed, nor the literature cited, nor the conclusion drawn, focused exclusively on NPL sites. This broader scope is quite evident from the conclusion quoted above, which talks about "Superfund and other hazardous-waste programs."

ATSDR health assessments: Next, the Draft Analysis discusses the 1999 report on 60 waste disposal sites published by Dr. Johnson, formerly of the ATSDR. According to the Draft Analysis, “Two percent of these sites present an ‘urgent hazard,’ 21% present a ‘hazard,’ and the remainder are less hazardous or not at all.” Draft Analysis at 2-4. Another way to present Dr. Johnson’s finding would be to say that more than three-quarters of the sites were found to present little or no hazard. But instead of focusing on the “big picture,” which would suggest that Superfund’s benefits may be limited, Chapter 2 emphasizes the 2% of sites that present an “urgent hazard.” It then immediately goes on to claim (without citation to any supporting evidence) that the ATSDR’s studies “tend to understate the total risk of a site.”

The Draft Analysis then quotes from Dr. Johnson’s report:

The most compelling health findings are those from studies of reproductive outcomes [i.e., birth defects and low birth weight] in populations living near certain kinds of hazardous waste sites.

Draft Analysis at p. 2-5 (emphasis supplied). Unfortunately, the Draft Analysis never tells us which “certain kinds” of sites were implicated by Dr. Johnson’s research. What is more, the Draft Analysis later goes on (in chapter 5) to propose transferring Dr. Johnson’s findings about “certain kinds” of sites to all Superfund NPL sites, without even acknowledging, much less justifying, such a transfer.

After reviewing a third study in similar one-sided fashion, Chapter 2 then sums up as follows:

Overall, these three reviews indicate that there is a lack of evidence about the health effects of uncontrolled releases of hazardous substances, although there is relatively more evidence for increased rates of congenital malformation than for cancer or other diseases. The major problem is a lack of accessible high-quality exposure data Furthermore, it is not clear if this problem is likely to be solved.

Draft Analysis at p. 2-4.

Despite this conclusion, the Draft Analysis later (in Chapter 5) proposes to bypass this “lack of evidence” and ascribe benefits to Superfund for hypothetical cases of illness that were supposedly avoided by EPA response actions.

Given the reliance upon property value transfer as a measure of Superfund’s benefits, it is unclear whether the persistent one-sided treatment of the literature actually affects the outcome of the Draft Analysis. What is clear is that the document’s transparency and credibility are diminished.

Similarly, Chapter 2 rebukes the late Professor Aaron Wildavsky of the University of California, whose 1995 book (published by Harvard University Press) argued that, inter alia, Superfund sites posed relatively low risks to human health. In Chapter 2, the author goes out of his way to add: “Even harsh critics of the Superfund program believe the removal program is effective” The only citation offered here is to the late Professor Wildavsky’s book.

This leaves the reader wondering: What about Professor Wildavsky’s book was “harsh”? Does the author mean to imply that Professor Wildavsky was not only “harsh,” but also “wrong”? If so, what exactly was he wrong about? And what does any of this have to do with Chapter 2’s discussion of removal actions?

No answers to these questions can be found in the Draft Analysis. The reader can only conclude that the author disapproves of (some? all?) of Professor Wildavsky’s writings because they were “harsh” in discussing Superfund. This sensitivity is damaging to the credibility of the Draft Analysis. Instead of reviewing the literature with objectivity and balance, EPA’s contractor apparently feels provoked by the views of the late Professor Wildavsky, yet does not directly dispute any of those views. We believe that this author should not be working on this project.

Case studies: Finally, Chapter 2 concludes with the first of several case studies that appear in this and subsequent chapters of the Draft Analysis. It is unclear what these case studies contribute, if anything, to the Draft Analysis. Certainly the case studies provide no documentation or quantification of any benefits at any of the sites they discuss. Simply listing the contaminants, describing site use, and summarizing the remedy chosen by EPA does not bridge the gap left by the Superfund program’s failure to document completed exposure routes, if any, and to quantify the health and environmental benefits of cleanup.

The SSP recommends that the case studies be deleted from the final Analysis. Alternatively, if it is deemed important to include case studies in the final Analysis, then their significance must be explained and the factual recitals about those sites should be validated by checking with other persons knowledgeable about the sites, such as the state agency, the local community, the PRPs, etc.

Chapter 3: CHARACTERIZATION OF SUPERFUND RESPONSES

Chapter 3 begins with a lengthy, meandering, and seemingly irrelevant discussion of many different aspects of the Superfund program. It is unclear what relationship, if any, the author might intend between the actual benefit analysis, which begins in Chapter 4, and the discussion in Chapter 3 of issues such as statute of limitations, TAG grants, and citizens suits.

The next section of Chapter 3 is devoted to giving Superfund credit for over 7,500 response actions performed by state agencies since 1980. Although the Draft Analysis has not yet presented its benefits analysis, Chapter 3 already sounds a warning that the forthcoming analysis in Chapter 4 underestimates the actual benefits of Superfund. But Chapter 3's principal claim -- that Superfund should be given credit for thousands of state response -- is unpersuasive, as we show below.

Chapter 3 argues as follows:

1. EPA pays for 25% of all state environmental expenditures.
2. EPA pays for 25% of state removal actions and state remedial actions at contaminated sites.
3. Superfund should be given credit for the benefits provided by 25% of the state removal actions and state remedial actions.
4. States perform almost as many removal actions and response actions as EPA does.
5. Estimating benefits from EPA actions at NPL sites (as the Draft Analysis does) significantly understates the benefits provided by Superfund.

This reasoning is seriously flawed and reflects a limited understanding of how Superfund works. To begin with, EPA does not pay for anything approaching 25% of state removal and remedial actions at contaminated sites. Instead, as is clear from the only source cited by the Draft Analysis,⁴ EPA pays for 25% of state environmental expenditures in the aggregate. Most of the money that flows from EPA to the states supports the development and maintenance of EPA-approved state programs to implement such laws as the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act, etc. Conversely, very little money flows from EPA to the states under the Superfund program.

As for the limited Superfund money that does flow from EPA to the states, most of it falls into one of two categories: (1) performance of removal or remedial actions as EPA's contractor at particular Superfund sites (in which case the action is already counted as a Superfund action and should not be double-counted as a state action), and (2) grants to develop and run brownfields programs under section 128(a) of CERCLA, which address relatively low-risk sites in order to promote economic redevelopment

⁴ R. Steven Brown, "States Put Their Money Where Their Environment Is" (2001), available at <http://www.ecos.org/section/publications/?id=686> (visited February 20, 2005).

Chapter 3 cites no evidence that EPA pays for 25% of state response actions, or, indeed, that EPA pays for any state response actions. Instead, the author says, “Lacking any more definitive value, this study will attribute 25% of state Superfund responses [to the Superfund program] on the basis of funding.” Draft Analysis at p. 3-23.

The Draft Analysis presents no factual basis for attributing to Superfund the benefits achieved by 25% of state removal and remedial actions. In fact, the Draft Analysis presents no factual basis for attributing to Superfund any of the benefits of those state actions.

The remainder of Chapter 3 is devoted to a long and highly technical discussion of how NPL sites are distributed with regard to nearby residences and nearby populations.⁵ Other than the statement on page 3-25 that the benefits analysis in Chapter 4 will define “nearby” residences as those within a radius of 2.5 miles from an NPL site, it is unclear how any of this lengthy discussion informs the benefits analysis that will be presented later.

With respect to the 2.5 mile radius itself, the Draft Analysis offers no justification for assigning “benefits” on the basis of arbitrarily selected radii from Superfund sites. Instead, the Draft Analysis simply states that the 2.5 mile distance was selected to facilitate a benefits transfer from 3 earlier studies. Draft Analysis at p. 3-27. No evidence is offered that the benefits provided by Superfund typically extend that far away from the sites. Instead, the 2.5-mile radius is plucked from the literature without explanation. This kind of pseudo-mathematics cannot obscure the fundamental arbitrariness of using proximity (and rather distant proximity at that) as a substitute for actual exposure, which would help to define actual benefits.

The arbitrariness of the 2.5-mile circles is magnified by the variability in other site characteristics. As the Draft Analysis acknowledges, just 6 NPL sites make up 53% of the total area of all NPL sites, and very few people live near those 6 sites. Thus, extrapolating benefits based on arbitrary uniform circles that contain assumed uniform populations leads to an estimate that is neither transparent nor credible.

Chapter 4: PROPERTY-BASED VALUATION

In Chapter 4, the author presents for the first time the basis for the “best” point estimate that Superfund has produced \$63 billion in benefits since 1980. So far as the reader can

⁵ Although Chapter 3 states that it will “characterize” NPL sites, it also candidly admits that “[d]ue to a lack of data accessibility, it is not feasible to characterize NPL sites according to risk.” The “characterization” provided in Chapter 3 is limited to “characterizing” how NPL sites are distributed with regard to “nearby” residences.

tell, this estimate is derived from an assumed 7.4% increase in property values at over six million single-family homes located near one thousand Superfund sites. The Draft Analysis assumes that the value of these six million homes initially dropped by 7.4% when area residents became aware of the Superfund site and its potential health risks, but then rebounded when area residents learned that EPA had selected (but not implemented) a plan for cleaning up the site.

At the outset, it bears noting that there is a curious circularity to this purported “benefit.” According to the Draft Analysis, designating a site as a Superfund site lowers property values based on exaggerated public perceptions of risk, only to have the announcement of a Superfund cleanup decision cause property values to return to their previous levels. In other words, Superfund is both the cause and the “cure” for diminished housing prices, according to the Draft Analysis. Thus, the “benefit” leaves housing prices exactly where they were before Superfund came along in the first place.

Putting aside that troubling aspect of the analysis, there is reason to question this estimate of Superfund’s benefits.

First, the statutory goals of Superfund are the protection of human health and the environment, not the protection of housing prices. As the author admits, the property valuation analysis is used as an indirect way of measuring public perceptions about risk reduction at Superfund sites. Unfortunately, the analysis deals entirely in the realm of subjective perceptions about risk, and does not traffic in actual risk at all. The author estimates Superfund’s benefits on the basis of first arousing, and then relieving, subjective fears about risk that are often exaggerated out of proportion to any actual risk. This is not what the program was created to do, and it surely is not all that the program does.

Second, the evidence that Superfund sites undermine property values is particularly thin. Acknowledging that obtaining actual data would be “prohibitively expensive,” the author relies on a handful of studies that reported decreased property values near a relatively few NPL sites. Those sites represent less than 2% of the sites on the NPL. Yet the Draft Analysis merely assumes that similar benefits occur at similar levels at the other 98% of the NPL sites. This assumption is never even acknowledged, much less supported with any evidence or logic.

Third, the evidence that Superfund reverses these assumed declines in housing prices is even thinner. Chapter 4 relies upon even fewer studies, and less persuasive studies, for the assumption that the decline in property values is completely reversed once EPA announces its selection of a cleanup plan. The author admits that “few studies have looked for possible reversals,” and “those that have [looked] seem to find mixed results.” Draft Analysis at p. 4-23. Despite this lack of evidence, the author tells us, “[a] complete reversal of the negative price effect is assumed.” *Id.* at p. 4-10.

Fourth, the evidence supporting the use of a 2.5 mile radius is limited and/or poorly explained. The author appears to take the maximum distance at which earlier studies reported any effect on housing prices, which is about 2.5 miles, and then assume (without explanation) that the maximum effect occurs at all locations within that maximum distance. If any empirical support exists for that assumption, none is offered. Yet this assumption is crucial to the benefits estimate; as the author admits, housing values decline precipitously if the artificial radius of assumed impact is narrowed from 2.5 miles to something smaller.

Finally, Chapter 4 persistently seek to maximize the tally of Superfund's benefits, whether or not the evidence supports doing so. Thus, Chapter 4 does not mention, or dismisses summarily, the various ways in which the entire property value analysis is highly speculative and could well overstate Superfund's benefits. On the other hand, Chapter 4 repeatedly speculates about ways in which benefits might be understated (what about "non-neighbor" benefits, what about non-use real estate values, what about impacts on school quality and social status, etc.). The net result is a benefits estimate that does not carry the needed indicia of transparency and objectivity.

Chapter 5: EFFECT-BY-EFFECT ANALYSIS

It is very difficult to assess Chapter 5 at this point because the SAB is to review the approach before any actual estimate is computed for health effects, ecological effects, and ground water protection effects. This is particularly wise because the most obvious conclusion that can be drawn from the current text is that data are insufficient to distinguish exposed from non-exposed populations, and estimates of health benefit will therefore be highly theoretical.

Nevertheless, severe methodological problems are evident even in the incomplete version of Chapter 5. For example, the author proposes to quantify benefits for birth defects avoided at NPL sites based on 11 studies that investigated the increased odds of birth defects occurring near sites with particular hazardous substances. Unfortunately, the Draft Analysis leaps over some serious difficulties in its approach.

To begin with, only 2 of the 11 studies appear to involve Superfund sites of any kind, and it is not even clear that they involve NPL sites. The other 9 studies involved a wide range of sites, including several in Europe, that simply are not part of Superfund. The author does not justify the use of these same data to characterize all NPL sites.⁶

⁶ Similar problems afflict the studies relied upon with regard to acute injuries, adult cancers, lead exposure, etc. In each case, few of the studies relied upon actually involved Superfund sites, and no showing has been made that the reported increased odds of experiencing health effects can be transferred to all Superfund sites.

Moreover, the increased odds of birth defects reported in these studies were computed based on increased potential exposure to specific hazardous substances. The author apparently intends to transfer these increased odds only to NPL sites that have completed human exposure pathways for those particular hazardous substances. Draft Analysis at p. 5-3. But the author has repeatedly pointed out that exposure data of this kind is extremely difficult to obtain for NPL sites. Thus, it is difficult to understand how the analysis could be completed even if the methodology itself was sound.

Similar problems plague the proposed valuation of benefits with regard to avoided cases of acute injuries and chronic health effects. The discussion of lead studies is a case in point. The number of sites where an identified population was exposed to lead is unmentioned, and the study acknowledges that there is “insufficiently strong evidence to quantitatively link lead response actions at NPL sites with possible beneficial outcomes.” Draft Analysis at p. 5-14. Yet this does not keep the author from attributing a \$2M benefit to helping a “high-risk youth avoid a life of crime.” Draft Analysis at p. 5-14.

In sum, Chapter 5 is largely a demonstration of the inadequacies of existing data to estimate health benefits for these various endpoints. It is difficult to see how the SAB could approve proceeding to quantify benefits on the basis of the information presented in the Draft Analysis.

Finally, Chapter 5’s discussion of natural resource damages (“NRD”) as a measure of ecological benefits appears to reflect some confusion as to how the Superfund NRD program works. The author seems to resist using NRDs as a measure of ecological benefits. Chapter 5 states that the payment of NRD “is simply a transfer payment, not a net gain in social welfare,” because “only the reversal of the physical injury creates a net benefit.” Draft Analysis at p. 5-28. But CERCLA specifically states that any NRDs recovered by federal or state resource trustees shall be used “only to restore, replace, or acquire the equivalent of such natural resources.” CERCLA § 107(f)(1). Thus, if the resource trustees are complying with CERCLA, the total amount of NRDs they recover should be a good proxy for the value of the resource restoration or resource replacement benefits achieved by the Superfund NRD program over any given period of time. Certainly this is a more direct and less conjectural approach to estimation than what is described in Chapter 5.

Chapter 6: NON-QUANTIFIED BENEFITS

Chapter 6 begins with the fair statement that many “Superfund program benefits . . . are not readily quantified due to gaps in data or a lack of suitable methods.” Draft Analysis at p. 6-1. In truth, this statement fairly describes the entirety of the Draft Analysis.

This is most obvious for ecological benefits, which are covered in both Chapter 5 as a “quantifiable benefit” (ecological effects) and in Chapter 6 as non-quantifiable (ecological benefits). This overlap is acknowledged in the beginning of Chapter 6, but

the brief explanation does not rebut the overall impression that the author seeks to find potential benefits at every turn by creating new “benefit” terms with no basis in CERCLA. Indeed, after describing the overlap, the author then proceed to repeat the topic of impact on real estate values covered in Chapter 4.

Chapter 6 repeatedly assumes without proof that Superfund is the source of various benefits. For example, the author states that “[W]ithout the Superfund program, far fewer responses to uncontrolled releases of hazardous substances would have occurred . . .” Draft Analysis at p. 6-2. This assumed reduction in responses is then extrapolated into the supposed benefit of minimizing “perceived risks,” as opposed to real risks.

Similarly, Chapter 6 credits Superfund with benefits in the areas of commercial real estate values, community empowerment, information and innovation, and technology innovation and transfer. In each case, the author appears to be straining to find ways to recognize benefits based on an uncritical (or uninformed) view of how Superfund actually works.

Most noteworthy is the lengthy and completely speculative discussion about Superfund’s impact on property values for commercial and industrial real estate. This discussion seems unjustified, given the conclusions of the few studies cited that relied upon actual data for more than one site. For example, Schoenbaum’s study of Baltimore concluded that “[n]o systematic relationships were found between environmental contamination, on the one hand, and either land values (assessed), land vacancy, property turnover, or changes in economic development.” Draft Analysis at p. 6-6. A Georgia study is cited as showing \$1 million in impact, but the study addresses non-NPL sites and assumes impacts on a 2-mile radius – clearly an enormous and arbitrary distance, especially for an assumed impact on commercial real estate.

Similarly, the discussion of “empowerment” is highly attenuated. It is a good thing for communities to be informed and empowered, but that is not Superfund’s statutory mandate. It is not clear what the author means by “essentially all activities designed to empower the community are attributable to the Superfund program,” but it appears that the author is making the far-fetched claim that state and local governments would not assist communities had Superfund not been enacted.

At the end of the discussion of “empowerment,” the author comments that “it seems realistic that all of the empowerment benefit can be attributed to the Superfund program.” By now, the reader has begun to notice that whenever the Draft Analysis uses the phrase “it seems realistic that . . .”, the remainder of the sentence will be a highly speculative claim that Superfund provides yet more benefits.

Equally unconvincing is the author’s discussion of unquantified benefits in the category of “information and innovation.” The author accepts uncritically EPA’s statements that

research performed by the Office of Research and Development has yielded significant benefits. Among the examples given is that statement that ORD “[r]esearch on bioremediation also led to the development of monitored natural attenuation, which is now widely used for ground water remediation, either alone or in combination with source control”

In reality, EPA has been very reluctant to embrace monitored natural attenuation (“MNA”) as part of ground water remediation, despite a strong scientific and policy basis for doing so at many sites. In fact, at many sites where MNA would be an appropriate remedy, EPA stubbornly selects pump-and-treat technologies instead, even though they are unlikely to succeed and are far more costly. These facts are well-known to environmental engineers with private-sector Superfund experience. So the claim of benefits flowing from ORD’s research on bioremediation rings somewhat hollow. Yet the author’s uncritical acceptance of EPA’s claim results in yet another set of unquantified benefits being ascribed to Superfund.

Similarly, the discussion of technology innovation and transfer takes for granted EPA’s broad statements about the value of the various programs that fit under this general heading. Wholly absent is any independent or objective analysis showing that innovation or technology transfer has actually taken place as a result of these activities. In fact, EPA’s Regional offices, which actually select the remedies at most NPL sites, are often slow to embrace innovative technologies. Yet despite the lack of factual support, the author concludes that “in the absence of the Superfund program, much or all of the [innovation and technology transfer] activities discussed above would likely not have been undertaken.”

In sum, although the author wisely stopped short of quantifying the various benefits discussed in Chapter 6, the presentation suffers from a lack of objectivity and critical review. Many of the benefits described here are not germane to Superfund’s statutory purpose. Others are simply not real.

Chapter 7: CONCLUSIONS AND FUTURE RESEARCH

Chapter 7 is entitled “Conclusions and Future Research.” We first address the conclusions, and then the suggestions for future research.

Although the conclusions in Chapter 7 simply restate what was said in earlier chapters, it is worth pausing to consider the impact of those conclusions on the general public. Recent stories in the trade press about the Draft Analysis reveal the dangers of those conclusions. *See, e.g.*, “EPA Draft Study Analyzes Program, Suggests Benefits Far Outweigh Costs,” Daily Environment Report (BNA) (Feb. 3. 2005). The general public will not read a 236-page report that reveals in painful detail the paucity of actual data and the wild leaps in methodological assumptions. Instead, they will only hear about “big numbers” ostensibly justifying Superfund’s enormous burden on the American economy.

Just as those seeking to quantify the transaction costs imposed by Superfund were held to very stringent standard of proof and precision in the past, the SAB should require the author of the study (to which the SAB's reputation will be associated) use sound analysis, pertinent data, and objectively characterized conclusions. If the SAB chooses to include a policy discussion of indirect beneficial effects independent of quantifiable direct benefits mandated by statute (and indirect assumed benefits constitute the vast majority of the material in this Draft Analysis), then the indirect benefits should be summarized concisely, accurately characterized, and distinguished from direct, quantifiable benefits.

With regard to future research, most of the suggestions that are offered here are quite familiar (e.g., more research on exposure pathways and ecological risks). Several others are new, but not compelling.

An example of this is the very first suggestion:

[I]n order to understand how best to regulate and manage hazardous substances in the future, we must understand better the benefits of various approaches used in the past.

Draft Analysis at p. 7-1. Two things are wrong here -- the premise and the conclusion. The premise is wrong because Superfund does not "regulate and manage" hazardous substances. Other environmental laws, such as the Resource Conservation and Recovery Act, provide the regulatory framework. And the conclusion is wrong because it is so nebulous. Which "approaches used in the past" does the writer have in mind? Old laws that have been superseded? Old industry practices? Old cleanup approaches? It simply is not possible to decipher what is intended by this suggestion, which casts doubt on whether it should be viewed as an important agenda item for future research.

Conclusion

For the reasons set out above, the SSP urges the SAB to expand the review panel, address the significant weaknesses in the Draft Analysis, and refocus the study on the current and future benefits of Superfund. The SSP also respectfully requests the opportunity to submit additional written comments within a reasonable period of time.