

2013

A Vicious CERCLA, Or The Twilight of the Superfund

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A VICIOUS CERCLA,

-OR-

TWILIGHT OF THE SUPERFUND:

WHY CERCLA WAS DOOMED TO FAIL DUE TO A LACK
OF GOVERNMENT SUPPORT, AND HOW THE
NEUTERED FORM OF CERCLA RESULTS IN REGIONAL
AND SOCIOECONOMIC INEQUITY IN SITE
ADDRESSMENT

A Thesis Report and Historical Case Study by

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ABSTRACT

The Comprehensive Environmental Response, Compensation, and Liability Act –commonly known as the Superfund act-- was passed by Congress in 1980, in the aftermath of toxic waste disasters such as that in Love Canal, NY. CERCLA not only required that major corporations take responsibility for cleaning up their dangerous disposal or accidental release of toxic waste into the public, but it also created a trust fund to cover instances where a responsible party could not be found or went bankrupt. This “superfund” was financed by taxes on pollutant-producing companies.

However, these taxes expired in 1995, and the Republican controlled congress blocked efforts to renew them. The trust fund ran out in 2003, and since then CERCLA sites have relied on congressional allocation and approval for funding, severely hindering recovery efforts under Superfund. Even before the halt on pollutant taxes, CERCLA was underutilized, and cleanup efforts were often slow or excessively delayed. With the absence of a superfund for sites of contested or unattributed responsibility, more and more sites were left untreated, or have undergone very slow and incomplete restoration processes.

This historical investigation aims to examine both the historical context of CERCLA, and the Policy principles that both brought CERCLA into existence, only to doom it to invalidity, in order to

concretely establish that CERCLA's failure is solely due to a lack of proper execution and support on the federal level. Furthermore, this investigation will also examine the methodology by which the National Priority List for superfund sites are ranked and thusly addressed, and will consider the ethical and economic implications of this system, and whether it discriminates against lower income regions in its prioritization process.

It becomes evident through this investigation, then, that CERCLA itself is not a badly designed piece of legislation. In fact, if properly funded, enforced, and with minimal overhaul to the prioritization process, CERCLA could be the incredibly effective program it was intended to be, rather than the helpful but limited capacities of the law in its current form. The solution, thus, is an obvious one, but it is the only effective and just option: the superfund needs to be replenished through the reinstatement of CERCLA taxes on polluting petroleum and chemical companies, and EPA funding needs to be increased or redistributed in order to provide the extra necessary resources to help expedite the cleanup process, and thusly correct the negligent inaction that has harmed thousands of U.S. citizens living near untreated superfund sites in the past decade.

INTRODUCTION

The Comprehensive Environmental Response, Compensation, and Liability Act is was, at its passage in 1980, the most ambitious piece of Environmental Legislation in American history. Coming about as a direct response to the toxic waste catastrophes of the 1970s such as the one that took place in in Love Canal, NY, CERCLA – or, as it is commonly known, the Superfund act-- held corporations and other waste-producing entities responsible for toxic waste crises caused by their own emissions or disposal, but just as importantly it created a trust fund that ensured cleanup and reclamation would occur in areas affected by toxic waste disasters even if no responsible party could be found¹². While the majority (70%)³ of waste-related disasters are able to be charged to the responsible party, the remaining 30% were, until 1995, financed by the titular “superfund”-- a pool of capital generated by taxes on petroleum and chemical feedstocks.

In 1995, however, these taxes on pollutant-emitting substance producers expired, and the Clinton administration failed to generate

¹ Beck, Eckardt C. “The Love Canal Tragedy”. *EPA Journal*, January 1979. <http://www.epa.gov/history/topics/lovecanal/01.html>

² Collin, Robert W. *The Environmental Protection Agency: Cleaning Up America's Act*. Greenwood Press, Westport CT, 2006. P29

³ “Superfund Enforcement: Success in Enhancing Fairness and Expediting Settlements”. The United States Environmental Protection Agency; <http://www.epa.gov/superfund/accomp/17yrrept/report3.htm>. “The Enforcement First strategy holds that the PRPs bear the responsibility and cleanup cost of the sites they polluted. The implementation of this strategy has assured responsible parties perform a majority of cleanups (approximately 70%), saving the taxpayers billions of dollars. The Enforcement First strategy has also been responsible for replenishing the Superfund trust fund, so cleanups can continue at abandoned and time-critical sites. This strategy has been a strong deterrent to potential future hazardous waste dumping because it establishes a real threat that polluters will be found and punished.”

the requisite support for renewal. The resources generated by the taxes did leave a pool of useable Superfund finances that lasted until 2003. Since then, there has been no Superfund to actually use for CERCLA-- instead, disasters which have no responsible parties burdening the cost are forced to apply to congress for special funding, and are as a result left to the partisan whims of the legislature, and at best can expect to wait through a crowded and slow legislative schedule to receive funding to clean up emergencies that are often time-sensitive in their response.

CERCLA has, as a result, come to be seen as somewhat of a noble failure, but how apt is this perception? Has CERCLA truly failed as a piece of environmental legislation, and if so is it the fault of the law itself, or is it due to the way the law was implemented and summarily neglected? After a thorough investigation into the law itself, its historical context, and data regarding its implementation, it becomes clear that while CERCLA is not responsible for its own failure, even if some compromises and lack of foresight did hamper its effectiveness in some respects. Rather, it becomes damningly clear that the legislation has never been properly enforced or implemented at any point in its nearly thirty-three year history.

CERCLA's very lax enforcement in its infancy under the Reagan administration set a precedent for under-implementation, and the Congress' decision to cease taxation funding of the CERCLA trust

Superfund not only hampered the effectiveness of CERCLA in the past decade, it also undermines the entire ethos of environmental accountability and the polluter pays principle that formed the impetus for the very passage of the Superfund act. By delegating response and allocation powers to Congress for unclaimed superfund sites, it becomes incredibly difficult-- and often impossible-- for the federal government to adequately and promptly respond to toxic waste disasters. It also places the burden of financing these reclamation and cleanup projects on taxpayers-- an immense injustice, considering these are the same taxpayers who are victimized by such toxic waste disasters in the first place.

Furthermore, knowledge of this burden also has caused congress to be reluctant to allocate full funding or any funding at all in these unclaimed cases, and as a result, the victimized regions fail to receive the aid and recovery assistance they deserve. This inability to properly respond to toxic waste disaster sites in a timely manner has created an implicit system of regional and socioeconomic bias in the cleanup implementation process. However it becomes difficult to determine whether such biases are inherent to the structure of the Superfund's National Priority List for sites, or whether it is simply due to the inherent bias endemic to American governance against lower socioeconomic areas in regards to the implementation of infrastructural reform and support.

In order to properly understand the way in which CERCLA's implementation was such a betrayal of its intentions, it is critical that we examine the historical context of its creation-- as the apex of a decade of environmental reform, and as a direct response to the toxic waste tragedy in Love Canal, NY.

THE HISTORY OF CERCLA

Background

The 1970's were a tumultuous time in American History, but they were marked largely by the Environmentalist movement finally coming into full, as the United States government under the Nixon, Ford, and Carter administrations passed a series of groundbreaking regulatory laws that would shape the impetus of modern environmentalism. As the 1960's saw a massive surge in environmental activism, brought on largely by Rachel Carson's *Silent Spring* and public environmental catastrophes such as the Cuyahoga River Fire in 1969, the U.S. government started to slowly respond, before finally taking some massive steps forward in the new decade. The Environmental Protection Agency (EPA) was formally established on December 2nd, 1970, marking the creation of the first government institution solely devoted to addressing environmental concerns¹. It was followed by the passage of a series of highly successful and comprehensive regulatory

¹ "EPA History". *United States Environmental Protection Agency*.
<http://www2.epa.gov/aboutepa/epa-history>

laws, such as the Clean Air Act of 1970¹, The Clean Water acts of 1972 and 1977², the Ocean Dumping Act of 1972³, the Resource Conservation and Recovery Act of 1976⁴, and the Toxic Substances Control Act of 1976⁵, all of which were coupled by an increased public and media awareness of environmental disasters. However, the most high-profile environmental disaster of the decade would not be a fire or cataclysmic spill, but rather the discovery of years of deception and neglect that put an entire community at risk.

Love Canal

Love Canal, NY, was a small town in Upstate New York, a community full of young families that, ironically, lacked its titular canal. Founded in the early 1900s with the intent of using a canal between the upper and lower Niagara rivers to provide power to a veritable dream community.⁶ However, his efforts only shortly preceded the advent of the alternating current as a cheap and simple means of carrying electricity over long-distance wires, and by the 1920's, the canal's primary use was as a chemical and industrial dumping site⁷.

¹ EPA History". *United States Environmental Protection Agency*.

<http://www2.epa.gov/aboutepa/epa-history>

² See Above

³ See Above

⁴ See above

⁵ See Above

⁶ Beck, Eckhart C. "The Love Canal Tragedy". *EPA Journal*, 1979.

<http://www.epa.gov/history/topics/lovecanal/01.html>

⁷ Beck

The largest contributor to this landfill --by a large margin-- was Hooker Chemical Corporation, using the site to bury waste from 1942 until 1954¹. By this time, “200 different chemicals and a total of 22,000 tons of waste had been dumped into the canal, including some of the most toxic substances ever devised: dioxin, polychlorinated biphenyls...and multiple solvents and pesticides.”² The hazardous waste was buried in metal drums, which were prone to breaking open upon being dumped, while other waste was dumped directly into the canal³. Meanwhile, Hooker Chemical left the site unguarded and without a fence, allowing children to play in the area even against the recommendations of its own internal advisory council⁴.

The Niagara Falls school board approached Hooker Chemical with the request to purchase a portion of the property under which this waste was buried, and in 1953, Hooker Chemical effectively donated the land to the school board for the price of one dollar⁵. The stipulations of the sale required the school board to take the entirety of the land, and it served to “indemnify Hooker against all liability...[and Hooker] retained dumping rights until the school was built.”⁶ While Hooker acknowledged the site had been used for chemical dumping, it did not mention the potential toxicity of these substances to the school

¹ Mazur, Alan. *A Hazardous Inquiry: The Rashomon Effect at Love Canal*. The President and Fellows at Harvard College, 1998. P8

² Magoc, Chris J. *Environmental Issues in American History: A Reference Guide with Primary Documents*. Greenwood Press, Westport CT, 2006. P248

³ Magoc, P248

⁴ Magoc, P248

⁵ Magoc, P248 and Beck;

⁶ Magoc, 248

board. The elementary school was finished in 1955, located right by the canal, and almost immediately, residents began to, “complain about children being burnt, nauseous odors, and black sludge...but nothing was done... the State finally began to investigate... in the spring of 1978.”¹ Health problems ranged from skin rashes to respiratory conditions, but the only response by Niagara Falls government officials was to further cover the waste with clay².

Lois Marie Gibbs, a young mother who had moved to Love Canal with her two children in 1972, would become one of the first leaders of the grassroots movement amongst Love Canal residents to get the state to investigate and address their concerns, after her son attending the elementary school built on the dump site developed epilepsy without any family history of the condition³. Gibbs launched a massive petition drive, and when the New York State Department of Health finally conceded and released their analysis in spring 1978, it declared the canal “an extremely serious threat to the health and welfare of residents”⁴. NSDOH Commissioner Robert Whalen declared a state of emergency in Love Canal on August 2nd, 1978⁵, the 99th Street School was closed, and a recommended evacuation order was put in place for parents and children under the age of two in love canal. When town

¹ Gibbs, Lois Marie, with Murray Levine. *Love Canal: My Story*. State University of New York Press, Albany, 1982. P3-4

²Magoc 249

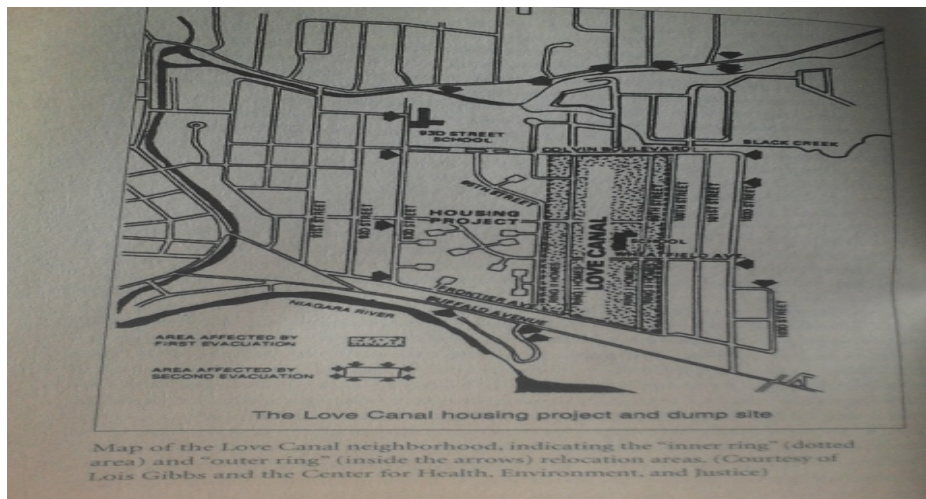
³ Gibbs 9-11

⁴ Magoc 249-250

⁵ Magoc 250 and Beck

residents found the two-year old age limit arbitrary, the order was extended to all 239 families in close proximity to the site, and President Carter signed a federal disaster order to provide emergency funding for their relocation¹, and on August 7 of that year, the New York state government announced it would purchase homes affected by chemicals from residents of Love Canal.²

More than 600 homes, however, fell outside of this evacuation range. Gibbs worked with cancer researcher Dr. Beverly Paigen, who led an additional survey of residents that found an unsettlingly high rate of birth defects, illness, and miscarriage rates in remaining residents³. The State health department, as a result, issued a second evacuation order in 1979. Below is a map of the school and surrounding neighborhood, with evacuation zones indicated⁴:



¹ Magoc 250

² Beck

³ Magoc 250

⁴ Blum, Elizabeth D. *Love Canal Revisited: Race, Class, and Gender in Environmental Activism*. University of Kansas Press, 2008. P10. Footnote applies to image on the next page

A majority of Love Canal residents, however, were still left behind, but by 1980, President Carter had signed an order funding the permanent relocation of all Love Canal residents who wished to evacuate-- only sixty seven residents stayed behind.¹ As reports of health problems continued filing in, more than 800 lawsuits were filed against Hooker Chemical, the county, the board of education, and the city of Love Canal, while the U.S. government filed a suit itself against Hooker, with the ensuing legal battle lasting more than a decade².The incident, however, was a major public event, dominating front-page news coverage and bringing the dangers of such undisclosed and improperly managed toxic waste sites to national attention. Soon, stories of similar incidents around the nation began receiving attention, and there was substantial public pressure for the federal government to address these issues.

Multiple bills appeared in both chambers of Congress, calling for legal accountability and liability for companies whose toxic waste disposal endangered communities in the United States. Love Canal turned into a galvanizing turning point.

¹ Magoc, 250-251

² Magoc 250-251

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980

“AN ACT To provide for liability, compensation, cleanup, and emergency response for hazardous substances released into the environment and the cleanup of inactive hazardous waste disposal sites.”¹

CERCLA was preceded by multiple legislative efforts at the end of the decade to enforce liability for waste disposal cleanup, and as such, effectively functioned as the composite of four bills put forward between January of 1979 and December of 1980. The first attempts at regulating such waste disposal, bill H.R. 85², was groundbreaking for its attempt to establish funding pools to address instances of oil and toxic waste spills into navigable bodies of water, as financed by taxes on the petroleum and toxic waste industries. However, this bill, introduced in January of 1979, died in committee by that summer, largely due to significant resistance on the part of opposition by the oil and chemical industry to the provisions on cleanup liability. Senator

¹ Comprehensive Environmental Response, Compensation, and Liability Act of 1980 [42 U.S.C. § 9601](http://www.epw.senate.gov/cercla.pdf) <http://www.epw.senate.gov/cercla.pdf>

² Bulan, Lynn A. & Switzer, Carole Stern. “CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act”. American Bar Association, Chicago, IL, 2002. P6: “The first [bill on which CERCLA was based]. H.R. 85, was introduced on January 15, 1979....never considered by the full house, reportedly due to oil and chemical industry opposition to the cleanup cost liability provisions.... the bill imposed joint and several strict liability on the owners and operators of facilities that released any of these substances into navigable waters, and provided both governmental and private rights of recovery for costs and injuries. After referral to the Senate, this bill died in the Committee on Environment and Public Works”

John Culver of Louisiana similarly introduced a bill that established a \$1.6 billion trust fund for cleanup efforts, larger than any of its comparable bills, but this bill also focused on waterways, and died at the subcommittee level¹. A similar bill, H.R. 7020, called for an expansion of this waste liability to all hazardous waste sites, while also granting the government response authority. H.R. 7020 was put forward on April 22, 1980, and passed the house in September, only to similarly die in the senate at the committee level².

The final bill, which would eventually form the basis for CERCLA, S. 1480, was introduced on July 11, 1979, and was brought to the full Senate exactly a year later. S. 1480 established a “\$200 million post-closure liability fund”³, and a \$4.085 billion fund for general cleanups, as funded by fees and appropriations on pollutant and waste producing companies that were generally responsible for such incidents⁴. S. 1480, however, was poised to meet the same resistance that the other bills had faced, and following the 1980 elections --in which Carter lost the presidency to Ronald Reagan, and the Democrats lost control of the Senate-- the lame duck Carter administration and democratic senate scrambled to find a way to make a bill that would pass before the end of 1980.

¹ Bulan 7

² Bulan 6-7

³ Bulan 7

⁴ Bulan 7

The bill that would form CERCLA was a combination of H.R 7020 and S. 1480, and it established a \$1.6 billion trust fund for covering the costs of cleanup and restoration for toxic waste sites where the responsible organization could not be found or could not cover the costs of cleanup, while also establishing legal liability for companies that could be identifiable as responsible for toxic waste disasters¹. CERCLA also established handling provisions for abandoned or closed toxic waste sites, along with retroactive liability for companies who had committed spills even before the passage of CERCLA.

However, the bill could not pass Congress so quickly without some major additional compromises. Both bills included petroleum-producing companies as liable for any spills or disposal under CERCLA, which obviously was met with significant opposition from lobbyists for petroleum companies. The only way CERCLA was able to quickly pass before the end of the Senate term with the tax on petroleum-based companies intact (a pivotal aspect of the Superfund, as taxes on petroleum producers were the biggest contributors to the trust fund) while still avoiding petroleum lobby resistance was by including a provision that excluded all crude oil production wastes from CERCLA eligibility². CERCLA's definition of toxic waste, as such, excludes petroleum, leaving victims of waste sites involving petroleum

¹ "CERCLA Overview". The United States Environmental Protection Agency. <http://www.epa.gov/superfund/policy/cercla.htm>

² Collins, Craig. "Toxic Loopholes: Failures and Future Prospects for Environmental Law". Cambridge University Press 2010. Cambridge, NY P87

waste with effectively no legal recourse to demand response. This clause is the reason that the Exxon-Valdez and BP Gulf Coast Oil spills of 1989 and 2010, respectively, were not eligible for CERCLA response funding. Similarly, the only way that the Carter Administration was able to get CERCLA through Congress in time without resistance was by striking a clause that would require direct compensation of victims of toxic waste spills¹.

However, in spite of these concessions, CERCLA held onto the important aspects, for the most part, establishing a standard of accountability for all toxic waste producing companies in waste disposal (petroleum excepted, of course), along with creating a polluting industries tax-financed trust fund to pay for unaccountable toxic waste sites, thereby taking the cleanup cost away from the victimized populace regardless of whether or not a company is found responsible. President Carter signed the act into law on December 11, 1980, with barely more than a month left in his term².

When President Ronald Reagan took office in 1981, with a Republican-controlled congress on his side, he instantly initiated an agenda that aimed to cut regulatory federal programs as much as possible, and two of his largest targets were the EPA and CERCLA. At

¹ Collins, P86: "Carter signed CERCLA in 1980. By the time it reached the president's desk, fierce chemical industry lobbying had convinced Congress to strike a provision compensating the victims of exposure to hazardous spills and dumps. "

² "CERCLA Overview". The United States Environmental Protection Agency.

<http://www.epa.gov/superfund/policy/cercla.htm>

the forefront of Reagan's deregulatory environmental agenda was his appointee to head the EPA, Anne Gorsuch. Gorsuch was an archconservative who was handpicked by a selection committee that was itself headed by archconservative beer tycoon Joseph Coors, who was staunchly opposed to the EPA. Coors was drawn to Gorsuch by her track record in the Colorado legislature, where she prominently fought toxic waste and auto emissions regulations¹. A frequently repeated anecdote is that Coors, "reportedly chose Gorsuch after she satisfactorily answered the question: 'Are you willing to bring the EPA to its knees?'"². It was a mission Gorsuch was more than up to: Gorsuch filled the EPA with appointees that were lobbyists for chemical, petroleum, automobile, and asbestos companies³, slashed the EPA's operating budget by 60 percent, and abolished the EPA's office of enforcement, replacing the office with the position of Chief Enforcement officer-- a position filled by a former Exxon employee who reported directly to Gorsuch⁴.

Gorsuch took particular aim at the nascent CERCLA, almost immediately cutting \$55 million from the EPA's hazardous waste program⁵. When Reagan took office in 1981, the EPA, "listed 14,000 sites for priority cleanup and 'fast tracked' 114 for immediate action"⁶.

¹ Collins 90

² Collins 90

³ Collins 91, and Collins 102: "A 1993 study found that 80% of the top EPA officials who worked in the area of hazardous waste after 1980 joined firms involved in Superfund cleanups"

⁴ Collins 90

⁵ Collins 91

⁶ Collins 91

In 1981, Gorsuch only used \$8 million out of \$78 million in funding available for toxic waste site cleanup, and in 1982 only spent \$71 million out of \$170 million available for the same fund¹. In spite of this complete neglect of the Superfund program, Gorsuch publicly asserted that she did not believe the program would be necessary after 1985². The Gorsuch-run EPA was absolutely crippled by Gorsuch's cutbacks, and though she was removed from office after her mishandling of a major dioxin spill in Times Beach, MO, the cozy relationship between the EPA and polluting companies under Reagan continued. A set of leaked EPA documents in 1987 revealed that senior-level EPA officials were collaborating with pollutant-producing companies in order to limit public knowledge on the dangers of dioxin and other chemicals³. There were some minor victories under the Reagan administration for Superfund --most notably Congress' successful passing of the Superfund Amendments and Reauthorization Act (SARA)⁴ in 1986, which expanded the trust fund to \$8.5 billion, increased state involvement in the cleanup process, and expanded the amount of citizen participation and feedback in making cleanup decisions for their local sites through the establishment of a more accessible pre-cleanup "public comment" period⁵. Furthermore, CERCLA proved to be

¹ Collins 91

² Collins 91

³ Collins 96: "According to U.S. District Judge Owen M. Panner, the documents revealed an agreement, "between the EPA and the industry to suppress, modify, or delay the results of the joint EPA/industry dioxin study"

⁴ Collin, 46

⁵"SARA Overview" United States Environmental Protection Agency.

<http://www.epa.gov/superfund/policy/sara.ht>

a more successful form of regulation, as the threat of being held financially liable for waste greatly cut back the amount of illicit and secret dumping chemical companies performed.

The biggest blow to CERCLA, however, would come during the Newt Gingrich lead, Republican dominated congress following the 1994 midterm elections. In 1994, legislation that was proposed to overhaul and improve superfund died in committee¹. When such efforts were reintroduced in 1995, the Republican controlled congress refused to renew the pollutant-producers tax that funded the CERCLA trust fund-- effectively eliminating the eponymous Superfund by eliminating its sole source of funding, while simultaneously undermining the “polluter pays” principle that is so integral to the nature and goals of CERCLA. Efforts to re-invigorate CERCLA further waned under the Bush Administration, as Bush became the first President since CERCLA’s passing not to include the “polluters pay” tax in any of his budget proposals, forcing victims of toxic waste incidents to pay for the cleanup process². The Superfund trust fund ran dry by 2003, and while a one-time \$600 million stimulus was added to the superfund in 2009³, Superfund site annual completion totals dropped off by more than 50% following the exhaustion of the trust fund⁴.

¹ Collins 89

² Collins 89

³ Broder, John M. “Without Superfund Tax, Stimulus Funds Cleanup”. *The New York Times*. April 25, 2009, A16.

http://www.nytimes.com/2009/04/26/science/earth/26superfund.html?partner=rss&emc=rss&_r=1&

⁴ Collins 89

CERCLA, as such, is only a shadow of its former self, which puts the program in dire straits considering its already neutered beginnings.

How Does CERCLA Work?

The two primary aims of CERCLA are effectively to ensure that the victims of toxic waste disasters are not forced to carry the burden of their own cleanup and recovery, and to ensure that whenever possible, an accountable company will be held responsible for the costs and efforts of recovery in the case of such disasters³. CERCLA allows for retroactive accountability --in other words, whether or not a company improperly disposed of their waste before or after CERCLA, and whether or not the cleanup was already paid for before a responsible party was found, the responsible party or parties will be forced to pay for the costs incurred in recovery. However, in some cases, a responsible party cannot be determined, or the responsible party defaults into bankruptcy in the process of paying for the cleanup of their toxic waste sites.

To this end, the “superfund” was created, in order to ensure victims were never forced to bear the brunt of the cost of cleanup. A taxpayer funded trust fund, however, would run counter to this goal, and so the “polluter pays” principle behind the law was extended to the means by which it is financed: a tax upon pollutant-producing companies that

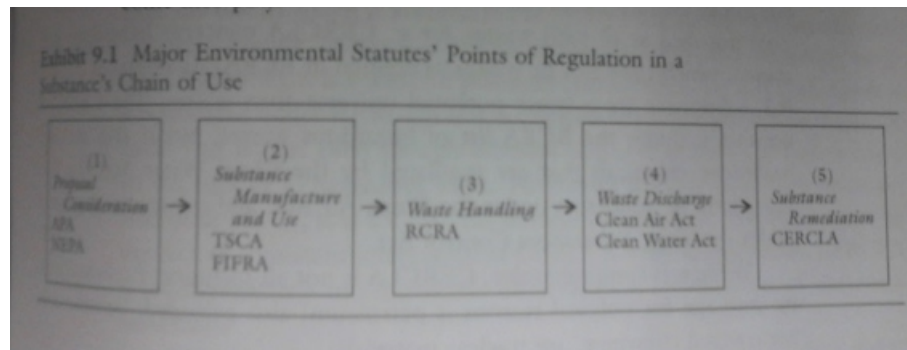
³ “Comprehensive Environmental Response, Compensation, and Liability Act of 1980” [42 U.S.C. § 9601 http://www.epw.senate.gov/cercla](http://www.epw.senate.gov/cercla): For general reference for the entirety of this section

were prone to cause these toxic-waste incidents, such as chemical and petroleum companies. By doing so, it would be ensured that no matter what happened, it would always be the polluting companies that pay for their own environmental crimes.

The key thing to understand about CERCLA --and what makes it the most different from not only other environmental laws, but from most regulatory legislation in U.S. history-- is that CERCLA is a retrospective statute¹ --it is entirely built around response and reparations to transgressions. Most environmental legislation is prospective-- it sets guidelines intended to dictate future behavior; if an entity violates these regulatory guidelines, then they are held subject to responsive penalties, most likely heavy fines. CERCLA is different because while it is a responsive measure, and the liability clause can be seen in one sense as punishment, its primary purpose is not punishment, but rather to ensure that a vital stage of the process in responding to a disaster takes place, and that it doesn't further penalize those already victimized by the disaster. When combined and properly enforced alongside other major environmental regulations, it ends up forming a comprehensive means of regulating and controlling the adverse effects of industrial chemicals on communities, citizens, and the ecosystem.

¹ Ferrey, Steven. *Environmental Law: Examples and Explanations*. Aspen Law and Business, 2001, Second Edition. P333

The Resource Conservation and Recovery Act¹ governs the proper procedures for handling chemicals and their waste in the production process, while the Clean Air Act and Clean Water Act govern the proper procedures for discharge and disposal of these toxic wastes. CERCLA, then, as we see in the diagram on the next page², exists to govern over the clean-up process when, for whatever reason, this waste is exposed to the community due to a party failing the standards of either the handling or the discharge steps. CERCLA, when properly implemented, ensures that the life of a chemical in its exposure to human populations is always a closed cycle.

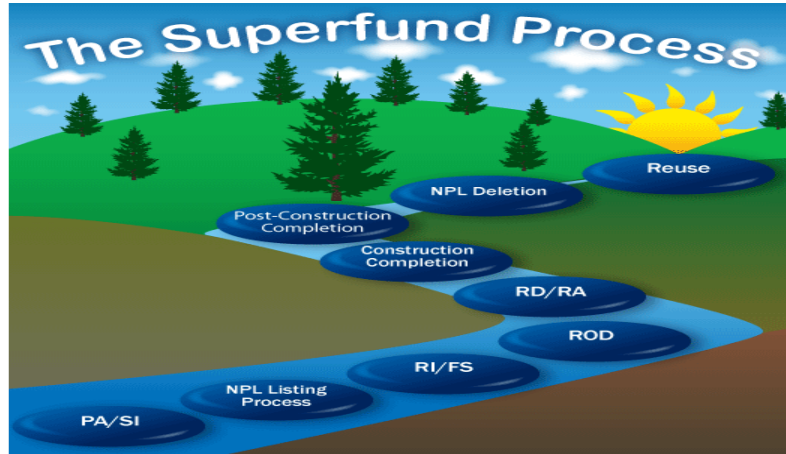


The other critical element of CERCLA involves the identification, assessment, and response of the EPA to toxic waste sites. The goal of this multi-stage process is to effectively identify not only the toxic waste threat and how to best address it, but to also determine the responsible parties for this waste, and also to get community input and

¹ "Resources Conservation and Recovery Act", United States Environmental Protection Agency. <http://www.epa.gov/agriculture/lrca.html#About>

² Image on next page taken from Ferrey 333

cooperation in the response process in order to ensure that victims' needs are properly met.



The CERCLA assessment and response process, as it is so colorfully displayed in the above infographic from the EPA's official website¹, is most certainly lengthy, yet designed to be comprehensive. The first, the Preliminary Investigation and Site investigation, are effectively self explanatory-- the former is background research on the area, community, and involved parties, along with research on the chemicals potentially involved, while the latter is an initial on-site visit in order to identify at the most basic level what happened, and how urgently the EPA needs to respond. CERCLA allows for two levels of response, both immediate basic response to ensure toxic waste quarantine and basic citizen safety, and long-term restoration of toxic waste sites².

¹ "The Superfund Process" United States Environmental Protection Agency. <http://www.epa.gov/superfund/community/process.htm>. Also for whole section.

² "CERCLA Overview"

With regards to long term response, the next stage in this process involves determining the degree of urgency involved in implementing a long-term restoration-- it would be impossible for the EPA to respond to all incidents as they come up, and so ranking them by priority becomes necessary. After Initial/Site assessment, a toxic waste site is then evaluated using the Hazard Ranking System as a means of determining the urgency with which a site necessitates response. The HRS is based around evaluating three categories of risk posed by toxic waste, as it is applied to four means of contamination. The HRS assigns a numerical risk value to multiple factors, “grouped into three categories:

- “likelihood that a site has released or has the potential to release hazardous substances into the environment;
- characteristics of the waste (e.g. toxicity and waste quantity);
and
- people or sensitive environments (targets) affected by the release.”¹

These categories are then assessed on potential contamination to drinking water through ground water migration; to drinking water, food, and environments through surface-water migration; to soil exposure of the toxins to the populations and environments nearby; and air migration, the potential for harmful exposure to the population

¹ “Introduction to the Hazard Ranking System (HRS)”. United States Environmental Protection Agency.
http://www.epa.gov/superfund/programs/npl_hrs/hrsint.htm

(Especially sensitive or at health risk individuals) or environment to airborne toxins¹. After being assessed for all four possible pathways of exposure, the scores are combined and calculated using a “Root-mean-square”² equation³.

This aggregate score is then used to determine a site’s placement on the National Priorities List, which determines the urgency and order of federal response to Superfund sites. To qualify for placement, a site must have a score of 28.5 or higher⁴. From here, the EPA conducts a remedial investigation of the toxic threats that are present, and a feasibility study to determine which technologies and methods will work most effectively in cleaning up the site. At the same time, the community feedback element becomes pivotal, as the EPA begins to reach out to the community for feedback on the response. The following step is the most community-involved, as the EPA then issues a list of the possible alternatives for response and restoration, and then seeks public feedback. The window for public feedback on methodology is a limited period of time, and feedback can be provided both in public

¹ See above

² See above

³ For further reference,

<http://www.epa.gov/superfund/sites/npl/hrsres/hrsgm/ch1.pdf>, where the equation is included on the second page, but I am unable to trace the pdf back to the exact source, so this is not a concrete citation-- it is, however, an official EPA document, as indicated by the URL.

⁴ Steinzor, Rena and Clune, Margaret. “The Toll of Superfund Neglect: Toxic Waste Dumps & Communities at Risk”. Center for American Progress. Center for Progressive Reform. June 15, 2006.

http://images1.americanprogress.org/il80web20037/cap/superfund_neglect.pdf via <http://www.americanprogress.org/issues/green/news/2006/06/15/2027/the-toll-of-superfund-neglect/>

meetings and in mailed/electronically submitted statements, while the EPA representatives working at this site try to reach out to the public in order to solicit this feedback from as many community members as possible.

From here, the EPA team moves into the Remedial Design and Remedial Action step-- in layman's terms, the planning and cleanup step. This is where the vast majority of the cleanup process takes place, and is fairly self explanatory. The next step, however -- "Construction Completion"-- is critical, as it is the present standard of what constitutes a "finalized" or treated site, when it was not the original intended standard of CERCLA. Construction Completion occurs either when all physical construction standards have been met, or the EPA determines that the site can be deleted from the NPL listing as a completed project. Note that the "construction completion" stage does not require meeting standards of toxic waste removal, but rather the completed construction of all planned physical restorations.

Post-Construction Completion, then, is devoted to long-term action and maintenance-- mostly, enforcing restrictions and safety measures regarding exposure to toxins, and continued operation of the "technologies"¹ and systems in place to implement the long-term cleanup. This step is very vaguely defined, and all mentions of EPA

¹ "The Superfund Process" --to reiterate, while many, many sources used for this investigation go over the whole process, this is the EPA's official public explanation of the process.

participation according to their explanation frame their role as regular but not necessarily constant maintenance, regulation, and involvement in the cleanup process. At this point, EPA involvement is much more limited in terms of active, direct assistance.

The Post-Construction Completion stage's loose definition and requirements allow for EPA flexibility in determining the fulfillment of this stage. When a site passes out of Post-Construction Completion, the EPA deletes it from the NPL listing, and it is no longer an active superfund site. There is a public comment period similar to the Record of Decision in which the public can provide feedback on the EPA's stated reasoning for deleting the site off the NPL list, and ending CERCLA funding. Following this, the EPA will attempt to work with the community in determining a safe but positive way in which the affected toxic waste site can be reclaimed and reuse for public benefit, without posing a risk to the community.

THESIS : CERCLA WAS NEVER PROPERLY IMPLEMENTED

As we've established in our history of the act, CERCLA has had a tumultuous existence, to say the least. Indeed, after an examination of its political and practical history, it becomes evident that CERCLA was never properly implemented in the first place. The circumstances surrounding the passage of the bill at the end of Carter's term resulted in exceptionally large concessions, including the exemption of the Petroleum industry --arguably the

single-largest toxic waste polluting industry-- from accountability, while also similarly neglecting to firmly define adequately concrete completion and ranking standards explicitly due to an urgency in passing the law. CERCLA's hurried passage also allowed the Reagan administration to set a negligent and dangerous precedent for its implementation. CERCLA was then damaged even further when its entire end-goals were undermined by the failure of Congress to renew the pollutants-tax that funded the program, thereby undermining the "polluters pay" principle inherent to the law's design, and thereby eventually eliminating the pool of federal funding for Superfund cleanup assistance. As a result, countless Superfund sites on the NPL have waited for years --even decades-- for restoration aid, resulting in an astonishing inequity that would be experienced by thousands of communities in the ten years since the exhaustion of the Superfund trust fund.

CERCLA was harmed in its implementation by major compromises and oversights in its drafting

It is very easy to understand --and similarly justify-- why the Democrat-controlled congress and the Carter administration felt the need to rush CERCLA's passage through before the advent of the Reagan administration's small-government agenda. The successful passage of CERCLA in the early Reagan years would have been nearly impossible.

However, the concessions that were made -most critically, the aforementioned exemption for petroleum-producing companies from the liability clause, instead omitting petroleum from the list of toxins covered under CERCLA- set a very dangerous precedent that would play a negative role in determining how the EPA utilized and implemented the law. Indeed, crude oil's role as arguably the most dangerous polluter has been very visibly proven by events such as the 1989 oil spill in Alaska following the crash of an Exxon-Valdez oil tanker, or the 2010 BP Deepwater Oil Spill in the Gulf Coast-- potentially the two most costly and destructive corporate environmental disasters in American history. Moreover, the exemption undermined the very logic that defined CERCLA-- the oil exemption was included in order to maintain the clause that included petroleum producing companies in the polluters-tax that supported the superfund. Yet by demarcating these oil companies as not responsible for toxic waste incidents, and still requiring them to pay the polluter's tax, it gave detractors of CERCLA the factual grounds to argue that the tax was unjustly applied to companies that weren't responsible for the toxic waste incidents that CERCLA covered-- in essence, "punishing" these oil companies for a crime they, at least by the definition of CERCLA, would never commit¹. This became one of the dominant arguments in the senate hearings that ultimately led

¹ Burnett, H. Sterling. "Superfund: History of Failure". *National Center for Policy Analysis*. No 198. March 21, 1996. <http://www.ncpa.org/pdfs/ba198.pdf>. P1

to the failure to renew the polluter's tax, and the depletion of the Superfund¹.

CERCLA Was never properly enforced, and a precedent of negligence and corporate cooperation was established

As established previously, Gorsuch's tenure as EPA chief was marked by an actively antagonistic relationship to the office's primary role and function. A particularly damning example, of course, is her management of the catastrophe in Times Beach, MO. Waste oil released onto the beaches and surrounding land in Times Beach in 1982 contained two million times the maximum safe amount of dioxin --one of the most dangerous chemical byproducts in the world-- as defined by the EPA. For reference, this is 2,000 times the amount of dioxin in the chemical weapon "Agent Orange"². After the dioxin contamination in Times Beach was publicly discovered after more than ten years of exposure, the EPA stated an intent to investigate the site, but for nine months took no public action. Shortly after the EPA had finally gotten around to taking initial toxicity samplings, the nearby Meramec River flooded, covering literally the entire town under "twenty-five feet

¹ Microfilm Y 4.C 73/8: 104-12: "SUPERFUND REAUTHORIZATION HEARING BEFORE THE SUBCOMMITTEE ON COMMERCE, TRADE AND HAZARDOUS MATERIALS OF THE COMMITTEE ON COMMERCE HOUSE OF REPRESENTATIVES ONE HUNDRED AND FOURTH CONGRESS FIRST SESSION 104-12"

² Collins 91-92

of toxic water and muck”¹ that was filled with decades of improperly disposed waste containing dioxin. The town was literally inhospitable, and posed a severe danger to every resident remaining. This flood came at a time close to the revelation that Burford’s (by this point in time, *nee* Gorsuch) EPA was filled with senior officials who had secretly granted cleanup discounts to corporations liable under superfund, while also manipulating cleanup timetables in a manner advantageous for Republican congressional candidates in these regions². On top of this, Burford’s budget slashing and political pressuring had resulted in more than 4,100 EPA employees leaving the agency by the end of 1981-- her first year in the office of EPA chief³. When Congress investigated the EPA’s mishandling of Times Beach, Reagan gave Gorsuch/Burford direct orders to use executive privilege to withhold subpoenaed documents from investigation. After months of political scandal, tumult, and constitutional debate over the apparent cover-up, Gorsuch/Burford announced that the EPA would buy out the entire town of Times Beach for \$33 million, to finance the relocation of its residents⁴. Times Beach became a federally mandated ghost town. Eventually, in 1983 Burford/Gorsuch resigned from her office along with nine other Reagan EPA appointees, but the damage was done. Internally, the

¹ Collins 94-95

² Collins 94

³ Collins 95

⁴ Collins 95

precedent of inaction and corporate cooperation would maintain in place for the duration of Reagan's presidency and the H.W. Bush administration, to the point where CERCLA-related EPA policies under Reagan had become codified as internal law. To the outside, the EPA and Superfund were seen as ineffective, corrupt, and harmful to the welfare of the American citizenry. There was now a firmly ingrained internal and external perception of what the EPA and CERCLA were supposed to do, and they both deviated significantly from their established intent.

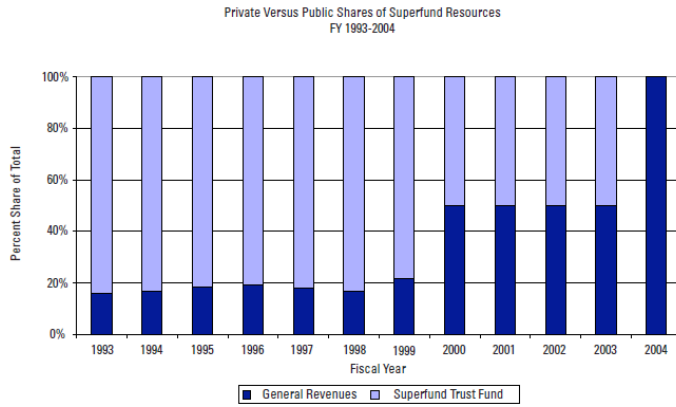
CERCLA's Defunding Rendered it powerless and invalidated its entire intent

While the Reagan administration did a great deal to reduce CERCLA's efficacy, and the law was in many ways hastily constructed, it was, by the 1990s, an overall beneficial and successful program. Under the Bush and Clinton administrations, Superfund sites successfully recovered increased, and the percentage and amount of superfund sites paid for by responsible companies skyrocketed--according to EPA statistics¹, by 1995, 75% of new superfund cleanups were financed by responsible companies, and 78% of the Superfund trust came from the tax on

¹ "The Buck Stops Here: Polluters are Paying for Most Hazardous Waste Cleanups". *Superfund Today*. United States Environmental Protection Agency. June 1996. <http://www.epa.gov/superfund/community/today/pdfs/whopays.pdf> P1-3

polluting industries. The effect becomes startling clear when exemplified visually¹:

Figure 5: Ratio of Polluter and Individual Taxpayer Contributions to Trust Fund⁵⁵

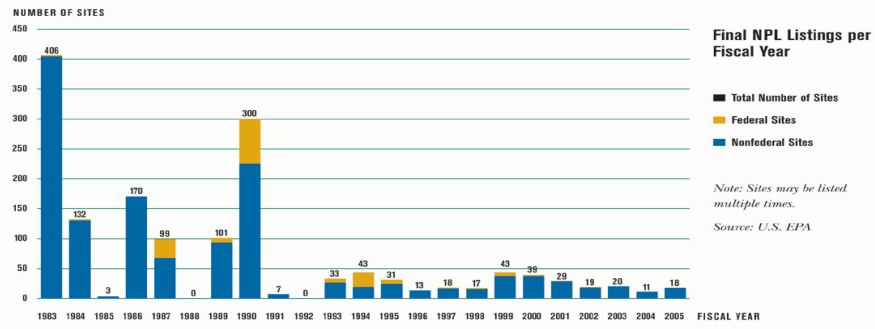


However, when congress failed to renew the polluters tax that financed Superfund, the \$3.2 billion available in 1996 was depleted by 2003², and taxpayers went from carrying 18% of the burden of cleanup costs to paying for 79% of the total cleanup cost in 2003. Furthermore, following the bankruptcy of superfund, toxic sites that did not have a responsible party determined that could finance the cleanup were forced to rely on federal or state appropriations for public funding-- a long, complex, and often unsuccessful process to navigate. Coupled with President George W. Bush's aforementioned de-emphasis of superfund projects and his failure to include increased CERCLA funding in any of his budget plans, the number of successfully completed NPL sites has

¹ Graph from: Steinzor 20

² Collins 89

nosedived: as the following two¹ charts² on the next two pages indicate, there has been a precipitous decline in the amount of NPL sites successfully removed from listing.



Number of National Priorities List (NPL) Site Actions and Milestones by Fiscal Year

Action	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sites Proposed to the NPL	27	20	34	37	40	45	9	14	26	12	10	17	17	23	8	35	18	0
Sites Finalized on the NPL	13	18	17	43	39	29	19	20	11	18	11	12	18	20	20	25	24	0
Sites Deleted from the NPL	34	32	20	23	19	30	17	9	16	18	7	7	9	8	7	7	11	2
Milestone	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Partial Deletions*	0	6	7	3	5	4	7	7	7	5	3	3	3	3	5	3	2	2
Construction Completions	64	88	87	85	87	47	42	40	40	40	40	24	30	20	18	22	22	3

A fiscal year is October 1 through September 30.

Furthermore, the way in which the scarce CERCLA funding is being spent has changed dramatically, as much more of the CERCLA budget is going to legal fees and research projects than ever before, at the expense of actual, direct cleanup efforts.

¹ Chart 1 Source: Probst, Katherine N. "Superfund at 25: What Remains to be done". Resources for the Future. Fall 2005; Chart created using epa.gov data.

<http://www.rff.org/rff/News/Features/Superfund-at-25.cfm>

² Chart 2 source: "Number of National Priorities List (NPL) Site Actions and Milestones by Fiscal Year". United States Environmental Protection Agency. Updated 2013.

<http://www.epa.gov/superfund/sites/query/queryhtm/nplify.htm>

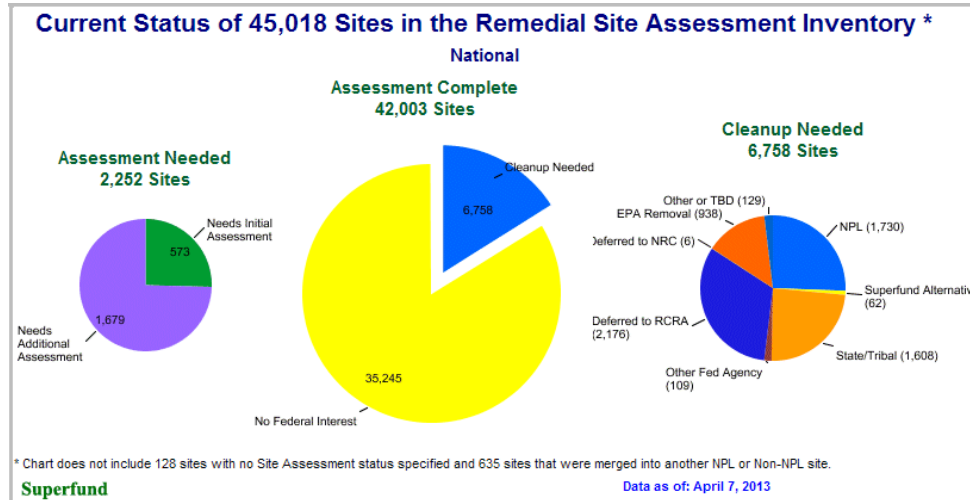
Without the funding from the polluting industries tax that was integral to CERCLA's "polluter pays" principle, the entire intent of the law is obliterated. Worse still, without a trust fund to finance cleanups, any Superfund sites that require public funding are at the mercy of congressional budgetary appropriation-- in the best case scenario, the cleanup burden falls on the taxpayers, and in the worst case, the cleanup simply does not receive the necessary funding. The Superfund program has been stripped of its operational autonomy, ruining it in the process.

CERCLA's defunding has made the Cleanup Process Inherently Inequitable

As established earlier, the rate at which superfund sites have been cleaned up has dramatically plummeted since CERCLA's defunding. As a result, superfund sites lower on the NPL list have been left neglected for years at a time. By 2006, out of 1,375 sites on the NPL list, CERCLA had only restored 294-- a mere 21%¹. The nature of the disparity is made all that much more clear when this data is taken in consideration with the nature of the CERCLA cleanup process: only NPL sites receive even basic federal support for cleanup efforts, while the standard for making the NPL requires a fairly high degree of toxic waste risk. A site that does not make the NPL, as such, is by no means necessarily a "Safe" site.

¹ Collins 99

The problem has not improved much in the past few years, either. A look at the current state of superfund sites makes it clear that the EPA is struggling to keep up¹:



To put those numbers into perspective: 2,252 potential superfund sites are still in need of further evaluation at this moment in time, and there are 1,730 sites already on the NPL. Compare that by referring to the previous chart of NPL milestones on page 35, to get an idea what a safe estimate on the number of site completions and additions we can expect this year, using the data for 2011, as it is the most complete recent dataset. Out of those 2,252 sites in need of further assessment to determine NPL status, only 35 were proposed to be added to the NPL, and only 25 were finalized for addition. Meanwhile, as far as successful cleanups go only 7 sites were deleted from the NPL registry to

¹ Chart from: "Status of Site Assessment Inventory". United States Environmental Protection Agency. As of April 7, 2013.
http://www.epa.gov/superfund/programs/npl_hrs/AttachD.htm

signify the end of CERCLA restoration. 3 more were partially completed. If we go by the standard of “Construction complete” as an acceptable standard of forward progress for restoration efforts, then a whopping 22 sites met this milestone in 2011. If the rate at which NPL sites were added more closely reflected the number of NPL sites in total, this would be a fairly solid rate of completion. However, to reiterate: by the EPA’s own numbers, that is 22 out of 1,730 sites on the NPL list in need of cleanup. If we limited that number to only finalized sites on the NPL, that would still leave 1,311 sites in need of cleanup¹. The EPA’s lack of CERCLA funding and resources has left it completely unable to meet an ever mounting need to assist in cleanup efforts.

Meanwhile, the cleanup process for these sites is already a lengthy one, but the backlog of response and the lack of Superfund funding available has resulted in the wait for cleanup taking decades in some regions. Consider the case of Woburn, MA, home to the Industri-Plex site, a site that was finalized on the NPL in 1983 after arsenic and other toxins were found at dangerously high levels in the soil. The reclamation plan for the Woburn site wasn’t finalized until 2006, and the construction process has yet to even

¹ “National Priorities List (NPL)”. United States Environmental Protection Agency. As of April 22, 2013.
<http://www.epa.gov/superfund/sites/npl/index.htm>

formally begin¹. Congress only appropriated cleanup funding to the Industri-Plex site in February of this year².

Furthermore, the CERCLA cleanup process is by no means unobtrusive, and can sometimes potentially cause further exposure to toxins in the community around a superfund site. This poses an exceptionally large problem for superfund sites located within urban environments. A recent example comes in the EPA's planned Superfund project in Brooklyn, NY's Gowanus Canal³. The Gowanus Canal runs along several of Brooklyn's most densely populated neighborhoods of a wide variety of socioeconomic and ethnic demographics. However, the neighborhood most affected by toxic waste disposal into the Gowanus is Red Hook, which poses an interesting problem as the Red Hook neighborhood, while historically predominantly African-American, has become increasingly gentrified in the past decade. However, it is still straddling the line between gentrification, and the area is still dense with pollutant-emitting industries. One major aspect of the NPL plan for Gowanus involves the creation of a large sewage storage container for containing the removed sewage; this sewage

¹ "Superfund Site Progress Profile INDUSTRI-PLEX". United States Environmental Protection Agency. Updated May 13, 2013.

<http://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0100580>

² Burnham-Snyder, Eben. "Markey Praises Payment for Woburn Industri-Plex Superfund Site". Congressman Ed Markey. Feb 27, 2013.

<http://markey.house.gov/press-release/markey-praises-payment-woburn-industri-plex-superfund-site>

³ "Superfund Site Progress Profile GOWANUS CANAL". United States Environmental Protection Agency, Updated May 13, 2013.

<http://cfpub.epa.gov/supercpad/cursites/csitinfo.cfm?id=0206222>

storage unit would be constructed and located in Red Hook¹. The process of removing and storing this sewage could potentially release the toxins from the sewage into the air of a neighborhood that is already at high risk for asthma due to the high industrial presence there. Furthermore, the storage facility is planned to be located near a prominent park. As a result, Red Hook residents have voiced their discontent and protest during the recently ended Public Comment period, calling for the EPA to embrace a more costly plan of shipping the waste to a different state for storage. In either case, the sludge dredging and cleanup process isn't expected to start until 2015, and will not finish until 2020, at the expected earliest.

Not only do cities face the problem of how to cleanup sites in densely populated areas, they also face the crisis of storage. Due to the density of an area like Brooklyn, storage is difficult, and any inevitable leakage or possible catastrophe with stored waste will have its effects all that much more amplified. If the waste is stored in a city, it will most likely be stored in a lower socioeconomic area, or an area with a high industrial presence-- two categories that are often one in the same, and are also the two types of neighborhoods already at the most risk of toxic waste exposure, along with already

¹ Berger, Joseph. "Neighbors Resist a Plan to Clean a Toxic Canal". *The New York Times*, May 6, 2013, Section A17.
<http://www.nytimes.com/2013/05/06/nyregion/epa-plan-to-clean-up-gowanus-canal-meets-local-resistance.html>

being subject to an increased risk of respiratory and health problems due to the nature of the urban built environment.

Furthermore, shipping the waste off for disposal elsewhere poses its own set of ethical problems. Is it fair to make another community put itself at risk to store this waste? Alternatively, is it right to store this waste in isolated areas, where it still does damage to the ecosystem? Unfortunately, the latter is more likely the very slightly lesser of the two evils in the short term, but isolated areas devoted to storing dangerous waste --such as the Yucca Mountain Nuclear waste storage repository-- will, over time, amass an increasingly large amount of stored waste, thereby exponentially raising the potential damage done by an accidental leak or breach. Indeed, the very act of simply storing the waste elsewhere is potentially unethical due to the fact that storing large quantities of toxic waste poses a potential risk for the storage unit to fail in some way, and for a similar, more intensified version of repeating the very disaster the cleanup effort tried to address.

Most ethically unsettling, however, is the potential disadvantage certain regions or demographics have in receiving NPL and Superfund attention. Even before CERCLA's defunding, a study of NPL data as of 1989 found that, "the number of NPL sites in counties highly represented by the poor, unemployed, and nonwhites is below the national average. (The number of NPL sites

where the percentages of the poor and racial minorities are below the average necessarily exceeds the national average.) Further, significantly more NPL sites are located where median housing values are higher than the national average for counties.”¹

Now, it should be made clear: just because a site is not on the NPL list does not mean it does not require urgent attention and cleanup. As seen earlier, there are thousands of sites in need of further assessment, and the level of toxic waste risk required for NPL listing is quite high. Furthermore, because of the EPA’s limited resources, it takes years for a toxic waste site to receive this assessment. As such, it is entirely possible that more affluent and Caucasian communities are at a significant advantage for receiving assessment attention and NPL listing, as members of these communities have more influence --socially, politically, and financially speaking-- to lead public efforts calling for EPA assessment and intervention. As Love Canal proved, capturing widespread public attention to a crisis significantly expedites the timetable of government response.

However, it is also worth considering the fact that out of decades of toxic waste catastrophes --particularly in industrial-dense, lower income and minority-prominent communities-- the

¹ Hird, John A., “Environmental Policy and Equity: The Case of Superfund.” *Journal of Political Analysis and Management*, Volume 12: Issue 2. 1993, p334. <http://www.jstor.org/stable/3325238>

galvanizing event that led to public and governmental support for regulatory reform involved a toxic waste spill in an affluent, suburban, and predominantly white community. To this end, it becomes clear that the NPL process, due to the limited ability of EPA investigators to visit toxic waste sites in a timely manner, is inherently biased towards more affluent and Caucasian communities, if only because of their greater media visibility, increased influence, and greater financial resources at their disposal to help bring attention to their toxic waste sites. Furthermore, poorer communities often have lower HS graduation rates, and often have lower rates of English fluency and literacy as well, posing a severe obstacle to garnering awareness and EPA attention for these populations.

Even in spite of the inherent bias of the NPL system towards socioeconomically disadvantaged communities, the NPL assessment process still largely hinges around severity-- any site on the NPL list poses a severe toxic risk to its community. This makes it all the more disturbing that a 2008 study using 2008 NPL site locations and 2000 U.S. census data found that of 12,870,400 people living within one mile of an NPL site, 4,189,590 of them are living 200% below the poverty level¹. Approximately a third of all

¹ Golden, Meredith L.; Yetman, Gregory; Chai-Onn, Tricia. "Assessment of Populations in Proximity to Superfund National Priorities List Sites". Center for International Earth Science Information Network, Columbia University. December 5, 2008. P9.
http://www.ciesin.columbia.edu/repository/health/docs/NIEHS_SFpop_CIESIN_FinalReport_wAppendices_updated_06_05_09.pdf

U.S. citizens who are put at increased risk of toxic waste exposure are living in severe destitution. It is damningly clear that due to the increased presence of industrial facilities in predominantly lower-income communities, these already disadvantaged citizens are put at a significantly higher risk of being affected by a severe, NPL-worthy toxic waste incident. In fact, these statistics only serve to exacerbate the previous data regarding NPL assessment and selection biases, as in spite of those biases towards priority assessment and cleanup efforts in more affluent communities, a massive plurality of those affected by NPL sites are severely destitute. Furthermore, while it is difficult to find contemporary data regarding the rates of NPL site approval by race and affluence after de-funding of CERCLA, an examination of data in this study shows that the vast majority of residents living in a 1 mile radius of these established NPL sites are white¹, regardless of affluence. Considering that these NPL sites are largely located in poor neighborhoods, and also considering the disproportionately high rates of poverty found in predominantly minority communities, it becomes evident that there is a strong case for a selection bias in favor of white neighborhoods when it comes to NPL evaluation, meaning that poor minority communities are at equal risk of being affected by a toxic waste incident, but it is far more likely that their

¹ Golden, P9: Of those within a mile of an NPL site, 2,581,900 are Hispanic, and 1,513,350 are African American. 8,855,930 are white.

disasters will go years, even decades without assessment, if at all. This ingrained practice of EPA bias and neglect becomes a nightmarish proposition when compared with the Government Accountability Office's assessment that there are, "between 150,000 and 500,000 toxic sites that remain completely unaddressed by CERCLA."¹ There is a clear cause for concern over an implicit racial and socioeconomic bias in the NPL selection and CERCLA reclamation process, and the lack of readily available research on the matter only makes this disparity worse. It is indicative of a regulatory culture that takes a *de facto* permissive stance towards industrial negligence in poorer and predominantly minority neighborhoods, as the data clearly indicates there is a good chance that the EPA will never get around to investigating these locales.

When it is considered that there is a bias against certain population demographics in the NPL selection process, that the cleanup process is difficult and potentially equally damaging, and that often CERCLA cleanup efforts take decades to run to completion, there are already a myriad of ethical complications with CERCLA's current implementation, in spite of the fact that the vast majority of them are not endemic to the explicit written structure of the law. The fact, then, that CERCLA's defunding has gridlocked and impeded the assessment and cleanup process

¹ Collins 99

exponentially makes such inherent biases of neglect absolutely criminal.

SOLUTIONS AND CONCLUSIONS

CERCLA was already a flawed law due to the compromises and oversights it made in order to expedite its passage under the term of a friendly Congress and Presidency. However, its problems were only exacerbated by its initial improper and inadequate implementation, and by its crippling de-funding at the hands of Congress. As a result, and already ethically problematic solution to the problem of toxic waste dumps becomes a nightmare, as the EPA lacks the funding to support cleanup efforts at sites that need them the most: the sites where there is no company to hold accountable for the cleanup.

CERCLA, when it works, can do good things; the neighborhoods that do receive cleanup attention greatly benefit from it, and CERCLA's flexible criteria for cleanup solutions leaves room for the use of innovative and groundbreaking advances in methods and technology for cleaning up toxic waste. However, the cases in which it has been properly implemented are the exception, due simply to the fact that the CERCLA process is so infrequently carried out to completion in a timely and effective fashion. When CERCLA had non-conditional federal funding to work with, it was limited by internal EPA and Executive resistance; once it

exhausted its trust fund, CERCLA simply lacked the resources to be effective on a large and necessary scale.

It becomes clear that CERCLA is in need of dramatic reform, and the EPA is in dire need of increased operative ability. While it may seem like an obvious and basic solution, it must be noted that any improvement to the dire state of unaddressed toxic waste sites must be first addressed by re-implementing the “polluters pay” tax that was so integral to providing the EPA its operative autonomy in enforcing CERCLA, while at the same time defining the very purpose of the law: to avoid the further victimization of those already affected by toxic waste sites.

The next step, then, is to reform CERCLA itself, by adding petroleum to the list of toxins for which industries are legally liable, and by establishing firm timetables on the Preliminary Assessment/Site Inspection and on the NPL Listing process at the bare minimum, while also holding EPA employees involved in the NPL process accountable for making consistent and timely process in every stage of the cleanup effort. Further, a revised CERCLA should have stronger standards regarding how much CERCLA funding is actually used on the cleanup effort, and it should place the burden of legal costs on the responsible organization as well, in order to reduce drawn-out legal battles made by companies responsible for toxic waste incidents. Of course, in order to ensure

this proper implementation, it is necessary to significantly increase the EPA's federal funding and resources.

Furthermore, in order to address the inequity of assessment attention in the NPL process, the EPA should consider implementing educational programs in lower-income and minority communities, in order to inform them about how they can effectively pursue EPA attention for toxic waste issues in their neighborhood. Of course, the NPL's issue of bias will not be completely solved by this, as this racial and socioeconomic inequity is endemic of American society as a whole.

To further consider the impracticality of these solutions, it needs to be noted that with the massive number of unaddressed toxic waste sites, and with the invariable truth that these sites will continue to emerge at a staggeringly high rate for the foreseeable future without behavioral change, it becomes clear that even if the EPA had levels of funding approaching that of the Department of Defense, it still might lack the resources to address all these toxic waste sites with the urgency they require. It is all that much worse, as such, when upon considering the current economic climate of the present and the realities of political funding biases, it becomes clear that it is impossible for the EPA to get the resources and funding it needs to address cleanup sites at the rate it needs to, even if the "polluters pay" tax was reinstated.

It becomes clear, then, that in the immediacy, we can only hope to reform CERCLA in order to give the EPA more functional ability with the hopes that it will improve the number of toxic waste sites that do receive necessary attention, even if the task of keeping pace with the rate at which these sites appear has grown to be wholly Sisyphean. Furthermore, our long term hope rests on our ability to strengthen prospective and preventative industrial regulations on waste handling, and on our ability to bring about a cultural and behavioral shift in the way we deal with waste and industrial emissions. Without such a seismic change in American society's relationship with toxin-producing industries and institutions, the rate at which Superfund sites appear will continue to be staggeringly high, and will only get worse with time. Indeed, even with a cultural shift, toxic waste incidents will continue to inevitably occur at a high incidence, if caused by nothing else but the negligence and infrastructural establishments of our predecessors and present contemporaries.

As such, the situation is quite dire for the health of CERCLA, and even worse for the environmental health of United States, but a reformed Superfund Act does have the potential to make a more significant contribution to the cleanup process, provided the EPA commits itself to the mission of its proper implementation, and

Congress properly reforms the law to reinstate the crucial “polluters pay” tax that makes CERCLA’s very mission possible.

Major improvements and advancements in the way America handles toxic waste disposal will not appear overnight, but every small step forward makes a critical difference, and there is no clearer step to take than finally giving CERCLA its due reform and proper implementation. A society is only as meritorious as it is willing to engage in the hopelessly asymptotic struggle against its own endemic wrongdoings. Until we start to change our laws, our behavior, and our awareness of our own impact on the world around us, our swords will remain in our sheathes, and we will bear passive witness to the global existential threat posed by our negligence.

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