S. HRG. 113–770

PROTECTING TAXPAYERS AND ENSURING ACCOUNTABILITY: FASTER SUPERFUND CLEANUPS FOR HEALTHIER COMMUNITIES

HEARING

BEFORE THE

SUBCOMMITTEE ON OVERSIGHT

OF THE

COMMITTEE ON
ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

ONE HUNDRED THIRTEENTH CONGRESS

SECOND SESSION

JUNE 10, 2014

Printed for the use of the Committee on Environment and Public Works

Available via the World Wide Web: http://www.gpo.gov/fdsys

U.S. GOVERNMENT PUBLISHING OFFICE

98–180 PDF WASHINGTON : 2016

For sale by the Superintendent of Documents, U.S. Government Publishing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512–1800; DC area (202) 512–1800
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HEARING ON PROTECTING TAXPAYERS AND ENSURING ACCOUNTABILITY: FASTER SUPERFUND CLEANUPS FOR HEALTHIER COMMUNITIES

TUESDAY, JUNE 10, 2014

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON OVERSIGHT,
Washington, DC.

The committee met, pursuant to notice, at 2:30 p.m. in room 406, Dirksen Senate Building, Hon. Corey Booker (chairman of the subcommittee) presiding.

Present: Senators Booker, Gillibrand and Inhofe.

OPENING STATEMENT OF HON. COREY BOOKER, U.S. SENATOR FROM THE STATE OF NEW JERSEY

Senator BOOKER. Good afternoon, everyone.

I am very happy to be chairing this hearing of the Subcommittee on Oversight of the Committee on Environment and Public Works. We will come to order.

Senator Inhofe just pointed out I have started off well. This is the first time I am holding a gavel, so if I make any mistakes, the Senators decided to be very charitable with me as I hope you will be as well.

On behalf of Ranking Member Inhofe and members of the subcommittee, welcome to our witnesses. Thanks to several of you for traveling long distances. Some of you have traveled distances I know so well down from New Jersey, so I am grateful.

Across the United States, we have far too many unremediated, dangerous Superfund sites sitting in our neighborhoods, properties that are literally poisoning residents. The problem is particularly acute in the State of New Jersey which is both the most densely populated Stated in America and the State with the most Superfund sites.

Superfund sites on the National Priority List are the most heavily contaminated properties in the Country and the sites that pose the greatest potential risk to public health and environment. These sites endanger the health of our children and thwart economic development in our communities.

Our purpose today is to look at the impact these contaminated sites are having on our communities, to look at ways to speed up the cleanup process and to look at options for how to bring desperately needed additional funding to the Superfund Program.

As Mayor of Newark, I have seen firsthand the devastating impacts that Superfund sites can have on a community. When they are not cleaned up, contaminated properties are blights in our American neighborhoods. When these sites are cleaned up, the opportunities flow for job creation, new tax revenues and most importantly, for healthier communities.

It has been estimated that 11 million Americans live within one mile of a Superfund site and that 3–4 million children our most vulnerable Americans do as well. Let me repeat, that is 3–4 million children in the United States who live within one mile of a Superfund site.

The reason that is important is because of what I believe is a truly chilling statistic. Researchers at Princeton, MIT and Berkeley, after reviewing hundreds and hundreds of thousands of birth records, found that babies born to mothers living within one mile of a Superfund site, prior to that site being cleaned up, had a 20 percent great incident of being born with birth defects.

Let me repeat, that is a 20 percent higher rate—20 percent more babies being born with congenital anomalies like heart defects or Downs Syndrome, prior to a Superfund site being cleaned up.

That study is not alone. For example, a 2009 peer-reviewed research study concluded that autism rates were substantially higher for children within ten miles of a Superfund site. This is alarming and unacceptable that we have sites in America ready to go but for the resources we are not cleaning them up.

Every day that we wait, every month, every year that goes by, more children are facing these staggering risks, more parents have to worry about the health of their unborn children. nationwide, there are hundreds of Superfund sites that are on the National Priority List where mediation has not even begun. There are hundreds more sites on the list where remediation is ongoing but too often at a pace that is slowed by inefficient funding problems.

Appropriated funding for 2013 and 2014 for the Superfund Program is at the lowest level of funding in over 25 years. Adjusted for inflation, we are currently funding the Superfund Program at 40 percent of 1987 levels. From 1992 to 2000, an average of 80 Superfund cleanups were completed each year. In 2013, just 14 were completed.

In 2010, the GAO issued a report which found the current funding levels likely to not be sufficient to meet the needs of the Superfund Program. Based upon EPA official estimates of future program costs, the GAO found future funding needed will be 2.5 times higher than funds appropriated annually for the program over the past decades.

From the time of the GAO report to today, things have only gotten worse. Funding has dropped an additional 17 percent while more sites have been added to the National Priority List.

Today, Senator Boxer and I are requesting that the GAO update their 2010 report. This week, along with Senator Menendez, my senior Senator from New Jersey, we will be introducing the Superfund Polluter Pays Restoration Act of 2014. This bill would rein-State the excise tax on polluting industries, one approved by President Reagan, in order to provide funding for Superfund cleanups.

Today, I look forward to hearing from all of our witnesses and I look forward to working with Senators on both sides of the aisle to move forward to address these serious concerns and issues.

Senator BOOKER. Before hearing from our witnesses, I will turn to Senator Inhofe, the Ranking Member, for his opening statement. Again, I am grateful that you are here, Senator.

OPENING STATEMENT OF HON. JAMES INHOFE, U.S. SENATOR FROM THE STATE OF OKLAHOMA

Senator INHOFE. Thank you, Mr. Chairman.

We also have an Oklahoman here, Scott Thompson. We go back many years. He will be on the second panel. I hope we will be able to return from the votes that are in line right now.

Thank you for holding this meeting. I know the Superfund Program is a very important one in your State, Mr. Chairman, as well as in mine. Tar Creek was a big one that we had in Oklahoma. It is a 40 square mile area in the northeastern part of the State that was contaminated by lead and zinc mines that were abandoned back in the 1970's.

The site was added to the National Priority List in 1981 but it rightfully received a lot of attention in 2006 when the Corps of Engineers released a study showing that the underground mines were at risk of collapsing.

After a lot of effort on the part of the Oklahoma delegation, the EPA, the Oklahoma Department of Environmental Quality and several other stakeholders, we successfully got the at risk people out of the Tar Creek area.

To tell you how serious this was, Mr. Chairman, we had one elementary school that we found after we did a lot of digging around to find out where the danger of collapse was, and it went right under the elementary school and could have happened at any time.

In a number of the major components of the cleanup, work had already been completed. While there is more to be done, I am very appreciative that progress has been made by all the stakeholders involved.

Superfund sites need to be cleaned up. There is no question about that but the cleanup process needs to happen in the most cost effective and fair way possible. Generally, the financing for Superfund cleanups comes from agreements between the EPA and the parties responsible for the pollution.

Having the responsible parties pay for the contamination they cause is the way it should be. This is what happens about 70 percent of the time. In other cases, where the responsible parties cannot be identified, EPA pays for the cleanup out of appropriated dollars.

Some, including the Chairman of this Subcommittee, have called for the reinstatement of the Superfund tax to provide additional financing to the Superfund list. I understand why they are putting marker down. The tax is structured in a way that makes it appear like polluter pays when in reality, it is not.

There are two things I want to bring to everyone's attention that I do not think people realize about the Superfund tax. First, it applies to everyone. By taxing each barrel of oil produced and imposing a surtax on all income earned over $1.2 million by corporations,

even small businesses that do not have any risk of contamination are required to pay the tax.

While I know many think oil, gas and chemical industries are dirty, I do not believe the EPA has identified a single responsible party that did not ultimately pay its fair share of remedial costs at a Superfund site.

The second thing is that in the President's budget, does not propose to use any of the additional revenue raised by the Superfund tax, if it is actually imposed, to actually boost spending in the Superfund Program. This underscores that problem we have is not funding; it is priorities.

In fact, during the recent years of high appropriations for the EPA, funding for the Superfund Program remained flat. It did not go up by any significant amount. The funding went up for the EPA but not the Superfund portion of that. It makes me think that the purpose behind the Administration's Superfund tax proposal is more about imposing more taxes on industry than it is about cleaning up contaminated sites.

To increase the effectiveness of the Superfund Program, the EPA needs to be doing more with less. The agency needs to trim its costs of administering the program so that more funds are freed up for cleanup work. Once the EPA has demonstrated that it can do this, it would be reasonable for us to consider moving funds within the EPA's existing budget to make this work.

We had several examples before you began serving in this body, Mr. Chairman. One was in Louisiana where we had a way of cleaning up a site that was about one-fourth the cost of doing it through the EPA. We had a difficult time getting this done.

I think we need to look at those opportunities and look at the cheapest way to get it done as opposed to looking always to the bureaucracy. As this comes up and we talk about renewing this, we want to be sure to cover those options.

I will be there with you or against you but we are working in terms of correcting the problem.

[The prepared statement of Senator Inhofe follows:]

STATEMENT OF HON. JAMES INHOFE, U.S. SENATOR
FROM THE STATE OF OKLAHOMA

Chairman Booker, thank you for taking the time to hold this hearing. I know the Superfund program is very important to your state, as it is to mine. Tar Creek is a 40 square mile area in the northeastern part of Oklahoma that was contaminated by lead and zinc mines that were abandoned in the 1970's. The site was added to the National Priorities List in 1981, but it rightfully received a lot of attention in 2006 when the Corps of Engineers released a study showing that the underground mines were at risk of collapsing.

After a lot of effort on the part of the Oklahoma delegation, Oklahoma's Department of Environmental Quality, EPA Region 6, and many other stakeholders, we were successfully able to get all of the at-risk folks out of the Tar Creek area who were willing to move. A number of the major components of the cleanup work have already been completed, and while there is still a lot of work to be done, I'm very appreciative of the progress that's being made by all the stakeholders involved. Superfund sites need to be cleaned up, there is no question about that. But the cleanup process needs to happen in the most cost effective way possible.

Generally, the financing for Superfund cleanups comes from agreements between EPA and the parties responsible for the pollution. Having the responsible parties pay for the contamination they caused is the way it should be. This is what happens about 70 percent of the time. In other cases, where the responsible parties cannot be identified, the EPA pays for the cleanup out of appropriated dollars. Some, in-

cluding the Chairman of the Subcommittee, have called for the reinstatement of the Superfund tax to provide additional financing to the Superfund trust fund.

I understand why they are putting this marker down. The tax is structured in a way that makes it appear like a "polluter pays" tax, when in reality, it is not. There are two things I want to bring to everyone's attention that I do not think people realize about the superfund tax. The first is that it applies to everyone. By taxing each barrel of oil produced and imposing a surtax on all income earned over $2 million by corporations, even small businesses that do not have any risk of contamination are required to pay the tax. While I know many think the oil, gas, and chemical industries are dirty, I do not believe the EPA has identified a single responsible party that did not ultimately pay its fair share of remedial costs at a Superfund site.

The second is that in the President's budget, he does not propose to use any of the additional revenue raised by the Superfund tax to actually boost spending in the Superfund program. This underscores that the problem we have is not funding—it is priorities. In fact, during recent years of high appropriations for the EPA, funding for the Superfund program remained flat. It did not go up by any significant amount. This makes me think that the purpose behind the Administration's superfund tax proposal is more about imposing more taxes on industry than it is about cleaning up contaminated sites. To increase the effectiveness of the Superfund program, the EPA needs to be doing more with less. The agency needs to trim its cost of administering the program so that more funds are freed up for cleanup work. Once EPA has demonstrated that it can do this, it would be reasonable for us to consider moving funds within EPA's existing budget framework from lower priority, non-infrastructure related programs to this important program. I thank the witnesses for appearing today and look forward to hearing your testimony.

Senator BOOKER. I want to thank the Ranking Member for his opening comments.

Maybe as an effort to build some suspense, Senator Inhofe and I actually need to go do a quick vote. We will have a short recess and after we vote, I will hustle back here as quickly as possible. I don't think I will keep up with this guy, but I will try.

We will reconvene at 3:15 p.m.

[Recess.]

Senator BOOKER. According to Senate standard time, we are earlier than we said we would be. Please take note of that for the congressional Record, please.

Picking up after the opening statements of myself and the Ranking Member, I am happy that we can actually now move to Barry Breen, Principal Deputy Assistant Administrator, Office of Solid Waste and Emergency Response, EPA. We are very grateful that you would take time to come down.

Also on your left is Judith Enck who is the Region 2 Administrator of the U.S. Environmental Protection Agency.

STATEMENT OF BARRY N. BREEN, PRINCIPAL DEPUTY ASSISTANT ADMINISTRATOR, OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE, U.S. ENVIRONMENTAL PROTECTION AGENCY, ACCOMPANIED BY: JUDITH A. ENCK, REGION 2 ADMINISTRATOR, U.S. ENVIRONMENTAL PROTECTION AGENCY

Mr. BREEN. Thank you, Mr. Chairman.

As you described, I am joined by Administrator Judith Enck from the Region 2 office. She is here to answer site-specific and program-related questions for sites in New Jersey, New York, Puerto Rico and the Virgin Islands.

The Superfund Program was established in 1980 to respond to hazardous waste sites throughout the Nation. The program has a variety of tools to help protect human health and the environment.

These include shorter term removal actions and longer term remedial actions.

Each year, more than 30,000 emergencies involving the release or threatened release of oil or hazardous substances are reported in the United States. In a typical year, EPA completes or oversees the completion of some 300 removal actions.

On the longer term side, while there is no common way to characterize communities located near Superfund sites, our analysis of the latest census data found that approximately 49 million people live within three miles of a Superfund NPL site or Superfund alternative agreement site.

Mr. Chairman, I picked up as well your description of those who live within a one mile radius and both are relevant ways of measuring.

Using the three mile radius, the population is more likely to be minority, low income, linguistically isolated and less likely to have a high school education than the U.S. population as a whole. As a result, these communities may have fewer resources with which to address concerns about their health and the environment.

The importance of Superfund cleanup is highlighted by recent academic research. You mentioned it as well, Mr. Chairman, the article in the American Economic Review that indicated that congenital abnormalities are reduced by roughly 20–25 percent for those living within 5,000 meters of a site.

As well, Senator Inhofe, you described the Tar Creek Superfund site and their site actions have helped reduce the percentage of local children who had elevated blood lead levels from 35 percent to less than 1 percent. We are enormously proud to have worked with partners in that respect, including Executive Director Thompson's Oklahoma DEQ in this matter.

Besides the important health benefits, there are important economic benefits generated by the Superfund Program. A 2012 study completed by researchers at Duke University and the University of Pittsburgh found that deletion of a site from the National Priorities List after cleanup significantly raised the value of owner-occupied housing within three miles of the site by between 18 and 24 percent.

The shape of the curve is instructive in that regard. The study tracks the value changes in property over time, not just at the time of discovery but as well the time all the way through to deletion from the NPL.

What we find is that the property value decreases when the site is proposed for the NPL but then increases by more than a compensating amount when the site is finalized on the NPL and then continues to increase as the cleanup progresses.

The market seems to be anticipating the work that the EPA will do. That is, first announcement of a proposal does have a draw down in the property value but then over time, the work much more than makes up for that as we come to completion so that at the end, when the site is deleted, it has increased in value by between 18 and 24 percent.

That is residential, owner-occupied and that is the average but of course what that means is that enables that neighborhood and

community to do that much more—not just on environmental matters, but throughout the things that government can do.

Working with communities on the future of sites has resulted in more than 700 Superfund sites in actual, continued or planned reuse. At the 373 sites that have been studied, there are more than 2000 businesses generating more than $32 billion in annual sales, providing more than 70,000 jobs and $4.9 billion in employment income.

While Superfund continues to make progress, there are challenges. One is that the funding has decreased from the Fiscal Year 2011 budget of $605 million to the Fiscal Year 2014 budget of $500 million. This has resulted in a continued backlog of sites.

The President's Fiscal Year 2015 budget requests an increase of $43 million. The President has also requested that the Congress reinState the lapsed Superfund tax.

Thank you, Mr. Chairman. That completes my statement. I and Regional Administrator Enck will be happy to answer questions from you or your colleague.

[The prepared statement of Mr. Breen follows:]

TESTIMONY OF BARRY BREEN
PRINCIPAL DEPUTY ASSISTANT ADMINISTRATOR
OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE OVERSIGHT SUBCOMMITTEE
ENVIRONMENT AND PUBLIC WORKS COMMITTEE
UNITED STATES SENATE

JUNE 10, 2014

Chairman Booker and members of the subcommittee, I am Barry Breen, Principal Deputy Assistant Administrator for EPA's Office of Solid Waste and Emergency Response (OSWER). Thank you for the opportunity to appear today to discuss the Superfund program's accomplishments and challenges. Accompanying me today is EPA Region 2 Administrator Judith Enck who is available to answer site specific and program related questions associated with New Jersey, New York, Puerto Rico and the U.S. Virgin Islands.

THE SUPERFUND PROGRAM

The Superfund program has a variety of tools to help protect human health and the environment. These include shorter-term removal actions to mitigate immediate threats to human health and the environment and remedial actions, which address more complex and longer-term cleanup of hazardous waste sites.

Each year, more than 30,000 emergencies involving the release (or threatened release) of oil and hazardous substances are reported in the United States, with emergencies ranging from small scale spills to large events requiring prompt action and evacuation of nearby populations. EPA coordinates and implements a wide range of activities to ensure that adequate and timely response measures are taken in communities affected by hazardous substances and oil releases,

where state and local first responder capabilities have been exceeded, or where additional support is needed. EPA conducts time-critical and non-time-critical removal actions when necessary to protect human health and the environment by either funding response actions directly or overseeing and enforcing actions conducted by potentially responsible parties (PRPs).

Through shorter-term actions, the Superfund program controls exposure to hazardous substances so that human health is protected while long-term cleanup is underway. For example, where EPA determines that existing water supplies are unsafe due to releases from contaminated sites, we provide alternative sources of drinking water. EPA has provided more than 2.1 million people near or on Superfund National Priorities List (NPL) sites with alternative sources of drinking water.

In 2013, the Superfund Removal and Emergency Response programs conducted or provided oversight for 304 emergency response and removal cleanup actions. To date, more than 11,000 removals at both NPL and non-NPL hazardous waste sites have been completed to reduce the immediate threat to human health and the environment.

The Superfund Remedial program continues to protect human health and the environment by addressing high priority, more complex, often multimedia, longer-term cleanups. While there is no common way to characterize communities located near Superfund NPL sites, EPA analysis of the latest census data found that approximately 49 million people live within 3 miles of Superfund NPL sites as well as Superfund Alternative Agreement sites. This population is predominately minority, low income, and less likely to have a high school education than the U.S. population as a whole. As a result, these communities may have fewer resources with which to address concerns about their health and environment.

Through FY 2013, EPA and its state and tribal partners completed final assessments at more than 42,000 contaminated sites. In addition, through May 2014, 1,701 sites have been placed on the NPL with cleanup construction completed at 1,158 NPL sites, which represents approximately 68% of the sites listed on the NPL. All response actions have been completed at 375 sites (approximately 22% of the sites on the NPL), resulting in deletion from the NPL. Further, the Superfund program continued its focus on controlling potential human exposure at NPL sites. In FY 2013, human exposure was brought under control at an additional 13 sites resulting in a cumulative total of 1,389 NPL sites where human exposure is under control. And groundwater migration was brought under control at an additional 18 sites resulting in a cumulative total of 1,091 NPL sites where contaminated groundwater migration is under control.

Throughout the Superfund cleanup efforts, there is a commitment to meaningfully involve communities and follow through on Administrator Gina McCarthy's goal to make a visible difference in communities across the country. Transparency, access and public involvement are essential to meaningful and deliberate decision-making. EPA helps communities effectively participate in EPA decision-making by providing technical assistance through our Technical Assistance Grant and Technical Assistance Services for Communities programs. Bringing together diverse groups of community members through forums such as the Community Advisory Group better informs our decisions and actions to protect Americans where they live, work, play, and learn.

We are paying particular attention to how the Agency can improve its technical assistance processes. We recognize there are organizations outside of EPA that provide independent technical assistance, and are looking to expand opportunities for cooperation

between EPA and colleges, universities, and nonprofits with the shared goal of assessing and addressing the unmet technical assistance needs of impacted communities.

As the Superfund program has continued to mature and evolve, EPA has looked for additional ways to assess remedial program progress beyond the number of sites that have reached construction completion and help keep the public informed about site cleanup milestones. To better measure long-term progress, the program adopted a Site Wide Ready for Anticipated Use (SWRAU) measure. This measure tracks the number of NPL sites where the remedy is constructed (construction complete) and all of the engineering and institutional controls are in place to ensure the remedy is protective for reasonably anticipated uses over the long-term. Those anticipated uses and needed controls are outlined in the site Record of Decision (ROD). Through FY 2013, EPA determined 662 sites to be SWRAU.

EPA is continuing its efforts to efficiently utilize every dollar and resource available to clean up contaminated sites and to protect human health. In FY 2013, EPA's Superfund program obligated more than $230 million in appropriated funds, $21 million in state cost-share contributions and $82 million in responsible party settlement resources, for a total of $333 million to conduct cleanup construction and post-construction work at Superfund sites.

In addition, EPA has been very successful in leveraging federal enforcement dollars to secure private party cleanups. In FY 2013, EPA secured commitments from PRPs to perform cleanups and reimburse EPA for past costs worth more than $1.5 billion. The cumulative value of private party cleanup commitments and cost recovery settlements is more than $38 billion. EPA's enforcement efforts have allowed the program to focus EPA's appropriated funds on sites where PRPs cannot be identified or are unable to pay for or perform the cleanup.

EPA has also been particularly effective in leveraging its appropriated funding through the use of responsible party settlements to establish site-specific special accounts. Through the end of FY 2013, EPA has collected approximately $4.5 billion (including earned interest) in more than 1,200 site-specific special accounts. Of this amount, EPA has obligated or disbursed $2.8 billion for site-specific response actions, and developed multi-year, site-specific plans for using more than 99% of the $1.7 billion that remains available to help fund response actions. These funds will be used to conduct response work in addition to appropriated resources used at sites where PRPs cannot be identified or are unable to pay for or perform the cleanup.

The importance of Superfund cleanup is highlighted by recent academic research published in the *American Economic Review*[1] that found investment in Superfund cleanups reduces the incidence of congenital abnormalities by roughly 20-25 percent for those living within 5,000 meters of a site. In addition, the Superfund program not only benefits communities by protecting human health and the environment but it helps generate community economic benefits. A January 2012 study[2] completed by researchers at Duke University and the University of Pittsburgh examined the localized benefits from the cleanup of Superfund sites across the United States. Using census tract data, the researchers found that deletion of sites from the NPL after cleanup, significantly raises the value of owner-occupied housing within 3 miles of the site by 18.6% to 24.5%. Furthermore, property values were observed to increase at the site listing and construction completion program milestones.

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[1] Currie, Janet, Michael Greenstone, and Enrico Moretti. 2012. "Superfund Cleanups and Infant Health". *American Economic Review*, 101(3): 435-441

[2] Gamper-Rabindran, Shanti and Christopher Timmons. 2013. "Does cleanup of hazardous waste sites raise housing values? Evidence of spatially localized benefits," Journal of Environmental Economics and Management 65(3): 345-360

In addition, the Superfund program history of engaging communities in the future use of sites has resulted in more than 700 sites that are in actual, continued or planned reuse. At 373 sites that have been studied[3], there are 2,240 businesses generating $32.6 billion in annual sales, providing over 70,000 jobs and $4.9 billion in employment income.

The Universal Oil Products (Chemical Division) Superfund site located in East Rutherford, New Jersey is an example of how cleanup can lead to beneficial use of a Superfund site. Once home to a chemical and solvent recovery facility, the site now supports several shopping areas and a rail line extension. The rail extension, known as the Sports Line, connects the commuter rail line on site with nearby MetLife Stadium, home of the New York Giants and New York Jets and was the site of the 2014 Super Bowl. Public transportation ridership on the Sports Line saves about 170,000 vehicle miles traveled during each football game. Businesses on site support about 254 jobs and contribute more than $8 million in annual employment income to the local community.

Another example of cleanup and beneficial use is the Industri-Plex Superfund site in Woburn, Massachusetts. Past industrial practices had led to significant soil contamination and the closing of two municipal water supply wells. EPA added the site to the NPL, and response actions have included the excavation and removal of debris and contaminated soils, treatment of contaminated soils, and extraction and treatment of contaminated ground water. Today, this formerly contaminated site is now home to the $10 million James Anderson Regional Transportation Center that relieves congestion on several highways leading into Boston and eases the commutes of many area residents. In addition, the site hosts a new interstate highway

[3] Economic data provided for the 373 Superfund sites known to be in revenue-generating re-use include annual sales, number of employees and annual employment income collected in 2012 and 2013, from the Hoovers Dun and Bradstreet database and from Manta.com

exchange, a 200,000 square foot shopping center, an office park, and a hotel complex. Site cleanup also restored wetlands and provided recreational green space for area residents.

EPA also supports the cleanup and beneficial use of federal facility sites through its Superfund program oversight role. The Curtis Bay Coast Guard Yard in Baltimore, Maryland achieved the Construction Completion milestone in 2013, resulting in the fastest Superfund cleanup of a federal facility in the State of Maryland. EPA partnered with the Coast Guard and the State of Maryland to conduct an eleven-year cleanup project which included excavating thousands of tons of contaminated soil and sediment while making use of innovative green practices. The cleanup contributes to the Chesapeake Bay restoration efforts and incorporates many sustainable manufacturing practices including creation of its own electricity from landfill gas at an on-site co-generation plant.

SUPERFUND PROGRAM CHALLENGES AND ACTIONS TAKEN

While Superfund continues to make progress cleaning up hazardous waste sites, we still face numerous challenges. One such challenge is the Superfund Remedial Program's appropriated budget, which has declined from the FY 2011 enacted level of $605 million to $500 million in FY 2014. The decline in EPA's appropriated resources has resulted in a continued backlog of sites with unfunded new projects that are ready to start construction where other alternatives, such as PRPs conducting the work or special account resources, are not available for those projects. To help address some of the impact on new project starts, the FY 2015 President's budget requests an increase of $43 million for the Superfund Remedial Program. In addition to challenges associated with funding new start projects, the Superfund budget for federal facility oversight has been particularly hard hit with a significant decrease in FY 2014. The enacted budget was 21% lower than the FY 2014 President's budget request. The decrease has created a

challenge to EPA's NPL oversight activities and may create situations where Agency technical approval of NPL site cleanup documents are delayed. A further budget challenge is related to the need to more effectively manage cleanup resources to address the largest and most complex sites that have come to demand an increasing proportion of EPA's Superfund resources.

To address these Superfund program challenges, EPA is integrating programmatic improvements across all stages of the cleanup process. We are working to integrate and leverage the Agency's land cleanup authorities to put previously contaminated sites back into productive use while protecting human health and the environment. EPA is also improving our cleanup enforcement activities as a means to address the funding challenges that our program faces. By obtaining responsible party participation in conducting and/or financing cleanups, we preserve Superfund monies to address sites where there are no viable responsible parties.

Starting in FY 2011, EPA began reporting on a Superfund NPL site cleanup performance measure called "remedial action project completions." Projects under this category represent specific discrete actions, such as a particular media remediated (groundwater contamination), areas of a site remediated (discrete areas of contamination, building demolition, etc.), or particular technologies employed (soil vapor extraction). By highlighting this more focused aspect of the cleanup process as a performance measure, EPA can monitor incremental progress and can provide communities with greater opportunity to evaluate and hold EPA accountable for specific work conducted in the field in addition to overall progress toward risk reduction and reuse at Superfund sites.

In FY 2012, EPA completed a comprehensive "National Strategy to Expand Optimization Practices from Site Assessment to Site Completion." This Strategy institutes changes to Superfund remedial program business processes to take advantage of newer tools and strategies

that promote more effective and efficient cleanups. It lays out several objectives to achieve verifiably protective site cleanups faster, cleaner, greener and cheaper using techniques throughout the life cycle of site cleanup, including site evaluation, construction and operation and maintenance. The Strategy also capitalizes on the benefits of optimization through multiple processes including: work planning, communicating, training, implementing, measuring and cost accounting. As part of this Strategy, EPA expects regions to systemically apply optimization concepts throughout all phases of the remedial pipeline as a normal business practice. For example, at the Pemaco Superfund site in California, EPA reduced monitoring costs from approximately $443 thousand per year to $230 thousand per year using groundwater remedy optimization strategies.

In FY 2013, EPA undertook the Superfund Remedial Program Review as a follow on to the earlier Integrated Cleanup Initiative and in recognition of the need to continue to critically evaluate program resources and cleanup processes to minimize impacts to the Superfund remedial program's effectiveness in protecting human health and the environment brought on by budget constraints, workforce and technology changes. The Review's Action Plan was released in November 2013 outlining short- and long-term cleanup and program management activities. Since that time, the Groundwater Remedy Completion Strategy has been released and work on a new acquisition framework is underway. Many of the activities (35 of the 49 actions) are already underway including continued efforts in developing community engagement.

EPA has also completed four pilot projects that were designed to evaluate alternative approaches to achieving site cleanups more efficiently. Under these pilot projects, creative, non-traditional approaches for managing site cleanups were explored with exceptional results. The projects demonstrated business process innovations that are returning property to communities

sooner, accelerating the potential for reuse and the creation of new jobs. In several instances, tested approaches accelerated work at sites by roughly 50 percent or more. Lessons learned from these pilots have been shared with EPA Superfund program staff at both EPA headquarters and the regions, as well as with the Superfund remedial action contracting community. In addition, the results of these pilot projects are being used to shape the development of new Superfund contracts, policies, and tools that can be used to increase the pace of cleanup at sites.

CONCLUSION

The Superfund program continues to make progress in the face of a number of challenges and will continue protecting human health and the environment by responding to immediate and long-term threats through the cleanup of releases and hazardous waste sites. EPA believes its ongoing program efforts will help support continued cleanup progress and address critical aspects of Superfund program challenges.

U.S. ENVIRONMENTAL PROTECTION AGENCY
RESPONSES TO QUESTIONS FOR THE RECORD
JUNE 10, 2014 HEARING
BEFORE THE OVERSIGHT SUBCOMMITTEE
ENVIRONMENT AND PUBLIC WORKS COMMITTEE
UNITED STATES SENATE

Questions for Barry Breen:

Senator Cory A. Booker

1. **Mr. Breen as you know, climate change is upon us. It is not some problem of the distant future, but is a crisis in the here and now. What this means in New Jersey, unfortunately, is that we know we have to expect more flooding - and in some places, a lot more flooding. Some Superfund sites that were previously not in flood zones now are, or soon will be. What is the EPA doing to address the threat of flooding to superfund sites, where at some sites there will now be an even greater danger of contamination from one property spreading to others, and increased risk of groundwater contamination?**

   ANSWER: As described in the EPA's 2013 draft Climate Change Adaptation Plan, the agency's focus on climate adaptation is part of a larger federal effort "to increase the nation's adaptive capacity and promote a healthy prosperous nation that is resilient to a changing climate." The EPA's Office of Solid Waste and Emergency Response (OSWER) in 2013, released a draft Climate Change Adaptation Implementation Plan, which includes actions specific to the Superfund Program. OSWER's Office of Superfund Remediation and Technology Innovation is collaborating with other national program and regional offices to implement the climate change adaptation plan designed to ensure the resilience of remedies to climate change impacts. The following are key actions being implemented under Superfund to better adapt to climate change:

   - Expand and share a vulnerability screening protocol for regional use to better identify site remedies where performance may be impacted by climate change.
   - Develop adaptation fact sheets for site remedies most likely to be affected by climate change to help decision-makers identify potential vulnerabilities and select adaptation measures. To date, we have completed fact sheets on 1) groundwater treatment systems, and 2) landfills and containment remedies. The fact sheets are available at http://www.epa.gov/superfund/climatechange/.
   - Identify existing Superfund program processes (remedial investigation/feasibility study, record of decision, remedial design/remedial action, five-year reviews, etc.) for potential implementation of climate change adaptation protocols to help ensure continuing resilience of current and future site remedies. For example, Region 2 has developed a template for Remedial Project Managers (RPMs) to use in the Superfund site five-year review process to identify and assess climate change vulnerabilities.

- Deliver training to the EPA RPMs and provide web-based training for other stakeholders. Superfund provided comprehensive training on adaptation strategies to RPMs at the recent National Association of Remedial Project Managers training in Atlanta (June 2014).

When selecting and implementing response actions at Superfund sites, the EPA is aware of the increased potential for inundation from adjacent water bodies. The selected response actions must be able to withstand such inundation and remain effective.

2. **In May of 2014, EPA announced a remediation plan for the lower Passaic River. Can you describe the consultation with industry, stakeholders and communities along the lower Passaic that took place in advance of this plan being selected? How many years did the EPA study of this issue take?**

ANSWER: The Focused Feasibility Study (FFS) that supports the Proposed Plan for the Lower 8 Miles of the Lower Passaic River, issued by EPA Region 2 on April 11, 2014, was initiated in 2006. The FFS is in addition to the remedial investigation and feasibility study (RI/FS) for the 17 miles of the Lower Passaic River. The RI/FS began with a six-mile study in 1995, which was expanded to a 17-mile study in 2003. In 2007, a group of potentially responsible parties (PRPs) known as the Cooperating Parties Group (CPG) took over the 17-mile RI/FS from the EPA, performing with EPA oversight. The EPA has incorporated data from the ongoing 17-mile RI/FS into the FFS, and as that work continues, additional results will be integrated into the design of the Lower 8 Mile cleanup.

The EPA has worked closely with the CPG and another group of parties, formerly but no longer affiliated with the CPG, known as the Tierra/Maxus/Occidental (TMO) group. The EPA also works closely with many other stakeholders including the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the National Oceanic and Atmospheric Administration, the New Jersey Department of Environmental Protection, local governments in the affected area, non-governmental organizations, academic institutions, industry groups and private citizens. In 2009, the EPA facilitated formation of a Community Advisory Group (CAG); its membership includes a wide range of stakeholders and its meetings are open to the public. Since its formation, the CAG has been meeting monthly, and the EPA regularly attends these meetings.

3. **How is this plan the best option, in EPA's analysis, to protect public health and the environment?**

ANSWER: The EPA's Proposed Plan for the remediation of the Lower 8 Miles of the Lower Passaic River, issued on April 11, 2014, explains in detail why the EPA considers the proposed remedial alternative to be the most appropriate selection pursuant to the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the National Contingency Plan (NCP) (40 CFR Sec. 300.430), which is the EPA regulation promulgated pursuant to CERCLA that also governs remedy selection. In the agency's judgement, the alternative proposed for selection best satisfies and balances the nine criteria for remedy selection set out in the NCP. The agency's Proposed Plan is currently undergoing a 120-day formal public comment period that will close on August 20, 2014.

The EPA has held three formal public meetings regarding the Proposed Plan. The agency will carefully consider all comments received orally at the public meetings and in writing throughout the comment period before making a final remedy selection. The EPA's final remedy selection will be memorialized in a Record of Decision (ROD) and will include the "Responsiveness Summary" section responding to the comments received.

4. Did EPA fully consider alternative remediation plans before making its decision?

ANSWER: Yes, the EPA fully and carefully considered several alternative remediation plans before issuing the Proposed Plan on April 11, 2014. These alternatives are described in detail in the FFS and the Proposed Plan itself. The FFS and the Proposed Plan are available on the EPA's website: www.epa.gov/Region2/passaicriver. The EPA's reasons for selecting the proposed alternative, rather than one of the other alternatives, are described in the Proposed Plan.

Senator David Vitter

1. **In addition to the Corps' current authority to remove contaminated sediments outside of federal navigation channels, the Water Resources Reform and Development Act authorized the use of the Harbor Maintenance Trust Fund to pay for dredging and disposal of legacy-contaminated sediments in and adjacent to certain eligible federal navigation channels. Is EPA aware of this new provision? It has come to my attention that EPA seems to be applying a different construct on who is responsible for paying for the dredging and disposal of contaminated sediments in and adjacent to federal navigational channels.**

   ANSWER: The EPA is aware of the statutory provision in the Water Resources Reform and Development Act. In the case of the Lower Passaic River, we understand that maintenance dredging of the navigation channel has not occurred for several decades. Pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), parties that meet the criteria in Section 107(a) may be held responsible for payment of the costs of response to a release or threatened release of a hazardous substance.

   The EPA has notified more than 70 parties that they are Potentially Responsible Parties (PRPs) for the Lower Passaic River portion of the Diamond Alkali Superfund site. Groups of these PRPs – both the Cooperating Parties Group (CPG) and Tierra/Maxus/Occidental (TMO) – have carried out extensive work under CERCLA, and with EPA oversight, including the remedial investigation and feasibility study (RI/FS) and two significant removal actions. The Proposed Plan for remediation of the Lower 8 Miles of the Lower Passaic River issued by the EPA on April 11, 2014, includes the dredging of contaminated sediment that has accumulated in the lower 8.3 miles of the river, including in the lower 2.2 miles of the federally authorized navigation channel. Hazardous substances of the types attributable to the PRPs are found in these sediments. The costs of removing contaminated sediment from the navigation channel are costs for which CERCLA responsible parties are liable.

   Under CERCLA and the National Contingency Plan (NCP) (40 CFR Sec. 300.430), remedial actions are to be consistent with the reasonably anticipated future use of the site or area being remediated. Commercial navigation is a reasonably anticipated future use of the lower 2.2 miles of the federally authorized navigation channel in the Passaic River, according to a 2010 analysis carried out by the Corps in consultation with the commercial users.

2. **I am concerned that EPA may be blurring the lines between its regulation of Superfund clean-up responsibilities and the Corps of Engineers' navigational dredging responsibilities. There are many sites across the country where the Agency is requiring some amount of dredging to clean up past contamination of river sediments - usually to remove toxic hotspots. However, the EPA has not required responsible parties as part of a Superfund cleanup to pay for both the dredging costs required for removal and treatment or containment of contaminated sediments and the dredging costs required for navigation maintenance until recently at the Lower Passaic site in New Jersey. I'm concerned that EPA is proposing that the responsible parties also pay for all the costs of**

dredging the Lower Passaic River federal navigation channel to up to 30-feet to accommodate anticipated future commercial vessel traffic. I understand that responsible parties are responsible for the added costs of removing, treating, and containing contaminated sediments above the standard federal costs of maintaining commercial navigation channels, but requiring responsible parties to also pay for the standard navigation dredging costs goes beyond Superfund and is a responsibility of the Corps of Engineers. Additionally, I understand that the EPA proposes that the responsible parties pay for dredging a portion of the channel that will be maintained only for recreational vessel use, not for commercial vessel use. Under the Corps of Engineers' authorities, navigation channels for only recreational use would usually be maintained by the non-federal government sponsor, such as a State, county, or city.

a. **By proposing this remedy are you telling me that all of the proposed dredging of the Lower Passaic River is necessary to protect public health and the environment and none of it is required for commercial and recreational vessel navigation purposes?**

ANSWER: As explained above, under CERCLA and the NCP, a remedial response action is to be consistent with the reasonably anticipated future use of the affected site or area. In the case of the Lower Passaic River, the Army Corps of Engineers' berth-by-berth analysis and survey of commercial users showed clear future waterway use objectives in the lower 2.2 miles of the river, documented in the Corps' 2010 report, establishing commercial navigation as the current and reasonably anticipated future use of the lower 2.2 miles of the river. The Corps also provided the EPA with information about the minimum depth of the navigation channel that would accommodate the reasonably anticipated future commercial use. Although the federally authorized depth of the channel is 30 feet throughout these 2.2 miles, the Corps' analysis shows that shallower depths in portions of that stretch would accommodate the reasonably anticipated future use. Specifically, from river mile 1.2 to 1.7, a depth of 25 feet would suffice; and from river mile 1.7 to 2.2, a depth of 20 feet would suffice. All the accumulated sediment in the navigation channel in these lower 2.2 miles is contaminated with hazardous substances at levels that present an unacceptable risk.

The EPA has therefore proposed that the navigation channel be dredged to the depths specified by the Corps' analysis as part of the CERCLA remedy. This is consistent with what the EPA has determined at other sites where contaminated sediment exceeding acceptable risk levels is found in authorized navigation channels where navigation remains the reasonably anticipated future use. For example, in the Hudson River PCB Superfund site, where the triggering criteria specified in the ROD are met within the footprint of the Hudson River navigation channel, dredging of those sediments is required to a sufficient depth to allow the channel thereafter to be maintained without the extra cost and difficulty of removing and managing contaminated sediment. The EPA's Proposed Plan for the remediation of the Lower 8 Miles of the Lower Passaic River applies the same approach.

3. **It has come to my attention that EPA is not applying its own sediment guidance in selecting remedies consistently across the nation. For example, at the Lower Duwamish site in Washington, the EPA selected a remedy that uses adaptive management and**

targets hot spot removals along the river rather than dredging the entire river. Similarly, the Fox River in Wisconsin is using adaptive management as are many other sites. The outlier seems to be the Lower Passaic River which would dredge over 4.3 million cubic yards of material and cap the river rather than target hot spots. What is the purpose of the sediment guidance if EPA is not applying it consistently? When will EPA begin applying the guidance consistently?

ANSWER: The EPA takes the sediment guidance into consideration when evaluating the most appropriate remedy for the environmental conditions at sites with contaminated sediment. Where information and understanding about an aquatic system is limited, including understanding of the fate and transport of contamination within the system, adaptive management in the manner suggested by this question may be appropriate, allowing response action to begin while continuing to gather data and acquire a better understanding of the system. However, in the case of the Passaic River, the EPA and the PRPs have acquired extensive data over more than two decades. Highly sophisticated computer models have been developed and subjected to external, independent peer review. These models describe the hydrodynamics of the river, including tidal influence and the influence of storm events; sediment transport within the system; and contaminant fate and transport with the system. These models were used by the EPA to make predictions of future conditions under various remedial alternatives including the "no action" alternative. The EPA has already overseen two removals of contaminated sediments in the river.

However, based on the EPA's understanding of the river, and informed by these models, the EPA has concluded that "hot spot" removal in the Lower 8 Miles of the Lower Passaic River would not reduce risk from contaminated sediments to a sufficient degree; in the EPA's view only bank-to-bank remediation in the Lower 8 Miles would achieve an acceptable degree of risk reduction. This analysis is described in detail in the FFS and the EPA's Proposed Plan for the remediation of the Lower 8 Miles of the Lower Passaic River. As noted in the Proposed Plan, however, the agency will continue to utilize adaptive management going forward with the remediation of the Passaic River, as we have done in other aquatic sites.

4. **What are the most important factors in selecting a remedy? For example, if two remedies are equally protective, will EPA select the lower cost remedy?**

ANSWER: The NCP establishes a framework of nine criteria for evaluating remedies. These criteria address the statutory requirements and additional technical and policy considerations that are important for selecting remedial actions. The two most important criteria are the two "threshold" criteria: 1) overall protection of human health and the environment and 2) compliance with applicable or relevant and appropriate requirements (ARARs). Among the alternatives that meet the threshold criteria, the selection process considers seven additional criteria: long-term effectiveness and permanence; reduction of toxicity, mobility, or volume through treatment; short-term effectiveness; implementability; cost; state acceptance; and community acceptance. In considering and weighing all of these criteria, the lowest cost remedy may or may not be selected.

5. **What role does timing of a cleanup play? For example, if a site can be cleaned up faster, is that preferred over a remedy that will take more time?**

   ANSWER: "Time until protection is achieved" is one element of the "short-term effectiveness" criterion used to evaluate remedial alternatives.

6. **How does EPA estimate the timing of a cleanup? For example, at one site EPA estimated that it will take five years to dredge 4.2 million cubic yards, but at another site EPA estimated that dredging 3.9 million cubic yards will take 42 years. How is it possible to have two estimates so far apart?**

   ANSWER: The EPA assumes the 4.2 million cubic yard example refers to the Lower Passaic River, where the Proposed Plan calls for dredging 4.3 million cubic yards with an assumed construction period of five years. Each dredging site is different, but this assumption is informed by experience at other sites including the Hudson River PCB site and the Onondaga Lake site. We assume multiple dredges working 24 hours per day, six days per week, and 40 weeks per year. This weekly schedule is consistent with what has been done at the Hudson River PCB site and elsewhere. The number of weeks per year during which dredging operations can be assumed to continue is based on multiple factors including typical weather conditions and infrastructure limitations (e.g., at the Hudson River PCB site barges must move through locks in a canal system, which only operate about six months per year).

7. **When EPA is formulating the costs of its remedies, does it factor in the costs and inconvenience associated with its preferred remedies? For instance, in the case of the Lower Passaic River, it's my understanding there is a large amount of commerce and traffic as well as the 16 bridges that cross the river. What is the cost of inconvenience and traffic when those bridges are raised to allow for your tall dredging boats? Has that been factored in and are the communities aware of what awaits them?**

   ANSWER: The EPA considers the costs and inconvenience associated with the various alternatives in the remedy selection process. The NCP sets out nine criteria that EPA considers in remedy selection. One of these addresses "short term impacts" which includes assessment of risks and inconvenience associated with the actual implementation or construction of each evaluated alternative. The FFS and Proposed Plan for the remediation of the Lower 8 Miles of the Lower Passaic River address the short term impacts associated with each alternative considered. The EPA will also consider any comments about short term impacts, including the impacts of bridge openings that we may receive during the current public comment period.

8. **It has come to my attention that buried in Appendix G of EPA's Lower Passaic cleanup plan is a list of possible hazardous waste sites that the dredged material – 4.3 million cubic yards – may be disposed. I was surprised to learn that one of the sites listed to receive this toxic material is in Louisiana. Why did the EPA decide to ship this toxic dredged material out of state rather than manage it in state or in a CAD as they do at many other dredging operations?**

ANSWER: The EPA's Proposed Plan for the remediation of the Lower 8 Miles of the Lower Passaic River, issued on April 11, 2014, calls for removal of approximately 4.3 million cubic yards of contaminated sediment. The Proposed Plan provides that the dredged sediment would be dewatered at a facility to be sited near the river, and the dewatered sediment then would be sent to properly licensed and permitted disposal facilities. No facilities licensed to handle hazardous waste exist within the State of New Jersey. A number of such facilities exist elsewhere, including but not limited to Louisiana. The EPA will not select the specific facility to be used for disposal of the dewatered sediment; that choice will be made by the PRPs who the EPA expects will carry out the remedy (assuming that off-site disposal is the finally selected alternative in the ROD).

The facilities listed in Appendix G of the FFS were provided to demonstrate that there is sufficient capacity at existing hazardous waste disposal facilities for the various remedial alternatives to be technically feasible and for cost estimation purposes (two of the nine criteria that the EPA considers in remedy selection). The EPA's reasons for selecting off-site disposal, rather than disposal in a confined aquatic disposal (CAD) cell, are set forth in detail in the Proposed Plan. While CAD cells are used for disposal of wastes from some other Superfund contaminated sediment sites, off-site disposal is also a commonly selected alternative including, for example, the Hudson River PCB site, the Gowanus Canal site, and the General Motors/Massena site.

9. **What role does EPA headquarters play in selecting a remedy – particularly at complicated sites with large cleanup costs? Does headquarters or the region select the remedy? Does headquarters have a veto over a regional decision and if so has it ever exercised this role. Does headquarters worry about consistency across the nation? If so, how do you ensure consistency?**

ANSWER: EPA headquarters develops the national strategy, programs, technical policies, regulations and guidelines for the cleanup of Superfund sites. Regional Offices have the responsibility for implementation of site activities and are specifically delegated remedy selection authority with certain limitations and references to national regulations, directives, policies and guidance. Where needed, EPA headquarters may be involved further in selecting a particular remedy.

The EPA believes that consistent application of national policy and guidance is an important means by which we ensure the reasonableness, predictability, and cost-effectiveness of Superfund decisions. Recognizing that there is considerable flexibility in the NCP and related guidance to make each decision based on its merits and site-specific circumstances, EPA headquarters review and consultation helps ensure that national remedy selection policies and procedures are being implemented in a reasonable and appropriately consistent manner.

10. **There are lots of instances where major parties at Superfund sites are not at the table. EPA typically focuses on cooperating parties but doesn't often bring other parties to the table. What is EPA's plan to bring all major parties to the table?**

ANSWER: The EPA's general policy is to identify parties as PRPs when the agency has evidence that they are viable and liable – i.e., that they meet the criteria in Section 107(a) of CERCLA. In the case of the Lower Passaic River, the EPA has notified more than 70 parties that the agency considers to be PRPs, and anticipates that additional parties may be notified in the future.

EPA Region 2, in particular, has for nearly 30 years, successfully applied a policy of settlement incentives and disincentives for non-settlors. It is the Region's explicit goal and intention to have all PRPs participate at an appropriate level in carrying the burden of the costs of remediation. The EPA will use, as appropriate, the various enforcement tools provided by Congress in CERCLA to effectuate this goal.

11. **The EPA seems to pick and choose who it goes after to seek the financial costs for a clean-up. As you look at your proposed $1.7 billion clean-up of the Lower Passaic River, can you assure this Committee that all parties who have any role in polluting the River – including local municipalities – have been included in your responsibility?**

ANSWER: As explained in the response to Question 10, it is the EPA's general policy to identify viable and liable PRPs, and EPA Region 2's explicit policy to identify all responsible parties at a Superfund site and to use our enforcement tools to ensure that as many as possible participate in an appropriate way to share the financial burden of a cleanup. To date, the EPA has not notified any municipal entities that they are potentially responsible for the Passaic River portion of the Diamond Alkali Superfund site. The agency will continue to assess the potential liability of municipal and non-municipal entities and take appropriate action to ensure that those with legal responsibility are included in the enforcement process.

12. **How much of your appropriated funds are not used for core cleanup projects?**

ANSWER: Many important Superfund program functions work together before a site is ready for remedial construction/post-construction activities. For example, for the FY 2014 Enacted Budget, the Superfund appropriation was nearly $1.1 billion.

These funds are divided as follows:

- $500 million (46%) for the Superfund remedial program, which supports not only construction/post-construction cleanup work, but also site assessment, pre-construction activities, oversight of responsible parties, state and community involvement, and remedial policy development activities;
- $188 million (17%) for emergency response, preparedness and radiation protection which supports removal program cleanup work;
- $177 million (16%) for enforcement which provides the basis for cleanup work funded by responsible parties (including cost recovery financial system support);
- $138 million (13%) for management and support which supports activities ranging from facilities and human resources management, to information technology and

communication services, to advising on Superfund legal issues, to managing the Agency's financial management system, to acquisition management;
- $36 million (3%) for homeland security to support preparedness and response programs;
- $21 million (2%) for the Superfund federal facilities program which supports the EPA personnel who oversee cleanups at contaminated federal facilities;
- $19 million (2%) for research and development related to cleanup technologies (Science and Technology (S&T) transfer specifically appropriated);
- $10 million (1%) for Inspector General (IG) activities related to oversight of the EPA Superfund cleanup program efficiency and effectiveness (IG transfer specifically appropriated).

13. **During the hearing, both you and the Chairman said you are committed to expeditious clean-up of Superfund sites to improve the health and welfare of constituents living along the impact areas. We all share that goal. But we know throughout the history of Superfund that it is litigation prone with cooperating parties seeking financial support from other responsible parties – all of which prolongs the ultimate remedy and actual clean-up. Even in the Chairman's home State of New Jersey, the EPA Proposal for the clean-up of the Lower Passaic River is not likely to see real clean-up activity for years. Please share with this Committee how you evaluate alternative clean-up proposals that can be equally protective of the environment, may cost less to implement, and which may result in a consensus approach by the responsible parties negating any litigation delay.**

ANSWER: The NCP, which is the EPA regulation promulgated pursuant to CERCLA, establishes a remedy selection framework that reflects the principal requirements of CERCLA Section 121. The EPA developed nine criteria for evaluating remedial alternatives to ensure that multiple considerations are factored into remedy selection decisions. These criteria are derived from statutory requirements as well as technical and policy considerations that have proven to be important for selecting among remedial alternatives.

The nine criteria analysis found in 40 CFR Sec. 300.430, comprises two steps: an individual evaluation of each alternative with respect to each criterion; and a comparison of options to determine the relative performance of the alternatives and identify the relative advantages and disadvantages among them. The nine criteria include: protection of human health and the environment, compliance with applicable or relevant and appropriate federal and state cleanup requirements (ARARs), long-term effectiveness and permanence, use of treatment to reduce toxicity, mobility or volume, short-term effectiveness, remedy implementability, cost, state acceptance, and community acceptance.

Regarding litigation between the EPA and PRPs, or among PRPs, the agency has statutory tools to help prevent significant delays in implementing a selected remedy. For example, CERCLA provides that where a consensual agreement for remedy implementation cannot timely be secured, the agency may issue a unilateral administrative order requiring responsible parties to carry out the remedy; and CERCLA further provides that there may be no pre-enforcement judicial review of an EPA remedy selection or of a unilateral

administrative order issued by the EPA. While the EPA appreciates work done by cooperative responsible parties and considers input from all interested parties during the formal public comment period on proposed remedies, the agency uses the nine criteria discussed above and does not consider the threat of litigation delays in the remedy selection process.

14. If there is a shortage of money for the Superfund program, why does the EPA redirect major parts of its Superfund program appropriation to activities not immediately concerned with the clean-up of Superfund sites? What administrative costs can EPA cut back on or outright reduce?

ANSWER: As explained in response to Question 12, the Superfund appropriation supports numerous important functions in addition to remedial construction/post-construction activities. These functions include, but are not limited to: immediately responding to hazardous releases, identifying sources of contamination that threaten communities and the environment, supporting homeland security preparedness efforts, recovering response costs from responsible parties and obtaining commitments to conduct cleanups, encouraging cleanups and providing technical assistance at non-NPL sites, providing oversight of other federal agency cleanup efforts, engaging and providing support to state and community partners, promoting reuse of contaminated and formerly contaminated properties, providing transparency and accountability in the use of resources and representing accomplishments, managing the appropriate accounting of more than 950 site specific special accounts, creating jobs, and maintaining high acquisition standards that protect government resources. Congress additionally requires that a certain portion of the appropriation be directly transferred to Inspector General and Science and Technology functions. The agency must balance its use of resources to find the best outcomes to meet all of these expectations.

The EPA is continually seeking to improve the efficiency of it operations. For example, in 2012, the agency completed a comprehensive *National Strategy to Expand Optimization Practices from Site Assessment to Site Completion* (Strategy). This Strategy institutes changes to Superfund remedial program business processes to take advantage of newer tools and strategies that promote more effective and efficient cleanups. It lays out several objectives to achieve verifiably protective site cleanups faster, cleaner, greener and cheaper using techniques throughout the life-cycle of site cleanup, including site evaluation, construction and operation and maintenance. As part of this Strategy, the EPA expects regions to systematically apply optimization concepts throughout all phases of the remedial pipeline as a normal business practice.

Another example is the EPA's Superfund Remedial Program Review (SRPR) effort. The agency undertook this review as a follow-on to the earlier Integrated Cleanup Initiative and in recognition of the need to continue to critically evaluate program resources and cleanup processes to minimize impacts to the Superfund remedial program's effectiveness in light of budget constraints, and workforce and technology changes. The SPPR's Action Plan was released in November 2013 outlining short and long term cleanup and program management activities. Since that time, the Groundwater Remedy Completion Strategy has been released

and work on a new acquisition framework is underway. Many of the activities (35 of the 49 actions) are already underway.

15. **If the Superfund tax were re-imposed on U.S. manufacturers and businesses then the burden would fall upon goods, made from certain chemicals that are produced in the U.S. So imported finished products would not bear the tax because the taxable products are already incorporated into the finished products. So finished products imported into the U.S. would be less expensive to produce and would have a clear market advantage. What effect would this have on U.S. jobs?**

ANSWER: A 1994 study sponsored by the EPA investigated the economic impact of the Superfund taxes by calculating the maximum potential effect of each tax on prices or profits.[1] These maximum impacts were all found to be relatively small, indicating that the taxes have only minor economic effects. Using the same methods with current economic data, EPA found that the conclusions of the 1994 study are supported. Furthermore, since the petroleum and chemical taxes have not been updated to reflect real dollars, their economic impact may actually decrease.

Relative to consumer demand for other products, the demand for oil has been fairly unresponsive to price changes. Regarding the petroleum tax, if the entire tax is passed on to consumers, the estimated impact is less than a half penny per gallon increase in gas prices. Such an increase in gas prices would represent only a 0.154% increase to the current average retail price of gasoline of $3.44 per gallon.[2]

Current data suggest that the taxes on chemicals should have only minor economic impacts. These taxes were originally calculated as the *lower* of two figures: (1) 2% of the estimated wholesale price or (2) $4.87 per ton for organic chemicals and $4.45 per ton for inorganic chemicals. Current data indicate that the majority of the chemical prices have increased considerably since the tax was last in operation, with the producer price index of chemicals (from the U.S. Bureau of Labor Statistics) increasing by 168% since 1994.[3] On the other hand, the Superfund taxes will not be corrected for inflation. This should significantly reduce, below 2%, the potential economic impact of the taxes on chemicals. Regarding the international marketplace, the proposed taxes will apply equally to imported chemicals as well as domestic. Thus, it is unlikely that these taxes would cause any change in a manufacturer's or an industry's mix of domestic and imported chemical substances.[4]

Finally, the Corporate Environmental Tax of 0.12% is imposed on firms with alternative minimum taxable income (AMTI) exceeding $2 million. When it last expired, 89% of the tax was paid by firms with assets greater than $250 million. The 1994 study found that the

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[1] "Economic Impacts of Superfund Taxes," Prepared by Industrial Economics, Inc, for the Office of Policy Analysis, EPA (1994).
[2] This calculation is based on the average 2013 weekly average US conventional retail price from the Energy Information Administration.
[3] "Economic Impacts of Superfund Taxes," Prepared by Industrial Economics, Inc, for the Office of Policy Analysis, EPA (1994).

maximum estimated impact on the prices charged by affected firms did not exceed one percent in any of the major industrial categories, and was 0.09 percent across all industries.[5] Since the tax only targets AMTI over a threshold, most small businesses will not have to pay. Large businesses that are taxed will only pay a very small fraction of AMTI. Thus, the corporate tax should have only minor economic impacts.

16. What are EPA's estimated construction completions for 2015, 2016, 2017, and 2018?

ANSWER: As of June 30, 2014, the cumulative total of sites that have achieved construction complete is 1,158. In FY 2015, the EPA goal is to achieve site-wide construction completion at 13 sites, including federal facility-lead sites. Construction completion target estimates for FY 2016, FY 2017 and FY 2018 have not been estimated at this time as targets are determined each year based upon available funding and progress of remedial activities within the Superfund program pipeline.

17. What are EPA's estimated administrative costs for those respective years as well?

ANSWER: The EPA does not have a specific definition for administrative costs, and the agency believes that all of the costs incurred under the Superfund appropriation have a direct or indirect impact on the agency's ability to carry out its Superfund mission. However, there are numerous activities that are captured in the broad category of a management and support function that are funded through the Superfund appropriation. These activities range from facilities and human resources management to the provision of information technology and communication services to advising on programmatic Superfund legal issues to managing the Agency's financial system to acquisition management. The resources allocated to these types of activities has declined by more than $20 million since 2011. As a percentage of the entire Superfund appropriation, the budget for these activities has hovered between 13% and 14%. The President's request for FY 2015 for these activities is $164 million. Estimates for future year budget requests have not been developed.

Questions for Judith Enck:

Senator Kirsten E. Gillibrand

1. Regional Administrator Enck: there are many Superfund sites, like the Gowanus Canal in New York, that have been negatively affected by Combined Sewer Overflows. In many cases, fixing this problem has proven to be very costly for municipalities. What assistance can the EPA provide to municipalities like the City of New York and others to help them improve their wastewater systems to prevent Combined Sewer Overflows?

Answer: The EPA provides significant funding to the states through the Clean Water State Revolving Fund Program in the form of low-cost financing for a wide range of water quality infrastructure projects. In its continuing support of the program, the EPA provided $ $147 million to New York State in FY 2013. In addition, the EPA provides states and

[4] *ibid*

municipalities training and technical support on an array of water infrastructure issues. As an example, the agency recently assisted New York City and other municipalities in the region on how to use the EPA's Climate Resilience and Adaptation Tool (CREAT), a software tool to assist drinking water and wastewater utility owners and operators in understanding potential climate change threats and in assessing the related risks at their individual utilities.

2. **Are there policy changes that we could make in Congress to help provide the EPA with more tools to assist municipalities address Combined Sewer Overflows?**

Answer: The EPA, through its national efforts and at the regional level, works cooperatively with municipalities to address any potential Combined Sewer Overflow issues. If there are certain municipalities that you believe could benefit from a dialogue with the agency, the Region stands ready to work with your office and communities on CSO matters.

Senator BOOKER. I am grateful for that. Why don't I lead with the questions followed by the Ranking Member and if there are more, given the limited time we have, we can go back for another round.

Mr. Breen, thank you again for that great testimony and for highlighting some of the issues that obviously are resident with my opening remarks.

The EPA, we know, has the authority to create financial responsibility requirements. This would require companies currently managing hazardous substances to demonstrate they actually have the financial ability to pay for any future release of a hazardous substance.

It is very important we keep taxpayers off the hook for cleaning up future Superfund sites. Right now, taxpayers are often on the hook for the mistakes made in the inability to pay of past companies.

This would ensure that funding is actually available so that we don't have the problem we have right now of funding the Superfund sites. I would like to know the status of the EPA rulemaking on this issue?

Mr. BREEN. In the vernacular, this is called the 108(b) rulemaking because the statutory authority for it is in Section 108(b). I think it was actually in the original enactment in 1980. It was a very hard problem to approach and very complicated, easy to frame but complicated to address.

Over the last several years, the EPA has started to address it and has identified hard rock mining and mineral processing as the first industries for 108(b) rulemaking. We currently have that on a scheduled publication of a proposed rule in 2016.

We also have as well items underway in other industries but I expect the hard rock mining and mineral processing would be the first rules in this regard.

Senator BOOKER. What is the timeline on that, do you think?

Mr. BREEN. 2016.

Senator BOOKER. 2016, for all areas?

Mr. BREEN. No.

Senator BOOKER. Just the hard rock?

Mr. BREEN. Mr. Chairman, that is right, just the initial class of hard rock mining and mineral processing. Then there is more that we expect will be studied as well.

Senator BOOKER. Ms. Enck, again, thank you so much for being here and for the work you do in Region 2. I give you gratitude for the work you do in Region 2, except for Puerto Rico which I imagine you enjoy going to visit more than perhaps New Jersey.

I'd like to get an update on the cleanup status of some of the Superfund sites actually in New Jersey. I am concerned that there are many hazardous sites in New Jersey that could be moving forward with cleanup but are not because funding is not available.

Yesterday, we visited together the Syncon Resins Superfund site in Kearny, New Jersey. Paints, varnishes and resins were formerly manufactured at this site. Hazardous chemicals were found in both the soil and the groundwater. This site has been on the NPL since 1983.

For the record, could you please give me an update on the status of this site and when remediation work will begin?

Ms. ENCK. Sure. Thank you, Senators. My sincere thanks to both you and Senator Inhofe for convening this hearing on such an important topic, especially for New Jersey where, as you know, we have 149 Federal Superfund sites. I want to talk about a few that we need resources to address.

Certainly Syncon Resins, which you visited yesterday, I think really illustrates the challenge that is before us in this program.

This is a 15-acre site, located on a peninsula right between the Hackensack River and the Passaic River, so it floods. During Hurricane Sandy, the groundwater remediation building filled with water, and needed to stop operating.

We have done a lot of work at the site. It is contaminated with volatile organic compounds like Solulene and Toulene and heavy metals such as lead and nickel. It is contaminated with PCBs and with highly toxic pesticides, DDT and Aldrin.

We have taken our work there very seriously—10,000 people live within three miles of this site. The closest residents are in the city of Newark, just one mile away from this site.

We have cut this site into two phases. Phase 1, we have removed about 13,000 drums, many of them leaking chemicals. We dealt with storage tanks, there were hazardous waste lagoons on the site that we were able to remediate, and we installed a groundwater collection system.

Phase 1 ran us about $21 million. This money came from the Superfund because the company that created the mess, to use a technical term, is bankrupt.

We want to get on to Phase 2 of cleaning up this site which we are working together with the State of New Jersey on but Phase 2 will cost $24 million. We currently do not have the $24 million available to finish the cleanup.

We have to dig out about 40,000 cubic yards of contaminated soil and there are a number of buildings on the site that are on top of the contaminated soil, so we are going to have to demolish the building. We are about $24 million short, so I can't tell you what the timeline is to finish the job.

Senator BOOKER. I am going to let the Ranking Member ask his questions. When I have a chance, I'd like to followup some more.

Senator INHOFE. Mr. Breen, I mentioned this briefly in my opening remarks. Before we talk about additional money to the Superfund Program, whether through revenue increases or additional appropriations, I think we need to understand where the money we are already appropriating is actually going.

The last report—maybe you know of one more current than this—was in 1998 when the GAO reported that of all the Superfund spending, less than half, 46 percent, was actually used to clean up the contaminated sites. Has this report been updated since 1998?

Mr. BREEN. Senator, I am not aware of an update to the GAO report of 1998 in that regard.

Senator INHOFE. My concern is with the administrative efficiency of the EPA because I have been here since before that time and it hasn't really improved over the last 16 years. This means the

money being appropriated for Superfund is not being adequately managed or far fewer cleanups are being done.

Do you know if these numbers are any different today? Let me ask you to do this. Go through each year, you should have these fairly accessible to you, and let us know what has happened each year in terms of the percentage of money that is actually going to the Superfund sites. Could you get that for us?

Mr. BREEN. In fact, Senator, I brought some updated numbers from the President's Fiscal Year 2014 budget. Actually we are working off of Fiscal Year 2012 actuals that are reflected in the Fiscal Year 2014 budget. This would be actual data.

In the actual data, the Superfund Remedial Program called on 49 percent of the budget and the Superfund Emergency and Removal Program called on 15 percent so that is 64 percent. The Superfund Enforcement Program, which draws so much additional money into the program, is an additional 15 percent so that 64 and 15 is 79 percent.

There are a number of areas that are 1 and 2 percent. There is an area identified as operations and administration which is 10 percent.

That gives you some sense that roughly of three-quarters of the money if not more is for actual remediation, removal and enforcement.

Senator INHOFE. You are familiar with the President's plan now then?

Mr. BREEN. The President's plan.

Senator INHOFE. Budget.

Mr. BREEN. The President's budget.

Senator INHOFE. At 0.12 percent on the surtax.

Mr. BREEN. Senator, I don't want to miss one chance to explain one more thing. You identified the need to be as energetic as we can about saving money. Indeed, we are not resting on leaving business as usual.

We have the Superfund Remedial Program Review underway in which we are undertaking even more work. I wouldn't want to leave you thinking we are just setting aside. For example, we are looking at work sharing among various organizations within the EPA and as well, trying to hold down the time.

Senator INHOFE. What position were you in at the time of the Louisiana example I used? I couldn't remember the name but I can go back there and get all that stuff because I remember we had a hearing on that. We had a chance to do it a lot cheaper by some contractor down there that wasn't able to do it. Are you familiar with that case?

Mr. BREEN. Personally, I am not.

Senator INHOFE. For the record, kind of look that up and I will do that so we can communicate about that.

My concern is the surtax. I have two concerns. One is the surtax and the other is taxing people who happen to be in the oil industry or other industries when they haven't done anything or created any problem in a Superfund site.

This 0.12 percent surtax would play not only to manufacturing companies but software companies, financial service companies, re-

tail companies and some that pose no threat at all to Superfund. Is that correct?

Mr. BREEN. Senator, that portion of the tax is on incomes above a certain threshold. Many small businesses would not be subject to that portion of the tax.

Senator INHOFE. I am talking about businesses that have nothing to do with anything that could result in a Superfund problem.

Mr. BREEN. I think it is the case that there is a surprisingly wide array of diverse sectors represented in those for whom Superfund responsibility ultimately is found. It is actually quite remarkable how many people find themselves as actual responsible parties. This is a way to recognize that.

Senator INHOFE. It may be a way to recognize that but you are recognizing a lot more who have not found their way to do anything like that. The last time that this proposal was made, this was not even about a surtax. This was merely a tax on companies only because at that time there were oil or gas companies. That is where my opposition will come when we are looking at this.

Thank you.

Mr. BREEN. I would just add, the Administration proposal on this, we actually provided bill language in 2010. It is with one minor update the same language that the Congress adopted the last time. We are not changing anything except for an updated definition.

Senator INHOFE. I was opposed to it then too.

Thank you.

Senator BOOKER. Senator Gillibrand.

OPENING STATEMENT OF HON. KIRSTEN GILLIBRAND, U.S. SENATOR FROM THE STATE OF NEW YORK

Senator GILLIBRAND. Thank you, Mr. Chairman. I am grateful to be a part of this hearing. Thank you, Mr. Ranking Member, for holding it.

Superfund is a very serious issue in New York State. I am grateful to see Judith Enck, who I have worked with for a very long time. She has provided extraordinary leadership in my own State of New York. Thank you, Mr. Breen, for joining us.

I have a few questions. I had an opening statement that I will submit for the record.

[The prepared statement of Senator Gillibrand follows:]

STATEMENT OF HON. KIRSTEN GILLIBRAND, U.S. SENATOR FROM THE STATE OF NEW YORK

Chairman Booker, thank you for holding this hearing today to focus on the EPA's Superfund program, which is so important to the states we represent. would like to take a moment to welcome two witnesses to the committee today who both have a special connection to my State of New York. Judith Enck is the EPA's Regional Administrator for Region 2, which covers New York, New Jersey, Puerto Rico and the Virgin Islands. Regional Administrator Enck is a native of UpState New York, and has spent her entire career working to protect the environment of our state. I am pleased that she is here with us today and I thank her for her continued leadership.

I would also like to acknowledge Lois Gibbs, who led the movement to bring awareness to and cleanup Love Canal. We all know the story of Love Canal, and of the heroic fight that Lois and her neighbors put up to protect the health of their families and put right a disastrous wrong. Her activism paved the way for the cre-

ation of the Superfund program, we are grateful for her continued advocacy to protect children's health.

Beginning with Love Canal, New York has benefited from the Superfund program, through which we are cleaning up some of our most contaminated properties and waterways. Since the program started, there have been 116 Federal Superfund sites in New York State, 86 of which are currently still active. These range from the Hudson River to Onondaga Lake, and dozens of industrial sites from the tip of Long Island to Niagara Falls. Mr. Chairman, I'm glad that we are focusing this hearing on faster cleanups. For the families who live near Superfund sites, there is nothing more urgent than moving these projects forward.

One particular community that I have heard from recently is the Village of Holley, which is located near Rochester. This village was affected by the spill of 75 gallons of chemicals in 2002, after which residents were forced to relocate because the ground was too contaminated for them to continue to live in their homes. The EPA purchased these uninhabitable homes, with the intent of eventually returning them to the community. While I appreciate all that has been done to-date by the EPA to remediate this site, it is now 12 years after the initial spill, and the village still does not have a clear time-table for the sale of these homes or the fully finished remediation of the site. This is just one example of what I'm sure are many in each of our states.

But we in Congress must also do our part to ensure that the EPA has all of the resources it needs to do an effective job at cleaning up Superfund sites. I look forward to working with you, Senator Booker, and with the other members of this committee to continue to support this vital program that is critical to the health and safety of our constituents. I look forward to hearing the testimony from our witnesses today, and I yield back the balance of my time.

Senator GILLIBRAND. My questions are focused on four specific Superfund sites in New York State. The first one is Onondaga Lake cleanup. The lake has a history of pollution from municipal sewage waste and industrial discharge. In 1994, parts of Onondaga Lake were placed on the National Priorities List.

Since being listed on the NPL as one of the Nation's most contaminated sites, efforts to clean up the existing pollution and mitigate future pollution have made Onondaga Lake the cleanest it has been in over a century.

Senator GILLIBRAND. I know that the cleanup activities at Onondaga have reached a critical point. I would like to make sure that the restoration of the lake is completed in a timely manner. Do you see or are there any key obstacles remaining to finally getting Onondaga Lake off the NPL?

Ms. ENCK. Onondaga Lake once had the distinction of the most polluted lake in the Country. The good news is that it is coming back and because of that downtown Syracuse is coming back. I just met last week with the County Executive and we put our heads together often on how to keep this cleanup moving.

I think we are in pretty good shape. It has taken a long time. The waste beds that dotted the lake are being cleaned up. Almost just as important, the huge amount of raw sewage that went into Onondaga Lake is being addressed.

EPA has been working closely with the city of Syracuse and the county to promote green infrastructure, a more environmentally sustainable and often cheaper way to handle wastewater.

We have worked closely with the Onondaga Nation. I think the Nation would like to see a more thorough cleanup than is underway but the massive amount of waste that dots that lake makes actual removal of a lot of that waste virtually impossible—30 years of multibillion dollar removals. I think the Nation is happy with the progress that we have made to date.

I think in time we could look forward not only to sort of a process issue of delisting but making Onondaga Lake cleaner and a real anchor for economic development in downtown Syracuse. It has been a great cooperative effort with the local government, the State of New York and EPA.

Senator GILLIBRAND. Another challenge is the Hudson River. Can you provide me with an update on how the dredging is going? What is the current status and what are the next steps?

Ms. ENCK. How many hours do you have?

Senator GILLIBRAND. Thirty seconds.

Ms. ENCK. The Hudson River is a real success story. I grew up on the Hudson River, I think you spent a lot of time on the river. We heard for 25 years from the PRP, General Electric, first that PCBs were not a problem; second, that if you do dredging it was going to cause resuspension; and third, it wasn't worth spending the money.

None of those things have proven to be true. We are ahead of schedule. We are about 60 to 70 percent done with dredging PCBs out of the Hudson River. About 1,000 jobs were created and Warren and Washington Counties desperately needed those jobs.

There has not been a problem with resuspension and I think sometime in the future, it is going to be a long time but it might actually be safe to eat the fish that you catch in the Hudson. That was the driver on this cleanup.

Senator GILLIBRAND. The third issue is the Village of Holley located near Rochester. The village was affected by a spill of 75 gallons of chemicals in 2002, after which residents were forced to relocate because the ground was too contaminated. The EPA purchased the uninhabitable homes with the intent of eventually returning to the community.

Basically, the Village of Holley needs more clarity from the EPA on the timeline for completing the remediation. I just wanted to get your thoughts on whether we can work together to address these concerns?

Ms. ENCK. That is an important site. We expect to have all of the homes back on the market by the end of this year. I know that the Village was concerned that there was a pretty significant relocation. People had to leave their homes.

Now there is a desire to get about 15 homes back on the market. We want to make sure those homes are safe and we should have that done by the end of this calendar year.

Senator GILLIBRAND. Thank you.

Mr. Chairman, I will submit for the record a final question about combined sewer overflows because there are many Superfund sites like the Gowanus Canal in New York that have been negatively affected by the combined sewer overflows In many cases, fixing the problem is going to be very costly for the municipalities.

For the record, I will submit two questions about that in terms of how to help our cities meet those needs.

Thank you.

Senator BOOKER. Thank you, Senator.

If I can continue, I have some questions about the Carney site. I'd also like to know about the Horseshoe Road site in Sayreville, New Jersey.

The site was a former chemical processing site that produced coal, tar, asbestos, pesticides and other harmful chemicals. It was placed on the NPL list in 1995.

Could give me an update just on when remediation work will begin?

Ms. ENCK. Horseshoe Road is a highly contaminated site as you have described. Right next door is the Atlantic Resources Corporationsite. We have approached this to clean up both sites almost simultaneously. We have spent $46.5 million in Superfund dollars. Again, this is an orphan site. We don't have a responsible party to pay the bill.

We need another $34 million. I cannot tell you today, Senator, when that cleanup can be completed because I don't currently have the money to do that because of the shortage of funds. It seems a little crazy to do it halfway but that is our fiscal reality with those two sites.

Senator BOOKER. Again, we have just gone through two sites that are not having further action taken on them because we simply don't have the money. Those are sites that are open sores, so to speak, polluting our area with people living around them. We know there are people living and residing within a mile of both of those sites.

Both of those sites, Syncon Resins and Horseshoe are so-called orphan sites where the polluters are not paying. We are paying—EPA is paying. Both orphan sites, as we said, are shovel-ready but remediation hasn't started because of lack of funding.

The question I have is in a State like New Jersey where there are well over 100 sites, are there other sites in New Jersey just like these where but for the lack of funding, we could be getting them cleaned up?

Ms. ENCK. I am afraid the answer is yes. There are other sites where they are orphan sites. We don't have enough money to finish the job. What comes to mind right away is South Jersey Clothing contaminated an old, large dry cleaner facility, an industrial drycleaner which was contaminated with PERC.

We have spent $19.6 million on that site. We need another $2 million to get the job done. I am not sure where we are going to find that money. Radiation Technology, we have spent $1.3 million. We need another $2 million.

You will hear shortly from the Mayor of Garfield. I am not going to get into a lot of detail there other than to say we have spent $5 million at that site. It is in a residential area and a wonderful community. Some people think of Superfund sites as in a field and you just put a fence around them. Garfield is a vibrant, urban community that has a Superfund site right in the middle of it.

No remedy has been selected for the final cleanup but we estimate it will cost tens of millions of dollars. We don't have that money today for the Garfield site.

I can list others but your premise is absolutely accurate.

Senator BOOKER. Site after site after site in New Jersey where we have significant a chemical presence and a tremendous amount of poison are not being acted upon by the simple fact that we don't have the resources to act upon them.

Mr. BREEN. Senator Inhofe discussed understandably the concerns about putting taxes on industries. I understand back in the 1986 reauthorization supported by Republicans colleagues of the Ranking Member, supported by frankly the Minority Leader who voted for that, was a tax both on industries across the board as well as on polluting industries, correct?

Mr. BREEN. Yes, sir.

Senator BOOKER. The President's budget suggests doing it both ways. I would like your response to focusing on those polluting industries that produce tar sands, arsenic and the like, if we focused on those industries having the potential to cause serious damage, that would create funding to address some of these issues, if we more narrowly tailored it to the concerns the Ranking Member addressed?

Mr. BREEN. That precise question hasn't been presented to us for thoughtful review. We would want to be able to get back to you on that.

Senator BOOKER. All right.

Let me finish with one more question. Ms. Enck, perhaps you can take it.

In 2010, the GAO did a report that looked at whether the level of appropriations over the prior 10 years would be sufficient moving forward for EPA to perform the needed Superfund cleanups.

After talking with the EPA regional officials like you, the GAO concluded that the funds needed for the cleanups were likely 2–2.5 times greater than the funding being appropriated. Is that funding shortfall consistent with your experiences in Region 2. Second, if it is and we do not address this, what other solutions might we have in New Jersey, if any or if there are none, please say that?

Ms. ENCK. I think the GAO analysis is spot on. If you are asking me could EPA, Region 2 use twice or two and a half times more resources to address our backlog of Superfund sites, the answer is yes, we can absorb that. We would rely on our professional staff of scientists and engineers to cover more sites.

It is not only just more sites. Because of these fiscal constraints, we have had to calibrate the cleanup schedule on some sites, for instance, the Roebling Steel Superfund site in Florence Township, again an abandoned site, no PRP to carry the cost. We have been spreading that out over a long period of time.

This site was put on the Federal list in 1983. We have spent $135 million. We are not done, so it really has hindered redevelopment. If the GAO recommendation was to come true and we had 2–2.5 times more resources, not only could we tackle more sites but we could get to the finish line quicker.

We must protect public health. That is our legal imperative, our science imperative to protect public health and the environment but we also want to get these sites productive and back on the tax rolls and being a real asset in communities rather than just having locked gates around them with do not enter signs.

Senator BOOKER. The last part of my question was, say we don't do anything, Congress continues not to act. What are the consequences of that?

Ms. ENCK. The consequence is the process will be much slower. I am not going to say that we are not going to put sites on the list;

if there is a public health imperative, we act but you basically put it on a slower schedule and sites sit undeveloped.

I really want to rebut the notion that we are not being efficient with our resources. We are. We have a lot of sites. We want to cover all of them. If there is not an increase in funding, Superfund is super slow.

We want to pick up the pace because when we pick up the pace, it means there is a greater level of public health protection and greater opportunity for redevelopment at these sites.

Senator BOOKER. Mr. Breen, I guess that is the anguish I feel today and the more I have dug into this issue over the previous months. I understand and we are going to hear from a great panel about the economic development aspects. That is a real issue in a slow economy.

Right smack in the middle of some of our small cities and communities in New Jersey, you have these areas that could be producing jobs, tax revenue and the like. I think that is compelling enough of a reason.

Your mandate, as represented by the Region 2 director, is for public health. In your remarks, you began talking about the severe, this isn't bloody noses and a blister or two. These are health consequences that are devastating and life threatening to our most vulnerable populations as you pointed out, some of the poorest communities.

These are things like birth defects and autism which New Jersey has one of the highest national rates of autism, as well as the highest number of Superfund sites, these are of real concern.

You have this mandate to act. My question is you are telling me right now that you are unable to meet this public health crisis that you outlined simply because of the lack of congressional action to provide you with the resources? Is that what you are saying?

Mr. BREEN. Senator, we do have across the Country what we call unfunded, ready to go, new starts.

Senator BOOKER. What do you mean by ready to go?

Mr. BREEN. Sites that are just waiting for funding in order to get the cleanup underway.

Senator BOOKER. Is it a matter of prioritization? Can you take money from someplace else? Are you guys spending money on perhaps issues of other EPA enforcement? Can't you just take some money from someplace else and put it into this?

Mr. BREEN. Senator, the President has asked for money to come into this. The Fiscal Year 2015 budget asks for $43 million more for this and additional dollars as well for the emergency removal work. We are asking and very much hoping.

Senator BOOKER. I appreciate the two of you coming and providing testimony on what I believe are unacceptable public health crises in our Nation right now in which the anguish and the pain of families dealing with the health consequences are made real by numerous studies.

Thank you again, Mr. Breen and Ms. Enck.

I am looking forward to the next panel. It is good to have you all here. I am deeply grateful that you would take time to come to this important hearing.

I am going to read who we have before us today and then begin with statements. First, we have Lois Gibbs, Executive Director, Center for Health, Environment and Justice, an organization you founded in 1981. It is not here but I assume that was when you were about 10 years old.

The most important elected leaders in America are mayors. We have with us Joseph Delaney, currently serving as Mayor of the city of Garfield. Thank you very much for being here.

We also have Mr. Robert Spiegel, Executive Director and co-founder of the Edison Wetlands Association. I am grateful that you are here.

Also, we have Scott Thompson, currently serving as the Executive Director for Oklahoma's Department of Environmental Quality. Scott, if you heard the good things that Senator Inhofe said about you behind your back, you'd be blushing right now. I appreciate all the work you have done in the great State of Oklahoma.

Then we have Ms. Susan Bodine, currently a partner at Barns & Thornburg. Previously, Ms. Bodine served as the Assistant Administrator of the Environmental Protection Agency's Office of Solid Waste and Emergency Response.

Thank you all for being here. As this is my first hearing, I want you all to know that you never forget your first time. Thank you all for being with me for this. You will be remembered.

Why don't we start with Ms. Gibbs. I would appreciate it, Ms. Gibbs, if you would share your opening statement with us. Everyone, please mind your time.

STATEMENT OF LOIS GIBBS, EXECUTIVE DIRECTOR, CENTER FOR HEALTH, ENVIRONMENT AND JUSTICE

Ms. GIBBS. Thank you. I want to thank all the committee members for inviting me here to speak about a program that is very near and dear to me.

As you said, I am Executive Director of the Center for Health, Environment and Justice. We have worked for 12,000 grassroots groups across the Country faced with environmental health risks.

I began my work as a victim at Love Canal in Niagara Falls, New York. Over 30 years ago was my first time, Senator, when I sat at a similar table and spoke to another congressional committee about the need for funding of programs designed to assess and cleanup hazardous waste sites.

My community at Love Canal was the impetus for the creation of the Superfund Program after 20,000 tons of chemicals buried in the middle of the neighborhood leaked into the surrounding homes, yards and schools. I spoke then about the health problems our neighborhood was faced with and how my daughter and son were home sick with liver, urinary and central nervous system disease.

It is tragic that now more than three decades later, American communities face similar health threats to what I faced at Love Canal. Again, I am here pleading for you to support an effective Superfund Program.

There is no question about the need for the Superfund Program or that the program must have a reliable funding to protect American families and their communities. There is clear evidence that

many families who live near Superfund sites have suffered from serious adverse health effects, especially the children.

One study mentioned earlier found 20–25 percent increase in birth defects from mothers who lived near Superfund sites when they compared the birth outcomes before and after the cleanup.

It is the citizens and the health effects they suffer that get lost in the discussion of resource allocations and the control of Federal programs. Living in a Superfund community where there has been limited abatement and no clear commitment of whether the area will ever be livable again is an absolute nightmare.

The families who live in the Waste Pits River site just east of the city of Houston, Texas are suffering because of contaminated fish and crab, common sources of food for these low wealth families. ATSDR found dioxin levels in the fish that were unacceptably high for cancer.

After more than 20 years, EPA has decided to leave the waste in place and cover the pits rather than remove the contaminated soil and sediment. Why, because the other alternatives will cost too much money. The agency states it does not have the money.

Similarly, residents living near the Tremont Barrel Superfund site in Springfield, Ohio are concerned because 51,000 drums and 300,000 gallons of liquid toxic wastes were dumped in the landfill which is sitting above an aquifer. The aquifer provides drinking water for 82,000 people.

If the barrels are left in place, EPA's current preferred option, this site will threatened the drinking water and public health for decades. EPA claims removing the barrels would be too costly.

EPA said the same thing about removing 8,000 tons of highly radioactive waste buried in the West Lake Superfund site in St. Louis County, Missouri. The problem with this plan is an uncontrolled fire at an adjacent landfill that is moving toward the radioactive waste.

Residents are already suffering respiratory problems from the landfill fire and are concerned the fire will soon reach the radioactive waste and add radioactive material to the gases being released by the fire.

In addition to adverse health problems from contaminated air and water left for decades, everyone who lives near a Superfund site suffers from the Superfund stigma and the impact on property values. Homes of hard working Americans become essentially worthless. They can't sell them, they can't improve them, they can't abandon them and they surely don't feel safe living in them.

No bank will give families a loan against their home, so they cannot fix the roof, improve their property or even use the home equity to send their children to college. Property values drop and the entire neighborhood begins to spiral downward. Soon homes deteriorate and the neighborhood deteriorates.

No one will move in. No one can move out. The economic development comes to a screeching halt. These are not people looking for a free ride or a handout. They are hardworking, church going, taxpaying American families victimized by no fault of their own.

For over 30 years, I have urged, begged and pleaded with Congress to take care of the innocent families who have fallen victim to corporate negligence and carelessness. Please, for the innocent,

hardworking American family, their dreams, their hopes to be able to reach their potential, restore the polluter pays fees so that there is a reliable source of funding to provide the necessary cleanup to protect them and their investment from the worse toxic waste sites in America.

Thank you.

[The prepared statement of Ms. Gibbs follows:]

Senate Committee on Environment and Public Works
Protecting Taxpayers and Ensuring Accountability: Faster Superfund Cleanups for Healthier Communities

Testimony by
Lois Marie Gibbs
Executive Director
Center for Health, Environment & Justice
June 10, 2014

I want to thank the members of the Senate Committee on Environment and Public Works for inviting me to speak about a program that is very near and dear to me. My name is Lois Gibbs and I am the Executive Director of the Center for Health, Environment & Justice a national organization that for 33 years has worked with over 12,000 grassroots groups faced with an environmental health threats. I was also a resident and community leader at Love Canal in Niagara Falls, NY.

As I began to prepare my testimony for this afternoon, it occurred to me that some 30 odd years ago I sat at a similar table and spoke to a Congressional Committee about the need for funding a program designed to assess and cleanup of hazardous waste sites. My community at Love Canal was in part the impetus for creating the Superfund program after 20,000 tons of chemicals buried in the middle of my neighborhood leaked into surrounding homes, yards and schools. I spoke about the health problems in our neighborhood and how my daughter and son were home sick with liver, urinary and central nervous system diseases.

Another speaker at that hearing was Jim McCarthy from Jackson Township, New Jersey. With tears running down his face, Jim shared his story. He explained that the water his family used every day was contaminated. Jim then told the committee how his 9 year old daughter died from a kidney disease that he believed was the result of her drinking and bathing in that contaminated water.

It is tragic that now more three decades later, while hundreds of American communities face similar health threats to what I faced at Love Canal, I have been asked once again to speak to the need for an adequate Superfund program. Over the past thirty years, Superfund has had its successes and failures. I believe there were many more successes than failures when the program was adequately funded and the polluter pay fees were in place. Let me give you one example.

The Milltown Reservoir Superfund site is part of the largest Superfund complex in the western U.S. Situated in the Clark Fork River Basin in Montana, the complex stretches from the headwaters of the Clark Fork River at Warm Springs 125 river miles northwest to the Milltown Dam just east of Missoula.

The site was listed in 1983 when arsenic contamination was found in the groundwater around the reservoir and dam. Contamination resulted from a massive flood in 1908 which washed millions of tons of copper mine wastes into the river, ultimately ending up in the reservoir behind the dam. For over 70 years the Clark Fork River was used as a dumping ground for waste from one of the largest copper mining ventures in the U.S.

In August of 2005, after 22 years of Superfund site investigations and development of cleanup plans, an agreement was reached with EPA, the state of Montana, the responsible party (BP/Arco) and the dam's owner to remove the contaminated tailings from the reservoir, remove the dam and restore the river to a free flowing state. It took two years to remove and transport the contaminated reservoir tailing to a disposal site and it took an additional two years to remove the dam.

Today the Milltown site is Montana's newest state park. The floodplain has been restored with a naturally meandering river. The park includes 500 acres of restored river bottom and pine forest bluffs. It contains walking trails, picnic shelters and river access points. People can now hike, fish, float and watch wildlife in this restored area.

There is no question about the need for the Superfund program, and the need to have reliable adequate funding in place to protect the American people and their communities. One recent study found a 20-25% increase in birth defects for mothers who lived near a Superfund site when they compared birth outcomes before and after a site was cleaned up (Currie, J., M. Greenstone, and E. Moretti, "Superfund Cleanups and Infant Health." American Economic Review, 101(3): 435-41, 2011). At Love Canal 56% of our children were born with birth defects. A few years ago, the NY State Department of Health released a follow up study of former residents and found that Love Canal children (now adults) were experiencing a 50% rate of birth defects in their children. Superfund health impacts don't end when exposures are eliminated they move sometimes to the next generation. This is frightening and yet another reason to adequately and quickly cleanup sites that are environmental health threats.

Let me give you some idea what it's like to live in a Superfund community. Often it is the citizens of this great country and the health damages they suffer that gets lost in the discussion of resource allocations and control of federal programs. Living in a Superfund community where there has been limited abatement and no clear commitment for whether the area will ever be livable again is a nightmare.

The San Jacinto River Coalition formed to address the dioxin contamination posed by the San Jacinto Waste Pits, a 20 acre abandoned tract of land along the banks of the San Jacinto River just east of the city of Houston, TX. For more than 20 years the U.S. Environmental Protection Agency (EPA), using its authority under the federal Superfund program, studied how to cleanup this site and decided that it wants to simply cover the pits rather than remove the contaminated soil and sediment. Why? Because any other alternative will cost much more and the agency claims it doesn't have the money. The community group opposes this option and is arguing that the impact of hurricanes and climate on the river and the pits calls for a complete solution not a temporary cap and cover alternative. Toxic sludge waste from nearby pulp and paper mills was dumped at this site for years and is now leaching into the river. A large portion of the site is continually underwater from the river causing dioxin contaminated sediment to leach into and contaminate the river water. This has been a major issue for the community because many low wealth families fish the river and use their catch as a source of food. Dioxin levels as high as 46,000 parts per trillion (ppt) have been found in the waste pit area. EPA used a threshold level of 1,000 ppt of dioxin in soil to evacuate the entire town of Times Beach, MO in 1983. Dioxin is one of the most potent carcinogens ever tested and has been associated with a wide range of adverse health problems including reproductive, developmental, immunological, and endocrine effects in both animals and humans.

For over 10 years residents in Springfield, OH have been working with EPA Region 5 along with town officials and other stakeholders to come up with a mutually agreed upon plan to clean up the Tremont Barrel Superfund site. This site is known to contain at least 51,000 drums of hazardous and non-hazardous waste, as well as some 300,000 gallons of bulk liquid waste. It also sits above a sole source aquifer from which 82,000 people get their water. At the eleventh hour, the responsible party (Chemical Waste Management) stepped in and offered to pay for a smaller less costly cleanup which would include leaving the barrels in place and placing a clay cap over the top. EPA immediately agreed to this offer despite years of planning, communications and agreement among the community and stakeholders (other than the responsible party). Why did they do this? Because EPA gets a responsible party to pay for the inadequate cleanup, because it doesn't have enough funds to support the proper protective cleanup and later charge the responsible parties. The community is outraged at this last minute change of plan.

For more than two years the Bridgeton landfill in St. Louis County, Missouri has been on fire. Efforts to control the fire have failed and the surrounding community is concerned that things will get much worse because this landfill is immediately adjacent to the West Lake Superfund site where 8,000 tons of highly radioactive waste is buried. Residents concerned about the impact of these sites including the odors from the fire on their health have formed the group

Concerned Citizens Against Toxic Waste. A major concern raised by the residents is the potential for the fire to reach the radioactive waste and to add uranium and other radionuclides to the gases being released by the fire.

In 2008, the EPA decided to leave the radioactive waste in place, but now after more than 2 years of an uncontrolled fire creeping closer and closer to the site and with growing pressure from the community which has argued all along that the radioactive waste should be removed, the agency his reconsidering. EPA has stubbornly argued that it would cost too much to remove the highly radioactive waste and it would be better to leave it in place. Better for whom? The community wants it out. Perhaps it helps that this position is backed by four members of Missouri's congressional delegation including its two senators. EPA's efforts to hide its process for deciding and defending its position to leave the waste in place was the subject of a recent article in the Wall Street Journal (March 9, 2014).

In addition to adverse health problems, everyone who lives near a Superfund suffers from the "Superfund stigma," its impact on property values. The homes of hard working Americans are essentially worthless. They can't sell them; they can't improve them; they can't abandon them; and they don't feel safe living in them.

No bank will give families a loan against their homes. So families cannot fix the roof, improve their property or even use the equity from their home to send their children to college. Property values drop.

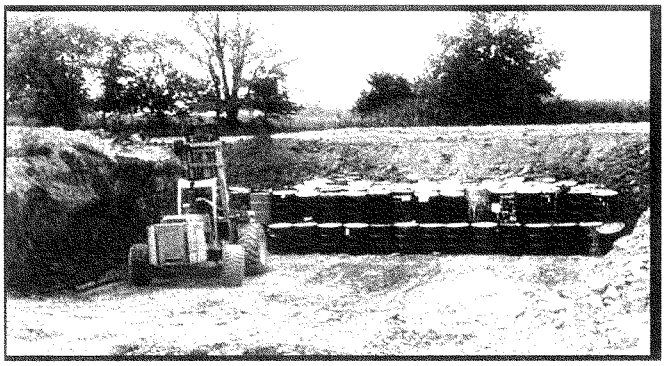
Consequently, the neighborhood begins to spiral downward. Soon the homes will deteriorate and so will the neighborhood. No one will move in, no one can move out and economic development comes to a screeching halt.

These are not people looking for a free ride, or a hand-out; they are hard working, church going American families; they are victimized by no fault of their own.

This is not the way our country should treat its citizens. For over 30 years I have urged, begged and pleaded with Congress to take care of the innocent families who have fallen victim to corporate negligence and carelessness. Please remember the people, their dreams, and their hopes for their families to be able to reach their potential. Restore the polluter pay fees so that there is a reliable source of funding to provide the necessary cleanup to protect innocent American families from the worst toxic wastes in America.

Thank you for your time and attention. I'd be happy to answer any questions you may have.

Tremont Barrel Fill, Springfield, Ohio



Waste buried in 1996

Clean up began in 2009. Now EPA is altering cleaned up plan to be less.

Senator BOOKER. Thank you for that very important testimony. We will now move on to the Mayor.

STATEMENT OF JOSEPH DELANEY,
MAYOR, GARFIELD, NEW JERSEY

Mayor Delaney. Thank you, Chairman Booker.

I appear before you today on behalf of the people of the city of Garfield, a community of approximately 35,000 people located in southern Bergen County in the State of New Jersey. We are a multiethnic, multicultural and multi-religious community. We are a microcosm of America itself.

Our city is an old industrial city filled with tired factory buildings, many of which are beyond their useful life. Many of those former industrial sites have contamination problems which are beyond the grasp of local government to handle.

We also border the Passaic River which is described by many as one of the most polluted rivers in New Jersey runs from Newark Bay to the Garfield Dam.

Back in 1983, at the EC Electroplating Factory located in our community, there was a spill of hexavalent chromium. Approximately 3,700 gallons of chromium were released into the earth; 1,056 gallons were recovered with the rest remaining in our soil.

Over the last 25 years, the New Jersey DEP handled this site. They made a determination in the late 1980's that no further action was required and that there were no health concerns.

In early 1993, Fire Company No. 3, located in the downstream plume of the undergroundwater table, had to be closed due to the detection of hexavalent chromium in the basement of that firehouse facility.

As we have learned, once hexavalent chromium enters a building and crystallizes, it can be dispersed into the air. Scientific evidence tells us that if you breathe that dust into your lungs, it will likely cause cancer.

Approximately 5 years ago in the fall of 2008, our city manager, Thomas Dutch, was contacted by the United States EPA. He was told they were taking on the responsibility for the chromium spill in our city.

His initial meeting with the EPA was productive, based on the competence and genuine interest of the EPA in helping our people. We provided them with a list of residents, property owners and tenants in an effort to get notice out to the community that the USEPA would investigate and examine homes and properties in the affected area.

The EC Electroplating facility is located in a densely populated section of Garfield. Within the spill area, there are more than 600 separate parcels of property. These include one and two family homes, multi-family dwellings, an elementary school, a daycare facility, houses of worship, and industrial and commercial properties.

We have 6,300 separate parcels of property in our city. Therefore, almost 10 percent of our community has been affected. Notification has been made to residents in multiple languages: English, Spanish, Polish and Macedonian, but not Gallic. I don't know why Gallic wasn't involved.

We have conducted many public hearings with the EPA to provide information to our people and to answer their questions. The EPA's team on the ground in the city of Garfield has been exceptional. They have answered our concerns professionally, knowledgeably and competently.

They have given reassurance to a scared populace. Despite that reassurance, property values in the area have definitely declined.

With the assistance of the EPA, 400 homes and properties have been examined. Contaminated properties detected to date have been cleaned up and monitoring wells have been installed throughout the affected areas, between 8 and 400 feet deep in order to fingerprint exactly where the contamination lies below the surface.

To get to the ground below the ECD Electroplating factory, demolition of the building on the surface was required. Due to safety concerns from residents that chromium tainted dust could be released from the property during demolition, an additional public hearing was held with the staff and administration of the K–5 elementary school, one block away from the site, which included residents throughout the affected area.

The factor itself has now been demolished and contaminated soil down to the water table has been removed. The site is fenced and ready for the next phase, removal of the chromium that sits below the ground in the water table of this neighborhood.

This clean-up phase will absolutely require funding of the USEPA initiative in the city of Garfield. We are a Superfund site. We are a Superfund clean-up priority. We are a community living in fear that this chromium in our water table may be impacting the health, safety and welfare of our residents.

Our clean-up need is immediate. I urge your committee to continue with the necessary funding to address Superfund sites in the city of Garfield.

On a personal note, I have a grandson with autism. I have a godson with autism, both born in the city of Garfield. I love them dearly. I can't say that this caused it, I can't say that it didn't cause it either. You are absolutely right, especially these days with the rate of autism and especially in the State of New Jersey.

I urge you to continue the cleanup in Garfield.

Thank you.

[The prepared statement of Mayor Delaney follows:]

United States Senate
Committee on Environmental and Public Works
Washington, DC

Statement of Joseph Delaney
Mayor, Garfield, NJ
June 10, 2014

I appear before you today on behalf of the people of the City of Garfield, a community of approximately 31,000 people, located in southern Bergen County, in the State of New Jersey. We are a multi- ethnic, multi-cultural, and multi-religious community. We are a microcosm of America itself.

Our City is an old industrial City filled with tired factory buildings, many of which are beyond their useful life. Many of these former industrial sites have contamination problems which are beyond the grasp of local government to handle.

Back in 1983, at the EC Electroplating Factory located in our community, there was a spill of hexavalent chromium. Approximately 3,640 gallons of chromium were released into the earth. 1,056 gallons were recovered with the rest remaining in our soil. Over the last 25 years the NJ DEP handled this site. They made a determination in the late 1980's that no further action was required and that there were no health concerns.

In early 1993, Fire Company #3 located in the downstream plume of the underground water table had to be closed due to the detection of hexavalent chromium in the basement of that firehouse facility. As we have learned, once hexavalent chromium enters a building and crystalizes, it can be dispersed into the air. Scientific evidence tells us that, if you breathe that dust into your lungs, it will likely cause cancer.

Approximately five years ago (in the fall of 2008) our City Manager, Thomas Duch was contacted by the US EPA. He was told that they were taking on the responsibility for the chromium spill in our City. His initial meeting with the EPA was productive, based on the competence and genuine interest of the EPA in helping our people. We provided them with lists of residents, property owners and tenants in an

effort to get notice out to the community that the USEPA would investigate and examine homes and properties in the affected area.

The EC Electroplating facility is located in a densely populated section of Garfield. Within the spill area, there are more than 600 separate parcels of property. These include one and two family homes, multi-family dwellings, an elementary school, a daycare facility, houses of worship, and industrial and commercial properties. We have 6,300 separate parcels of property in our City. Therefore, almost 10% of our community has been affected. Notification has been made to residents in multiple languages: English, Spanish, Polish and Macedonian. We have conducted many public hearings with the EPA to provide information to our people and to answer their questions. The EPA's team on the ground in the City of Garfield has been exceptional. They have answered our concerns professionally, knowledgeably and competently. They have given reassurance to a scared populace. Despite that reassurance, property values in the area have declined significantly.

With the assistance of the EPA, 400 homes and properties have been examined. Contaminated properties, detected to date, have been cleaned up and monitoring wells have been installed throughout the affected areas (between 8 feet and 400 feet deep) in order to fingerprint exactly where the contamination lies below the surface.

To get into the ground below the EC Electroplating factory, demolition of the building on the surface was required. Due to safety concerns from residents that chromium tainted dust could be released from the property during demolition, an additional public hearing was held with the staff and administration of a K – 5 elementary school one-half block from the site, which included residents throughout the affected area. The factory itself has now been demolished and contaminated soil down to the water table has been removed. The site is fenced and ready for the next phase, the removal of the chromium that sits below ground in the water table of this neighborhood. This clean-up phase will absolutely require continued funding of the USEPA initiative in the City of Garfield. We are a Superfund site. We are a superfund clean-up priority. We are a community living in fear that this chromium in our water table may be impacting the health, safety and welfare of our residents.

Our clean-up need is immediate. I urge your committee to continue with the necessary funding to address Superfund sites, not only in the City of Garfield but throughout the nation. It is incumbent upon all of us, as public officials, to prioritize and to fund those budgetary requests that provide the greatest good for the people we answer to.

I respectfully request your support for all of the clean-up funding that is necessary in the City of Garfield and other sites which present immediate health hazards to the people who live in or near them.

Thank you for giving me the opportunity to appear before this prestigious committee.

Senator BOOKER. Mayor, thank you very much, especially for the personal note at the end. I am grateful for that.

Mr. Spiegel.

STATEMENT OF ROBERT SPIEGEL, EXECUTIVE DIRECTOR AND CO-FOUNDER OF EDISON WETLANDS ASSOCIATION

Mr. SPIEGEL. Thank you, Senator Booker.

Good afternoon. My name is Robert Spiegel, Executive Director and co-founder of the Edison Wetlands Association. Thank you for allowing me to testify on this extremely important issue today, one that deeply impacts public health and the environment.

Before I start my testimony, I would like to say that cleanups of Superfund sites, not only make communities more vibrant, they restore community health and welfare but they also create jobs while the Superfund site cleanup work is going on, sometimes for several years, good paying jobs, blue collar jobs and support for jobs in communities where these cleanups take place.

While they are also good for the environment, they also stimulate the economy. We have seen that firsthand at many of the Superfund sites that we have seen cleaned up in New Jersey and beyond.

The EWA is a nonprofit organization that started in 1989. I was working as a pastry chef at the time in a catering hall. The hall's ice carver, John Shersick, who was also a naturalist and hunter, came into my bakery because he liked the smell of the baked goods, and asked me a question 1 day, hey, do you want to come see some green rabbits?

I pretty much was the kind of person that minded my own business, worked and didn't pay too much attention to the environment, which in New Jersey is kind of a difficult thing to do, but green rabbits were a little over the top.

I followed the ice carver onto a site called the Chemical Insecticide Superfund Site on Whitman Avenue in Edison, New Jersey. Indeed, the rabbits were green. It was because of a chemical called DynaSep. What I saw that day was children playing on the site, homeless people living on the site, people scavaging wood to build their decks. What they didn't know was this site was a place that made Agent Orange, the infamous defoliant used in the Vietnam War.

That day turned me from a pastry chef into somebody that got involved in Superfund and environmental remediation.

One of the things I wanted to talk about was over the last 10 years, we were able to get the last of the Superfund checks to clean up that site. Christie Whitman came and delivered that check. It was the last of the trust fund, the very last check. It got the site cleaned up.

While we were happy that we got our site cleaned up, we and the community around us were sad that somebody else didn't as a result of the fact there was no more Superfund Trust Fund.

I am here today to discuss the trust fund and the reason why we need it to clean up these so-called orphan sites. Orphan sites are sites where there is either not anybody to start the cleanup or there is insufficient money.

It has a rippling effect, not just on orphan sites, but sites where there is an active, responsible party because we have a thing called

treble damages in Superfund where if a Superfund polluter refuses to do the cleanup, EPA can step in and do the cleanup and bill them for up to three times the cleanup cost.

This big stick was seldom used by EPA but now without a robust Superfund, that threat is hollow because the polluters know that EPA cannot take over these cleanups and therefore, are much less likely to undertake them themselves.

Priorities for cleanups in Superfund communities are now a race to count the bodies of those who are sick and dying. Only those communities with the highest body counts are getting the funding from the EPA for Superfund cleanups. That is not the promise that was made to the Nation when Superfund was enacted. It was enacted to address the Nation's hazardous waste sites, not just the ones with the highest body counts.

New Jersey has a rich industrial legacy which has been both a blessing and a curse for our State. We have the most Superfund sites and we have about 25,000 known contaminated sites. If the Superfund Program was fully funded, by any objective observer, these fees are modest, we would have the funds to address the sites that are problematic in New Jersey and around the Country.

In my research, Congressman Eckhardt's 1979 waste disposal hearings, survey and final report show conclusively that the chemical industry used the entire United States as its own private chemical dump with no town or city being exempted from industrial practices. It is only fair that they contribute the modest fees asked of them to clean up the Nation's toxic waste dumps and nightmare that they created.

I can talk about some of the sites that we work on like the 10 mile Bound Brook where we have active chemical discharge. It is the most poisoned brook in New Jersey. You can't eat a single fish out of it, yet the State of New Jersey and the EPA have no funds to even finish the reports, no less start the cleanup. We can discuss some of the sites if you like after my testimony.

I always find it curious that when we need money to build bombs or wage wars, there is always plenty of money to be found, but whenever you ask for money for environmental protection or Superfund site cleanups, there is never a dime in our budget. I just think our priorities are backward.

This is a direct threat to our national security and towns and cities across the Country. We need to reauthorize these modest polluter pays fees so that we have the funds to clean up the Garfields, the Ringwoods, the Pompton Lakes, the towns throughout New Jersey and beyond and have the funds needed to not only create good jobs, but revitalize these communities and protect public health and the environment.

Thank you, Senator Booker.

[The prepared statement of Mr. Spiegel follows:]

Senate Committee on Environment and Public Works Subcommittee
Testimony of Robert Spiegel, Executive Director, Edison Wetlands Association
Tuesday April 10, 2014

Good Afternoon, my name is Robert Spiegel, I am the executive director and co-founder of the Edison Wetlands Association also known as the EWA. Thank you for allowing me to testify today on an extremely important issue, one that deeply impacts public health and environmental quality for all Americans, "Protecting Taxpayers and Ensuring Accountability: Faster Superfund Cleanups for Healthier Communities."

The EWA is a non-profit environmental organization that was founded in 1989 to protect public health and the environment by cleaning up and restoring hazardous waste sites in New Jersey and beyond. The EWA also owns and operates the last farm in Edison Township, the Triple C Ranch and Nature Center, a natural oasis in the 1450 acre Dismal Swamp Conservation Area. At the Triple C Ranch and Nature Center, our staff, volunteers and interns run community gardens, and teach hands on environmental programs. The EWA has over 1000 members in New Jersey.

The EWA has been working directly on Superfund Sites for over 25 years and we also work to strengthen the publics understanding of the Superfund process. The EWA accomplishes this by working directly to chair or co-chair at least 12 Community Advisory Groups (CAG's) with the public, elected officials, the USEPA and other state and federal agencies. One of the tools we provide to assist communities is the use of environmental engineers and technical advisors to disseminate technical information to communities so they can meaningfully participate in the Superfund Process. The EWA strongly advocates for protective remediation at Superfund Sites and study Superfund laws and regulations and helps Environmental Justice Communities navigate the often-confusing Superfund process.

I started working in 1989 on Superfund issues. I co-founded the Edison Wetlands Association when I was working as a pastry chef in a catering banquet hall. The hall's ice carver John Shersick came into my bakery because he liked the smell of the baked goods I made. Besides being an ice carver John was a naturalist and hunter. One day he asked me a very strange question, "Do you want to see some green rabbits?" At the time, I baked elaborate cakes and taught martial arts, took care of my family, and pretty much minded my own business, which is a pretty hard thing to do in New Jersey when it comes to the environment. A few days later I followed the ice carver onto the Chemical Insecticide Superfund Site on Whitman Avenue, Edison NJ, and the place reeked of death, decay and rot.

There were homeless people living on the site, children playing there, and people scavenging wood for building their decks. Those people didn't know that the site was actually a pesticide manufacturer that made among other chemicals, the defoliant used in the Vietnam War, the infamous Agent Orange. I did indeed see green rabbits and I thought to myself, " If the chemicals turned the rabbits green what were they doing to the children who routinely played on the site". What I saw that day got me out of the pastry shop and into the world of Superfund and environmental remediation.

I later found out that green ooze was running down into the parking lot where workers made rolls for all the McDonald's bakeries throughout the Tri-State area. As it turns out many of those workers died of cancer and other illness.

To raise awareness about this serious problem we took to holding impromptu press conferences as well as conducting our own soil samples. The fledgling EWA managed a USEPA Technical Assistance Grant to hire our own experts to review and comment on the EPA site reports. Our advocacy got the attention of those outside our community and even the late best selling author Molly Ivins featured our story in her best seller "Bushwhacked".

Our many years of advocacy finally paid off when we were able to get the very last of the Superfund trust fund. US EPA Administrator Christie Whitman delivered the funds in an over size novelty check to start the cleanup work herself.

Today thanks to the Superfund trust fund we were able to get the site fully clean and this site was the first in New Jersey to be purchased and preserved with Green Acres open-space money. The EWA even contributed $500,000.00 from New Jersey Green Acres open space funding to purchase this site for parkland.

I am here today to discuss the shortfalls with the United States Environmental Protection Agencies Superfund Program for so called "Orphan Sites". "Orphan sites" are sites where there is no responsible party or the responsible party does not have adequate resources to conduct the cleanup. These sites are poisoning the American public. The modest fees collected from under the Superfund Program on the chemical industry were collected from 1980 until 1995. Bill Clinton tried twice to reauthorize these modest fees and at its peak the trust fund had 5 billion dollars for "Orphan" Site cleanups around the country. The lack of a dedicated Superfund Trust Fund has also had a rippling effect on sites where there is a responsible party and I will explain why later in my testimony.

The US EPA depleted Trust fund has led to lack of funding, manpower and resources in New Jersey and across the country. Poisoned American towns and cities have an emergency situation with body counts piling up and no funding for all the Superfund cleanup work desperately needed. I also work with poisoned Superfund communities outside New Jersey including the Lees Lane Superfund Site Louisville, KY where children continue to play on its chemical slop pits.

The USEPA's priority for those who get cleanup funding is now a race to count the bodies of children and adults at sites around the country. Only the communities with the highest body count get scarce Superfund dollars allocated by the federal government for the USEPA Superfund Program.

These funding shortfalls did not exist when the Superfund Trust Funds were collected by the United States and available from the modest "Polluters Pays" fees collected from the industries that had caused the problems.

These serious problems are now compounded by severe weather events brought about by climate change. My opinion based on over 25 years of experience with the Superfund toxic waste program, the failure to have a well-funded USEPA with a dedicated trust fund for the thousands of leaking Superfund Sites is a direct threat to America's national security.

My testimony will focus on a few of the over 20 Superfund Sites that EWA works on everyday to cleanup and restore. We also cannot talk about the Superfund Program without discussing the communities that are directly impacted by those sites.

New Jersey's rich industrial legacy is both a blessing and a curse for New Jersey families. New Jersey's industries helped make the nation a powerhouse. This included manufacturing to make bricks and steel that built the nations skyscrapers and bridges. It also included the development of synthetic chemicals that were a break through and thought to have had a net environmental benefit by replacing things like whale oil and animal based products thus saving the lives of thousands of animals. New Jersey led the nation in innovation from industries such as the automobile to the development of the pharmaceutical and biotech industries.

This legacy also left behind a sinister dark side partly due to industries poor housekeeping practices along with organized crimes involvement in the waste disposal industry.

New Jersey has at least 114 USEPA Superfund Sites the most in the nation. New Jersey also has approximately 25,000 known contaminated sites including Department of Defense and Department of Energy Sites. New Jersey has the distinction of having the highest population density as well as the highest cancer rates in the country. This problem is compounded by the failure of New Jersey's State Environmental Protection (NJDEP) to provide any meaningful over sight on the remediation of the states contaminated sites. New Jersey has divested itself of most the regulatory oversight of New Jersey's roughly 25,000 contaminated sites, now letting the polluters self-regulate.

There are also many New Jersey sites that would more than qualify for the Superfund program if the US EPA had sufficient funding to fully undertake its mandate to cleanup the nations worst toxic sites.

New Jersey's many leaking toxic waste Superfund nightmares continue to pollute our estuaries, wetlands and communities. Without a dedicated trust fund these Superfund Sites continue to discharge highly toxic chemicals into drinking water wells, surface and groundwater including our homes, parks and schools. Any objective observer can see why New Jersey is the poster child for why we need to reauthorize the modest "polluter pays" fees and where the EPA's mission could not be more apparent or necessary.

Congressman Eckhardt's 1979 Waste Disposal Hearings, Survey and final Report show that the chemical industry used the entire United States as its own private chemical dump with no town or city being exempt from industries practices. Its only fair they contribute the modest fees asked to cleanup the national toxic waste nightmare they created.

The Superfund Sites that I'm going to talk about in my testimony are just a few of the many examples that continue to poison New Jersey families and communities throughout our nation. It is clear the USEPA's mission and the legislators who first help draft the Superfund Bill in 1980 never anticipated the magnitude of the problems left behind by many of the nations industrial powerhouses especially in New Jersey's Garden State.

The first site I want to testify on is the Cornell-Dubilier Superfund site located in South Plainfield, New Jersey. This site produced cancer causing Polychlorinated Biphenyls (**PCBs**) Capacitors and oils and dumped massive amounts of capacitors and chemicals including solvents into the adjacent wetlands and streams. Disposal practices at the site in the 1930's and 1940's were responsible for contaminating a vast geographic area including at least one other Superfund Site. The company also may have dumped PCB's at unremediated landfills where children play unaware they are not sports fields.

The site also rendered the10 mile Bound Brook with the distinction of being the only New Jersey waterbody with a ban on consuming even a single organism, due to the fact the fish and other biota have PCB's at the highest levels seen in New Jersey fish. The Bound Brook also traverses seven other towns and children frequently play in the PCB laced brook and subsistence fisherman catch and eat from the Brook, contaminated Spring Lake and New Market Pond. Both the lake and pond host yearly fishing derbies and people regularly consume the poisoned fish that they catch for sustenance.

Recent USEPA's studies show these highly toxic cancer-causing chemicals will continue to discharge for decades, maybe centuries, without the USEPA taking active measures to stop the flow of chemicals from the 825-acre plume into this densely populated residential community. The USEPA cannot stop the groundwater discharge nor do they have the resources to test the hundreds of homes, schools, daycare centers and businesses that sit directly above the

groundwater plume. This plume has the potential to emit deadly gases that may pose a threat to unsuspecting families.

This problem is similar to the DuPont Public Works Site in Pompton Lakes, NJ where poison gases were discovered by the USEPA to be discharging from a chemical plume into over 450 homes. The scope of the problem in South Plainfield may be much greater than Pompton Lakes but the USEPA does not have the funds to sample the air in the structures located about the plume.

The USEPA has been studying the Bound Brook for 20 years and without dedicated funding, staff and resources the USEPA cannot even finalize the investigation of the Bound Brook and Groundwater (Operable Unit 3 and Operable Unit 4). The information has not been released to the public and the USEPA has no funding to stop the dangerous flow of these cancer-causing chemicals into the many towns that are being impacted along the 10 mile Bound Brook and in the 825 acre toxic plume under South Plainfield, Piscataway and North Edison. Without dedicated funding for the USEPA to conduct the critical cleanup work needed to address this direct human health and environmental threat, it may take centuries to stop the chemicals actively discharging from this site.

Another New Jersey Superfund Site cleanup drastically slowed down by lack of dedicated funding is the Horseshoe Road Superfund Site in Sayreville. This combination of several sites that comprise the Horseshoe Road Superfund Site used a variety of chemicals including roofing tars and processed and incinerated x-rays and computer boards to recover precious metals.

Using our nations wetlands for their private landfills, as many companies have done the Horseshoe Road Superfund Site has polluted vast areas on New Jersey's longest river, the Raritan. The USEPA was able to clean the uplands area when funding was dedicated to the cleanup. However, vast expanses of tidal and freshwater wetlands along the Raritan River and the Raritan River sediments remain poisoned with deadly arsenic, dioxins and other chemicals. EPA plans to clean the expansive wetlands and dredge the Raritan River to make it safe again for the commercial crabbers, fisherman, recreational boaters, jet skiers and bird watchers to use. The USEPA has completed all the studies needed to begin the cleanup.

Unfortunately, the USEPA's plan has stalled because the funding is just not available. Now fisherman and crabbers as well as those who walk along the Raritan River are routinely exposed to high levels of chemicals that continue to leach from these chemically soaked wetlands and contaminated sediments in the Raritan River.

The last site I'd like to discuss in some detail is the Raritan Bay Slag Superfund Site in Lawrence harbor and Sayreville, New Jersey.

The Raritan Bay Slag Superfund Site is an USEPA success story in the making, if USEPA only had the funds to begin the cleanup. The Raritan Bay Slag Superfund site is comprised of several massive toxic lead slag disposal areas indiscriminately dumped along large jetties, beaches and seawalls in the Raritan River and the Raritan Bay. The site is located in the New Jersey towns of Sayreville and Lawrence Harbor. USEPA used a very innovative approach to fast track the investigation of this site due to the impact on the Raritan Bayfront community, the environment and its devastation to Bayfront businesses. The USEPA used their removal branch in conjunction with the remedial branch to fast track the investigation and get to a decision point in only three years.

This approach restored confidence in the federal government and the USEPA and was lightning speed for a Superfund Site. The USEPA was able to use their own USEPA divers to gather the information needed to understand how the toxic lead slag had spread and what it was doing in the natural environment of the Raritan River and Raritan Bay. Even with the setback from Hurricane Sandy, the USEPA was able to quickly recover and assess the changes from the Hurricane. USEPA worked with the EWA, the community and bringing all stakeholders together for meaningful community involvement. The USEPA's decision was to clean up all the leaking toxic lead slag and arsenic that had polluted the areas beautiful beaches and bay front community of Lawrence Harbor and Sayreville.

However, here's where the story takes a very sad turn. In the past the threat of treble damages was enough to get polluters to do the cleanup the USEPA ordered. That is if the polluter refused to do the cleanup ordered the USEPA could do the cleanup and bill the polluter for three times the cost of the cleanup. The USEPA rarely, if ever, used this provision but it acted as the big stick to get recalcitrant polluters to undertake extensive cleanups.

Now that there is no money left in the Superfund Trust Fund, the USEPA does not have the funds to do the cleanup or pursue enforcement treble damages as USEPA once did. The responsible parties and polluters know that the USEPA cannot undertake this expensive cleanup and that treble damages is just an idle threat.

What these three sites have in common is that with dedicated funding like the USEPA Trust Fund there would be sufficient funding to clean these Superfund Sites. These and many of the country's leaking toxic Superfund Sites would be cleaned up quicker if there were a dedicated source of funds, like the USEPA had with the Trust Fund fees.

The USEPA is now stuck in limbo on a cleanup that is ready to start and that without funding is not going to be cleaned up anytime soon. These same stories are repeated over and over throughout the state of New Jersey and the country. There is no shortage of examples of a need

for a well-funded Superfund Program that could only come from a dedicated trust fund financed by fees collected from polluting industries.

Superfund sites not mentioned in my earlier testimony but equally as important are the cleanup at the Ringwood Mines Superfund Site where the Ramapough/ Lenape Indian Nation and the rights of the native American community requires significant Superfund resources to address the impacts to food, medicine and tribal natural resources. Dedicated Superfund funding for the USEPA Superfund Program could expedite the cleanup of the Ramapough/ Lenape sacred ancestral lands. Other New Jersey sites like Bridgewater's American Cyanamid Superfund Site has over 2 million tons of toxic waste and 27 chemical lagoons are still extremely dangerous and leaking near drinking water supplies. Funding is critical to getting these sites cleaned up quicker.

A stronger, fully funded Superfund would provide for vastly improved enforcement as the polluter pays three times would stop being a hollow threat and the USEPA would have the funds to address toxic waste impacts to human health and environmental crisis of epic proportions. This is the toxic legacy that New Jersey and all Americans still face. Detractors look at Superfund and see it as a bureaucratic program, and those who call for Superfund's abolishment have not seen the many Superfund communities throughout the country where cleanups have restored community health and reenergized property and home values.

Recent university studies show a direct connection between the cleanup of Superfund Sites and a reduction in birth defects and childhood illness. In other words where Superfund Sites are cleaned up children are born healthier and suffer from less illness and disease.

When we think about reauthorizing the polluter pays fees, we must keep in mind that it is only fair that those who caused this problem must pay to clean it up.

American's should not be forced to decide whether to fund a school, road or to pay for the cleanup of America's hazardous waste sites. The United States has a host of new problems in the public eye from waste impacting the shores of the United States from the Fukushima reactor to global climate change and rising sea levels. There are certainly no shortages of serious problems that Americans face. Restoring the "Polluter Pays" fees will give us the funds to finally address America's toxic legacy that continues to poison our country.

Dying from cancer after being exposed to hazardous waste sites sometimes takes years and is not the most glamorous way to die. If only we could get more Superfund Sites to have Green Rabbits like the CIC did maybe enough politicians will pay more attention to this issue to reauthorize the "Polluter Pays" Provision of this important law that impacts every family and person in the United States and does not care whether you are Republican, Democrat or Independent.

Senator BOOKER. Mr. Spiegel, thank you very much for your testimony.

Susan Bodine.

STATEMENT OF SUSAN BODINE,
PARTNER, BARNS & THORNBURG

Ms. BODINE. Thank you very much, Chairman Booker, for inviting me to testify today on protecting taxpayers and ensuring accountability, faster Superfund cleanups for healthier communities.

I have I think voluminous testimony in the record so I am going to try to be very short and make a few highlights. Then I want to talk about the funding issue.

EPA can protect taxpayers by staying within its statutory authority, focusing on national priorities, and making sure it follows its own policies. Headquarters does put out a number of policies and has a number of expert groups whose role is to assist the regions in remedy selection, making sure they follow national policy, and making sure that they are developing protective and cost effective remedies.

There is a management issue there in that the regions don't report to the headquarters Superfund Program, there is no line authority there, so it is more hortatory trying to make sure the regions are following national policy.

Nonetheless, the policies are there and we do have these expert work groups of headquarters and regional staff who are there to assist regions to make sure they are developing cost effective remedies that stay within the legal authorities.

I want mention the fact that EPA's Superfund Program is protecting communities. That is, of course, the highest priority. The agency is focusing on cutting off exposure which is different from returning to economic reuse. First and foremost, cutting of exposure, protecting human health at these sites is happening first. That is the highest priority.

Returning sites to beneficial use can take longer. That may not be the highest priority in every situation. It is a good thing, everyone agrees it is a good thing, but from a budgetary standpoint, protecting human health is absolutely the highest priority.

Returning sites may lag and that is why you do see in some of these cases, situations where EPA goes in and screens the 400 homes in Garfield, makes sure the 13 homes with high exposures are cleaned up and then the site itself, which isn't presenting exposure issues right now, may lag but that is a funding issue.

That is a priority issue where returning to economic development, which everyone agrees is important, isn't as high a priority as cutting off exposure and protecting people.

In answer to the question could the Superfund Program spent more money, the Regional Administrator said she could spend twice as much money. The President didn't ask for twice as much money; the President's request for 2015 is $1.156 billion for the Superfund Program. The Deputy Administrator explained how that was carved up to different offices and different purposes.

Nonetheless, the Superfund Program competes with every other program within the Federal budget for money. That is true whether or not the Superfund taxes are reinstated. That is true whether

or not there is money in the Trust Fund, whether or not there is a huge balance in the Trust Fund.

The reason that the Superfund Trust Fund is on budget, it is part of the unified Federal budget. It is not off budget, there are no firewalls. If it were off budget, it would truly mean that it could not be expended at all for other purposes.

If it were firewalled, this is something this committee holds near and dear because you have the Highway Trust Fund. The Highway Trust Fund has firewalls. That means that the funding in the Highway Trust Fund cannot be used to offset Federal spending. That is not true of the Superfund Trust Fund.

That is why when the taxes were being collected, the trust fund was gaining a very large balance. In fact, at the end of 1995, it had a balance of $3.7 billion, whereas the appropriation for 1995 was $1.4 billion and the appropriation for 1996 was $1.3 billion.

The trust fund balances and the appropriations have never tracked. Again, it is because that money is not mandatory spending, it is not off budget, it is not available, it has to be appropriated and the money can offset any other spending.

The taxes, you had a bit of discussion on the taxes earlier, are simply raising revenue. That is policy neutral or it is morality neutral. You can put an excise tax, a sales tax, on the sale of chemicals, you can put an excise tax on the sale of oil, the tax will be passed through and people who buy products made with chemicals, whether it is a car seat, a bike helmet or anything else, or people who buy gasoline, are going to pay more.

You can also put a tax on corporate environmental income. It is a net income above $2 million. Net income above $2 million it is a tax across the board. Again, that is value neutral. It is not polluter pays because there is no determination if these entities are polluters and if a company produces oil or chemicals and creates a problem, the companies paying taxes are the ones in business. They are paying for any cleanup of pollution that they create.

In fact, they are not doing it under Superfund. There is a whole other program, the Resource Conservation Recovery Act, RCRA. Ongoing industrial operations are addressed under RCRA and are not even addressed under Superfund for an ongoing. Superfund is for the legacy sites.

I have gone way over my time but I just wanted to make sure that you understood how the trust fund works and what the taxes are.

[The prepared statement of Ms. Bodine follows:]

TESTIMONY OF SUSAN PARKER BODINE
PARTNER
BARNES & THORNBURG
BEFORE THE SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
SUBCOMMITTEE ON OVERSIGHT
"PROTECTING TAXPAYERS AND ENSURING ACCOUNTABILITY: FASTER SUPERFUND CLEANUPS FOR HEALTHIER COMMUNITIES"
JUNE 10, 2014

Chairman Booker, Ranking Member Inhofe, members of the subcommittee, thank you for the invitation to testify today on "Protecting Taxpayers and Ensuring Accountability: Faster Superfund Cleanups for Healthier Communities." I am currently a partner in the law firm of Barnes & Thornburg. I have previously worked as an assistant administrator for the Office of Solid Waste and Emergency Response at the U.S. Environmental Protection Agency, with responsibility for the Superfund program. I would like to make four points in my testimony today:

- First, EPA can protect taxpayers by remaining within its statutory authority, focusing Superfund on national priorities, following its own guidance to ensure protective and cost-effective cleanups.
- Second, EPA's focus on getting sites ready for anticipated use is ensuring accountability and creating healthier communities.
- Third, cleanup is funded by both appropriations and private parties and appropriations are unrelated to the balance of the Superfund Trust Fund.
- Fourth, the pace of Superfund construction completions has declined, but that decline appears to be unrelated to federal funding and due instead to the complexity of the sites that remain on the National Priorities List.

I. EPA has Policies Designed to Ensure Cost-Effective Cleanups.

A. Staying Within the Limits on Statutory Authority.

EPA can protect taxpayers by staying within its statutory authority.

The Comprehensive Environmental Remediation, Compensation, and Liability Act (CERCLA) authorizes EPA action to address releases of hazardous substances to the environment. CERCLA does not give EPA unlimited authority to address any releases. For example, under section 104(a)(3), absent a public health emergency, EPA cannot use CERCLA authority to address a naturally occurring substance in its unaltered form (precluding most responses to releases of radon), or products which are part of the structure of, and result in exposure within, residential buildings or business or community structures (precluding most responses to releases from indoor lead paint).

CERCLA also does not authorize EPA to provide a remedy that goes beyond what is needed to address a significant risk. For example, if relocation is part of a remedy, EPA cannot provide a person with a better home. If soil removal damages septic systems, EPA cannot build a centralized sewage treatment facility. If groundwater contamination requires hookups to public water systems, EPA cannot also hook up homes with uncontaminated wells. All of these examples are considered "enhancements" or "betterments," which are not authorized by the statute. *See, e.g.*, EPA 540-K-01-008, OSWER Directive 9230.0-100 (Feb. 2002).

B. Focusing on National Priorities.

EPA can protect taxpayers by focusing on national priorities.

The National Priorities List (NPL) under the Superfund program is not intended to be the mechanism for addressing all situations where there may be human exposure to a release of a hazardous substance. The NPL is intended to be a list of "national priorities among the known releases or threatened releases throughout the United States." CERCLA, § 105(a)(8)(B). Not every release to the environment and not every exposure to hazardous substances is a "national priority" that merits intervention by the federal government. In fact, under the National Contingency Plan (NCP), releases that pose no significant threat to public health or the environment are not national priorities and are eliminated from further consideration. 40 C.F.R. 300.420(c)(i).

For example, some hazardous substances exposures can be cost effectively addressed through off the shelf technology. These types of exposures do not need the technical expertise of the federal Superfund program.

An example of a less costly and complex site is a site where the sole pathway of exposure is vapor intrusion. Under the current Hazard Ranking System, sites can be added to the NPL based on groundwater, surface water, soil, and air exposure pathways. These pathways do not include exposure to indoor air through vapor intrusion. If a vapor intrusion site is complex, it generally would be eligible for NPL listing based on another pathway. In not complex, a vapor intrusion site can be addressed using the same simple technology that homeowners use to address radon.[1]

[1] Vapor intrusion sites also can be addressed by EPA through its removal program, under which EPA can take action for up to 2 years and $2 million (caps that can be waived) without listing a site on the NPL.

In 2011, EPA had proposed to amend the Hazard Ranking System to add a vapor intrusion pathway. Recent trade press articles indicate that this proposal has been set aside. This does not mean EPA cannot list a vapor intrusion site on the NPL if it is truly a national priority.[2] But, by setting aside this rulemaking, EPA has avoided suggesting to states that every dry cleaner site is now a national priority, with the implicit promise of federal resources.

C. National Remedy Policies.

EPA can protect taxpayers by following its own policies.

There are other types of Superfund sites that are highly complex. For these types of sites, EPA Headquarters has developed policies requiring consultation with Headquarters to ensure appropriate action and national consistency.

For example, EPA has developed policies requiring consultation for dioxin sites, contaminated sediment sites, some groundwater and lead sites, and highly costly sites. See http://www.epa.gov/superfund/policy/remedy/sfremedy/hqconsult. I discuss a few of these policies below.

1. *Contaminated Sediment Policies.*

Contaminated sediment sites are often both highly complex and highly costly. To ensure that remedies focus on risk reduction, rather that simple removal of sediment mass, and to ensure that sources are addressed first to avoid recontamination of sites, EPA developed "Principles for

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[2] Under 40 CFR 300.425(c)(3), a site may be listed if it poses a significant threat to public health
EPA used this authority to list the Garfield Groundwater Contamination Site, in Garfield N.J., on the NPL.

Managing Contaminated Sediment Risks at Hazardous Waste Sites," Office of Solid Waste and Emergency Response (OSWER) Directive 9285.6-08, February 2002. This guidance established 11 risk management principles for sediment sites:

- Control Sources Early.
- Involve the Community Early and Often.
- Coordinate with States, Local Governments, Tribes, and Natural Resource Trustees
- Develop and Refine a Conceptual Site Model that Considers Sediment Stability
- Use an Iterative Approach in a Risk-Based Framework
- Carefully Evaluate the Assumptions and Uncertainties Associated with Site Characterization Data and Site Models.
- Select Site-specific, Project-specific, and Sediment-specific Risk Management Approaches that will Achieve Risk-based Goals.
- Ensure that Sediment Cleanup Levels are Clearly Tied to Risk Management Goals.
- Maximize the Effectiveness of Institutional Controls and Recognize their Limitations
- Design Remedies to Minimize Short-term Risks while Achieving Long-term Protection
- Monitor During and After Sediment Remediation to Assess and Document Remedy Effectiveness.

This guidance also established a Contaminated Sediment Technical Advisory Group (CSTAG) composed of Headquarters and Regional experts to help regional site project managers comply with Headquarters guidance on contaminated sediment cleanups. The purpose of the CSTAG is to provide technical input before a remedy is developed. Accordingly, OSWER Directive No. 9285.6-20, September 2009, Changes to the Roles and Responsibilities of the Contaminated Sediments Technical Advisory Group (CSTAG), clarified that sediment sites require a separate, earlier, technical review even if the site will also undergo a review by the Remedy Review Board.[3]

http://www.epa.gov/superfund/policy/remedy/sfremedy/hqconsult.htm#CSTAG

[3] Although the 2009 guidance has not been changed or withdrawn, there is some indication that EPA is no longer following this guidance, which requires early technical input to regions on remedies for contaminated sediment sites. April 11, 2014, National Remedy Review Board and Contaminated Sediments Technical Advisory Group Recommendations for the Diamond Alkali Superfund Site, Lower Eight Miles of the Lower Passaic River (Focused Feasibility Study Area) ("EPA decided not to have a separate technical review by the CSTAG per OSWER Directive No. 9285.6-20, September 2009, Changes to the Roles and Responsibilities of the Contaminated

2. Superfund Remedy Review Board

EPA established the Remedy Review Board as one of the 1995 Superfund Administrative Reforms to help control response costs and promote consistent and cost-effective remedy decisions. The Board provides a cross-regional, management-level, review of high cost proposed response actions prior to their being issued for public comment. The Board reviews all proposed cleanup actions that exceed its cost-based review criteria, currently $25 million.[4] The Board review is intended to help control remedy costs and to promote both consistent and cost-effective decisions.[5] http://www.epa.gov/superfund/programs/nrrb/index.htm The purpose of the Remedy Review Board is to review a proposed remedy after it has been developed.

3. Remedy Optimization

In September 2012, the Superfund program released a "National Strategy to Expand Superfund Optimization Practices from Site Assessment to Site Completion."[6] The goals of the Strategy are to expand and formalize optimization practices as an operating business model for the Superfund remedial program. The Strategy envisions the application of optimization concepts throughout all phases of the remedial pipeline as a normal part of remedial program activities.

Sediments Technical Advisory Group (CSTAG), but instead elected to have a combined NRRB/CSTAG meeting for this site. *This joint meeting format is the approach EPA plans to take in the future at CSTAG sites.*").

[4] There are higher thresholds for certain DOE sites.

[5] Consistent with the CERCLA and the NCP, in addition to being protective, all remedies are to be cost-effective.

[6] http://www.epa.gov/superfund/cleanup/postconstruction/optimize.htm

Optimization is a remedy evaluation to determine if a site is meeting its remedial action objectives and facilitates remedy revision if objectives are not being met. At some sites this may involve changing from active to passive remediation, if active treatment is not working. The benefits of these optimization efforts may include more cost-effective expenditure of Superfund dollars; lower energy use; reduced carbon footprint; improved remedy protectiveness; improved project and site decision making; and acceleration of project and site completion.

4. Groundwater Remedy Completion Strategy.

In May 2014, EPA released a groundwater remedy completion strategy. OSWER Directive 9200.2-144. This guidance requires Regions to consider groundwater goals when designing a remedy and, through the optimization process discussed above, to reconsider those goals if they are not being met.

http://www.epa.gov/superfund/health/conmedia/gwdocs/pdfs/EPA_Groundwater_Remedy_Completion.pdf

It appears that this guidance may be motivated by a 2012 report by the National Academies of Sciences entitled: Alternatives for Managing the Nation's Complex Contaminated Groundwater Sites (2012) (NAS Groundwater Report). http://www.nap.edu/catalog.php?record_id=14668

This NAS report estimates that at least 126,000 sites across the U.S. still have contaminated groundwater, and their closure is expected to cost at least $110 billion to $127 billion. About 10 percent of these sites are considered "complex," meaning restoration is unlikely to be achieved in the next 50 to 100 years due to technological limitations. At sites where contaminant

concentrations have plateaued at levels above cleanup goals despite active efforts, the report recommends evaluating whether the sites should transition to long-term management, where risks would be monitored and harmful exposures prevented, but at reduced costs. The report includes the following recommendation: "*At many complex sites where the effectiveness of site remediation has reached a point of diminishing returns prior to reaching cleanup goals, the transition to passive management (like monitored natural attenuation or MNA) should be considered using a formal evaluation called a Transition Assessment.*"

The NAS conclusions mean that many pump and treat remedies are using energy and emitting greenhouse gases but are not actually cleaning up groundwater. EPA's new guidance encourages EPA Regions to evaluate these situations and, if needed, to change the remedy or the remedial objectives.

In its review of complex contaminated groundwater sites, the NAS did its own analysis of 80 delisted groundwater Superfund sites identified by EPA as having met cleanup goals because this information was not readily available. NAS Report, at 65 and Appendix C. This highlights the fact that missing from EPA's groundwater remedy completion guidance is any reporting of the results of remedy evaluations. The guidance recommends site-specific evaluations of progress in achieving groundwater remedial action goals but does not indicate whether such information will be collected at the national level. EPA should collect and report this information in its Annual Status Reports.

EPA's Annual Status Report used to report on the status of remedies, including the number of pump and treat projects that had been shut down. Treatment Technologies for Site Cleanup: Annual Status Report (Twelfth Edition) (Sept. 2007) (EPA-542-R-07-012), at 4-13 (ASR). http://www.clu-in.org/asr/ The Thirteenth Edition of this report (renamed the Superfund Remedy Report, reports on the type of groundwater remedies selected, but no longer reports the status of those remedies. EPA should reinstate reporting on remedy status and include information on achievement or modification of remedial action goals. For example, the 12th ASR reported 73 pump and treat remedies had been shut down, 30 because they met project goals. Id., at 4-13 and Appendix G. The report also noted that 100 pump and treat remedies had been changed to other groundwater remedies. Reporting this information will help the public understand the limits of current technologies, promoting both transparency and EPA's ability to implement its Groundwater Remedy Completion Strategy.

II. Protecting Communities by Ensuring Sites are Ready for Reuse.

EPA ensures accountability and protects communities by evaluating sites based on whether human health will be protected when the site is returned to productive use.

In the past, the Superfund program was evaluated primarily on the basis of how many sites it completed. Initially, sites were determined to be complete when they were deleted from the NPL. However, many sites had long term remedies, such as groundwater remedies, and site deletions lagged far behind the work performed by the Agency. In 1993, EPA created the category called "construction completion," and began tracking and reporting the number of Superfund sites where the physical construction of the cleanup remedy is finished.

Construction completion is simply a measure of physical progress, not of the protectiveness of a remedy. Following enactment of the Government Performance and Results Act, EPA also adopted environmental indicators to measure when human exposure and groundwater migration were controlled at sites. However, so much attention was paid to the construction completion measure that EPA regions often failed to ensure that all measures were in place at sites to ensure long-term protectiveness when a site is reused (particularly institutional controls).

To address this issue, EPA began tracking when sites were ready for reuse and in FY 2007, the Superfund program adopted a new measure to capture site progress beyond the construction completion milestone: Site-Wide Ready for Anticipated Use. This measure tracks the number of NPL sites where the remedy is constructed (construction complete), cleanup goals for anticipated uses of the land have been met, and any necessary institutional controls are in place. http://www.epa.gov/superfund/programs/recycle/effects/swrau.html Thus, EPA is focusing not only on remedy construction, but also on ensuring long-term protectiveness for communities.

III. **Funding for Superfund Cleanups.**

Taxpayers are protected by monitoring use of appropriated dollars, relying on private parties to conduct cleanups, and making sure EPA uses non-appropriated funding from Special Accounts before using appropriated dollars.

A. EPA Funding.

Funding available for EPA to expend on the Superfund each year is provided by annual appropriations and from Special Accounts that are in the Superfund Trust Fund. Most of EPA's appropriated dollars go for programmatic spending, including the salaries of EPA employees. Figure 2 below shows annual appropriations and EPA's annual obligations for cleanup from both appropriations and Special Accounts.

Special Account funding comes from cash out settlements by private parties and state cost shares. These funds are placed in special accounts in the Superfund Trust Fund. These funds are not subject to appropriation. However, these funds are associated with specific sites and cannot be used for the Superfund program in general.

In 2006 and 2009 the EPA Inspector General recommended better management of these special account funds to ensure that they were being utilized[7]. The Inspector General had been told that some EPA Regions were spending appropriated dollars before using special account monies, treating the accounts as "rainy day funds." EPA responded by issuing guidance on the use of Special Accounts and by assigning people to oversee that use. In January 2012, the Government Accountability Office reviewed EPA's efforts and issued a report entitled: "Superfund, Status of EPA's Efforts to Improve Its Management and Oversight of Special Accounts" (GAO-12-109). GAO reported that of $4 billion that had been collected in Special Accounts through October 2010, $1.9 billion had been obligated and $1.6 billion had been disbursed. GAO also reported that EPA planned to spend the remaining $1.8 billion over the next 10 years.

[7] EPA Office of Inspector General, Evaluation Report: EPA Can Better Manage Superfund Resources, Report No. 2006-P-00013, Feb. 28, 2006. EPA Office of Inspector General, Evaluation Report: Improved Management of Superfund Special Accounts Will Make More Funds Available for Clean-ups, Report No. 09-P-0119, Mar. 18, 2009.

Due to the timing of when funds are needed at Superfund sites, EPA is continuing to collect settlement dollars and place those funds in Special Accounts faster than those funds are being expended. According to the Appendix to the President's 2015 budget, the total unexpended balance of the Superfund Trust fund was $3.23 billion at the end of FY 2103 and is estimated to be $3.17 at the end of FY 2014.

B. Private Party Funding.

The money spent by EPA on cleanup activities, whether from appropriations or Special Accounts, is far less than the amount spent each year by private parties carrying out cleanup work themselves. EPA tracks private party commitments on an annual basis. For example, in FY 2013, EPA obtained commitments from responsible parties to invest an estimated $1.2 billion in Superfund site studies and cleanups. Private parties also fund EPA's work. In 2013, private parties agreed to reimburse the Agency for more than $292 million spent cleaning up Superfund sites and EPA billed private parties for approximately $93 million in oversight costs. These reimbursements go back to the Superfund Trust Fund or are placed into special accounts for additional work at a site. Thus, in 2013 alone, private parties committed to contributing nearly $1.6 billion to Superfund cleanups.

C. Relationship between the Superfund Trust Fund and Appropriations.

The amount of annual appropriations is unrelated to the balance of the Superfund Trust Fund. Like any tax increase, reinstating the Superfund taxes would generate more revenue for the U.S. Treasury. However, that revenue can offset any federal spending because the Superfund Trust

Fund is part of the Unified Federal Budget, and unlike the Highway Trust Fund, its revenue can offset any federal spending. Therefore, annual appropriations are unrelated to the balance of the Trust Fund. The current administration made this point in July 2009 in responding to a GAO Report:

> *Specifically, the balance in the Superfund Trust Fund does not affect the funds available for current or future annual appropriations. Therefore, it cannot serve as a reliable indicator to responsible parties of EPA's ability to fund future cleanup actions. For example, in FY 1995, prior to the tax expiration on December 31, 1995, the Superfund Trust Fund end-of-year balance of $3.7 billion was well above the FYs 1995 and 1996 annual appropriations levels from the Trust Fund of $1.4 billion and $1.3 billion, respectively.*[8]

This point is made even more dramatically by the President's budget request. In the 2015 Request, the President proposes to reinstate the Superfund Taxes and collect $1.8 billion in revenue from excise taxes on oil and chemicals and an income tax on corporations. However, the President proposes to appropriate $1.157 billion for the Superfund program, leaving an end of year balance of nearly $2 billion in funds available for appropriation. The Appendix to the President's Budget shows the total unobligated balance of the Trust fund is projected to be over $5 billion at the end of FY 2015.[9]

It also does not appear that OMB plans to increase Superfund funding in future years, even if the taxes were reinstated. The projection of budget authority in the Historical Tables accompanying the President's Budget show relatively flat spending for EPA out to 2019. See http://www.whitehouse.gov/omb/budget/Historicals

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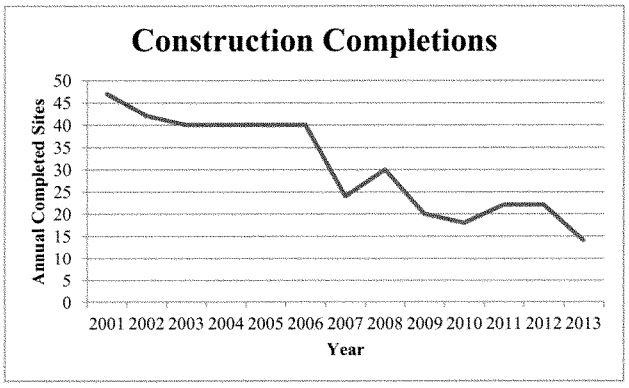
[8] June 26, 2009, letter from Catherine R. McCabe, EPA Office of Enforcement and Compliance Assurance to John Stephenson, Government Accountability Office, GAO-09-656, Appendix III. Unfortunately, the chart demonstrating relationship between appropriations and the unobligated trust fund balance that accompanied Ms. McCabe's letter is not reprinted in the report.

[9] The additional $3 billion is in Special Accounts.

IV. Pace of Cleanup is Generally Unrelated to Funding.

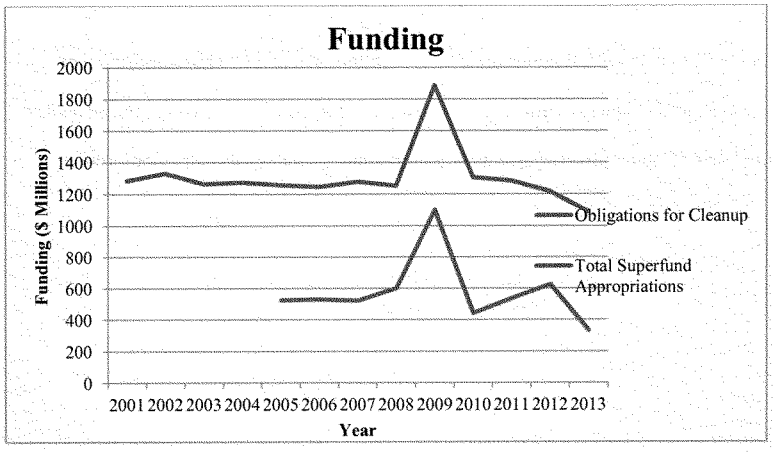
EPA has received criticism about the pace of cleanup, due primarily to the focus on construction completions. Some have suggested that increased funding will increase the pace of cleanup. While it appears intuitive that this would be the case, the data do not show it. If construction completions are used as the measure of pace, EPA's pace of cleanup continued to decline even though obligations (funding used by EPA from appropriations and special accounts) and appropriations spiked in 2009.

Figure 1. Construction Completions [10].



[10] Data from Superfund end of year accomplishments reports. http://www.epa.gov/superfund/accomplishments.htm According to the OSWER National Program Manger Guidance, the targets for 2014 and 2015 are 15 and 13 construction completions, respectively. http://www2.epa.gov/planandbudget/national-program-manager-guidances

Figure 2. Appropriations and Obligations for Cleanup.[11]



These data support statements by EPA that the remaining Superfund sites are more complex and are taking longer by demonstrating that even with an additional $600 million in funding in 2009, more sites have not been completed in the near term.[12]

This result is not unexpected. As discussed above, the NPL should be a list of sites that are truly national priorities and the complex sites that are national priorities take a long time to address. EPA could list many small sites and clean them up quickly, but that would simply divert funds from the sites that do need national attention and assistance.

[11] Obligations data are from the Superfund end of year accomplishments reports, supra, and include obligations of Special Account funds. Appropriations data are from a 2008 CRS Report Number No. RL31410 (for 2001 through 2008 appropriations, in inflation adjusted dollars), the President's Budget Appendix (showing prior year appropriations when proposing new appropriations) for 2009, 2010, 2012, and 2013; and P.L. 112-10 for FY 2011.

[12] The continued growth of the unobligated balance of the Superfund also supports this conclusion, as the availability of funding for sites in Special Accounts is not leading to more construction completions in the near term. Cleaning up Superfund sites takes time.

V. Conclusion.

CERCLA requires cost-effective and protective cleanups. EPA Headquarters has provided guidance and tools to help EPA Regions meet these statutory mandates. Thus, ensuring that EPA Regions follow Headquarters guidance is essential. EPA also is proactively returning sites to productive use relying on private party work and funding, as well as its own appropriated dollars.

Senator BOOKER. Ms. Bodine, that was very helpful. I am a vegetarian so forgive the analogy, but that had a lot of meat on it, so I appreciate it.

Scott Thompson?

STATEMENT OF SCOTT THOMPSON, EXECUTIVE DIRECTOR, OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

Mr. THOMPSON. Good afternoon, Chairman Booker.

I'd like to thank you and Ranking Member Inhofe for allowing me to speak today.

My name is Scott Thompson, Director of the Oklahoma Department of Environmental Quality.

My personal involvement with Superfund started in 1984. I was out pulling samples across Oklahoma, evaluating sites for the Superfund Program.

I would like to begin by thanking EPA Administrator McCarthy for bringing a very cooperative atmosphere to working with headquarters, the regions and the States. I think that is very healthy.

One program we work in that demonstrates the success of partnerships between EPA, the States and the local stakeholders is the Brownfields Program. Information we previously obtained through the Superfund Site Assessment Program on various Oklahoma sites allowed us to get expedited redevelopment on many brownfields properties.

Additionally, the liability releases through the Brownfields Program have provided the necessary assurances to entice developers to invest in communities and to spark more urban renewal.

Two examples of successful, award winning projects include: one, the Guthrie Green Project in Tulsa which was funded by the nonprofit George Kaiser Family Foundation, and was the recipient of the 2012 Brownfields Renewal Award; and two, the Devon Energy Center in Oklahoma City which received the 2012 EPA Region 6 Phoenix Award as well as the 2012 National Phoenix Award.

Both sites are now vibrant recreational gathering places that have sparked economic and cultural rejuvenation in Tulsa and Oklahoma City. These major successes were only possible through the teamwork of many dedicated partners.

The importance of public funding for the Brownfields Program cannot be overstated. Its greatest impact is by removing perceived and real environmental obstacles at sites and allowing economic redevelopment and encouraging other private development around those sites.

The program demonstrates that modest public investment can lead to extraordinary growth that far exceeds the original scope of the original brownfields project. Due to the major impact that brownfields funding has had in Oklahoma, the Oklahoma DEQ strongly supports reauthorization of this program.

The Superfund process, while noble in its goals, is not without its drawbacks. It takes a very long time to successfully complete the process and can put a strain on resources, on communities, on human health and on the environment.

Our lengthy experience with Superfund sites at the DEQ strongly indicates the best way to maintain cost effectiveness and to ade-

quately protect human health and the environment is to have responsible government oversight of contractors.

One recommendation I have for improving the Superfund Remedial Program is to look at the Superfund Emergency Response Program as a model. On-scene coordinators function as onsite construction and contract managers in a way that is substantially different than some remedial project managers.

In my experience, RPMs are often removed from onsite remedial actions. Cost control on remedial projects is at times managed in an inefficient way in comparison to removal actions. Remedial actions on National Priorities List sites would benefit if the RPM model was modified to mirror the OSC model.

Fostering innovative partnerships is another way to ensure cost efficiencies and to better protect human health and the environment. One example of such a partnership is the cooperative agreement between EPA Region 6 and the Quapaw Tribe which was fully supported by the Oklahoma DEQ.

This groundbreaking agreement provided the tribe with funds to conduct cleanup of specific tribal property while providing a platform for the tribe to demonstrate its capability to protect tribal homelands.

The implementation of this agreement successfully demonstrated that direct local involvement can be more cost effective and that local communities have a vested interest in protecting their homes.

However, an opportunity was missed to continue the cleanup of adjacent property while the Quapaw Tribe was mobilized in the field. This would have saved us some remobilization costs and got the job done quicker. I am fully supportive of providing matching funds for the Quapaw Tribe to do work on non-tribal properties because the tribe has demonstrated its ability to do high quality work.

States have developed robust expertise in implementing Superfund and have a vested interest in ensuring that Superfund sites within their borders are adequately cleaned up. It seems that strong consideration should be given to delegating the program or portions of the program to the States.

At a minimum, Congress and the EPA should facilitate cooperation between the various EPA regional offices and respective State environmental agencies. In my nearly three decades of working in the Superfund Program, we had our greatest successes when had strong partnerships with EPA and we worked as a team.

Again, thank you, Chairman Booker, for allowing me to speak today. I'd be happy to take any questions.

[The prepared statement of Mr. Thompson follows:]

BEFORE THE UNITED STATES SENATE
COMMITTEE OF ENVIRONMENT AND PUBLIC WORKS
SUBCOMMITTEE ON OVERSIGHT

Hearing Entitled "Protecting Taxpayers and Ensuring Accountability: Faster Superfund Cleanups for Healthier Communities"
June 10, 2014

TESTIMONY OF SCOTT A. THOMPSON
EXECUTIVE DIRECTOR
OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

Good afternoon Chairman Booker, Ranking Member Inhofe, and members of the Subcommittee. Thank you for the opportunity to speak at today's hearing. My name is Scott Thompson and I serve as the Executive Director of the Oklahoma Department of Environmental Quality.

My personal involvement with Superfund sites dates back to 1984 when I was pulling samples across Oklahoma at various sites being evaluated for the Superfund Program.

I would like to begin by thanking EPA Administrator McCarthy for fostering a cooperative atmosphere between EPA headquarters, the various EPA Regional Offices, and the respective state environmental agencies.

One program that demonstrates the success of partnerships between EPA, States, and local stakeholders is the Brownfields Program. Information previously obtained through the Superfund Site Assessment Program on various Oklahoma sites has allowed for expedited redevelopment of many properties. Additionally, liability releases through the Brownfields Program have provided the necessary assurances to entice developers to invest in the community and spark more urban renewal.

Two examples of successful, award winning projects include: (1) Guthrie Green Project in Tulsa, which was funded by the non-profit George Kaiser Family Foundation, and was the

recipient of the 2013 Brownfields Renewal Award; (2) The Devon Energy Center in Oklahoma City which received the 2012 EPA Region 6 Phoenix Award as well as the 2012 National Phoenix Award. Both sites are now vibrant recreational gathering places that have sparked economic and cultural rejuvenation in Tulsa and Oklahoma City. These major successes were only possible through the teamwork of our many dedicated partners.

The importance of public funding for the Brownfields Program cannot be overstated. Its greatest impact is demonstrated by removing perceived and real environmental obstacles to economic redevelopment, and encourages private development. The Program demonstrates that modest public investment can lead to extraordinary growth that far exceeds the original scope of a Brownfields Project. Due to the major impacts that Brownfields funding has had in Oklahoma, the Oklahoma Department of Environmental Quality strongly supports the reauthorization of the Brownfields Program.

The Superfund process, while noble in its goals is not without its drawbacks. The time it takes to successfully complete the process can put a strain on resources, communities, and on human health and the environment.

Through our lengthy experience with Superfund Sites, The Oklahoma Department of Environmental Quality strongly believes that the best way to maintain cost effectiveness and to adequately protect human health and the environment is to have responsible government oversight of contractors. One recommendation for improving the Superfund Remedial Program is to use the Superfund Emergency Response Program as the model. On-Scene Coordinators (OSCs) function as on-site construction and contract managers in a way that is substantially different than some Remedial Project Managers (RPMs). In my experience, RPMs are too often removed from the on-site remedial actions. Cost control on remedial projects is at times

managed in an inefficient way in comparison to Removal Actions. Remedial Actions on National Priorities List (NPL) sites would benefit if the RPM model was modified to mirror the OSC model.

Fostering innovative partnerships is another way to ensure cost efficiencies and to better protect human health and the environment. One example of such a partnership is the cooperative agreement between EPA Region 6 and the Quapaw Tribe which was fully supported by the Oklahoma Department of Environmental Quality. This groundbreaking agreement provided the Tribe with funds to conduct cleanup of a specific tribal property, while providing a platform for the Tribe to demonstrate its capability to protect tribal homelands. The implementation of this agreement successfully demonstrated that direct local involvement can be more cost effective, and that local communities have a vested interest in protecting their home.

However, an opportunity was missed to continue the cleanup of adjacent property while the Quapaw Tribe was mobilized in the field. This would have saved on remobilization costs. I am fully supportive of providing matching funds for the Quapaw Tribe to clean up non-tribal properties because the Tribe has demonstrated its ability to do high quality work.

States have developed robust expertise in implementing Superfund, and they have a vested interest in ensuring that Superfund Sites within their borders are adequately cleaned up. It seems that strong consideration should be given to delegating the program, or portions of the program, to the states. At a minimum, Congress and the EPA should facilitate cooperation between the various EPA Regional Offices and respective state environmental agencies. In my nearly three (3) decades of experience in the Superfund Program, our greatest successes occurred when Oklahoma has had strong partnerships with the EPA.

Again, thank you Chairman Booker and members of the Subcommittee, for the opportunity to speak to you today and I would be happy to take your questions.

Senator BOOKER. Thank you for that valuable testimony. You give a lot of gratitude to me but I want to thank our Ranking Member Inhofe for including you as well. Your testimony is very valuable.

I'd like to begin the questioning. If any Senators return, I will allow them to come in.

Ms. Bodine, I really appreciate your comments. In fact, the issue of the firewall is something my team has been working on. We will be putting that in the legislation we will be putting forward.

I also appreciate the truth of the matter that sometimes these are done in phases. Some of those phases are to deal with that health urgency we have talked about. I think your point was right on, spot on.

I am concerned about and am curious to get your input for the record as to the simple issue of funding. I agree with you 100 percent. You can call it whatever you want, we have lots of fancy names for revenue in the Senate, as I am quickly learning, but as you said, it is value neutral, the resources.

That is not my issue. I think that is something that Congress has to figure out the best way to pay for it or whether to do anything differently.

My question for you is, do we need more funding? I will be specific. If we know that stopping the health risk is the priority, the economic development is secondary, I would agree with you on that.

The evidence right now is really stunning to me on those that pose ongoing health risks to families and communities. The EPA in 2010 noted that 75 of the sites on the NPL nationally presented what they termed an unacceptable level of human exposure. What bothers me now is that number is now up to 89 around our Country, posing serious health risks to communities, much of which are now being documented by academic peer-reviewed studies.

The response I seem to get from the previous panel is that some of those sites we are not moving on because we don't have the resources. In your experience dealing with these issues, both in the public and private sectors, do we have the resources needed to deal with the "unacceptable level of human risk" in the expedited fashion that would best protect the American public?

Ms. BODINE. One of the measures is the human exposure measure. It is very good that the agency tracks that. They haven't always in the past and do track that now.

To answer your question, you'd have to know why the human exposure was still not under control. That is the test. I strongly believe that EPA does everything it can to cutoff human exposure as quickly as possible.

Some of the sites not under control that can still cause human exposure are sites where the exposure is, for example, fish consumption and there is a fish advisory in place saying don't eat the fish but nonetheless the agency is aware that some people do eat the fish. Therefore, it labels the site human exposure not under control.

Nonetheless, it will take decades and decades to get the levels down so that the fish consumption advisory can be lifted. That is

a situation where EPA is doing what it can, but it is going to take a very long time before that can be lifted.

In other situations, communities don't give access. I don't think every home in Garfield gave access. If the agency can't get access to the site, they can't do the cleanup, then the agency is not going to call it human exposure under control because it is not. Nonetheless, they did everything they could.

Each of those up to 89 sites, you'd have to look and see why. You are assuming it is funding; I am not assuming. I am assuming that the agency is doing everything it absolutely can to get that human exposure under control.

Senator BOOKER. So you are not representing that all of these 89 are just because of non-funding related issues. You are saying you'd have to evaluate them?

Ms. BODINE. Right. I don't know the story. I am not assuming it is not funding, I would not assume it was funding either. In fact, I guess I would go further and say I am assuming it is not funding because I do believe the agency has and certainly should have if that isn't the case, has its priorities in place so it is spending money first to eliminate exposure.

Senator BOOKER. So the testimony of Judith Enck that she is ready to move on some of these sites that are considered unacceptable human risks, she feels we need to address them, and when she says the only thing stopping her is funding, you are saying that is not the case?

Ms. BODINE. You are referring to the Regional Administrator's testimony?

Senator BOOKER. Yes.

Ms. BODINE. Again, you'd have to look at each story. I am not going to say it is not accurate. I'd have to look at the sites to which she was referring.

Senator BOOKER. You just said that you thought none of them had to do with funding issues.

Ms. BODINE. That I thought none of them had to do with funding issues on the human exposure issue. I did agree that getting sites back into productive use is lagging due to funding. Sites aren't going to be completed as quickly due to funding. I think the agency is doing everything it can to get the exposure under control.

If it isn't, if it is prioritizing economic redevelopment over human exposure, that is a problem. That is something as an oversight agency, you should look at.

Senator BOOKER. Ms. Gibbs, I was out with the EPA Region 2 director on a number of these sites that do have ongoing human exposure that claim the funding and resources aren't there. In fact, it really disturbed me that a lot of unanticipated weather events have further added to the health concerns on the sites we are not moving on simply because of lack of money.

For example, the flooding we got during Hurricane Sandy at a lot of these sites aggravated human exposure and the levels that are very frightening to me. The site I stood on had severe flooding which then carried much of those contaminants that were otherwise isolated back into our water table, our drinking water table in and around the site I was on.

I have testimony from folks out there in the field who do know the details of all the sites telling me not only is it an ongoing health risk but it is also now being aggravated by these once in a hundred year weather events. I seem to see them now about every other year in New Jersey.

You spoke about the suffering of your children and others in the Love Canal community from living on top of a Superfund site. Much of the debate over Superfund focuses on how much it costs to clean it up.

I don't know how you really measure the costs. As said by Mr. Spiegel, over the last 30 years you have been involved in this, you have witnesses the Senate move to help savings and loans come up with tremendous resources during that crisis. You have watched bank bailouts, tremendous money during that crisis. You have watched a war in Iraq spending billions of dollars every week to deal with that crisis. I have watched thankfully natural disasters, most recently Sandy, and dealing with that crisis.

I believe that crises that face our children and their health and well being, which you have personally experienced, should be a matter of priority and urgency at the same level if not more than just a handful of things this body seems to come up with the resources to deal with.

I'd like to ask, these public health costs, could you tell me the real nature of those public health costs and risks in the human terms you have experienced in your 30 years of work?

Ms. GIBBS. I don't have actual numbers but I will tell you that what is forgotten in this is those human costs. You have mothers and fathers who have children who have to go to the hospital. If you look at the Oklahoma site mentioned earlier, there are children 1–5 who have very high levels of lead. Those children lost IQ points. What does that cost? Where are those children going to go? How do they make a living?

It is a bigger societal cost. What does it cost to take somebody to the hospital for asthma? It is a huge cost. I think that is what is being forgotten.

My children, fortunately, survived Love Canal. Others did not. When you have a miscarriage, what is the cost? You have medical costs associated with it, but what is the cost to society when a woman loses a child, a child she was ready and prepared to have a happy life with and then it is gone by no fault of her own?

I really think the human element of this, in the eye of the storm is what we call it, when the tornado went through Oklahoma, when Sandy hit there, when Katrina hit the agricultural Superfund site in southeast New Orleans, it creates additional environmental costs because when you take the agriculture landfill and spread it all out in southeast New Orleans, you have to go back and test it again, clean it up again and assess it again.

Without the proper amount of money to totally cleanup these sites, we are just going to keep on feeding, feeding and feeding the same problems over again.

I was around when the tax and the polluter pay fees were established, if I could add one more thing. The income tax part of the polluter pay fee is the price of a pizza. I know that sounds very

simple because corporations are saying they are going to go bankrupt.

The fact of the matter is if a company makes a million dollars, say Exxon, and had to pay the income tax, the old established tax according to the 1986 bill, on every million dollars, it would be the price of a cheese pizza. That is what we are really talking about here.

We are talking about a woman who loses a child, a family who has a child who no longer can reach its potential because of IQ loss or other things for the price of a pizza. It literally is $12 per million dollars. To have so little disregard for human life, family and property that the other side would argue that the whole world is going to come crashing down and our economy for the price of a pizza. That is really what we are talking about.

My children almost died on me. My church can buy plenty of pizza and they don't have a lot of money like some of these larger corporations. I really encourage you.

I don't know the numbers, I know the suffering and I know it does cost money. My husband made $10,000 a year. My daughter's hematology clinic cost us $90 a week. That adds up a lot. You just get trapped.

Senator BOOKER. Thank you, Ms. Gibbs.

Mr. Spiegel, I want to talk about a specific site with you. It is a New Jersey Superfund site I am really concerned about. It is the Ringwood Mine site. That site was listed as a Superfund site, then it was delisted in 1994. Then in 2006, it was relisted again.

I know you have worked with the local residents there. Could you describe the impact that site has had on the local community, bringing to light the costs we don't often see when we add dollars and cents? In your response, can you include the Ramapough Lenape community?

Mr. SPIEGEL. Sure. Originally, the late Senator Lautenberg requested that I go up to see Ringwood and assist the community because the Senator was very concerned about the situation in Ringwood, the wholesale poisoning of the Ramapough Lenape Indian Nation.

That is a community that lives in upper Ringwood. They actually live on the mountains where the iron mines of Ringwood provided iron for the building of the United States, and have lived there for 300 years.

They provided the iron that helped to build the dome of the Capitol in the United States. They mined the iron that made the first 500 cannonballs shot in the Revolutionary War. They played a significant part in the Country's success and were repaid by being wholesale poisoned by toxic waste dumped on them by the Ford Motor Company from their manufacturing base in Mahwah, New Jersey.

When I went up to this community, I could not believe what a beautiful and amazing area this is. It sits above the Wanaque Reservoir which provides drinking water for 2 million north Jerseyians, including Newark.

This place is of such immense beauty, when I went up there and saw the absolute devastation brought on these very proud and hard working Native American families, I cried my first night. I went to

a meeting and after that, I made a commitment that I would not leave this community until it was cleaned up.

Every home in the 50 homes in the upper Ringwood area has either someone who has died, know someone who is currently dying or has lost a child. I have worked with Vivian Milligan who is an activist up there who just refuses to give up the fight. She wants to get her community back.

This is a community that lives off the land like most Native American communities. They hunt the land, they gather berries and medicinal medicines and have been there for hundreds of years. Now their way of life is being threatened.

Senator BOOKER. Based on your experience in New Jersey, are there sites with unacceptable ongoing risks of human exposure that need additional funding? I know you work with the EPA and have a lot of personal experience with their assessments. I would appreciate it if you would answer that question.

Mr. SPIEGEL. Yes, sir. Every single Superfund site that is not remediated has unacceptable exposures. I have not seen a Superfund site in New Jersey that does not stop at the fence line where the chemicals are not running into residential neighborhoods or waterways, into playgrounds or parks.

There are dozens of sites that we work on day in and day out that have chemicals that are impacting the health of children. If you went to Ringwood, you would see firsthand the absolute misery and death that has been brought upon this community by no fault of their own, by the poisons dumped by Ford Motor Company.

It is the only site in the Country that had to be relisted a second time because of the failure at all levels of government. The families there want nothing more than you and I want which is to have a safe place to raise our children and continue on living.

They can't because right now EPA has not decided whether or not they are going to clean up the mineshafts or require Ford to clean up the toxic sledge because of money, plain and simple. They do not have the money to do it if Ford refuses.

Senator BOOKER. Regarding the health issues and the Mayor's testimony, the honesty he gave in his personal comments, that is a lot of anecdotal evidence. Are you familiar with a lot of the studies that are coming out now, especially the one done at Princeton that looked at hundreds of thousands of American birth records?

I was amazed with the things they control for, age, whether the people smoked or not and concluded that there was a 20 percent increase in birth defects before cleanups of Superfund sites compared to after the remediation.

Have you done any kind of analysis of the studies that are out there that my team was wading through in preparation for this hearing?

Mr. SPIEGEL. I have looked at the studies. They study you are discussing was one that was trying to show the opposite. They ended up showing that in fact communities where Superfund sites were cleaned up showed a marked increase in the health of the children across the board.

It is not rocket science to understand that when you have a poisoned community and clean it up, that community is not only going to be more vibrant with better places to live, but the people

are going to be healthier. I have seen community after community in New Jersey where people who live near these Superfund sites get sick and die.

I don't have to look at statistics because I go to the funerals of the families in Ringwood. I go to the funerals of the families in Pompton Lakes. I go to the funerals of families that live around the Cornell-Dubilier site and other sites where we work.

I see firsthand the absolute misery and suffering that these families go through only because they picked the wrong zip code to raise their family. Nobody should have to sacrifice a family member because they picked the wrong zip code and happen to live near a Superfund site that doesn't have the funds to be cleaned up.

Senator BOOKER. Just to conclude with you, Mr. Spiegel, you work closely with EPA officials. I think you actually have a degree of respect for those working out there and you have seen a number of them. I know you worked with Lisa Jackson before and others.

Is it right to conclude that if these officials had more resources, they could get the job done a lot quicker? Is that your conclusion?

Mr. SPIEGEL. Absolutely. At one site alone, Bound Brook, we have a ten mile poisoned brook where children are playing that has an active discharge of chemicals, of PCBs and dozens of other chemicals.

EPA doesn't even have the funds to put out the study. Mark Weston, the project manager, can't release the study because they don't have the funds to finish it. When we talk about cleanups, when EPA doesn't even have the funds to finish the investigative work, no less the cleanup, that tells us that we have a drastic emergency, one in which certainly funding would go a long way.

Going back to the Oklahoma Director of Environmental Quality, the emergency removal branch of EPA in Region 2 is by far the best I have ever seen. They can go in and get the job done very quickly at sites. They can assess them. We have seen them work together with the remedial branch to fast track investigations so that we can get to the cleanups quicker.

If we had more funding in the removal branch, which goes out first to these imminent threats, and gave them more funding to be able to go in and get these sites moving quicker, these sites would be cleaned up quicker.

Senator BOOKER. Mayor Delaney, thanks again for being here.

We have talked about a lot of the health aspects, but you and I also were mayors. I was a mayor, you are a mayor. Could you tell me in general the impacts the Superfund site has had on your residents in terms of not just health but this is prime real eState in your city and the loss of that economic generation, I wonder if you can speak to that as well?

Mayor Delaney. Of course it has an economic impact. I know a dear friend of a family that lives in the direction of that plume. They wanted to sell their house and they can't even sell their house. The house depreciated at least 40 percent since it was determined they were in that area. That affects everything from their credit to the way they live, everything they do.

The most important object a person buys is their house. When your house depreciates that quickly, it throws the whole family into

a tailspin. It is saddening to see the prices and value of the homes in this area.

Senator BOOKER. You know this from other mayors. The opportunities for future economic development onsites where you could build or have other companies come or what have you, can you give an understanding, to your knowledge, of what it means to a community to get back a contaminated area?

Mayor Delaney. It is very important to get back a contaminated area, to put it back on the tax rolls and see people back to work in certain areas. We do have contaminated properties, not Superfund sites, in the city of Garfield where people are looking to invest and clean it up.

The talk is, let's get this done. There are people who will definitely thrive once you do cleanup the property and put it back on the tax rolls.

Senator BOOKER. Mr. Thompson, the good partnerships you have between localities is so important and with the Federal Government in these cleanups. I want to get to your experience because Mayor Delaney, you have sort of bad experiences in some sense if this partnership doesn't work like it should.

I think there is some idea in Washington that Congress should give more control of the Superfund Program to the States rather than keeping authority or control with the EPA. The EC Electroplating Factory site in Garfield was managed by the State for a while. In fact, it was managed from 1983 when the hexavalent chromium spilled until about 2008.

From your experience, can you tell us what it was like when the site was managed by the State versus when it was managed by the EPA?

Mayor Delaney. Honestly, I feel the State dropped the ball. The State did not do the work that it should have done. I don't know if they thought the chromium would just disappear. Stuff like that don't go away. To do nothing is the worse. To do something is much better.

When the EPA did come in, we saw some progress and that alone left the residents feeling better, that something actually was being done right now. Everybody realizes this stuff just don't disappear.

Senator BOOKER. Ms. Gibbs, let me ask a concluding question. You have been fighting this battle for decades. That means a lot to me as a newbie here in the U.S. Senate that you have put in that kind of effort.

You worked with the environmental champion that was here before me who I think a lot of Americans, from those flying on planes without cigarette smoke, have benefited from that gentleman's efforts on environmental issues in general.

To see some of these sites go on for decades in the State of New Jersey, literally in 30 years, an entire generation has grown up in our State in and around these sites. I wonder if you could advise a Senator like me on how to solve this problem?

I am now considering legislation with some of the wisdom expressed by Ms. Bodine and others of putting a firewall on the money, looking to legislation that would stop Congress from having to appropriate it every single year but have those funds dedicated and focused.

Looking at a funding mechanism, I think that is where the issue and debate is going to be. It seemed something that was right for Reagan, that was right for McConnell, that was right for pretty much 80 of the 100 Senators in 1986, if I remember, that reauthorized those funding mechanisms.

Now that funding has lapsed. The slowness that we see of getting these sites remediated to which the testimony of the previous panel specifically pointed, the slowness is caused, I think Ms. Bodine was right, by a lot of other factors. Clearly there are shovel-ready projects right now that were testified to.

As look to focus on legislation, as this panel will have to discuss it, and great Senators like Senator Inhofe who has been focused on these issues for some time, I am wondering in my heart if you have any final bit of advice for me because with all due respect, I don't want to be here 30 years from now dealing with this issue and have my children, who are yet unborn, be growing up in my State that I love with over 100 Superfund sites moving so slowly.

I am wondering, given the technical aspects of having to design legislation, if you would have any specific parting advice on this hearing? Obviously, I would be open to everybody and look for advice as we try to push forward and actually solve this problem.

Ms. GIBBS. Thank you for that question.

I think that one of the biggest things is to not have the fees or the funding mechanism sunset. In 1996, there was agreement to do the feed stock fee as well as the income tax. Then after a sunset, we are starting from scratch.

I really think that whether you put firewalls on it or how you go about it, whatever we are able to do to get money in there, we need to make sure it does not sunset.

I think one of the keys that Administrator Enck and others talked about is what we need to have a stable funding mechanism which is meant for this program.

My other piece of advice is to follow Senator Lautenberg's lead. He did an extraordinary job of being persistent and a little aggressive, a heck of a smart man and a mentor whom I certainly enjoyed working with through my 30 years on Superfund.

Senator BOOKER. That is incredibly helpful.

Ms. GIBBS. You could also serve pizza at the meeting.

Senator BOOKER. What is that?

Ms. GIBBS. You could also serve pizza at your first meeting to discuss this. Maybe someone will ask why you are eating pizza.

Senator BOOKER. That is a very good point.

After Mr. Spiegel's testimony and he told me he was a pastry chef, I thought maybe he would have brought me something for this meeting, but that might have violated some of the rules of ethics. I appreciate you not putting me in that bind where I value my moral values versus my temptation to consume carbohydrates.

I want to ask unanimous consent to enter into the record those very disturbing health studies I referenced in my opening statement. They are chilling and disturbing and should be motivating us as a nation to see this as the crisis it is and to solve the problem with the collective wisdom of both parties, especially the study relating to birth defects and autism.

[The referenced information follows:]

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NeuroToxicology xxx (2009) xxx–xxx

Contents lists available at ScienceDirect

NeuroToxicology

Commentary

Ockham's Razor and autism: The case for developmental neurotoxins contributing to a disease of neurodevelopment

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ARTICLE INFO

Article history:
Received 16 January 2009
Accepted 7 March 2009
Available online xxx

Keywords:
Autism
Developmental disorders
Toxins
Pollution
Heavy metals
Environmental contaminants

ABSTRACT

Much professional awareness regarding environmental triggers for ASD has been narrowly focused on a single possible exposure pathway (vaccines). Meanwhile, empirical support for environmental toxins as a broad class has been quietly accumulating. Recent research has shown that persons with ASD have comparatively higher levels of various toxins and are more likely to have reduced detoxifying ability, and, that rates of ASD may be higher in areas with greater pollution. This report documents that within the state with the highest rate of ASD, the rate is higher for schools near EPA Superfund sites, $t(332) = 3.84$, $p = .0001$. The reasons for the rise in diagnoses likely involve genetically predisposed individuals being exposed to various environmental triggers at higher rates than in past generations.

1. Introduction

Vaccination presents a challenge to the body's defenses, and although it appears plausible that heavy metal exposure (especially at a time when the body is addressing another invasion) could pose unique challenges in susceptible individuals, currently the weight of evidence does not support a connection between thimerisol and ASD[1] (Madsen et al., 2003; Richler et al., 2006). Yet, the implications of recent findings suggest a role for toxins in a broad sense. First, persons with ASD have higher levels of various toxins compared to controls. Second, persons with certain neurobiological disorders – including ASD – appear to be more likely to have genotypes that increase harmful effects of toxins. And finally, most important to the current report, multiple studies are documenting that rates of ASD are higher in areas or populations with greater pollution/toxic exposures. Each of these three points will be reviewed as background and framework for the current report. Here, focusing on the state with the highest IDEA reported rate of ASD, it is investigated whether or not the prevalence of autism is higher near areas of identified high contamination.

1.1. Higher levels of toxins

Because it has long been understood that autism is essentially a disorder of neurodevelopment, many researchers have hypothesized that prenatal effects or very early insults play an important etiological role. The gold standard for questions such as this are research designs that measure a hypothesized independent variable prospectively and then follow the participants to see if measured levels will predict who later develops the outcome of interest. Longitudinal studies such as this are time-intensive, and there are not many that fit this criteria. However, such a study was recently reported. In a sample of Latino farm workers in California, families were first contacted during pregnancy and followed until the child was 2 years old. Pesticide levels were determined via urine analysis for both mothers prenatally and children after birth. Higher levels of pesticide metabolites predicted "significantly higher risk of PDD, with an approximately twofold increase in risk for each 10-fold increase in metabolites" Eskenazi et al., 2007, p. 796. It should also be noted that controlling for variables such as birth weight and abnormal neonatal reflexes did not appreciably lessen the effect. As a group, farm workers have higher exposure to pesticides, and this group had an overall higher rate of behaviors associated with ASD (rocking or flapping, indifference to affection, lack of eye contact). Importantly, this study suggests that when pockets of high ASD are found, it might not be due to diagnostic differences, but rather to a biologically relevant exposure. Recently, a study that had been cited by researchers (Shattuck, 2006a,b; Fombonne et al., 2006) as demonstrating that mercury

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[1] It should be noted for completeness that federal officials recently acknowledged that a child diagnosed with autism began her autism-like symptoms after multiple vaccinations given the same day aggravated a preexisting mitochondrial disorder. Some studies show that this disorder is not rare among those diagnosed with autism (Poling et al., 2006; Oliveira et al., 2007).

0161-813X/$ – see front matter © 2009 Published by Elsevier Inc.
doi:10.1016/j.neuro.2009.03.003

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blood levels are NOT higher in those with ASD was found to be in error with the published results based on typographical and statistical errors by the original authors. The original numbers published in 2004 (Ip et al., 2004) as well as proper analysis of the clean data set shows a statistically significant relationship was present such that children with ASD had higher levels of blood mercury (DeSoto and Hitlan, 2007). Other studies have shown that persons diagnosed with an ASD have higher levels of various pollutants (pesticides, PCB's and solvents) than would be expected (Edelson and Cantor, 2000), and urinary markers for mercury exposure (via coproporphyrin) have been shown to be higher among children with autism by two separate lab groups (Nataf et al., 2006; Geier and Geier, 2006). Furthermore, the levels were reported to predict ASD severity in one study (Geier and Geier, 2006). A recent study by Soden et al., while not finding support for chelation as a therapeutic approach in the age of children studied, clearly showed that more children with ASD had higher levels of heavy metals (Soden et al., 2007; DeSoto, 2008). As a whole, recent research from multiple labs is demonstrating that when direct measurements of neurotoxins among those with autism are compared to those without, the levels are higher in those with an ASD.

1.2. Genetic alleles that effect how the body handles toxins

Of the approximately 25,000 genes that provide the directions to construct a working human being, a number have been isolated that appear to have an effect on how the body deals with environmental toxins. Some of these genes that allow the body to deal with toxins have more than one allele in the human gene pool—and some alleles result in greater efficiency than others. For example, paraoxonase is associated with detoxification processes for neurotoxins such as pesticides and nerve gasses. Paraoxonase (PON) activity varies significantly across individuals, decreased PON activity means less ability to break down and remove toxins, and the genes that control PON activity come in more than one variety. Certain variants may be associated with neurological diseases such as amyotrophic lateral sclerosis, or ALS (Morahan et al., 2006; Saeed et al., 2006). This is important because although more research is needed, variants of such genes may predispose persons to neurological diseases as a result of environmental exposure. The strong relationship of ALS to a "PON gene cluster is consistent with the hypothesis of environmental toxicity in a susceptible host precipitating ALS," and the finding is speculatively offered as a possible explanation as to why groups that have higher exposure to such toxins might have higher prevalence of the disease (Saeed et al., 2006, p. 775). The frequency of variants of PON genes is not identical across populations. Importantly, some studies have found that autistic persons have less paraoxonase activity than non-autistics (Pasca et al., 2006) and one study has found evidence that in some populations, but not in others, autism is related to PON gene variants that are less active (D'Amelio et al., 2005). Besides the PON1 genotype, genes that instruct the body regarding glutathione synthesis have been found to differ in autistic populations compared to controls (Buyske et al., 2006). Glutathione plays an important role in eliminating heavy metal toxins from the body and the null variant of the GSTM-1 gene can be expected to be less efficient at eliminating heavy metal toxins that find their way into circulation (Gundacker et al., 2007). Finally, deficiencies in functioning of the mitochondria (especially mitochondrial chain disorders) appear to result in an increased detrimental effect for even standard types of stress, which may cause affected children to regress after developing normally for a time (CDC, 2008). Such deficiencies may be more common in those with an ASD (Poling et al., 2006; Oliveira et al., 2007). It is crucial to appreciate the recency of these findings: each of the studies that are directly addressing genetic vulnerability via genotypic differences were all reported within the last two years. It is imperative that researchers and practitioners appreciate that new information is rapidly accumulating; reviews from even 1 or 2 years ago are likely to be outdated.

1.3. Increased rates and environmental pollutant levels

Areas with the biggest increases in ASD do not appear to be randomly distributed. It might be argued that if environmental contact with neurotoxins increases the odds of autism, then the increase in ASD diagnosis over the past generation can be explained by a macro-level increase in such toxins. There is a test for this idea. The test is whether the increase in ASD is higher in areas with more pollutants. Although some researchers have denied that any actual increase has occurred (and that there has been no change in actual incidence at all), this view is predicated on the belief that practitioner behavior changed before the increase began, and that current differences in prevalence are fully due to changes in practitioner/diagnostic behavior. The initial change in prevalence began within the United States near the time of changes in the IDEA law, and the official diagnostic criteria of the DSM was slightly modified near this time as well (APA, 1994). The temporal correlation is of interest, but correlation does not necessarily imply cause.

Ideally, the hypothesis that "diagnostic changes" are the cause of the continued increase in prevalence would require a precise definition of diagnostic changes, an independent, direct measurement of diagnostic changes—and then a statistical test of this variable's ability to account for prevalence changes. The question is not if a change in diagnostic practice has occurred over the past two decades, but whether this change can account for the increase in prevalence. Autism prevalence across time in California has been analyzed as a function of changes in diagnostic practice. Results have shown that there have been changes in diagnostic behavior—these changes have been quantified and appear to account for a 67% increase in the number of diagnoses (Hertz-Picciotto and Delwiche, 2009), however as noted in the study, there has been a nearly 700% increase in prevalence. As a whole, this suggests that diagnostic changes have occurred, but do not come close to fully accounting for the observed change in prevalence. This is important, the fact of diagnostic change is not in dispute, the question is if the change in practice can account for the several-fold increase in observed prevalence.

On the other hand, if toxic exposure is playing at least some role in the increased prevalence, then the rate of ASD should not be random: ASD prevalence should increase as environmental toxins increase. This coupling should occur both across time and across geographical region in as much as toxic exposure levels can be defined and quantified. In the past 2 years, several tests of this idea have emerged in the literature. A large study using 7540 children found that proximity to heavy pesticide use in the mother was strongly related to ASD in the offspring. The risk was strongest for mothers living closest to the greatest amount of exposure and the risk appeared specific to ASD—comparison groups included both normal children as well as mentally retarded children without ASD (Roberts et al., 2007). Autism may be more common in more industrialized areas. The difference is not explainable by differences in general diagnostic practice or medical availability, and importantly, seem to relate more to where the *pregnancy* occurred than where the *diagnosis* occurred (Kamer et al., 2004; Yurong et al., 2001; Hoshino et al., 1982). Most recently a study of the state of Texas has demonstrated that the rate of autism is higher for school districts that are near toxic releasers and the increase in ASD rate is predictable based on the distance and the amount of heavy metals released (Palmer et al., 2009). Despite the limitations of the

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ecological design of these studies, findings such as this are hard to explain in terms of simple diagnostic awareness.

1.4. Current study of Minnesota ASD prevalence

In the past generation the United States, like other industrialized countries (see for example Atladottir et al., 2007), has seen the diagnoses of both classic autism and the broader category of ASD increase dramatically. By the year 2002, the nation wide increase within the United States had been widely acknowledged to have been at least a factor fourfold (see Yeargin-Allsopp et al., 2003). An analysis in the same year conducted within Minnesota, found the increase in ASD to be as high as a 14-fold increase (Gurney et al., 2003). The study by Gurney and colleagues attempted to dissect competing influences on the increase in Minnesota. Although the data rule out the type of diagnostic substitution that Shattuck (2006a,b) suggested might underlie the increase, the data were consistent with an increased attempt to count children with ASD specific behaviors. As a whole, it was concluded that changes in administrative law played some role in the increase, but the authors were careful to note that whether a true change in disease incidence had occurred could not be determined.

In 2009, a careful study of incidence within a single county in Minnesota by Barbaresi, Cooligan, Weaver and Katusic found that relying on clinical diagnosis alone results in an increased estimate of the change in incidence. Barbaresi et al. (2009) report that while the increase in clinical diagnosis increased by 22-fold, utilizing a more careful research-based methodology (reviewing information from all health care and school sourced for the entire population), the increase in incidence was found to be closer to an eightfold increase (from 5.5 cases per 100,000 in the early 1980s to 45 cases per 100,000 for the mid-1990s). Although the authors' main conclusion was focused on the discrepancy between clinical and research-based ascertainment methodology, it is at least of equal import to note that using either clinical diagnosis or a more careful research-based incidence approach, a sharp increase is observed in a circumscribed region. The results may be interpreted as further documenting that an increase has occurred—including using the more stringent research-based incidence measure. Certainly finding a range of increase between 800% and 2200% using very different methods does not lend any credence to the idea that no increase has occurred. Furthermore, the discrepancy in the size of the increase is probably best seen as an artifact of selecting the specific interval of time (grouping the years 1980–1983 and using this as the starting point). Had there been one more clinically diagnosed case in that time period – or, had the years before or after this interval been selected as the starting point – it would not have resulted in the clinical case incidence increase being significantly higher than the research-based increase. For example, careful readers may note that if one compares the years of the sharply increasing prevalence (1988 across 1997), one method shows a sevenfold increase and the other a ninefold increase in autism (Barbaresi et al., 2009). As depicted in Table 1 and Fig. 1, page 466, the data and the graph appear to demonstrate an increase in incidence regardless of the method employed to count cases. Although it is necessary to refer to the original article for full clarity—either method shows a clear, in fact almost parallel, increase in autism for Olmstead County, Minnesota.

Minnesota is of special interest because according to IDEA data, it is the state with the highest rate of children having an ASD diagnosis. In Minnesota, like many states, there is no formal requirement that a licensed clinician or physician diagnose a child as having autism for them to categorize as ASD by a school district (although most are). Instead, a team meets to determine if ASD is the best diagnosis for educational purposes. The team includes a specialist in autism and often a psychologist. DSM-IV criteria are used. Although it is reasonable to assume that precise diagnostic procedures vary slightly from one team to another, this is not tantamount as showing these differences relate to differences in prevalence estimates. To the author's knowledge, no attempts have been made by proponents of the theory that diagnostic differences have caused the increase in autism to test the hypothesis; i.e., there is little data provided by these proponents that measure actual diagnostic practice, and to my knowledge none that show such variables are able to account for the differences in prevalence rates observed.

Conversely, if the rate within a population has increased as a result of exposure to known neurodevelopmental toxins—then the rate should be highest in areas with the highest level of contaminants. And this can be tested.

Table 1
Important autism findings documented by at least three independent lab groups that a viable theory should be able to explain.

Finding	Lab groups reporting/replicating[a]
High heritability estimates (last 10 years based on twin concordance studies)	Hoekstra et al. (2007); $H = .57$ Taniai et al. (2008); $H = .73$ for males, $H = .87$ females. Ronald et al. (2008); $H = .36–87$
Some form of decreased toxin-reduction capacity in ASD	James et al. (2004) Pasca et al. (2006) Poling et al. (2006)
Specific genes related to detoxification are seen more commonly in ASD	Serajee et al. (2004) James et al. (2006) Buyske et al. (2006)
Higher average toxic levels in autistic individuals	Edelson and Cantor (2000) Nataf et al. (2006) Eskenazi et al. (2007)
Significant differences in concurrently measured within-study ASD incidence	Hoshino et al. (1982) Oliveira et al. (2007) Kamer et al. (2004)
Increased rates associated with sources of contaminants	Roberts et al. (2007) Palmer et al. (2009) DeSoto (current report)
Rise in the reported prevalence of autism outside North America	Baker (2002) Gillberg et al. (2006) Atladottir et al. (2007)

[a] Several findings above have additional replications not listed in the table (see text), but at least three replications by independent researchers are often assumed to reflect a genuine finding.

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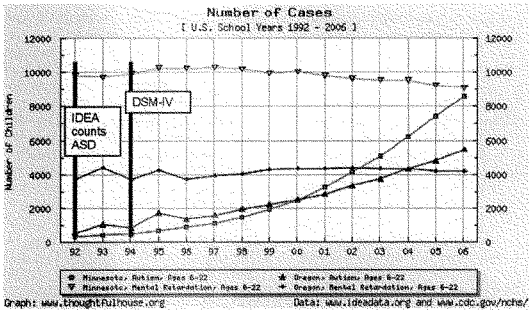

Fig. 1. Two states with highest reported autism prevalence, as reported by public schools, are Minnesota and Oregon. For comparison, the rates of students receiving services for mental retardation are included for these states. The IDEA required schools to report ASD as a diagnosis starting for the school year 1992, and there was a slight revision in autism diagnostic criteria in the edition of DSM that came out in 1994.

2. Methods

2.1. Prevalence estimates

District ASD rates for the 2007–2008 school year were obtained from the Minnesota department of education. The number of children who are receiving services for an ASD in comparison to the total number of students enrolled in the district was used to determine district prevalence. The prevalence is expressed as a ratio of one in X number of students who were receiving disability services for ASD in a school district. Minnesota had 336 type 1 school districts that range from 104 to 22,000 pupils. Each school district was treated as in independent measure of prevalence. Only type 1 school districts were included, charter school districts and other specialized schools were not included. A few districts with very high ASD rates were a result of one or two students residing in a very small district. To avoid undue influence on a region's prevalence by one or two pupils, districts that had an expected frequency (based on national prevalence estimates) of four or fewer and had an ASD rate above the 90th percentile (12 school districts) were simply averaged with the adjacent school district to which they shared the largest border. District prevalence ranged from 1 in 40 to 1 in 666, and a few smaller districts with enrollments less than 550 had zero cases.

2.2. EPA Superfund sites

Superfund is the environmental program that addresses hazardous waste sites that are found to be a significant threat to human health. Once a site is identified, it undergoes formal assessment which includes a hazardous ranking system scoring. Sites with the highest scores are recommended to the National Priority List (NPL). Minnesota sites that are part of the NPL were obtained from the EPA (EPA, 2008) and latitude and longitude coordinates were obtained for each location, and GIS software was used to plot these locations so that distances between Superfund sites and school districts could be calculated. The U.S. Department of Health and Human Service's Agency for Toxic Substances and Disease Registry (ATSDR) provides a Completed Exposure Pathway site count report. The report is based on the number of sites that a substance has been detected and incorporates ATSDR's health assessments and consultations. The list can be considered as reflecting the most frequent contaminants of exposure. The full list and rankings are publically available, but frequent toxins found at NPL Superfund include: Lead, Arsenic, Trichloroethelyene, Tetrachloroethelyne, Benzene, Cadmium, Chromium and Mercury (ATSDR, 2007).

Based on the idea that ASD rates have increased partly due to changes in average exposures to neurotoxic substances at key times in development, it was expected that school districts near serious sources of environmental contamination would have higher rates of ASDs than school districts where there were no highly toxic sites near. Although it seems reasonable that prenatal exposure is of importance, and that some families would move from one district to another after a birth occurred (so that where a child was gestated might not always be the same as where the enroll in school), if exposure to toxins (prenatally or in early childhood) is playing any causal role in the increase in diagnosis that has been observed over the last generation, then proximity to a NPL Superfund location should serve to increase the observed prevalence.

Specifically, it was hypothesized school districts (using the centroid latitude and longitude point) that had one or more NPL Superfund sites within a 10 mile radius would have higher rates of ASD than those that had no NPL sites within a 10 mile radius. The geographic centroid for each school district was determined using ArcGIS software. Next, ArcGIS was employed to determine which school district centroids are located within a 10 mile radius of EPA Superfund sites.

2.3. Statistical methods

A list of school districts that had at least one NPL Superfund site within a 10 mile radius was constructed, and a list of school districts that did not have a NPL Superfund site within 10 miles was also constructed. The reported ASD prevalence rate for the two lists was compared using an independent sample *t*-test, with equal variances assumed.

3. Results

There were 288 school districts that did not have a NPL Superfund site within a 10 mile radius. The mean ASD rate for these districts was one case per 132 pupils. There were 46 districts that had one or more NPL Superfund sites within a 10 mile radius. The mean ASD rate for these districts was 1 case per 92 pupils. Fig. 1

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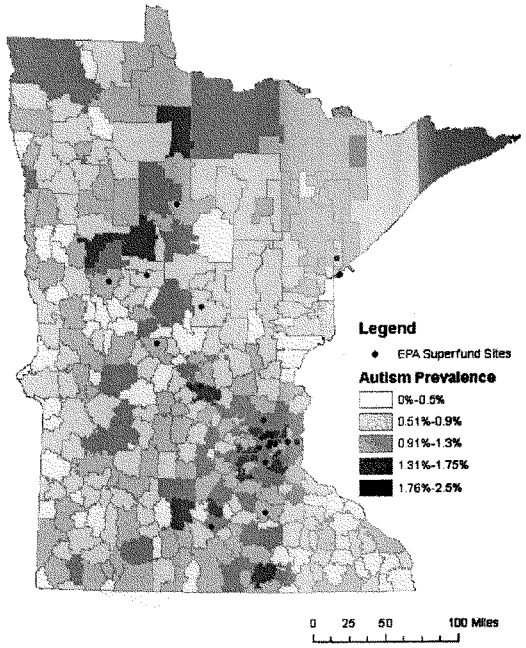

Fig. 2. Minnesota school district rates of Autism, as provided by Department of Special Education, and EPA Superfund site locations.

depicts the rate of ASD in school districts in relation to the location to EPA NPL Superfund site locations.

Overall, there was a significantly higher ASD prevalence among districts near a NPL site, $t(332) = 2.53$, $p = .01$, as hypothesized.

There were relatively few school districts within a 10 mile radius of such a site (14% of the districts). To get a more even division and to be sure that the effect was a general effect, an identical procedure was conducted using a 20 mile radius. Ninety-seven districts had one or more sites within a 20 mile radius. The result did not change. There was a significantly higher ASD prevalence among districts near a NPL site, $t(332) = 3.84$, $p = .0001$. Overall, it appears that the absence of highly polluted sites within a 10 or 20 mile radius affords some protection against the otherwise high rate of ASD observed in Minnesota school districts.

4. Discussion

These results do not support the idea that differences in prevalence rates are solely due to differences in diagnostic practice. Rather, these results suggest that prevalence rates vary in a way that can be predicted by environmental characteristics. These results fit well with very recent research that shows that ASD rates are higher in California where pesticide use is very high (Roberts et al., 2007), and with research that shows in Texas, rates are higher near toxic releasing industries (Palmer et al., 2009).

Recent studies by authors who have argued against the apparent increase in prevalence reflecting any real increase in incidence have recently documented the increase has not abated (Schechter and Grether, 2008; Fombonne, 2008). Fombonne noted that the rate of ASD increase has been steady; compared to the prior years the increase "did not attenuate" for the years 2004–2007 (Fombonne, 2008, p. 15). In fact, autism has been steadily increasing since the early 1990s, as depicted in Fig. 2. If the increase were due to changes in the DSM (APA, 1994) or to changes in IDEA law that were introduced for 1992, it seems likely that the initial increase would be lessening. After all, there have been no significant changes in the DSM for 14 years, and the IDEA categories were shifted 16 years ago.

4.1. Limitations

A weakness of the current study is that although it is likely that toxic exposure during gestation is of import, information on where families lived during the pregnancy of the child is not known. U.S. Census Bureau data suggests that approximately 15% of the population moves in a given year. However, a majority of these moves are to another residence within the same county. Furthermore, the mobility rate is higher for singles than for families (U.S. Census Bureau, 2001). Thus, most of the families with children likely lived in the same county for several years.

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Nonetheless, future studies attempting to predict rates of autism as a function of environmental pollution should seek to collect information on where the pregnancy occurred whenever possible.

An additional weakness is the correlational nature of the relationship that is being reported. Essentially, there appear to be more cases of ASD diagnosed near highly polluted areas. However, such an association could result from a third variable, such as proximity to urban centers. For example, it might be that families affected by autism might choose to relocate to an urban area that might have a wider range of services to offer. Although such an explanation cannot explain the overall pattern of results reported in the literature (Kamer et al., 2004; Yurong et al., 2001; Hoshino et al., 1982), it could play a role in the association here reported between ASD prevalence and proximity to EPA Superfund locations. Future research could address this using place of birth and by specifically including highly polluted rural areas. Recent research has found an association between heavy metal pollution and developmental delay in rural areas specifically (Aelion et al., 2008), and future research should be conducted that considers ASD prevalence in rural-only areas to avoid this potential confound. Controls for age of parents and/or family SES would also strengthen the design of a future study.

Given research showing that acquired metabolic abnormalities in the parents have an inherited impact on offspring, it seems likely that a fruitful avenue for future research will focus on epigenetic mechanisms for environmental effects (see discussion in James et al., 2006). Autism is a disease of neurodevelopment: it is generally understood that something goes amiss during brain development that leads to the set of behaviors that becomes recognized as autism. Although autism is largely genetic, it is also clear the etiology is not fully explainable by classical genetics since the concordance rate for genetically identical MZ twins is not 100% (Santangelo and Tsatsanis, 2005). Something about the environment is also playing an etiological role. Researchers at the University of Arkansas have published a series of careful studies showing that ability to detoxify environmental toxins is lessened in autistic versus control subjects (see James et al., 2008 for an overview). Similar results have been found by Ming et al. (2005), Yao et al. (2006), and Zoroglu et al. (2004) in that all document a decreased ability to handle toxic insult in groups of autistic persons. A team at Rutgers has found evidence that the certain genotypes related to glutathione production are more common in Autistic groups (Buyske et al., 2006) and some evidence exists that other genes important for dealing with neurotoxic effects occur with different frequencies in ASD populations and their mothers (Williams et al., 2007). As reviewed above, a number of these genes appear to be facultative, in that their activity is affected by environmental exposures.

As documented here, the state with the highest rate of IDEA-reported ASDs has higher rates in areas near highly polluted areas, and living far from sources of toxic pollution appears to be associated with a relatively lower rate of ASD. As a whole, the data that has been published since 2005 suggest that classical genetic vulnerability predisposes certain persons to experience the particular set of missteps during neuronal development that result in the behaviors labeled as autism. One possible model for development of ASD includes epigenetic mechanisms activated by environmental toxins (and/or pathogens). One or more environmental prompts experienced by a predisposed individual at the right time in development could then "pull the trigger" and instigate one or more specific errors in neurodevelopment. Such a model is consistent with key findings that have emerged in the past 3 years as depicted in Table 1.

A long held standard of evaluating competing theories is parsimony. A single theory that explains multiple findings is superior to circuitous explanations that require untestable assumptions. It is hard to imagine how the set of findings could be more easily explained than including an etiological role for environmental toxins.

Conflict of interest statement

None.

Acknowledgements

Thanks to Alex Oberle for assistance with ArcGIS software applications, to Minnesota Department of Special Education for supplying ASD school district data, and to Amanda Osborn, Katherine Hall and Robert Hitlan for their comments on an earlier version of this manuscript.

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Please cite this article in press as: DeSoto MC. Ockham's Razor and autism: The case for developmental neurotoxins contributing to a disease of neurodevelopment. Neurotoxicology (2009), doi:10.1016/j.neuro.2009.03.003

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Please cite this article in press as: DeSoto MC, Ockham's Razor and autism: The case for developmental neurotoxins contributing to a disease of neurodevelopment, Neurotoxicology (2009), doi:10.1016/j.neuro.2009.03.003

NBER WORKING PAPER SERIES

SUPERFUND CLEANUPS AND INFANT HEALTH

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Working Paper 16844
http://www.nber.org/papers/w16844

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
March 2011

We thank Joshua Graff Zivin for helpful comments and Peter Evangelakis, Samantha Heep, Henry Swift, Emilia Simeonova, Johannes Schmeider, and Reed Walker for excellent research assistance. We gratefully acknowledge support from the NIH under grant #HD055613-02 and from the MacArthur Foundation. We are solely responsible for our analysis and conclusions. The views expressed herein are those of the authors and do not necessarily reflect the views of the National Bureau of Economic Research.

Superfund Cleanups and Infant Health
Janet Currie, Michael Greenstone, and Enrico Moretti
NBER Working Paper No. 16844
March 2011
JEL No. H4,I1,Q5

ABSTRACT

We are the first to examine the effect of Superfund cleanups on infant health rather than focusing on proximity to a site. We study singleton births to mothers residing within 5km of a Superfund site between 1989-2003 in five large states. Our "difference in differences" approach compares birth outcomes before and after a site clean-up for mothers who live within 2,000 meters of the site and those who live between 2,000- 5,000 meters of a site. We find that proximity to a Superfund site before cleanup is associated with a 20 to 25% increase in the risk of congenital anomalies.

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In 1980, outcry over the health effects of toxic waste in Love Canal, New York resulted in the Comprehensive Environmental Response, Compensation, and Liability Act, which became known as Superfund. Superfund was intended to provide a mechanism for conducting remedial clean-ups at the most dangerous hazardous waste sites. Over the years, it became the largest and most expensive federal program to deal with toxic waste in the US. Given the substantial cost and slow rate of clean up, there is considerable debate on whether it is in the public interest to continue the program in its current form (EPA, 2006).

While the costs of the programs are clear, its benefits are not well understood. Indeed, the policy is controversial in part because there is a paucity of reliable information on the program's benefits. Some previous studies find poorer birth outcomes near a site while others do not (see Martine Vrijheid, 2000). However, evidence of a correlation between proximity to a site and poor birth outcomes does not necessarily represent a causal effect because populations living near hazardous waste sites are typically different from the general population, and their health outcomes are likely to differ even in the absence of negative health effects from exposure. For example, Michael Greenstone and Justin Gallagher (2008) found that residents of areas near hazardous waste sites are more likely to be poor and have lower levels of education than others.

Our project is the first to examine the effect of site cleanups on infant health rather than simply focusing on proximity to a site. We focus on single births that occurred within 5km of a Superfund site between 1989 and 2003 in five large states -- Florida, Michigan, New Jersey, Pennsylvania, and Texas. The basis of our "difference in differences" approach is to compare changes in birth outcomes before and after a site's clean-up among births to mothers who live within 2,000 meters of the site and among those who live between 2,000 and 5,000 meters away. Our approach is made feasible by access to confidential Vital Statistics data that includes the

exact street address of the mother's residence. Our large sample gives us statistical power to detect small effects.

II. Data and Sample

The primary source of outcomes data for this study are individual Vital Statistics Natality records, which provide data on both birth outcomes and characteristics of the mother. We focus on births to mothers between 15 and 45. The five states we consider include data on 154 sites that were cleaned up between 1989 and 2003. The key data step is that we were able to use geocoded maternal residential address to identify mothers who lived within a given distance of a Superfund site. In addition to focusing on births within 5000 meters of a site, we further restrict the sample to births conceived between 4 years before the initiation of a site cleanup and 4 years after its completion. This provides a sample of roughly 621,409 births, with 92,609 births to mothers living within 2,000 meters of one of the 154 sites in the sample.

Data on Superfund sites comes from the Environmental Protection Agency (EPA) and includes the date when the site was added to the National Priority List, the date when cleanup was initiated, and the date when cleanup was completed. In addition, the EPA conducts a hazardous risk assessment for all sites, and this hazardous ranking system (HRS) allows us to identify the most dangerous sites.

III. Econometric Approach

We estimate the following model:

$$(1)\ \textit{Health Outcome}_{ijt} = \Upsilon_0 + \Upsilon_1 \textit{Close}_{ijt} + \Upsilon_2 \textit{During}_{ijt} + \Upsilon_3 \textit{After}_{ijt} + \Upsilon_4 \textit{Close}_{ijt} * \textit{During}_{ijt} + \Upsilon_5 \textit{Close}_{ijt} * \textit{After}_{ijt} + \Upsilon_6 \boldsymbol{X}_{ijt} + \boldsymbol{\alpha}_j + \boldsymbol{\delta}_t + \varepsilon_{ijt},$$

where i indicates a birth, j is the mother's street address, and t denotes the year of birth. There are three key indicator variables in this specification. $Close_{ijt}$ equals one if the mother resided within 2000 meters of a site where a clean-up was finished during the sample. $During_{ijt}$ equals one if the birth occurred during the site clean-up. $After_{ijt}$ indicates that it occurred after the site clean-up was completed. The vector X_{ijt} of maternal and child controls includes: indicators for the mother's age (<20, 20-34, 35 plus, age missing); maternal education (less than high school, high school, some college, college, education missing); maternal race and ethnicity (African-American, non-Hispanic white, Hispanic, other, race and ethnicity missing); birth order (first, second, third, fourth, fifth or higher order births, and birth order missing); and maternal smoking (smokes, does not smoke, smoking status missing).

We present results that adjust for all time invariant or fixed neighborhood characteristics in two different ways. In the first, α_j is implemented with a full set of indicators for each site. We also report on specifications that replace the site fixed effects with zip code fixed effects that are based on the zip code of the mother's residence. On the one hand, there are ten times as many zip codes as sites so that zip code fixed effects may control more fully for the characteristics of local areas. On the other hand, the differences in exposure to Superfund site hazards between births within 2,000 meters and those 2,000 to 5,000 meters from a site are likely to be smaller within a zip code. Additionally, we include a vector of indicators for the year, δ_t, which allow us to control for time trends non-parametrically. The estimates are qualitatively similar if year indicators are replaced with state by year ones.

The coefficient of primary interest is γ_5 which is a "difference in differences" estimator of the impact of a site's clean-up on infant health outcomes. It measures the change in outcomes after a site's clean-up, relative to before clean-up, among births to mothers that live within 2,000

meters of the site to those that live between 2,000 and 5,000 meters away. Although we don't emphasize it in the subsequent results, γ_4 is also a difference in differences estimator of the impact of living near a site during cleanup.

The key identifying assumption is that any clean-up related benefits to women 2000 to 5000 meters away are smaller than the benefits to those closer to a site. This assumption is reasonable since the primary methods for Superfund sites to affect local residents are through direct contact with the site, migration of toxic dirt or fumes through the air, or invasion of the water supply for houses that rely on well water.

While migration in response to environmental amenities is itself an interesting question (see Currie, 2011), the assumptions necessary to identify health effects would be violated if the clean-up causes mothers with systematically different unobserved health endowments to move closer to the site. In order to guard against the possible effects of selective migration, we use the X vector to adjust for a wide range of observable determinants of infant health and restrict the sample to the period 4 years before the cleanup's initiation through four years after its completion. We also estimate models focusing on demographically uniform samples (e.g. white, non-smoking, 20-34 year old mothers with a high school education or more) to probe the robustness of the results to bias due to sorting on observable characteristics.

Finally, models of dichotomous dependent variables were estimated using linear probability models. The variance-covariance matrix allows for clustering at the county-year level to allow for dependence of observations within these cells.

IV. Results

Summary statistics for outcomes and some characteristics of infants are shown in Table

1. Columns (1) and (2) report the means of these variables in the four years preceding the initiation of the clean-up among births to mothers that live within 2000 meters and 2000 to 5000 meters of one of the Superfund sites. Column (3) reports the difference in these means after adjustment for year of birth fixed effects. The associated standard error is clustered at the county by year level (reported in brackets).

Panel A shows that infants living close to a site before its clean-up are more likely to have a congenital anomaly. Otherwise, the birth outcomes are statistically indistinguishable. However, the differences in maternal characteristics shown in Panel B suggest that such a direct comparison may confound the impact of clean-ups with other determinants of infant health. For example, mothers closer to a site are less likely to have a college degree or to be older than 35 years of age. Additionally, they are substantially more likely to smoke. Hence, it is important to control adequately for maternal characteristics, and to explore the possibility that maternal characteristics change systematically following a site cleanup.

Column (4) of Table 1 presents some initial results on Superfund cleanups and the quality of the research design. The entries come from fitting a version of equation (1) that includes site and year fixed effects but does not adjust for the vector X of maternal and child controls; they are unadjusted difference in differences estimates. The most striking finding is that there is a statistically significant decline in congenital anomalies. Table 1 does not show any evidence of

Table I: Means of Key Variables in Births Data

	<2000 meters [1]	2000-5000 meters [2]	Diff-erence [3]	Diff-in-Diff [4]
A. Outcomes				
Cong. Anomalies	0.0118	0.0101	0.0018**	-0.0022**
			[0.0008]	[0.0010]
Low Birth Weight	0.0767	0.0742	0.0016	-0.0005
			[0.0035]	[0.0041]
Preterm	0.0869	0.0897	-0.0026	-0.0030
			[0.0032]	[0.0035]
Infant Death	0.0084	0.0085	-0.0001	-0.0011
			[0.0008]	[0.0010]
B. Mother Characteristics				
<=19 Years Old	0.1359	0.1367	0.0004	0.0021
			[0.0067]	[0.0071]
>=35 Years Old	0.1035	0.1135	-0.0114***	0.0062
			[0.0043]	[0.0052]
< High School Ed.	0.2512	0.2534	-0.0009	0.0100
			[0.0138]	[0.0115]
>= College Ed.	0.1856	0.2051	-0.0228**	0.0090
			[0.0111]	[0.0118]
African American	0.2491	0.2919	-0.0383	0.0062
			[0.0420]	[0.0322]
Hispanic	0.1973	0.1931	0.0028	0.0143
			[0.0340]	[0.0164]
Smoker	0.1556	0.1355	0.0194**	0.0013
			[0.0081]	[0.0054]
C. Child Characteristics				
Birth Order	1.9496	1.9791	-0.0280	0.0039
			[0.0305]	[0.0260]
Male	0.5115	0.5099	0.0014	-0.0064
			[0.0027]	[0.0047]

Notes: For Columns 1-3, only singleton births conceived in the 4 years before the initiation of a cleanup are included. The number of such births within 2000 meters of a cleanup site (Column 1) is 31,126; within 2000-5000 meters of a site (Column 2), it is 166,338. Column 3 reports the difference in means after adjustment for year of birth fixed effects. The standard error is clustered at the county by year level (in square brackets). In Column 4, the sample includes all singleton births conceived between 4 years prior to the initiation of a cleanup and 4 years after completion; 621,409 births. Column 4 reports the difference and differences estimator obtained by fitting a version of equation (1) that includes site and year fixed effects but does not adjust for the X vector. The standard error clustered at the county by year level is also reported (in square brackets). See the text for further details.

differential changes in the determinants of infant health, which provides some support for the validity of the difference in differences design. However, Currie (2011) shows evidence that there is some sorting on observables following Superfund cleanups when the specification includes zip code fixed effects, rather than site fixed effects. Hence, the subsequent analysis will adjust for all available covariates as well as estimating the effects of Superfund cleanups in more uniform samples of mothers.

Panel A of Table 2 shows estimates from the fitting of versions of equation (1) with site fixed effects in the (a) columns and zip code fixed effects in the (b) columns. There is continued evidence that Superfund cleanups reduce the incidence of congenital anomalies. The coefficients in columns (1a) and (1b) indicate a reduction of 20-25%, relative to the baseline levels shown in Table 1. There is little evidence of an impact on the incidence of low birth weight. In columns (3a) and (3b), the point estimates suggest a reduction in the incidence of prematurity in the models with zip code fixed effects. The stronger results for congenital anomalies may indicate that the fetus is most vulnerable in the first trimester of pregnancy, when congenital anomalies are most likely to occur (see Gerald G. Briggs, Roger K. Freeman, and Sumner J. Yaffe (2008)), and less vulnerable in the later stages of pregnancy, when the fetus puts on most of its weight and preterm labor may occur.

There is a roughly 14% decline in infant mortality rates but it would not be judged to be statistically significant by conventional criteria. Deaths are 30% less likely than congenital anomalies and an order of magnitude rarer than the other negative birth outcomes, suggesting that we have less power to detect effects on deaths. Finally, we note that there is little evidence of a change in any of the birth outcomes during the cleanup.

Panel B of Table 2 repeats the analysis for the subset of births near the Superfund sites believed to be the most dangerous, defined as those with HRS scores in the top third. This sample restriction reduces the estimated impact of the cleanups on the incidence of congenital anomalies, but the effect remains statistically insignificant in the specification with zip code fixed effects. The estimates of γ_5 in the models for the incidence of low birth weight and prematurity all rise in absolute value and become statistically significant in the case of prematurity for the specification that includes zip code fixed effects.

Table II: Effects of Superfund Cleanups on Birth Outcomes

	Cong. Anom. [1a]	Cong. Anom. [1b]	Low BW [2a]	Low BW [2b]	Pre-mature [3a]	Pre-mature [3b]	Infant Death [4a]	Infant Death [4b]
A. Full Sample								
During*Close	-0.0009	-0.0011	0.0016	0.0013	0.0003	-0.0003	-0.0009	-0.0009
	[0.0011]	[0.0011]	[0.0027]	[0.0030]	[0.0025]	[0.0026]	[0.0011]	[0.0010]
After Clean*	-0.0022**	-0.0029***	-0.0020	-0.0033	-0.0036	-0.0051*	-0.0011	-0.0011
Close	[0.0010]	[0.0010]	[0.0030]	[0.0028]	[0.0026]	[0.0027]	[0.0010]	[0.0009]
Mean Dep. Var.:	0.0112	0.0112	0.0795	0.0795	0.0880	0.0880	0.0079	0.0079
R-squared	0.0061	0.0126	0.0412	0.0585	0.014	0.0181	0.0028	0.0069
# Obs.	601949	599289	617698	615037	617792	615131	617792	615131
B. Top HRS Sites (Sites in the Top 1/3 of HRS Scores)								
During*Close	-0.0014	-0.0021	0.0002	-0.0032	-0.0023	-0.0064	-0.0036**	-0.0032**
	[0.0014]	[0.0015]	[0.0044]	[0.0048]	[0.0040]	[0.0044]	[0.0015]	[0.0016]
After Clean*	-0.0014	-0.0026*	-0.0048	-0.0080	-0.0041	-0.0092**	-0.0045***	-0.0044***
Close	[0.0017]	[0.0015]	[0.0049]	[0.0049]	[0.0036]	[0.0042]	[0.0015]	[0.0015]
Mean Dep. Var.:	0.0120	0.0120	0.0811	0.0811	0.0899	0.0899	0.0074	0.0074
R-squared	0.0060	0.0142	0.0445	0.0712	0.0122	0.0195	0.0024	0.0098
# Obs.	260168	258970	267623	266425	267686	266488	267686	266488
Site FE	Yes	No	Yes	No	Yes	No	Yes	No
Zip FE	No	Yes	No	Yes	No	Yes	No	Yes

Notes: The table reports the coefficients and standard errors (in square brackets) associated with $Close_{ilt}$*$During_{ilt}$ and $Close_{ilt}$*$After_{ilt}$ from the estimation of alternative versions of equation (1). Standard errors are clustered at the county-year level. The sample is limited to singleton births within 5,000 meters of a site conceived between 4 years prior to the initiation of a cleanup and 4 years after completion are included. "Close" is defined as within 2000 meters of the site. Regressions include controls for race, maternal age, maternal education, maternal smoking, child parity, child gender, year of birth, and zip code. *, **, and *** indicate significance at the 90%, 95%, and 99% levels. See the text for further details.

Perhaps, the most noteworthy results are the statistically significant decline in infant mortality after clean-up at these high HRS score sites. These estimates imply that the infant

mortality rate declined by a substantial 4.5 infants per 1000 births. However, the magnitude of these estimated impacts appears too large; the overall mean is just 7.4 deaths per 1000 births. It is possible that these results are driven by sorting, as Currie (2011) suggests that sorting following cleanups is stronger at more hazardous sites.

To explore the robustness of our estimates further, we estimated a series of models using more uniform samples. In particular we excluded smokers, fourth and higher order births, mothers less than 20 and older than 34, and mothers with less than 12 years of education from our samples. Due to the similarity of the results from the site and zip code fixed effects specifications, we only report on the former here. Column (1) repeats the column (1a) results from Table 2 as a basis of comparison. Columns (2) through (5) report estimates for white mothers from this uniform sample.

Table III: Effects of Superfund Cleanups on Congenital Anomalies: Alternative Samples and Specifications

	[1]	[2]	[3]	[4]	[5]	[6]
During*Close	-0.0009	-0.0027	0.0002	-0.0038	-0.0017	-0.0027
	[0.0011]	[0.0017]	[0.0022]	[0.0026]	[0.0020]	[0.0031]
After Cleanup*	-0.0022**	-0.0055***	-0.0044**	-0.0068**	-0.0040**	-0.0021
Close	[0.0010]	[0.0018]	[0.0022]	[0.0027]	[0.0019]	[0.0034]
Mean Dep. Var.:	0.0112	0.0109	0.0109	0.0127	0.0089	0.0106
R-squared	0.0061	0.0070	0.0070	0.0099	0.0076	0.0143
# Obs.	601949	183693	183693	94245	89448	54485
Uniform Sample	No	Yes	Yes	Yes	Yes	Yes
Other Restriction	None	White	White	White, Male	White, Female	Black
Definition Close	2000m	2000m	1500m	2000m	2000m	2000m
Site FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: See the notes to Table 2. In addition to those details, the "uniform" samples include only nonsmoking mothers with high school education or more who are between 20 and 34, and only children of parities 1, 2, or 3. *, **, and *** indicate significance at the 90%, 95%, and 99% levels. See the text for further details.

The estimates are generally more than twice as large as the baseline ones in column (1), which suggests that the results for congenital anomalies are not driven by changes in the

composition of mothers near a Superfund site after cleanup. A comparison of columns (2) and (3) shows that the estimated effect is robust to defining "close" as 1500m rather than 2000m. A comparison of columns (4) and (5) suggests that boys are more vulnerable to exposure to a Superfund site than girls and that they also have higher baseline rates of congenital anomalies. Column (6) fails to find an impact of cleanups among black infants, although the standard errors are more than three times larger than in the baseline sample since the sample is much smaller. When we conducted this exercise for the other outcome variables we did not find consistent evidence of an impact of Superfund cleanups on the incidence of low birthweight, prematurity, or infant mortality in these subsamples. Hence, only the estimates for congenital anomalies are robust to different specifications.

V. Discussion and Conclusions

This study is the first to examine the impact of cleanups of hazardous waste sites on infant health. Our estimates suggest that Superfund cleanups reduce the incidence of congenital anomalies by roughly 20-25%.[1] The finding of health benefits does not necessarily imply that it is in the public interest to continue the Superfund program in its current form. It might be more cost effective, for example, simply to ensure that people do not live near contaminated sites. Further research is clearly needed to determine whether the program is cost effective in improving health outcomes relative to possible alternative use of federal resources. Given the likelihood of a large heterogeneity in the toxicity level of the remaining sites, further research is also needed to determine how the expected benefits of the clean ups may vary across sites, as the

[1] In a cross-sectional analysis Paul Elliott, et al. (2001) finds that proximity to a hazardous waste site in Great Britain increases the incidence of congenital anomalies. Dolk et al. (1998) find a 33% increase in the risk on non-chromosomal anomalies for residents living within 3km of a hazardous waste site, which is quite similar to our estimate.

program moves its focus from the sites with the highest levels of pollution to the sites with lower levels of pollution.

One appeal of infant health as an outcome is that it avoids the problem of a lack of information on the countless other environmental factors that may affect adult health, including, lifetime smoking behavior, lifetime exposure to ambient air pollution, and lifetime exposure to multiple hazardous waste sites. A limitation of our analysis is that it cannot be informative about long run outcomes, like cancer. Further, there is no standard measure of the willingness to pay to avoid a congenital anomaly so it is difficult to develop a monetary benefit of these clean-ups.[2]

A primary limitation of our study is that like many previous studies of hazardous waste sites we do not have a direct measure of exposure or the toxics that individuals were exposed to. Hence, our estimates cannot be used to identify the precise pathways or toxics through which proximity harms health. This is an important question for future research.

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[2] The estimates imply that these clean ups averted between 76 and 144 instances of congenital anomalies in the 26,238 infants born to mothers within 2000 meters of Superfund site that had been cleaned up. Using Greenstone and Gallagher's cost of clean-up figures, the total cost of cleaning up these sites was approximately $4 billion (2005 $s). Hence, the cost per anomaly averted greatly exceeds standard estimates of the value of a statistical life (e.g., Ashenfelter and Greenstone 2004). Of course, this paper's focus on infants cannot measure any health improvements that occur later in life and we have explored only one dimension of possible health effects.

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Senator BOOKER. Hearing no objection, I would also ask unanimous consent to enter into the record letters from Congresswoman Julia Brownley of California and multiple California mayors and city officials. These letters all support the complete remediation of the Halaco Superfund site in Oxnard, California. I think those are important to include in the record as well.

[The referenced information was not received at time of print.]

Senator BOOKER. I want to thank you all for your time. I know it takes a lot of energy to come here to Washington and participate in a hearing but this hearing is of great importance. The testimony from everyone, I must say, was invaluable.

Thank you very much.

This hearing is adjourned.

[Whereupon, at 5:05 p.m., the hearing was adjourned.]