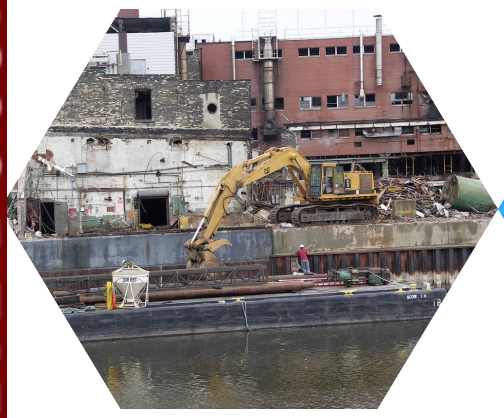
PROTECTING & RESTORING LAND

Making a Visible Difference in Communities

OSWER FY13 END OF YEAR ACCOMPLISHMENTS REPORT



United States Environmental Protection Agency

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Message from the Assistant Administrator for the Office of Solid Waste and Emergency Response

I am pleased to present the Office of Solid Waste and Emergency Response's (OSWER) Fiscal Year 2013 (FY13) Accomplishments Report. OSWER in partnership with other federal agencies, states, tribes, local government, and communities, works to protect land, preserve resources, and cleanup contaminated properties and facilities to create a safer environment for all Americans. In partnership with our stakeholders, we ensure proper management of hazardous waste and petroleum products, and help prevent and prepare for oil spills, chemical accidents, and other emergencies to protect the health of communities. Through a variety of cleanup programs we assess and cleanup contaminated land to set the stage for redevelopment or facilitate the continued use of the facility.

Assistant Administrator Stanislaus speaking at a public meeting

In FY13, we helped communities recover from Hurricane Sandy; completed our first Climate Adaptation Plan; and collaborated with the Occupational Safety and Health Administration (OSHA) and Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) to issue an advisory on the hazards of ammonium nitrate to improve chemical risk management. These are just some of the achievements highlighted in the report. Throughout the report you will find examples of how OSWER's work touches on key priorities of the Administration including clean energy and domestic fossil fuel energy development, climate change, job creation and training, and manufacturing and economic development. I hope this report gives you an idea of the variety of ways that OSWER, working collaboratively with other federal agencies, states, tribes, and communities helped create a safer environment this past year.

I am proud of OSWER's dedicated and talented work force and our accomplishments in FY13 and look forward to applying our expertise and energy to address the complex environmental issues facing our country.

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Executive Summary

In FY13, the U.S. Environmental Protection Agency's (EPA) Office of Solid Waste and Emergency Response (OSWER) continued to advance the protection and restoration of land. As Administrator Gina McCarthy noted in her themes for the Agency:

> "EPA must work each and every day - hand-in-hand with other federal agencies, states, tribes and local communities - to improve the health of American families and protect the environment one community at a time, all across the country."

OSWER programs and their regional colleagues regularly work in communities across America –cleaning up Superfund sites; responding to emergencies; assisting tribes, state and local governments in the cleaning up and redeveloping brownfield sites and underground storage tanks; and establishing protections for the management of hazardous waste.

OSWER's Accomplishments Report includes highlights from across the country of the many on-the-ground activities that are performed every day in communities, under the two broad goals of OSWER's work, *Preserving Land and Resources* and *Restoring Land.* OSWER's FY13 accomplishments include new program initiatives and activities of note in long-term programs. These initiatives and activities must involve and engage our partners at all levels of government in order to reach their full potential. For example, climate change is a national challenge with significant local impacts. In FY13, OSWER completed its first Climate Change Adaptation Plan to identify the climate change impacts to our programs and develop a plan for integrating consideration of climate change impacts into our work. In the Plan, OSWER identified 26 priority actions to begin over the next three years, including, but not limited to, reviewing remedy effectiveness, management of storm debris, and emergency management planning. EPA also has an opportunity to make a difference at the local level by helping communities capture new, job-generating manufacturing investment in an environmentally responsible way. In FY13, OSWER participated in the Investing in Manufacturing Communities Partnership to promote new manufacturing activity in U.S. communities. OSWER has a keen interest in encouraging new manufacturing investment and enhancing the ability of communities of all sizes to recycle vacant and abandoned properties for new, productive reuses in ways that build on local economic advantages.

Preserving Land and Resources

Land is a finite resource. As a result, preventing the contamination of this land and preserving critical resources is vital to creating healthy and vibrant communities and ecosystems. When contaminants and pollutants are released or wasted, communities and ecosystems are threatened. For example, discharges of oil into U.S. waters from facilities; accidents at chemical facilities; or improperly stored or treated wastes, all may threaten human health, result in injury and death or result in environmental damage and financial loss. Furthermore, some projections predict by 2050, our global population will grow 50 percent, economic activity will grow 500 percent, and energy and materials use will grow 300

percent.[1] As a result of this growth and as we strive to meet the associated demand, there will be greater pressure on these finite resources underscoring the need to preserve and reuse these resources.

OSWER, in partnership with our state co-regulators, currently oversees and manages permits for 20,000 hazardous waste units at 6,600 facilities, and set standards for approximately 580,000 federally-regulated underground storage tanks in order to prevent potentially dangerous releases. OSWER conducts prevention, preparedness, compliance assistance, and enforcement activities for approximately 13,000 chemical facilities subject to Risk Management Program facilities, which handle highly toxic and flammable chemicals, and provides guidance to state and local response organizations to assist them in their management and implementation of the Emergency Planning and Community Right to Know Act at over 390,000 facilities.

In FY13, OSWER took many actions that helped advance its mission to preserve land and resources. OSWER worked with the Occupational Safety and Health Administration (OSHA) and the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF) to issue an advisory, as part of an ongoing federal effort to improve chemical risk management, advance safety, and protect human health and the environment. This advisory contains information on recent and past accidents involving ammonium nitrate, its hazards, and appropriate steps for community emergency planning and proper emergency response. OSWER also made progress implementing three national strategies that are part of the Sustainable Materials Management (SMM) framework to encourage approaches that consider the human health and environmental impacts associated with the full life cycle of the materials. In 2012 alone, the most recent year with data, more than 36 million tons of food waste was generated, with less than five percent diverted from landfills and incinerators. In FY13, the U.S. Department of Agriculture (USDA) and EPA jointly announced the launch of the USDA - U.S. Food Waste Challenge, enabling targeted work to reduce food waste at school meal programs and inspection labs, in addition to other locations where food waste is generated. In FY13, OSWER revised the Spill Prevention and Countermeasures (SPCC) Guidance for inspectors and increased SPCC training and targeted outreach to improve compliance and help oil facilities, the public, and EPA inspectors prevent, prepare for and respond to oil spills. In FY13, OSWER continued to see an increase in the number of underground storage tanks that are in compliance with leak prevention and detection requirements which directly contribute to the protection of America's drinking water supply.

These are just a few examples of OSWER's continued success in preventing future environmental contamination and protecting the health of communities. The *Preserving Land and Resources* section gives additional illustrations of how OSWER is considering the full life cycle of materials, ensuring

[1] World Resources Institute, *The Weight of Nations: Material Outflows from Industrial Economies* (Washington, DC, 2000).

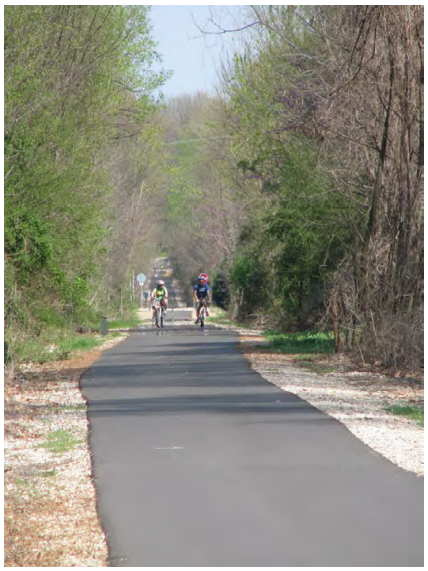
appropriate management of generated wastes and petroleum products, and preventing and preparing for accidental chemical releases at industrial facilities.

Restoring Land

Accidents, spills, leaks, releases and past improper disposal and handling of hazardous materials and wastes have resulted in tens of thousands of contaminated sites in the United States.

OSWER's land cleanup programs track over 530,000 sites and almost 23 million acres. Contaminated sites addressed by OSWER programs exist in thousands of communities across the United States ranging from remote to large urban settings. Approximately 51 percent of the total U.S. population lives within three miles of a Superfund, Resource Conservation and Recovery Act (RCRA) Corrective Action, or Brownfields site. While there is no single way to characterize communities located near the sites, census data shows that the population within three miles of OSWER sites is more minority, lower income, linguistically isolated, and less likely to have a high school education than the U.S. population as a whole. These communities may have fewer resources with which to address concerns about their health and environment.

Contaminated land can threaten human health and the environment, and potentially hamper economic growth and the vitality of local communities. Substances commonly found on contaminated sites have been linked to a variety of human health problems, such as birth defects, cancer, and changes in neuro-behavioral functions. Recent academic research demonstrated that investment in Superfund cleanups reduces the incidence of congenital abnormalities by roughly 20-25 percent for those living within 5,000 meters (3.2 miles) of a site.[2] In FY13, the Superfund and Brownfields Programs exceeded their site assessment targets, setting the stage for protective cleanups and redevelopment, as well as providing communities with valuable information regarding the environmental condition of sites. The two cleanup programs most often involved in long-term cleanups - RCRA Corrective Action and Superfund -addressed any unacceptable exposures and have eliminated acute risks at more than 80 percent of sites, while continuing to pursue long-term permanent cleanups.



Contaminated land is often unused, resulting in missed opportunities for reuse, as well as potential economic opportunities, such as jobs for local residents. In addition, contaminated land located on an operating facility may hinder other activities on site. At the end of FY13, OSWER and its partners made over 2.3 million acres (over 440,000 sites) available for commercial, industrial, ecological, recreational, residential and other purposes. Once a property is cleaned up and redeveloped, the reuse or continued use, results in new income to the community in the form of taxes, jobs to local residents or provides recreational or other services to make the community a better place to live. A 2012 study found an increase in property values between 5.1 and 12.8 percent at homes located within one kilometer (0.6 miles) of Brownfields sites where cleanup was completed.[3] A study conducted by researchers at Duke and the

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

[3] Haninger, Kevin, Lala Ma, and Christopher Timmins. 2012. Estimating the Impacts of Brownfield Remediation on Housing Property Values. Working Paper EE 12-08. Nicholas Institute for Environmental Policy Solutions.

University of Pittsburgh found that property values within three miles of sites where Superfund cleanups were completed increased approximately 20 percent.[4] In FY13, the Brownfields Program's funding for cleanup and redevelopment activities leveraged $1.5 billion dollars and over 10,000 jobs, significant increases from FY12.

OSWER also plays a critical role in responding to emergencies and acts as a safety net for all levels of government during these crises. There are national and regional EPA emergency operations centers with 24-hour per day capability for reporting of hazardous materials or other releases. Each year, more than 30,000 emergencies involving the release (or threatened release) of oil and hazardous substances are reported in the United States. Natural disasters, such as hurricanes and tornados, may be occurring more frequently and on a larger scale. In general, responsibilities during these events are spread across federal, state, local and tribal governments, depending upon the size and type of the emergency and involve the environmental, emergency management, and public health agencies of all levels of government, as well as local responders such as firefighters and police. In FY13, OSWER completed or oversaw the completion of more than 300 removal actions, typically immediate short-term responses intended to protect people from threats posed by hazardous substances or pollutants and contaminants. OSWER also participated in a variety of Hurricane Sandy preparations and response activities.

The *Restoring Land* section of this document gives many more examples to describe OSWER's progress assessing and cleaning up contaminated sites to maintain or put them back into productive use and demonstrates how EPA is using the relevant tools available in each of the cleanup programs, including enforcement and emergency response, to better leverage resources.

http://nicholasinstitute.duke.edu/environmentaleconomics/estimating-the-impacts-of-brownfield-remediation-on-housing-property-values

[4] Gamper-Rabindran, Shanti and Christopher Timmins. 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, http://dx.doi.org/10.1016/j.jeem.2012.12.001.

Preserving Land and Resources

The Challenge

Land is a finite resource. As a result, preventing the contamination of this land and preserving critical resources is vital to creating healthy and vibrant communities and ecosystems. When contaminants and pollutants are released or wasted, communities and ecosystems are threatened. For example, discharges of oil into U.S. waters from facilities; the release of gasoline; accidents at chemical facilities; or improperly stored or treated wastes, all may threaten human health, result in injury and death or result in environmental damage and financial loss. Furthermore, some projections predict by 2050, our global population will grow 50 percent, economic activity will grow 500 percent, and energy and materials use will grow 300 percent.[5] As a result of this growth and as we strive to meet the associated demand, there will be greater pressure on these finite resources and the resulting waste could increase significantly.

What is EPA doing?

The Environmental Protection Agency (EPA) works collaboratively with states, local governments, other federal agencies, and communities to preserve land and resources. EPA works to ensure that materials, both hazardous and non-hazardous, are controlled and managed responsibly. In order to accomplish this, EPA permits, inspects and monitors facilities or requires proper planning to ensure that anyone who generates, recycles, transports, treats, stores or disposes of potential contaminants is meeting necessary standards to protect human health and the environment. For example, the Resource Conservation and Recovery Act (RCRA) program and Underground Storage Tanks (UST) Program help prevent incidents at operating facilities, including, but not limited to, manufacturing plants and gas stations. The Oil Spill Program, in cooperation with the Coast Guard, protects land and water bodies from oil and petroleum spills and leaks. Each of these programs utilizes a unique set of regulatory and non-regulatory tools to accomplish its goals. With rigorous prevention activities, EPA can reduce the creation of Superfund, Brownfield, RCRA Corrective Action, and other contaminated sites.

In addition, EPA works to preserve resources whenever possible and encourage responsible consumption and usage. This includes advancing sustainable, lifecycle waste and material management approaches. By applying lifecycle principles, EPA has integrated more holistic resource and material management concepts into the program.

EPA's work on these challenges and solutions to these problems, however, is far from complete – new products and chemicals are continually being introduced; emerging technologies are constantly being developed; and unpredictable and unusual consequences from an increasing number of natural and manmade disasters are becoming more prevalent. As a result EPA will need to continue to innovate and learn in order to prepare for the long-term.

[5] World Resources Institute, *The Weight of Nations: Material Outflows from Industrial Economies* (Washington, DC, 2000).

OSWER Prevention & Preparedness Programs
RCRA Solid Waste Program The Resource Conservation and Recovery Act (RCRA) solid waste program encourages states to develop comprehensive plans to manage nonhazardous industrial solid waste and municipal solid waste, sets criteria for municipal solid waste landfills and other solid waste disposal facilities, and prohibits the open dumping of solid waste. This program also looks for more sustainable ways to manage our materials, prolonging the life of materials as usable commodities for as long as possible.
RCRA Hazardous Waste Program The RCRA Hazardous Waste program issues comprehensive, national regulations that define solid and hazardous wastes, and imposes strict standards on anyone who generates, recycles, transports, treats, stores or disposes of hazardous waste to ensure proper management of waste. This program also monitors the movement of hazardous waste in and out of U.S. borders and works to ensure the waste that is exported is properly recycled or disposed of.
UST Program The Underground Storage Tank (UST) program works with state, tribal and interagency partners to set and implement standards which prevent and detect releases from USTs, thereby reducing cleanup costs while protecting human health and the environment.
Oil Spill Program The Oil Spill Program, authorized under Section 311 of the Clean Water Act and the Oil Pollution Act of 1990, protects U.S. waters by preventing, preparing for and responding to oil spills.
The **EPA Chemical Emergency Preparedness and Prevention Program** is the national regulatory framework to prevent, prepare for and respond to catastrophic accidental chemical releases at industrial facilities throughout the United States.

How is this chapter structured?

EPA conserves resources and prevents land contamination by:

- Managing Materials Sustainably;
- Managing Hazardous Waste;
- Preventing Petroleum Releases; and
- Reducing Chemical Risks and Releases.

This section will review our programs, including enforcement efforts as appropriate, and demonstrate how they have achieved significant strides in preserving land and preventing releases to the environment.

Preserving Land and Resources: Managing Materials Sustainably

Historically, much of the nation's resource conservation efforts have focused on decisions to reuse or recycle materials that would otherwise be disposed as waste. While these remain important resource conservation practices, they only represent a fraction of all the opportunities available to conserve resources. Conserving resources requires attention at every step of the manufacturing or production process to prevent the unnecessary use of materials, decrease the use of toxins and prevent materials from going to landfills.

Figure 1
The Life Cycle of Materials

Benefits from Sustainable Materials Management

- It is estimated that approximately 42 percent of greenhouse gas emissions are attributable to materials management activities and approximately 16 percent are related to land management choices.
- Making an aluminum can from recycled aluminum requires 95 percent less energy than making a can from virgin feedstocks.
- Recycling 50 plastic bottles saves enough energy to power a laptop computer for over 127 hours.

Through a Sustainable Materials Management (SMM) approach, EPA is helping change the way our society protects the environment and conserves resources for future generations. Building on the familiar concept of Reduce, Reuse, Recycle, SMM is a systemic approach that seeks to reduce materials use and their associated environmental impacts over their entire life cycle, starting with extraction of natural resources and product design and ending with decisions on recycling or final disposal. This approach changes how we think about environmental protection and recognizes the impacts of the vast amount of materials we consume. Integrating SMM into the business practices of our stakeholders, on a broad, national level is a critical means for the U.S. to conserve its own natural resources and stay competitive globally.

EPA is currently promoting three national strategies, the Federal Green Challenge, the Electronics Challenge, and the Food Recovery Challenge. EPA is working with other federal agencies, state and tribal governments, and non-governmental organizations to promote sustainability goals through these and other initiatives. While EPA is striving for sustainable materials management, we also ensure that when materials reach the true end of life, they are disposed of properly and safely throughout the country.

FY13 Accomplishments

Partnering with other Federal Agencies to Promote SMM

On June 4, 2013, the U.S. Department of Agriculture (USDA) and EPA jointly announced the launch of the USDA - U.S. Food Waste Challenge. In 2012 alone, more than 36 million tons of food waste was

generated, with less than five percent diverted from landfills and incinerators. The goal of the U.S. Food Waste Challenge is to lead a fundamental shift in how we think about and manage food and food waste in this country. The Challenge expands upon the efforts in EPA's Food Recovery Challenge, increasing food recovery efforts to reach additional producer groups, processors, manufacturers, retailers, communities, and other government agencies. This partnership also enables targeted work with school meal programs, imported food issues, and food waste at inspection labs.

Expanding the Federal Green Challenge

The Federal Green Challenge is a national effort encouraging EPA and other federal agencies throughout the country to lead by example in reducing the federal government's environmental impact. In FY12, the Federal Green Challenge efforts to reduce waste, water and electricity usage resulted in an estimated cost savings of $31 million and over 900,000 metric tons of GHG reductions. With 126 new federal facilities joining in FY13 (exceeding the goal of 50 and bringing the total number of participants to 365) the cost savings and greenhouse gas reductions are likely to increase significantly. EPA itself is a major participant in the Challenge. The number of EPA facilities participating in the Challenge increased to 21, including the main offices in all ten EPA Regions.

Moving Forward on the Electronics Challenge

With an ever increasing supply of new electronics, Americans discard more than two million tons of obsolete electronics annually.[6] One way EPA is addressing this growing number of discarded electronics is through the Electronics Challenge. By participating in the Challenge, original equipment manufacturers and retailers promote responsible electronics recycling. Challenge participants are increasing the number of electronics being collected and sending 100 percent of their used electronics to a recognized third-party certified recycler by the third year of participation. The SMM Electronics Challenge was launched September 20, 2012 with ten national participants. These participants represent some of the nation's largest retailers and manufacturers of electronics.[7] During FY13, extensive assistance was provided to the existing ten participants on interpreting the Challenge requirements as they relate to each company's unique business structure and processes. EPA also collected participant baseline data; developed electronics portion of the SMM Data Management System; and developed a narrative awards process and criteria.

Advancing Beneficial Use

The generation of power by the combustion of coal currently represents over 40 percent of the U.S. electricity usage and generates over 130 million tons of coal combustion residues (CCR) annually. EPA undertook the development of a methodology to evaluate potential uses of this enormous waste stream and subsequently applied this methodology to the two most common beneficial uses of CCRs – uses in concrete and wallboard. Not only were these products useful to ensure reuse of CCRs is appropriate but they can be valuable tools for EPA, states, and other stakeholders in evaluating future beneficial uses of

[6] USEPA, Office of Resource Conservation and Recovery. 2011. *Electronics Waste Management in the United States Through 2009.*

[7] The ten participants are Best Buy, Dell, LG Electronics, Nokia, Panasonic, Samsung, Sharp, Sony, Sprint Nextel and Staples.

industrial materials. Overcoming these issues will move the science and practice of beneficial use forward.

MAKING A DIFFERENCE IN COMMUNITIES

Cupertino, California: In November 2012, EPA recognized the City of Cupertino as a winner of the 2012 Food Recovery Challenge Award for Innovation. Cupertino teamed up with its waste hauler, Recology, and EPA's Food Recovery Challenge program to work with local grocers and food markets to reduce food waste. In 2010, Cupertino and Recology agreed to add a stipulation to its franchise agreement to keep 75 percent of community-generated waste out of landfills by 2015, a 10 percent increase from 2010 levels. More than 2,000 tons of food waste has been diverted from landfills since the city amended its franchise agreement. Reducing food waste is a key component of this plan. Also, the city has made significant progress toward its 75 percent goal and has seen a six percent increase of material reused, recycled, or composted, rather than sent to landfills. As a member of EPA's Food Recovery Challenge, the City of Cupertino has created a foundation of innovation and achievement that can serve as a model for other cities across the nation as they pursue their own sustainable food management goals.

Measures

To help assess EPA progress in advancing materials management, EPA used two annual performance measures in FY13 that track the amount of material that is managed. FY13 results will be available in February 2015 for both measures.[8]

EPA also tracked improvements in tribal capacity to manage solid waste in FY13 by measuring the number of open dumps cleaned up in Indian Country and number of tribes with an integrated solid waste management plan. Both of these measures were met in FY13.

Status	Measure	FY13 Target	FY13 Value
●	Increase in percentage of coal combustion ash that is beneficially used instead of disposed	1.4	NA
●	Tons of materials and products offsetting use of virgin resources through sustainable materials management	8,549,502	NA
▲	Number of closed, cleaned up or upgraded open dumps in Indian Country or on other tribal lands.	45	106
▲	Number of tribes covered by an integrated solid waste management plan.	3	26

Legend: ● Data Unavailable ▲ Goal Met ▲ Goal Not Met

[8] The coal ash measure was originally established to track EPA's progress in supporting the beneficial use of coal combustion residuals under EPA's Coal Combustion Products Partnership (C^2P^2). EPA decided to suspend the Partnership in 2010, and as a result in FY14 we will no longer report this measure. Because there is no C^2P^2, insight to expected results for FY13 is very limited. Elements of the sustainable materials management measure are based on calculations of national recycling and waste disposal rates, which require data generated from other data sources, including other Federal Agencies.

Preserving Land and Resources: Managing Hazardous Waste

Hazardous wastes are potentially harmful to human health and the environment if they are not properly managed. In the U.S. more than 34 million tons of hazardous waste was generated in 2011 by over 16,400 large quantity generators.[9] EPA protects human health, communities and the environment through a comprehensive regulatory framework implemented in partnership with states which guides the safe management of hazardous waste and prevents their release. EPA's hazardous waste management activities also play a key role in supporting U.S. industries and small businesses.

National regulations define hazardous waste, and impose strict standards on anyone who generates, recycles, transports, treats, stores or disposes of hazardous waste. Some key aspects of the hazardous waste management program include: controlling transportation of hazardous waste through a manifest system; ensuring the safe treatment, storage and disposal of hazardous wastes by establishing specific requirements/permits that must be followed when managing those wastes; and inspecting facilities to ensure compliance with regulations.

In addition, new technologies, waste streams and new Clean Air Act and Clean Water Act regulations have meant the RCRA program must evolve to address new challenges, including incorporation of these advances into the current regulatory structure in a lasting and effective manner.

EPA and its state partners have issued new or updated permits and other approved controls for 20,000 hazardous waste units (such as incinerators and landfills) at 6,600 treatment, storage and disposal facilities in the permitting universe. With these permits and other enforceable controls, the RCRA program actively protects the environment and the health of communities near hazardous waste treatment, storage and disposal facilities (TSDFs), including an estimated 62.5 million people living within three miles of these facilities.[10]

Furthermore, EPA promotes the management of waste in more environmentally beneficial and cost-effective ways. It is important for EPA to strike a balance between recovering valuable materials and preventing loopholes that could lead to unsafe disposal under the guise of recycling. EPA is working to provide regulatory flexibilities designed to encourage hazardous materials recycling with adequate safeguards. In order to protect human health and the environment, EPA must ensure materials are destined for legitimate recycling.

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[9] EPA collects information on the hazardous waste generated by large quantity generators (LQGs) every two years. The total number of LQGs includes generators that do not meet the federal definition because some states can have different regulations where the threshold for an LQG is lower than the federal threshold or additional state wastes are counted as hazardous waste. In addition, there are hundreds of thousands of smaller generators in the country who are not required to report every 2 years. At the end of calendar year 2013, reporting had begun for the next biennial report and will be available December 2014.

[10] Data collected includes: site information as of the end of FY11 from RCRAInfo and census data from the 2007-2011 American Community Survey (ACS). Facility site data from FY11 was chosen to correspond most closely to the census data in the 2007-2011 ACS. In FY11 this included 1,795 hazardous waste treatment, storage, and disposal facilities in the 50 U.S. states with accurate locational data. A three mile ring was placed around each facility's lat/long and census data was collected for the block groups whose centroid fell within the three mile area.

FY13 Accomplishments

Solvent-Contaminated Wipes Final Rule

In August 2013, EPA finalized the Solvent-Contaminated Wipes Rule modifying the hazardous waste management regulations under RCRA to conditionally exclude solvent-contaminated wipes from hazardous waste regulations provided that businesses clean or dispose of them properly. This rule uses the latest science to provide a regulatory framework that is appropriate to the level of risk posed. The rule is based on EPA's final risk analysis that concluded wipes contaminated with certain hazardous solvents do not pose significant risk to human health and the environment when managed properly. Wipes are used in conjunction with solvents for a variety of purposes by thousands of facilities, including many small businesses, such as printers, automobiles repair shops, and manufacturing. EPA estimates the final rule will result in a net savings of $21.7 - $27.8 million per year and was effective on January 31, 2014.

Modernizing Hazardous Waste Reporting Processes

EPA has made several significant steps in moving from paper-based to electronic reporting of hazardous waste handler activity. In FY13, EPA successfully deployed a new application, myRCRAid, providing a web-based alternative to the current paper-based RCRA site identification (ID) application process for facilities that have an existing EPA ID. By enabling electronic submissions, myRCRAid will save in mailing costs; improve data quality; increase efficiency of the notification process by allowing facilities to easily submit updates of past submissions; and enable states and EPA to receive the updated data faster.

In addition, EPA continued system planning under the October 2012 Hazardous Waste Electronic Manifest (e-Manifest) Establishment Act. The planned e-Manifest system will allow for the electronic reporting of hazardous waste shipments. Webinars and information gathering sessions were held across the country to solicit information about system requirements. The well attended sessions included industry, state representatives, and non-governmental organizations. The e-Manifest program is the vanguard of the EPA's e-Enterprise initiative and it is estimated it will ultimately reduce the burden associated with preparing shipping manifests by between 300,000 and 700,000 hours and result in savings of more than $75 million for states and industry.

Updating Waste Characterization Methods

EPA developed and revised 23 analytical procedures for inclusion in SW-846, RCRA's methods guidance document for waste characterization. The development of updated analytical procedures ensures the regulated community can accurately identify their waste, which is the first step to ensuring proper management.

Using Evidence Based Evaluation to Improve our Programs

In an effort to improve the EPA's Hazardous Waste regulations and to increase compliance, EPA worked with a third party evaluator to review the regulatory requirement for generators to determine if their waste materials are hazardous. EPA published the final Hazardous Waste Determination Program evaluation in April 2013. Major findings of this evaluation included a desire to clarify and simplify some of the regulations and substantial difficulties in generators making required waste determinations. These findings support many of the in development proposed revisions to the generator regulations and are one of the follow-up actions that came out of this effort.

Measures

EPA measured its FY13 progress in this area with an annual performance measure that tracks the number of RCRA hazardous waste facilities with new or updated controls in place to prevent releases of contaminants into the environment. This measure was exceeded in FY13.

Status	Measure	FY13 Target	FY13 Value
▲	Number of hazardous waste facilities with new or updated controls.	100	114

Legend: ● Data Unavailable ▲ Goal Met ▲ Goal Not Met

Continuing Progress and Trends

Hazardous Waste Generation and Management

Hazardous waste poses potential environmental impacts if not properly treated, stored, and disposed of. In addition, the total quantity and type of hazardous waste reflects a component of the total materials a society creates and uses, which is an important aspect of sustainability. In partnership with the states, EPA collects extensive data on the RCRA hazardous waste generation and management practices of treatment, storage and disposal facilities and large quantity generators. Since 2001, the quantity of RCRA hazardous waste generated in the U.S. ranged from 20.1 million tons in 2003 to 28.8 million tons in 2005.[11] From 2001 to 2009, the quantity of RCRA hazardous waste ultimately disposed to the land ranged from 16.1 to 24.3 million tons.

[11] Note that because some wastes can go through multiple management steps, the individual management categories do not sum to the total quantity of RCRA hazardous waste generated. "Other" includes stored, bulk, transferred, material recovery, energy recovery and treated.

Preserving Land and Resources: Preventing Oil & Petroleum Releases

EPA has two primary programs that work to protect our land and water bodies from oil and petroleum spills and leaks.

EPA's Underground Storage Tanks (UST) Program helps prevents petroleum releases by developing federal regulations governing the program; providing needed funds and oversight to state and tribal partners to support their programs; providing technical information/guidance,[12] forums for information exchanges and training opportunities to states, tribes and intertribal consortia to encourage program development and/or implementation; and implementing the program in Indian country. In the UST program the states are the front-line implementers conducting the majority of inspections, enforcement and site-specific compliance assistance. The greatest potential hazard from leaking underground storage tanks is that petroleum or other hazardous substances can seep into soil and contaminate groundwater, the source of drinking water for nearly half of all Americans.

EPA's Oil Spill Program and the Coast Guard protects U.S. waters by preventing, preparing for and responding to oil spills.[13] The Oil Pollution Prevention regulations apply to certain non-transportation-related facilities that could discharge oil into navigable waters of the United States. This regulation require each owner or operator of a regulated facility to prepare a Spill Prevention, Control, and Countermeasures (SPCC) Plan addressing the facility's design, operation and maintenance procedures established to prevent oil spills, as well as countermeasures to control, contain, clean up and mitigate the effects of an oil spill that could affect navigable waters. In addition, some facility owners and operators are also required to prepare Facility Response Plans (FRPs) addressing response actions for discharges of oil that present the potential for substantial environmental harm. EPA's FRP regulation requires plans to be consistent with Area Contingency Plans (ACPs) under the National Oil and Hazardous Substances Pollution Contingency Plan.

FY13 Accomplishments

Updating Guidance for Regional Inspectors and Outreach

In August 2013, EPA revised the *SPCC Guidance for Regional Inspectors,* to assist inspectors in reviewing a facility's implementation of the SPCC rule. This guidance document is also available to owners and operators of facilities and the public and provides a consistent national policy on several SPCC-related issues. EPA also developed outreach and held a series of webinars related to the revised SPCC Guidance. These webinars and other in-person outreach sessions resulted in more than 2,500 stakeholders receiving online training from EPA staff and several hundred more being trained in person. EPA also

[12] For example, EPA provides national guidance for emerging issues, such as the impact of alternative fuels on tank infrastructure and cleanup of higher blend releases.

[13] Section 311 of the Clean Water Act and the Oil Pollution Act provide EPA with the authority to establish a regulatory program for preventing, preparing for and responding to oil spills that occur in navigable waters of the United States.

presented sector-specific guidance training for the electrical power industry, military, and construction industry stakeholders. EPA continues to use such innovative and cost effective outreach tools to promote SPCC compliance.

Providing SPCC Guidance for Agriculture

EPA developed specialized materials for farm owners to help them address the unique circumstances the agriculture community faces so that they can comply with the SPCC rule. Outreach materials, including frequently asked questions, factsheets, and webinars were created in order to help farm owners determine if their farm is covered under SPCC and prepare an SPCC plan to prevent oil spills on their land.

Developing Guidance for Dispersant Use

During the Deepwater Horizon Oil Spill in 2010, dispersant was applied using novel techniques and in amounts never seen in U.S. waters. For the first time, dispersant was injected at the source of the release at depths of nearly a mile, and in quantities approximating three quarters of a million gallons. In addition, aircraft and vessels deployed dispersant to the surface at volumes topping 1,000,000 gallons over the course of the response, quantities unsurpassed in North America. Such atypical uses of dispersant during a response were neither envisioned nor incorporated into existing Regional Response Team (RRT) dispersant use plans. To address this gap, the National Response Team, which is chaired by EPA, developed guidance called *Environmental Monitoring for Atypical Dispersant Operations* to assist On-Scene Coordinators and RRTs in making incident-specific decisions regarding atypical dispersant use. The guidance is envisioned to continue addressing monitoring challenges as they become necessary, and as resources allow other atypical dispersant applications.

Implementing Delivery Prohibitions

EPA's UST program began implementing the delivery prohibition policy in FY13, which describes EPA's process for prohibiting delivery of regulated substances to federally regulated USTs. Many states already use delivery prohibition and indicate it is a very successful enforcement option in improving compliance. This enforcement option allows EPA to use fewer resources while helping violators return to compliance quickly and effectively.

Increasing State Operator Training

EPA and states are now implementing underground storage tank operator training, which is the last requirement of the Energy Policy Act of 2005. At the end of 2013, most states have fully implemented this important program and are already seeing positive results. For example, Colorado reported that their operator training program has been very successful and is positively impacting operational compliance statistics. Since rolling out this initiative, Colorado inspectors are finding owners/operators who are more engaged, knowledgeable and wanting to learn more about their systems. Suspected releases are being detected and addressed earlier, resulting in smaller impacts to the environment and quicker cleanup timelines, while significantly reducing cleanup costs.

Measures

Ensuring that high risk facilities that store large amounts of oil are compliant with EPA's SPCC and FRP regulations is a crucial part of preventing oil spills. To help assess EPA's progress in this area, EPA reported two performance measures in FY13 that track the percentage of facilities brought into compliance with the regulations. Over the past several years, EPA has exceeded its yearly targets for these two measures, helping to improve facility oil spill preparedness and prevent oil spills.

To help assess EPA's progress in reducing petroleum releases into the environment from USTs, EPA collects state data for two key performance measures that track reductions in the number of confirmed UST releases across the country, and increases in the percentage of UST facilities that are in compliance with release detection and prevention regulations. EPA exceeded both of these targets in FY13.

Status	Measure	FY13 Target	FY13 Value
▲	% of all FRP inspected facilities found to be non-compliant which are brought into compliance.	40	78
▲	% of all SPCC inspected facilities found to be non-compliant which are brought into compliance.	40	69
▲	Reduce the number of confirmed releases at UST facilities to 5% fewer than previous year.	7,715	6,128
▲	Increase the % of UST facilities that are in significant operational compliance with both release detection and release prevention requirements by 0.5% over the previous year's target.	67	71.6

Legend: ● Data Unavailable ▲ Goal Met ▲ Goal Not Met

Continuing Progress and Trends

Focus on UST Confirmed Releases

Because of the increased emphasis on inspections and release prevention requirements, since FY05, EPA has consistently met our yearly goal to reduce the number of confirmed releases. This has resulted in a general downward trend in the number of confirmed releases. However, in FY13 the number of releases did trend upward for the first time since FY08.

Since the beginning of the UST program, over 514,000 confirmed released from leaking underground storage tanks have been discovered. Given that remediation costs average between $100,000 and $400,000 per release (depending on the presence of ground water contamination), a robust prevention program also saves resources in the long run.

In addition, fewer sites are entering the backlog of UST sites awaiting cleanup. The EPA's backlog study completed in FY12 found that almost half of the releases yet to be addressed were 15 years old or older, and that groundwater was contaminated at more than 75 percent of releases.

While EPA and its partners have made major progress in reducing the number of new releases, thousands of releases are still discovered each year (about 6,128 in FY13). A main cause of releases from USTs is the lack of proper operation and maintenance of UST systems. Approximately 30 percent of the federally regulated UST systems still need to come into and stay in compliance. At the end of FY13, there were approximately 77,700 open releases still in the cleanup process or waiting to be cleaned up.

Figure 3
UST Confirmed Releases

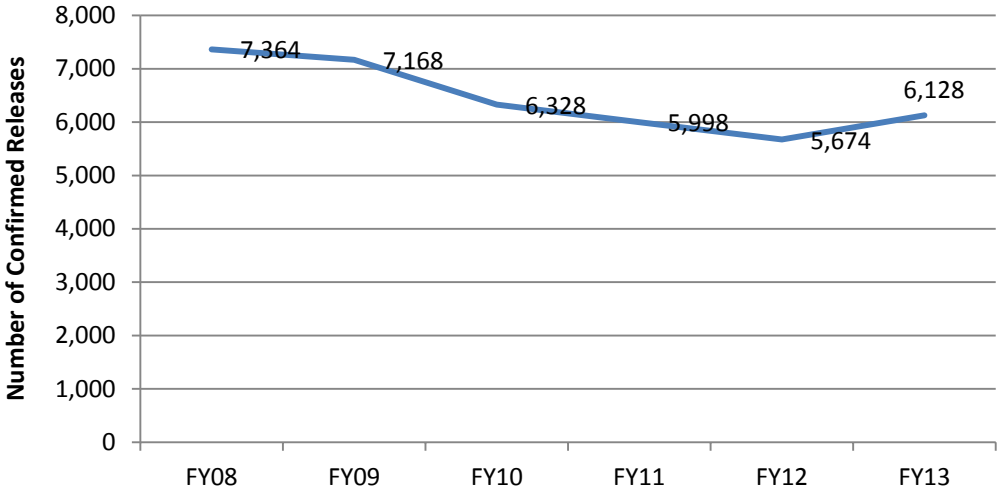
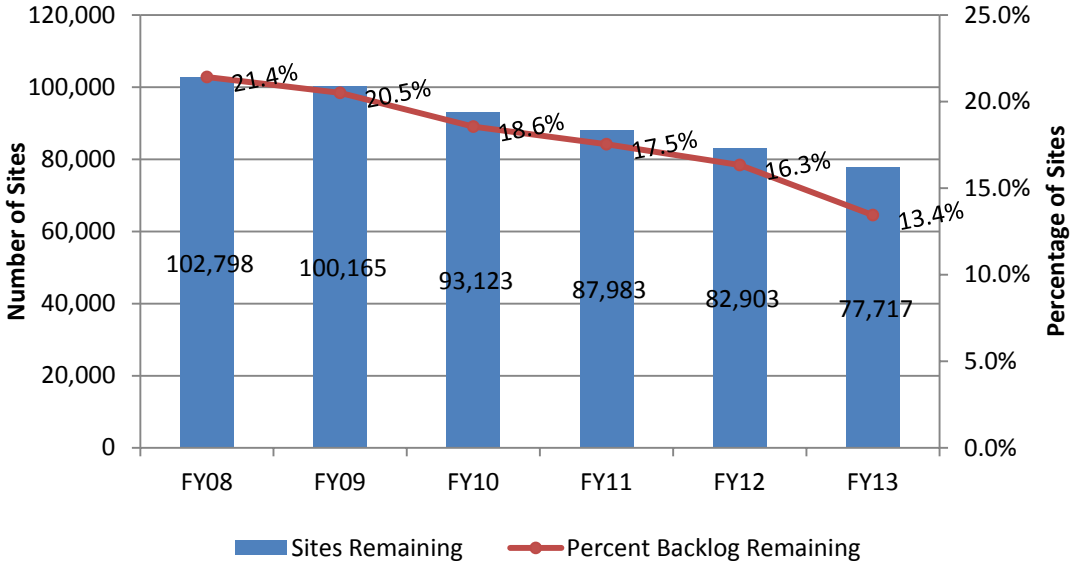


Figure 4
Tanks Cleanup Backlog



Preserving Land and Resources: Reducing Chemical Risks & Releases

EPA's Chemical Emergency Preparedness and Prevention Program is the national regulatory framework to prevent, prepare for and respond to catastrophic accidental chemical releases at industrial facilities throughout the United States. This program includes the Clean Air Act Section 112(r) Risk Management Program and the Emergency Planning and Community Right-to-Know Act (EPCRA) program.

Together, the Risk Management Program and EPCRA establish a structure within which federal, state, local and tribal partners work together to protect the public and the environment from chemical risks. They also play an important role in increasing transparency and communication among facilities, governments and communities to facilitate the prevention of accidents when possible and plan for effective emergency response actions when they are necessary.

Under the Clean Air Act, EPA regulations require that facilities handling more than a threshold quantity of certain extremely hazardous substances implement a risk management program and submit a risk management plan (RMP) to EPA. The RMP describes the approach the facility is taking to prevent and mitigate chemical accidents. The plan addresses the hazards of the chemicals used by the facility, the potential consequences of worst case and other accidental chemical release scenarios, the facility's five-year accident history, the chemical accident prevention program in place at the site and the emergency response program used by the site to minimize the impacts on the public and environment should a chemical release occur.

The EPCRA program requires facilities to report their chemical accidents and inventories of chemicals to the local communities and emergency responders in order for those officials to develop a local community emergency response plan to mitigate the effects of a chemical accident.

In addition, these programs also collect and share data to assist other stakeholders in preventing and responding to releases of all types, and as such, RMP provides the foundation for community and hazards response planning. RMPs are currently available to local emergency planning committees (LEPCs) and members of the local community's access to them is limited through either the LEPC or by visiting a federal risk management plan reading room. The RMP regulation requires facilities to coordinate facility emergency response plans with the community emergency response plan developed under EPCRA, and facilities must have a means of notifying local community responders in the event of an accident. During inspections of RMP facilities, in addition to verifying compliance with accident prevention requirements, EPA checks with the LEPC to ensure that the facility has adequately coordinated its emergency plan with community responders.

FY13 Accomplishments

Safeguarding Communities from Chemical Accidents and Spills

EPA, the Occupational Safety and Health Administration (OSHA), and the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF) issued an advisory as part of an ongoing federal effort to improve chemical risk management and to advance safety and protect human health and the environment. Part of an Executive Order issued in August 2013 titled *Improving Chemical Facility Safety and Security*, this advisory contains information on recent and past accidents involving ammonium nitrate, its hazards, and appropriate steps for community emergency planning and proper emergency response. It is focused primarily on safe handling and storage of higher density, solid ammonium nitrate pellets and prills used in fertilizers. This advisory is intended to broadly disseminate lessons learned from recent incidents involving ammonium nitrate so that such incidents can be prevented in the future. Since the EO was

issued, the Working Group has launched a pilot program in the New York and New Jersey regions to evaluate best practices and test innovative methods for interagency collaboration on chemical facility safety and security. In addition, listening sessions and webinars have been held to collect suggestions and comments from stakeholders.

Measures

EPA identified approximately 13,000 RMP facilities nationwide, of which approximately 1,900 facilities have been designated as high risk. To help assess EPA's progress in inspecting these facilities, EPA tracks the annual number of both regular and high risk RMP facility inspections it conducts. In FY13, EPA surpassed its target for number of risk management plan inspections completed with 539 inspections.

Status	Measure	FY13 Target	FY13 Value
▲	Number of risk management plan audits and inspections conducted.	500	539

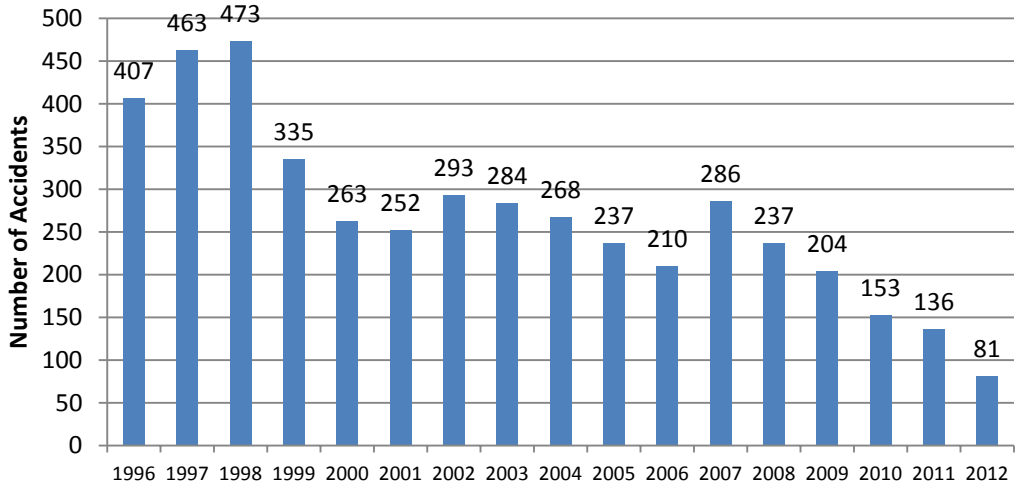
Legend: ● Data Unavailable ▲ Goal Met ▲ Goal Not Met

Continuing Progress and Trends

Risk Management Facility Accident Reports

There has been a significant decrease in accidents reported at RMP facilities since FY96.[14] Overall accident reductions could be attributed to a number of factors including those actions taken by facilities to prevent spills. EPA has continued its work to increase inspection activities at high-risk facilities, continues to evaluate RMPs that have been submitted, and carries out regulatory enforcement actions where appropriate. These activities, along with consistent outreach with regulated communities, advancing technologies, and improved safety systems, have helped to maximize the effectiveness of prevention and preparedness at chemical facilities.

Figure 5
Accidents at RMP Facilities



[14] These data are current as of March 2013. The FY12 number may slightly change due to a six-month deadline for reporting accidents.

Restoring Land

The Challenge

Accidents, spills, leaks, releases and past improper disposal and handling of hazardous materials and wastes have resulted in tens of thousands of contaminated sites in the United States. Each year, more than 30,000 emergencies involving the release (or threatened release) of oil and hazardous substances are reported in the United States. Contaminated land can threaten human health and the environment, and potentially hamper economic growth and the vitality of local communities.

Substances commonly found on contaminated sites have been linked to a variety of human health problems, such as birth defects, cancer, and changes in neuro-behavioral functions. Contaminated land is often unused, resulting in missed opportunities for reuse, as well as potential economic opportunities, such as jobs for local residents. In addition, contaminated land located on an operative facility may hinder other activities on site.

What is EPA doing?

Together with our federal, state, and tribal partners, EPA reduces risk to human health and the environment through emergency response activities, site assessment and cleanup, and restores them for productive use. Recent academic research demonstrated that 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.[15]

Cleaning up land, whether for commercial, industrial, residential, recreational, greenspace or other productive use may result in new income to the community in the form of taxes, jobs to local residents or it may provide recreational or other services to make the community a better place to live. Property values may also increase after EPA completes a site cleanup. A 2012 study found an increase in property values between 5.1 and 12.8 percent at homes located within one kilometer of Brownfields sites where cleanup was completed.[16] A study conducted by researchers at Duke and the University of Pittsburgh

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

[16] Haninger, Kevin, Lala Ma, and Christopher Timmins. 2012. Estimating the Impacts of Brownfield Remediation on Housing Property Values. Working Paper EE 12-08. Nicholas Institute for Environmental Policy Solutions. http://nicholasinstitute.duke.edu/environmentaleconomics/estimating-the-impacts-of-brownfield-remediation-on-housing-property-values

found that property values within three miles of sites where Superfund cleanups were completed increased approximately 20 percent.[17]

EPA has six major land cleanup programs: Superfund Remedial and Federal Facilities Programs, Superfund Emergency Response and Removal Program, the Brownfields and Land Revitalization Program, the RCRA Corrective Action (CA) Program, the Leaking Underground Storage Tank (LUST) Program and the Polychlorinated Biphenyls (PCBs) Cleanup Program. The EPA cleanup program which becomes involved at a particular site or release is based on the level and type of contamination. Some contaminated sites pose little risk to human health and the environment, because the level of contamination is low, as is the chance of exposure to toxic or hazardous contaminants. Other contaminated sites are of greater concern because of the chemicals that may be present and their propensity to persist in or move through the environment, exposing humans or the plants and animals in the ecosystem to hazards. For emergency response, there is a complex system of responsibilities. In general, responsibilities are spread across federal, state and local governments, depending upon the size and type of the emergency and involve the environmental, emergency management, public safety, and public health agencies of the three levels of government. In addition, industry has a very important role to play in preparing for and responding to such emergencies.

Throughout this work, EPA engages with communities so that they may meaningfully participate in cleanup decisions and have a say in how contaminated areas are reused. Community engagement helps to ensure transparent and accessible decision-making processes, to deliver information that communities can use to participate effectively, and to improve EPA responsiveness to community perspectives.

OSWER CLEANUP PROGRAMS
Superfund Emergency Response and Removal Program The Superfund Removal Program functions as the backbone federal response to many contamination events; providing response support to state, local, tribal and potentially responsible parties when their response capabilities are exceeded; and managing risks to human health, the environment, and the economic viability of communities. Removal actions are typically immediate short-term responses intended to protect people from threats posed by hazardous waste sites.
Superfund Remedial Programs The Superfund Remedial and Federal Facilities Program addresses long-term risks to human health and the environment resulting from releases of hazardous substances at the nation's highest priority sites. Superfund sites are found across the country. The Federal Facilities Program works with federal entities to ensure fast and effective cleanup at federally-owned sites, and facilitates partnerships between the other federal agencies and the surrounding communities. The Superfund Remedial Program works on non-federally owned sites.
Brownfields Program The Brownfields Program addresses environmental site assessment and cleanup of abandoned and potentially contaminated sites that are not Superfund sites, through grants, cooperative agreements, and technical assistance to communities, states, and tribes. Funding to states and tribes helps develop and enhance their voluntary cleanup programs. In addition, the program provides environmental workforce development and job training funding to recruit, train and place local, unemployed residents of solid and hazardous waste-affected communities with the skills needed

[17] Gamper-Rabindran, Shanti and Christopher Timmins. 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, http://dx.doi.org/10.1016/j.jeem.2012.12.001.

to secure full-time employment in the environmental field.

RCRA Corrective Action Program An essential element of EPA's hazardous waste management program is the statutory requirement that facilities managing hazardous wastes must clean up releases of hazardous constituents that could adversely impact human health and the environment. A cleanup under RCRA is referred to as Corrective Action (CA). The RCRA Program directly implements the CA program in 13 states and territories, and performs as lead regulator at an increasingly significant number of facilities undergoing CAs in 42 states across the country that are authorized for the RCRA CA Program. The CA program is critical to preventing Superfund sites and the associated resources and expenditures.

PCBs Cleanup Program The national Polychlorinated Biphenyls (PCBs) cleanup and disposal program is implemented by EPA, and works closely with other EPA cleanup programs and state and local governments to ensure cleanups are conducted efficiently and that human health and the environment are protected. Prior to the Toxic Substances Control Act (TSCA), PCBs were widely used across many commercial industries and significant PCB contamination resulted from spills, releases and from products.

LUST Program The Leaking Underground Storage Tank (LUST) program works with state and tribal partners to clean up releases from LUST sites, many of which impact ground water resources. States are the primary implementing agencies. EPA provides resources to support the infrastructure of state LUST programs so that private and state resources can directly finance the field work necessary to address contamination at federally- regulated tank releases. EPA also provides regulations, guidance and policy to support cleanup of tank releases.

How is this chapter structured?

EPA restores land by:

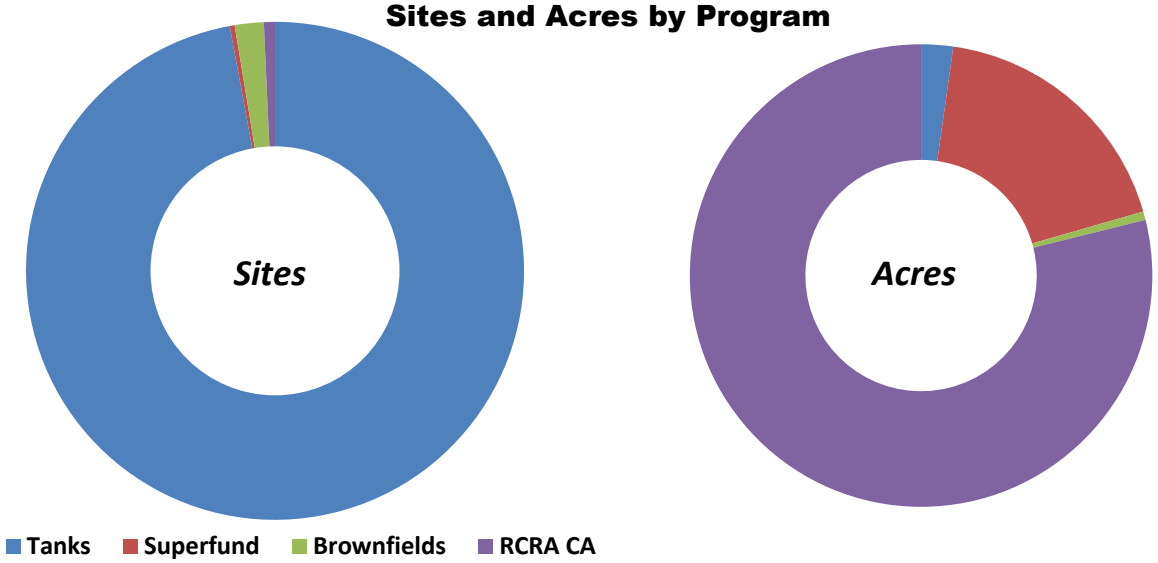
- Preparing for and responding to emergencies;
- Starting cleanups;
- Advancing cleanups; and
- Completing cleanups and reusing sites.

This section will review the three stages of the cleanup process, referred to as the cleanup continuum, as well as EPA's emergency response functions.

Profile of Sites and Communities

EPA tracks more than 520,000 sites representing almost 23 million acres. The number of sites and acres for which four of EPA's cleanup programs are or were involved in is provided below.[18] The universe as of FY13, which includes all sites along the cleanup continuum from assessment to cleanup, translates to 23 percent of all developed land in the United States.[19] The number of sites and acres tracked in the universe changes over time as more sites are identified and/or brought under the jurisdiction of the different programs (e.g., when a community addresses a site with a Brownfields' grant).

Figure 6
Sites and Acres by Program



Sites and Acres by Program
(% of Universe)

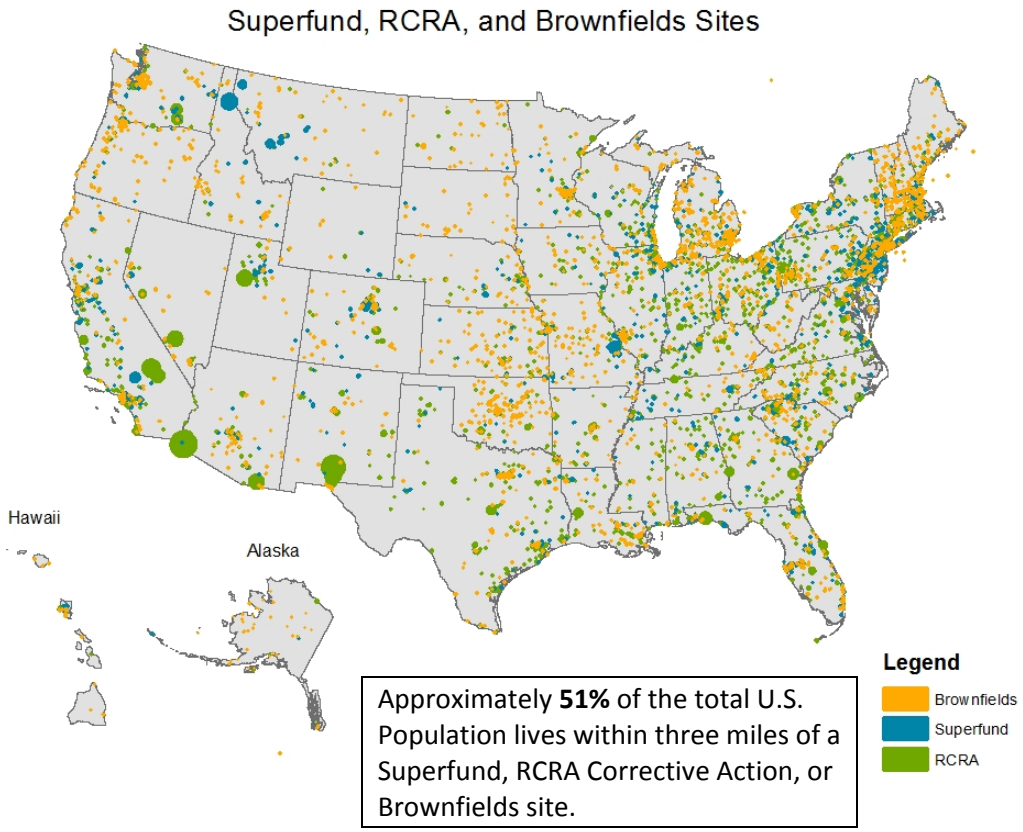
	Tanks	Superfund	Brownfields	RCRA CA	Total
Sites	514,123 (96.6%)	1,739 (0.3%)	12,718 (2.4%)	3,747 (0.7%)	532,327
Acres	514,123 (2.2%)	4,281,604 (18.7%)	177,356 (0.8%)	17,951,871 (78.3%)	22,924,954

To help understand the communities EPA is working in, EPA collected data on the population within three miles of our Superfund, RCRA CA, and Brownfields sites. UST sites were not included because there are over 500,000 typically small acreage sites (i.e. gas stations) making them present in most communities. The three mile area surrounding sites was used because it is a good representation of the

[18] Acres and sites are not collected for the PCB program or the Superfund Emergency Response and Removal Program.
[19] Developed land accounts for 102.5 million acres or 5 percent of total land in the U.S. EPA's 2008 Report on the Environment. Chapter 4, Exhibit 4-2.

geographic area where people in a community live most of their lives – where they shop, work, go to school, go out to restaurants, and participate in outdoor activities.[20]

Figure 7

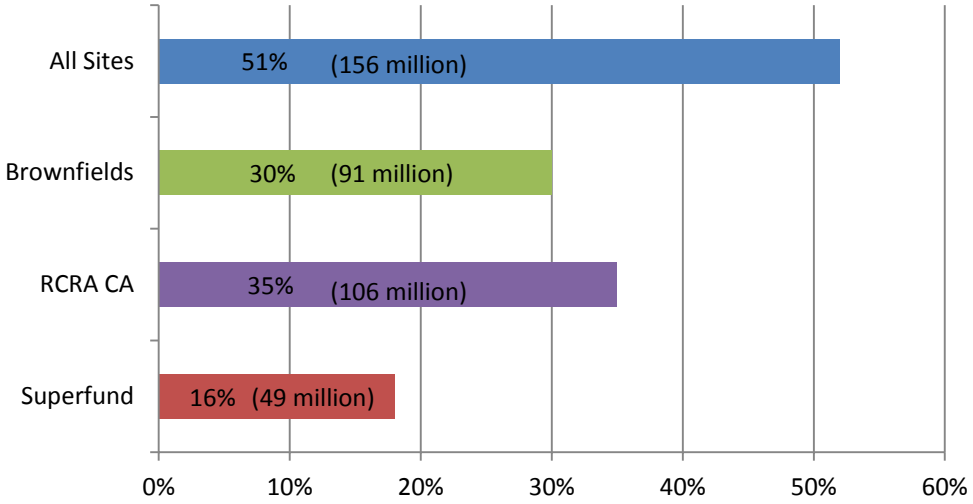


Approximately 156 million people live within three miles of these sites (roughly 51 percent) of the U.S. population) including approximately:

- 52% of all children in the U.S. under the age of 5
- 50% of all children in the U.S. under 18
- 65% of all blacks in the U.S.
- 61% of all Hispanics in the U.S.
- 62% of all minorities in the U.S.
- 58% of all households in the U.S. below the poverty level
- 54% of all people with less than a high school education in the U.S.
- 65% of the linguistically isolated people in the U.S.

[20] Data collected includes: site information as of the end of FY11 from CERCLIS, RCRAInfo, and ACRES and census data from the 2007-2011 American Community Survey. Data from FY11 was chosen to correspond most closely to the census data in the 2007-2011 American Community Survey. In FY11 this included 1,393 Superfund sites, 3,689 RCRA Corrective Action sites and 11,568 Brownfields sites. This universe of sites is not the same universe as in Figure 6. A circular site boundary, equal to the site acreage, was modeled around the latitude/longitude for each site and then a 3 mile buffer ring was placed around the site boundary. Census data was then collected for each block group whose centroid fell within the three mile area.

Figure 8
Percent of Total U.S. Population Living Within 3 Miles of OSWER Sites



Contaminated sites addressed by EPA programs exist in thousands of communities across the U.S. ranging from remote to large urban settings. Many of them are located in economically distressed communities that suffer from disproportionate and adverse environmental exposures. While there is no single way to characterize communities located near our sites, looking at the census data we found that the population within three miles of our sites is more minority, low income, linguistically isolated, and less likely to have a high school education than the U.S. population as a whole. These communities may have fewer resources with which to address concerns about their health and environment. It is important to note that proximity to a site does not necessarily represent risk of adverse health effects. The risk of exposure varies significantly across all the different types of contaminated sites.

Proportions of Key Demographics in the Total Near Site Population Compared with the Proportions Among the Total U.S. Population		
Demographic Characteristic	**Population within 3 miles of sites (approx)**	**Total US Population (approx)**
Minority	44%	36%
Below Poverty Level	15%	13%
Linguistically Isolated	11%	9%
Less than a High School Education	16%	15%

Restoring Land: Preparing for & Responding to Emergencies

The Superfund Emergency Response and Removal Program trains, equips and deploys resources in order to contain and remove contaminants. Under this Program, EPA personnel have responded to or overseen responsible parties clean ups of thousands of releases, regardless of their cause. The Program's first priority is to eliminate dangers to the public. EPA manages and/or provides support for emergency responses, removal assessments and cleanup response actions at National Priorities List (NPL) and non–NPL sites.

A 24-hour per day capability is a cornerstone of the National Oil and Hazardous Substances Pollution Contingency Plan, more commonly called the National Contingency Plan (NCP). The NCP is the federal government's blueprint for responding to both oil spills and hazardous substance releases. EPA maintains national and regional emergency operations centers for reporting of hazardous material or petroleum releases and other emergencies. EPA deploys many advanced technologies and other assets during disaster responses, such as the Chemical, Biological, Radiological and Nuclear Consequence Management Advisory Team, the portable laboratories or the airborne sensor platform called ASPECT.

In addition, OSWER supports EPA's Homeland Security Emergency Preparedness and Response Program through multiple efforts including participating in the National Incident Coordination Team, response training and exercises, and providing technical assistance.

FY13 Accomplishments

Participating in Hurricane Sandy Preparations and Response

On October 29, 2012, Hurricane Sandy made landfall near Atlantic City, New Jersey. The hurricane caused untold damage and hardship in the New York and New Jersey region. All forms of commerce and infrastructure were impacted, including facilities with underground storage tanks and Superfund sites. As a result, offices throughout EPA participated in Sandy preparation and response.

EPA's ASPECT was deployed by Region 2 to provide aerial situational awareness along the entire New Jersey and New York coastlines and to conduct chemical surveys over targeted areas. ASPECT made four flights between November 4-9, 2012, collecting more than 3,000 aerial photos and hundreds of oblique photos that were geo-rectified (aerial) or geo-referenced (oblique) and made available to view using a free version of Google™ Earth. This was the largest photo mission ever conducted by ASPECT, and it yielded 21 terabytes of data.

On the ground in New York, EPA's response activities included collection, staging, and disposal of household hazardous waste (HHW) and orphan containers as well as segregating hazardous waste from the general debris stream. EPA supported debris management, recovery operations, and collection of HHW in affected New York counties. Primary response activities in New Jersey were assessment for orphan containers and assistance in bringing wastewater treatment plants back on-line. EPA provided assistance restoring the wastewater treatment plant to pre-storm service levels, hazmat and water assessment operations, and recovery of hazmat and HHW in affected New Jersey counties.

In the aftermath of Sandy, EPA evaluated the storm's effects on Superfund sites through response actions, sampling and analysis and other activities to ensure the remedies of sites in the storm's path continued to protect affected communities. After the hurricane, EPA assessed 105 sites at which removal activities had been performed and 142 long-term remedial sites in the storm's path.

Hurricanes also can have devastating effects on UST systems and remediation equipment, causing or exacerbating releases which threaten groundwater and drinking water. As such, EPA partnered closely with New York, New Jersey, and the Federal Emergency Management Agency (FEMA) to investigate more than 1,000 UST sites for potential damage. In addition, EPA worked with Congress to acquire nearly $5 million in supplemental funds dedicated to responding to the UST-related impacts of Hurricane Sandy. Working in close partnership with the states, EPA developed practical yet comprehensive grant guidance, and distributed the funding before the end of the fiscal year to ensure UST sites are adequately assessed and remediated.

Enhancing Cooperation among Federal and Local Responders

In FY13, EPA helped to update the National Response Framework (NRF), including Emergency Support Function (ESF) #10 – Oil and Hazardous Materials Response Annex, and the new Response Federal Interagency Operational Plan. The updated NRF and ESF #10 now contain more detailed information on EPA's response authorities under the NCP. The goal of these updates is to help educate the federal, state, local, and private sector response community about NCP authorities.

MAKING A DIFFERENCE IN COMMUNITIES

Paulsboro, New Jersey: In November and December 2013, 13 freight cars were transporting chemicals and other goods when they overturned at a creek bridge crossing in Paulsboro, New Jersey. Three cars fell into the creek, one of which released approximately 23,000 gallons of vinyl chloride into the air as vapor. EPA's Superfund Environmental Response Team provided expertise and advanced tools to support first responders in the safe management of the significant releases including activating an air monitoring system and collecting vinyl chloride air samples.

***Poplar Bluff, Missouri*:** In 2012, EPA responded to a citizen's tip that there were leaking drums at a facility operated by the Southern Machine and Tool Company (SMT) that was later left unattended for years. EPA tracked down the current owner of the property and found more than 600 bulging and leaking drums and containers of hazardous substances. In addition, sheds that once protected the drums had fallen, creating additional hazards. As EPA's cleanup began in June 2012, crews spent a lot of effort removing debris and decaying structures just to get to the hazardous materials. Once the containers were accessed, EPA removed and consolidated the contaminated liquids they contained. EPA then crushed the empty drums for disposal as solid waste. By the end of July, the liquid and solid wastes were removed from the site for safe disposal. With the waste removed, the next step was to investigate the underlying soil for more contamination. EPA collected soil and water samples from the surface and below the surface, and determined that soil needed to be excavated up to two feet in six areas. As a result, more than 60 tons of contaminated soil and approximately 20,000 gallons of hazardous materials were removed from the site. By February 2013, EPA completed the disposal of soil and restored the site to nearly original conditions with clean soil.

Measures

In FY13, EPA used three performance measures to help assess its work in responding to environmental emergencies and preparing for disasters. Two measures track the number of Superfund removal actions completed to protect communities from releases that posed an imminent threat to public health or the environment. Often, these cleanups are of varying complexity and contain a wide variety of contaminants. EPA missed its target for Potentially Responsible Party (PRP) removals in FY13. Removal targets are hard to predict since the responses are usually for short, immediate, and emergency-based cleanups. Eighty percent of PRP-led removals are emergencies (e.g., a tanker truck accident on a highway). EPA is reviewing data and exploring a variety of reasons to determine why we are accomplishing less of these types of removals. In FY15, EPA is implementing a new measure "number of Superfund removals completed" to track the total number of removals completed each year for both PRP-lead and Superfund-lead removals.

The third performance measure in this area tracks EPA's score on the annual CORE NAR (National Approach to Response), which is intended to assess EPA's level of preparedness for preventing, limiting, mitigating on containing hazardous materials during a manmade or natural disaster in the United States.[21] EPA met the CORE NAR goal in FY13.

Status	Measure	FY13 Target	FY13 Value
▲	Number of Superfund lead removal actions completed annually	170	179
▲	PRP removal completions overseen by EPA	170	125
▲	Score on annual Core National Approach to Response	72	82.2

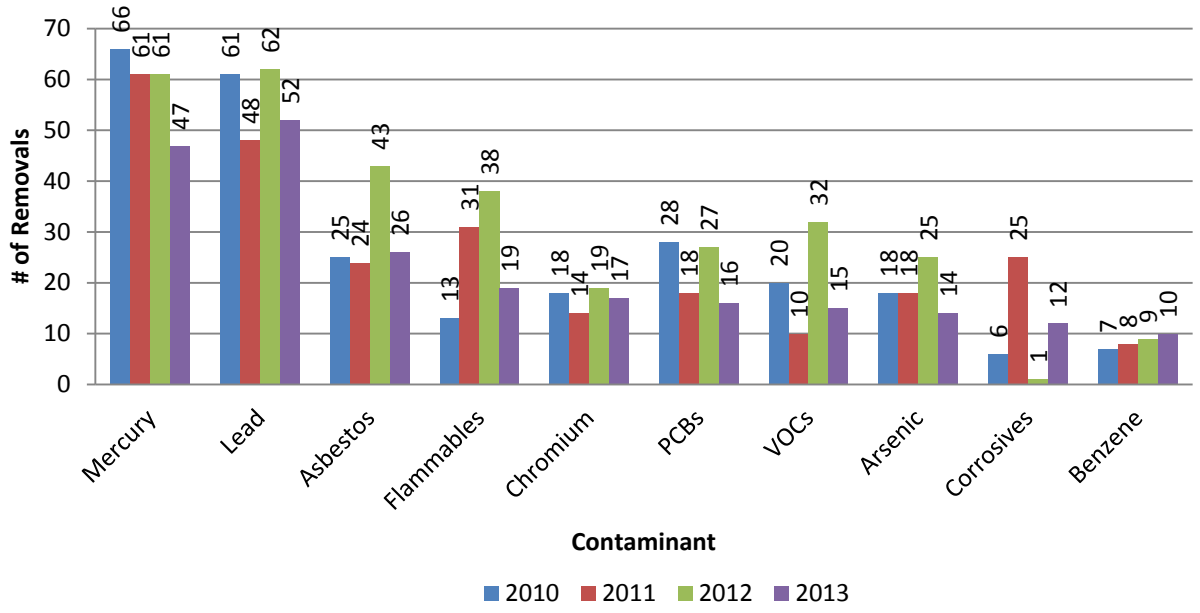
Legend: ● Data Unavailable ▲ Goal Met ▲ Goal Not Met

Continuing Progress and Trends

The number and type of sites needing emergency response is constantly changing. It can include a small, contained area of land or an entire region of the country. Over the past ten years, EPA has performed or overseen an average of approximately 350 cleanup actions a year, some of which are on sites that are on the NPL. The cleanups range from quick-clean ups to longer efforts that often involve complicated contaminants and coordination with state and local officials and potentially responsible parties. EPA emergency responders have to account for a number of variables when performing cleanup actions. One of these key variables is the kind of contaminant that is being removed. EPA collects and analyzes data on the type of contaminant involved in removal actions because this information contributes to our understanding of how and why a given removal became necessary, and helps ensure that we are using our limited funding to perform the most critical emergency and removal actions. Over time, we expect this analysis to support both preventive actions and response planning and resource allocation.

[21] Annually, EPA reviews its response and removal preparedness via the Core National Approach to Response (Core NAR) assessment. The Core NAR addresses day-to-day preparedness for removal actions for Regions, Special Teams and Headquarters, as well as national preparedness for chemical, biological, radiological and nuclear incidents. Core NAR is also an opportunity to evaluate progress on addressing lessons learned in recent incidents and exercises. The Core NAR score is intended to measure our level of emergency preparedness for various types of incidents.

Figure 9
Commonly Occuring Removal Contaminants



MAKING A DIFFERENCE IN COMMUNITIES

Adapting to Climate Change: The global climate is changing and the impacts of these changes are being felt in communities across the United States. Communities throughout the U.S. have encountered unprecedented hurricanes, wildfires, and tornados. A changing climate, however, may not just cause more frequent and severe storms, but also may cause sustained higher temperatures, increased drought, and sea level rise. Many of these impacts will directly affect OSWER's ability to fulfill its mission. In FY13, OSWER drafted a Climate Change Adaptation Plan to identify the climate change impacts to our programs and develop a plan for integrating consideration of climate change impacts into our work. This plan will enable OSWER to work with states, communities and tribal nations to continue to protect human health and the environment in the face of the challenges of climate change. OSWER identified 26 priority actions to begin over the next 3 years, including, but not limited to, reviewing remedy effectiveness, management of storm debris, and emergency management planning. For example, the RCRA program has proposed working with states to determine how climate change impacts might be incorporated in to permitting programs and working with other federal agencies to determine how to manage waste from extreme events. OUST has proposed working with states to evaluate a range of possible impacts, affecting assessment to remediation. Superfund will work to determine how climate change may impact remedy effectiveness at various stages of the cleanup process. The Brownfields program has included language that encouraged grantees to consider resiliency related to climate change in cleanup grants terms and conditions. Finally, because we anticipate an increased frequency and intensity of storms, actions are identified to ensure Emergency Operations Center (EOC) staff are provided with the most accurate and comprehensive information that takes into consideration changes in climate.

Restoring Land: Starting Cleanups

Assessment activities under all six of the land cleanup programs are intended to determine the extent and degree of contamination at these sites, to resolve the degree of uncertainty regarding any contamination and to determine the need for additional environmental work. This represents an important milestone in the overall cleanup process.

EPA's involvement in the site investigation and cleanup process begins with notification of potential contamination. EPA can be notified by states, tribes, community members, other federal agencies, or other sources of a potential hazardous waste site or incident.

EPA, the implementing state, tribe, local government or regulated entity assesses releases at sites to determine whether there is in fact a release and, if so, the extent of the contamination. If contamination is found, a series of progressively more complex assessments may be conducted to determine whether cleanup is needed and design appropriate cleanup and reuse strategies for the site. Additionally, as noted in the preceding section, a removal action may be completed to reduce the immediate threat to human health or the environment. A removal may occur along any part of the cleanup continuum.

States and tribes are essential partners in screening sites for contamination. For example, in FY13, states and tribes through funding from EPA completed 367 superfund remedial site assessments or 48 percent of the total Superfund assessments. A study by the Association of State and Territorial Solid Waste Management Officials (ASTSWMO) of 28 states found that close to 40 percent of sites assessed in those states with federal funding are ultimately cleaned up through state programs. Therefore, limited federal site assessment resources leverage state and other resources in order to achieve protective cleanups.

FY13 Accomplishments

Assessing Lead Smelter Sites

EPA's Superfund program, in cooperation with its state partners, has been implementing a lead smelter assessment strategy to evaluate the 464 lead smelter sites identified in the 2001 report *"Discovering Unrecognized Lead-Smelting Sites by Historical Methods"* published in the American Journal of Public Health. Assessment work has been performed at all 464 sites. By the end of FY13, EPA determined that 88 sites require no further federal Superfund involvement, 11 sites need cleanup attention (these sites have been placed on the NPL or have been referred to other state/federal cleanup programs) and 1 site requires further assessment work before making a final decision. The intent of the strategy is to ensure successful completion of remaining Superfund site assessment work at the 464 sites, with the goal of protecting the health of communities located at or near these sites.

RCRA Lean

In FY13, EPA Region 7 and Region 3, in partnership with Missouri, Virginia, ASTSWMO and representatives from industry and consultants, used Lean techniques to evaluate the RCRA Facility Investigation (RFI) phase of corrective action. The Region 7/3 team selected the RFI process for streamlining because these investigations require the most time to complete and have not been revised

in a significant amount of time. The goal was to eliminate non-value added activities and redundancies in the investigation phases. As an initial step, a Corrective Action Framework Agreement (CAFA) template was developed to serve as a guiding document clarifying the facility-specific goals and expectations for the RFI. Regions 3 and 7 have both selected pilot facilities at which to implement a CAFA and the rest of the Regions are in the process of identifying facilities for the pilot. Based on preliminary estimates, the new process reduces the time required to complete an investigation by 73 percent.

Investing in Manufacturing Communities Partnership

The Investing in Manufacturing Communities Partnership (IMCP) promotes new manufacturing activity in U.S. communities by taking advantage of emerging in-shoring opportunities, as well as, encouraging new investment in expanding domestic operations. EPA has a keen interest in encouraging new manufacturing investment and enhancing the ability of communities of all sizes to recycle vacant and abandoned properties for new, productive reuses in ways that build on local economic advantages. The following activities are highlights of the Partnership:

- Convening a series of community roundtables/workshops to help communities lay out a blueprint to advance their manufacturing prospects, engage local stakeholders, and define implementation strategies that focus on land revitalization.
- Providing a "preference and priority" for manufacturing sites and activities, through the Brownfield Area Wide Planning (AWP) and Targeted Brownfield Assessment programs, and using our experiences to encourage other agencies to better align their resources to support manufacturing activities (a total of 37 programs across 12 agencies have been identified so far).
- Using experiences from AWP to inform the development of the U.S. Economic Development Administration's Federal Funding Opportunities for its planned IMCP Challenge Grants and enhance the national value of the manufacturing effort by linking potential IMCP designees to other federal programs via a preference-and-priority strategy.
- Leading interagency efforts to synthesize and analyze the results of the IMCP roundtables, and also develop a technical assistance "play book" for communities seeking to attract new manufacturing investment.

Measures

EPA has two measures to gauge the progress in starting cleanups and completing assessment activities. The Superfund Program and the Brownfields Program each have an assessment measure, and each have a different role in the assessment process. For both programs, however, assessments are an important stage in the cleanup process. In FY13, both assessment measures exceeded their targeted levels.

Status	Measure	FY13 Target	FY13 Value
▲	Number of Superfund remedial site assessments completed	650	772
▲	Brownfield properties assessed	1,200	1,528

Legend: ● Data Unavailable ▲ Goal Met ▲ Goal Not Met

MAKING A DIFFERENCE IN COMMUNITIES

Del Amo, Los Angeles, California: Hundreds of commercial and industrial businesses operate within the Del Amo site in Los Angeles, California. Since 2007, EPA has been partnering with site potentially responsible parties (PRPs), the State of California, and the City of Los Angeles to ensure that a thorough environmental review takes place before any business upgrades occur or expansions involving soil excavation are undertaken. This process allows commercial and industrial operations across the site to proceed in a way protective of both human health and the environment. As of FY13, 315 on-site businesses had been identified, providing an estimated 6,815 jobs with an estimated wage income of nearly $400 million. On-site property values are estimated to be nearly $600 million with property tax revenue of approximately $8.7 million.

Passamaquoddy Tribe, Maine: The Passamaquoddy Tribe used Section 128(a) Response Program funding to conduct assessment activities on two properties. A Phase I and Phase II Environmental Site Assessment were conducted at the Passamaquoddy Public Works Garage, used to store and maintain public works vehicles and the tribe's winter road-salt pile, which is located immediately upslope of traditional shell-fishing grounds. The Phase II assessment indicated that concentrations of semi-volatile organic compounds are present in adjacent freshwater sediments, as well as high salinity concentrations in surface and ground water. As a result of the investigation, the tribe will consider further evaluation of the adjacent shell-fishing grounds and determine the feasibility of constructing a fixed structure over the salt pile. A Phase I assessment was also conducted at a potentially impacted property on Penknife Lake which will be dedicated to the development and enrichment of tribal youth through traditional activities such as hunting, fishing and camping.

Superfund Job Training Initiative: The Superfund Remedial Program provided environmental remediation job readiness training at two Superfund sites through its Superfund Job Training Initiative (SuperJTI) program. At the Lower Duwamish and Couer d'Alene sites, SuperJTI graduates gained the technical skills to work on a broad range of projects in environmental remediation and construction, as well as the cleanup of Superfund sites. Twenty-eight community members were trained in FY13, the majority of whom found jobs in the hazardous waste cleanup field. EPA's goal is to help communities develop job opportunities and partnerships, which remain long after a Superfund site is cleaned up.

***Jacksonville, Florida*:** The Brownfields Program provided funding to Florida State College at Jacksonville (FSCJ) to administer an environmental workforce development and job training program serving individuals with a myriad of significant employment barriers, including: displaced workers, ex-offenders, single mothers, those recovering from substance abuse, homeless residents, low-income, and minority individuals. Through this grant, to date, FSCJ has trained 102 unemployed and severely under-employed, local residents of Jacksonville, and of those, 82 have been placed in full-time, sustainable employment within the environmental field, including brownfields assessment and cleanup activities.

SUPPORTING THE CITIZEN SCIENTIST

Jackpile Uranium Mine: EPA strives to cultivate strong tribal relationships. One such example is EPA's five-year plan for an area-wide investigation of legacy contamination from uranium mining and milling operations within the Grants Mineral Belt area of New Mexico. In coordination with the Laguna Pueblo, the Superfund program has proposed the Jackpile Uranium Mine to the National Priorities List, assessed over 500 properties for elevated radiation levels, excavated soils at 21 properties and installed 21 abatement systems. The partnership between EPA and the Pueblo has been particularly successful due to the leadership of Pueblo resident, Amy Garcia. Ms. Garcia was instrumental in helping EPA obtain access to start cleanup of the Pueblo's more than 500 contaminated residential properties. She ensured EPA and its contractors worked in a manner consistent with tribal customs, protocols and procedures. Her role as a liaison between EPA and the Pueblo greatly improved the success of EPA's cleanup by keeping tribal members and homeowners informed during every step of the assessment and cleanup process. In FY13, the Superfund program recognized Ms. Garcia as the winner of the national 2013 Citizen Excellence in Community Involvement Award.

Technical Assistance Services for Communities: In FY13, the Superfund program initiated Technical Assistance Services for Communities (TASC) support for the Town of Ayer, MA. Ayer town officials were seeking technical and community outreach assistance on potential groundwater contamination impacts on private wells associated with Shepley's Hill Landfill, located on the former Fort Devens military base's property now a Superfund site. The town's goal was to pass a private groundwater well ordinance to restrict approximately 40 residences' well-water use; the residences are in close proximity to the landfill. The town officials were seeking to prevent any exposure to contaminated groundwater from the landfill. Through the TASC program, EPA provided education and outreach assistance to the town. With TASC support, the Town of Ayer successfully passed the groundwater well moratorium in May 2013.

In FY13, using TASC support, the Upper Columbia River Superfund site along the U.S./Canada border community was successful in its efforts to work with EPA and the responsible party to have site-related samples reanalyzed. Specifically, the community was concerned about how a portion of the site's beach sediment samples were analyzed. EPA met with the community group, their technical advisor, and the responsible party to work out what reanalysis could be done to ensure community comfort with the data and more importantly, the decisions to be made based on the data.

Restoring Land: Advancing Cleanups

After a site has been assessed and it is determined that cleanup is required, there is often a substantial amount of work that occurs before the cleanup is completed. The length and complexity of cleanups across cleanup programs can vary widely, and some sites can take a significant amount of time to clean up. Many Superfund sites and RCRA CA facilities are highly contaminated, technically challenging, and cover large areas. Sites can require decades to clean up. Therefore, during the cleanup process, when a potential pathway for human exposure (air, water, soil) is identified, a process is normally initiated for exposure to be minimized or eliminated as soon as possible. EPA cleanup programs, or authorized delegated state programs, undertake or oversee interim site specific actions (e.g., fencing, capping of source areas, providing alternate water supplies, or constructing containment walls, etc.) and cleanup activities (e.g., excavation and ground water treatment, etc.) to reduce or eliminate exposure, protecting people and the environment from the acute threats posed by uncontrolled hazardous wastes or contaminated ground water while cleanup is ongoing. EPA also engages local communities in decision-making, and selecting and designing the cleanup remedy.

EPA works collaboratively with other federal agencies, states, tribes, local governments, communities and the regulated entities to clean up contaminated sites. For example, through the utilization of CERCLA 128(a) state and tribal response program grant funding, state and tribal programs oversee assessment and cleanup activities at the majority of brownfield sites across the country.

FY13 Accomplishments

Increasing Efficiency and Effectiveness

The Superfund Remedial Program recently undertook a critical internal review—the Superfund Program Review (SPR)—which included evaluations of cleanup processes and program operations to minimize negative impacts on the program's effectiveness in a challenging budget environment. The SPR is helping lay the groundwork for sound program management of resources beyond FY13.

Measures

EPA established five measures related to advancing cleanup. EPA uses two performance measures that track the number of Superfund and RCRA Corrective Action sites at which human exposures are under control. This helps EPA to assess progress in preventing human exposures to harmful chemicals at sites, while longer term cleanup progresses. Actions taken to achieve this critical milestone include, but are not limited to: providing alternative water supplies to affected communities; removing lead contaminated soil around homes with children; and/or installing migration systems in homes with indoor air contaminated by harmful chemical vapors. EPA exceeded both of these measures in FY13.

EPA uses two additional annual performance measures to specifically assess its progress in ensuring that groundwater contamination at Superfund and RCRA sites is protective and not migrating into nearby surface water or drinking water supplies. The fifth measure tracks Superfund remedial action project completions to measure ongoing progress and risk reduction at superfund sites. In FY13, EPA met or exceeded all of its annual targets for these measures.

Status	Measure	FY13 Target	FY13 Value
▲	Number of Superfund sites with human exposures under control	10	14
▲	Number of Superfund sites with contaminated ground water mitigation under control	15	18
▲	Cumulative percentage of RCRA facilities with human exposures to toxins under control	85	85
▲	Cumulative percentage of RCRA facilities with mitigation of contaminated groundwater under control	73	76
▲	Number of remedial projects completed at Superfund NPL sites	115	121

Legend: ● Data Unavailable ▲ Goal Met ▲ Goal Not Met

MAKING A DIFFERENCE IN COMMUNITIES

Omaha, Nebraska: At the Omaha Lead Superfund site in Nebraska, EPA completed its 11,425th residential yard cleanup to protect children from lead poisoning in June 2013. The percentage of eastern Omaha children tested with elevated blood-lead levels have been reduced from nearly 33 percent prior to 1998, to less than two percent today. EPA expects the cleanup of the remaining 2,000 or so properties to be completed by 2015.

Camden and Gloucester City, New Jersey: At the Welsbach & General Gas Mantle Superfund site in New Jersey, EPA continued its cleanup efforts in FY13 to address radiological contamination, including thorium and other radioactive materials, in residential properties. As a result of these materials' radioactive decay, elevated levels of gamma radiation and radon gas are present. Residents directly exposed to radiation or who inadvertently ingest radioactive particles from the site may suffer adverse health effects. As of September 2013, EPA had investigated nearly 950 properties, completed the cleanup of almost 150 of the nearly 200 properties identified as contaminated, and excavated and disposed of more than 275,000 tons of radiologically contaminated soils and waste materials.

New York, New York: In December 2012, EPA released its proposed plan for the cleanup of one of the nation's most extensively contaminated water bodies, the Gowanus Canal Superfund site in Brooklyn, New York. The Canal, historically lined with manufactured gas plants, mills, tanneries, and chemical plants, is contaminated with PCBs, coal tar wastes, heavy metals and volatile organics. The cleanup plan for the Gowanus Canal site includes controls to prevent raw sewage overflows and other land-based sources of contamination from compromising the cleanup. Prior to listing the site on the National Priorities List in 2010, the Superfund program worked extensively with the affected community including holding several public meetings and extending the plan comment period, to ensure the Gowanus Canal community has a clear voice in the cleanup decisions. EPA provided neutral third-party support to help the community establish and maintain a community advisory group (CAG). The Gowanus Canal CAG is the largest in the U.S. and is made up of over 50 representatives from civic, environmental, business and community organizations as well as individual citizen-members who are stakeholders in the affected community. EPA also maintains a site-specific open group Facebook page with over 500 members as another means to keep the affected community informed and engaged.

Continuing Progress and Trends

Protecting Human Health

EPA is making significant progress in assuring that prior to completion of cleanups, unacceptable human exposures are eliminated or controlled as soon as possible. Both the RCRA CA and Superfund programs have made significant progress in stabilizing exposure, while longer-term cleanup progresses. As of FY13, both RCRA CA and Superfund had at least 80 percent of their sites with human exposures under control. At these sites, EPA has taken action to address any unacceptable exposures and eliminate acute risks, protecting human health and the environment, while continuing to pursue long-term, permanent cleanups.

Figure 10. Annual Number and Percentage of Superfund and RCRA CA Sites with Human Exposure Under Control

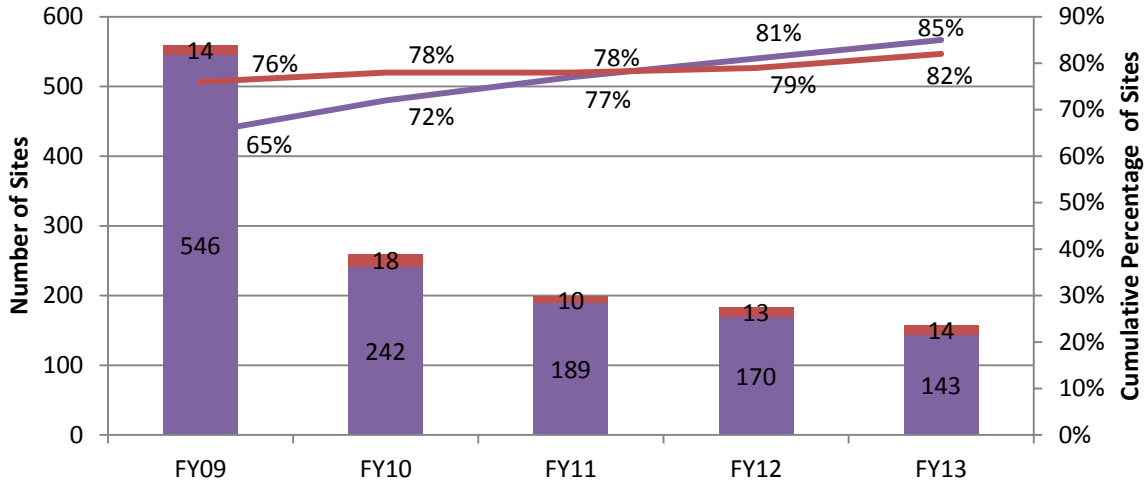
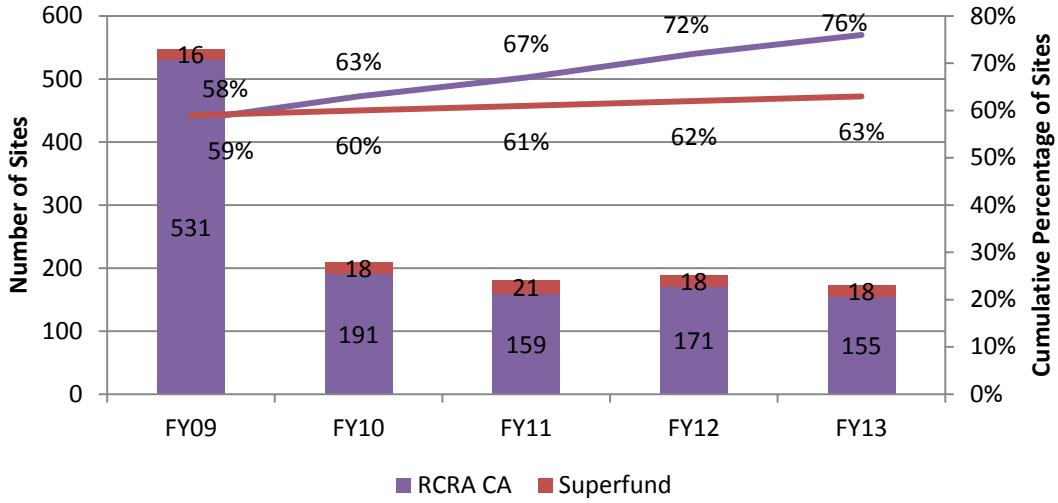


Figure 11. Annual Number and Percentage of Superfund and RCRA CA Sites with Groundwater Migration Under Control



Restoring Land: Completing Cleanups & Reusing Sites

One of EPA's top priorities is to support sustainable, thriving communities by cleaning up sites and returning them to productive reuse or maintaining the viability of the operating facility. During the final phase of the cleanup continuum, cleanup activities are completed.

For some sites, however, removing or destroying all of the contamination is not possible. Some remaining contamination must be managed on-site, creating the need for site-specific long-term stewardship activities. EPA employs several different types of controls at these sites, including institutional controls and engineering controls, to assure that any contamination is contained and stabilized, and that human or environmental exposure to contamination is limited. Significant attention is given to these activities to ensure long-term protection of human health and the environment.

In addition to cleaning up sites and making them protective of human health and the environment, EPA is working with communities and other partners in considering future use opportunities and integrating appropriate reuse options into the cleanup process. The partnerships fostered between EPA, communities, state and local governments, developers and other stakeholders, not only ensure site stakeholders have a voice in how previously contaminated land is reused/redeveloped but they also generate economic benefits for communities.

FY13 Accomplishments

RE-Powering recognized as top innovation

In FY13, EPA's RE-Powering America's Land Initiative: Siting Renewable Energy on Potentially Contaminated Land and Mine Sites was selected by Harvard as one of the 25 finalists for the Innovation in American Government Award. The RE-Powering Initiative targets potentially contaminated lands, landfills, and mines as sites for renewable energy installations (e.g., siting wind turbines, solar panels, etc.). EPA is aware of over 85 renewable energy installations in 26 states on contaminated sites, mines, or landfills since RE-Powering's inception. Mining wastes have been converted into solar arrays, abandoned industrial sites into wind farms, and closed landfills into solar farms. The Innovation in American Government award program identifies and promotes excellence in the public sector at the federal, state, and local level.

MAKING A DIFFERENCE IN COMMUNITIES

Jacksonville, Florida: In FY13, the Superfund Redevelopment Initiative (SRI) provided reuse support, including planning and other support, at 14 sites across the country, including the Fairfax Street Wood Treaters site. The Fairfax Street Wood Treaters site is a former wood treater facility located in an environmental justice neighborhood in Jacksonville, Florida. Bordered by an elementary school and residential community, this 12-acre site has tremendous potential to become a future community amenity. In 2010, the site owner filed for bankruptcy and ceased operation. SRI funded a reuse planning process to identify reasonably anticipated future land uses and potential stewardship options for the site. A design charrette was held on September 20, 2012, with community stakeholders to identify likely reuse stewardship scenarios. The reuse framework, distributed in May 2013, has generated interest from a local community development corporation that is developing a mixed-use housing proposal for the site.

East Rutherford, New Jersey: Starting in the mid-2000s, EPA, New Jersey Department of the Environment, New Jersey Transit, and the New Jersey Sports & Exposition Authority worked together with the site owner to clean up a portion of the site to accommodate a new rail line that would connect to a commuter rail line associated with the nearby MetLife Stadium, home to the New York Giants and New York Jets. Today, use of the Meadowlands Rail Line replaces an estimated 170,000 vehicle miles traveled per football game. As of FY13, 16 on-site businesses had been identified, providing an estimated 254 jobs with an estimated wage income of nearly $400 million. On-site property values are estimated to be nearly $600 million with property tax revenue of approximately $8.7 million.

Aurora, Colorado: In March 2013, the National Renewable Energy Laboratory (NREL) and EPA published a Feasibility Study on the Tower Road Site in Aurora, Colorado. The study determined that the site, which EPA considers to be a brownfield because its redevelopment is complicated by historic contamination from the nearby air force base, could potentially support a solar energy system based on resource availability, site conditions, and incentives available. In November 2013, the Tower Road site went online as a successful community solar project. It is a 498 kW system comprising 1,684 solar panels, and built on a 4.5-acre brownfield owned by the City of Aurora Water Department. Citizens and businesses can subscribe to “portions” of the array and receive credit for an equivalent amount of the electricity generated.

Henderson, Nevada: The Tronox Henderson Facility, located 13 miles outside of Las Vegas, NV, is the source of the nation’s largest perchlorate release, and affects drinking water for 15 million people. In 1997, due to site investigations required by the RCRA Corrective Action program, it was discovered that perchlorate-contaminated groundwater traveled three miles off-site, entered the Las Vegas Wash, and reached the Lake Mead and Colorado River. Measures were quickly taken to address the potential for major human health issues, with more advanced treatment remedies being installed in 2001. As of November 2012, nearly 3,600 tons of perchlorate had been removed from the environment and perchlorate levels were too low to measure in most samples of the plant’s discharge water.

Measures

EPA established nine measures related to completion of cleanups and site reuse. These measures demonstrate EPA's progress in cleaning up sites and returning them to productive use, so that they can return value to local communities. Six measures – representing the RCRA CA, Superfund, LUST and Brownfields programs – describe progress toward meeting the completion of cleanup goals. Two of these measures were not met this year: Superfund sites construction complete and LUST cleanups in Indian Country.

Status	Measure	FY13 Target	FY13 Value
▲	Annual number of Superfund sites with remedy construction completed	19	14
▲	Number of properties cleaned up using Brownfields funding	120	122
▲	Cumulative percentage of RCRA facilities with final remedies constructed	51	51
▲	Number of LUST cleanups completed that meet risk-based standards for human exposure and ground water migration	10,100	11,582
▲	Number of LUST cleanups completed that meet risk-based standards for human exposure and ground water migration in Indian country	42	18

Legend: ● Data Unavailable ▲ Goal Met ▲ Goal Not Met

Four measures representing the Superfund and Brownfields Programs support site reuse and redevelopment goals. Three of the measures were met in FY13; the measure for Superfund sites ready for anticipated use site-wide was not met in FY13.

Status	Measure	FY13 Target	FY13 Value
▲	Acres of Brownfields properties made ready for reuse	3,000	4,643.57
▲	Jobs leveraged from Brownfields activities	5,000	10,141
▲	Billions of dollars of cleanup and redevelopment funds leveraged at Brownfields sites	1.2	1.54
▲	Number of Superfund sites ready for anticipated use site-wide	60	56

Legend: ● Data Unavailable ▲ Goal Met ▲ Goal Not Met

Continuing Progress and Trends

Making Sites Ready for Anticipated Use

EPA's authority and control over contaminated sites varies depending on the statutory authority under which the site is being addressed. In some cases, states are authorized to operate cleanup programs, while in others they are partners. Where other federal agencies are designated as the lead for the cleanup actions at their sites, EPA's environmental cleanup goals are subject to, and reliant on, the lead federal agencies' cleanup budgets, execution, and site cleanup performance. EPA recognizes the need to work with our co-regulators to build tools and strategies that enhance coordination and manage resources effectively.

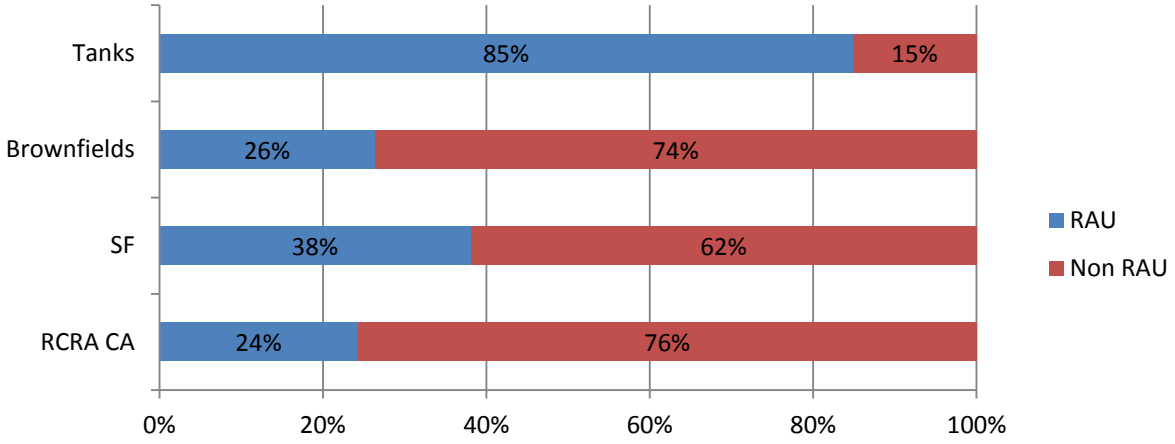
There are multiple benefits associated with cleaning up contaminated sites and making them ready for reuse: reducing mortality and morbidity risk; preventing and reducing human exposure to contaminants;

making land available for commercial, residential, industrial, or recreational reuse; and promoting community economic development.

Ready for anticipated use (RAU) is an indicator that the local, state, or federal agency has determined that cleanup goals and engineering and institutional controls have been implemented for the media that affects current and reasonably anticipated future use so the sites are available for communities to use or reuse. EPA's Superfund, RCRA Corrective Action, LUST and Brownfields cleanup programs all set individual annual targets for the number of sites made RAU. However, EPA also established an Agency Priority goal that includes all four cleanup programs to encourage them to work together to identify lessons learned, potential efficiencies, and opportunities to advance site cleanup.

At the end of FY13, an additional 441,333 sites were made RAU.[22] These sites represent over 2.3 million acres of land for ecological, recreational, commercial, residential and other productive purposes.

Figure 12
Cumulative Sites RAU as a Percentage of all Sites



Annual Number of Sites RAU

	FY08	FY09	FY10	FY11	FY12	FY13
Tanks	12,768	12,944	11,591	11,169	10,927	11,582
Brownfields	987	300	381	677	437	577
Superfund	85	66	66	65	66	56
RCRA CA	68	118	133	92	125	134
Total	13,908	13,428	12,171	12,003	11,555	12,349

[22] Brownfields' data are self-reported by grantees and the RCRA corrective action and LUST data are reported by states. For the LUST program, data as to whether institutional controls are in place are unavailable. EPA is exploring with states whether the data can be made available.

MAKING A DIFFERENCE IN COMMUNITIES

Indianapolis, Indiana: Indianapolis' first permanent supportive housing for homeless veterans opened on the site of a former iron foundry brownfield remediated by the City. The Lincoln Apartments are fully furnished apartments located at 530 Holmes Avenue and will serve 75 formerly homeless veterans. The project is within a mile of the Roudebush Veterans Affairs Medical Center and adjacent to a community health center. The City of Indianapolis donated the land for this project after remediating environmental problems by utilizing grants from the EPA, the Department of Housing and Urban Development (HUD) and the State's brownfield program. EPA Brownfield grants, like the one used for the Lincoln Apartments, have been used by hundreds of cities and towns throughout the country to revitalize their communities.

Waterbury, Connecticut: Approximately 10.75 acres of a remediated brownfield industrial site was purchased at the Waterbury Industrial Commons to build a new manufacturing facility. King Industries will build the $50 million facility over 10 years and it is expected to generate $1.4 million a year in property taxes. The construction of an 80,000-square-foot manufacturing complex will create an estimated 180 construction jobs and upon completion over 50 permanent manufacturing jobs. When all phases of construction are completed, the new state-of-the-art plant will consist of several buildings totaling 80,000 square feet.

***San Francisco, California*:** In FY13, the San Francisco Parks Alliance (SFPA) completed their EPA Brownfields Area-Wide Planning (AWP) pilot project activities, throughout which they effectively and innovatively engaged the community around six brownfield sites that could be cleaned up and reused for open space and parks development in a manner that connects the gaps in the Blue Greenway Trail. The Blue Greenway is a 13-mile network of trails and parks along San Francisco's southeastern waterfront, weaving through predominantly environmental justice communities in a historically low-income, African-American and industrial part of the City. SFPA established partnerships with community and neighborhood groups, the City of San Francisco, non-profit organizations, and private partners – many of whom have already invested in developing the Blue Greenway trail, using a variety of public and private resources.

Reading, Pennsylvania: The Exide Technologies site, northeast of Reading Pennsylvania, was home to decades of lead smelting which resulted in contamination of off-site soil and adverse impacts to communities within a mile radius of the site, including residential properties and a nearby 40 acre park. Sampling detected soil lead levels as high as 10,000 parts per million (ppm) in residential yards adjacent to the facility. For over a decade EPA, the State of Pennsylvania and the Agency of Toxic Substances and Disease Registry (ATSDR) worked with Exide and local residents on this $20 million cleanup. More than 200 yards have been remediated, with priority placed on yards with high concentrations and those with young children – the population group most sensitive to lead's toxic effects. In 2013, the nearby park was reopened.

APPENDIX A: ACRONYM GLOSSARY

ACP – Area Contingency Planning
ATF – Bureau of Alcohol, Tobacco, and Firearms
ATSDR – Agency of Toxic Substances and Disease Registry
ASTSWMO – Association of State and Tribal Waste Management Officials
AWP – Area-Wide Planning
CA – Corrective Action
CAFA – Corrective Action Framework
CAG – Community Advisory Group
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act
CCR – Coal Combustion Residues
EPA – Environmental Protection Agency
EPCRA – Emergency Planning and Community Right-to-Know Act
ESF – Emergency Support Function
FEMA – Federal Emergency Management Agency
FRP – Facility Response Plan
HHW – Household Hazardous Waste
LUST – Leaking Underground Storage Tank
NAR – National Approach to Response
NCP – National Contingency Plan
NPL – National Priorities List
NREL – National Renewable Energy Laboratory
OSHA – Occupational Health and Safety Administration
OSWER – Office of Solid Waste and Emergency Response
PCB – Polychlorinated Biphenyls
PFP – Protective for People
PRP – Potentially Responsible Party
RAU – Ready for Anticipated Use
RCRA – Resource Conservation and Recovery Act
RFI – RCRA Facility Investigation
RMP – Risk Management Plan
RRT – Regional Response Team
SMM – Sustainable Materials Management
SPCC – Spill Prevention, Control and Countermeasure
SPR – Superfund Program Review
SRI – Superfund Redevelopment Initiative
TASC – Technical Assistance Services for Communities
TSCA – Toxic Substances Control Act
TSDF – Treatment, Storage and Disposal Facility
USDA – United States Department of Agriculture
UST – Underground Storage Tanks