REGION 2 LEAD ACTION & OUTREACH PLAN

May 2018

Introduction

Childhood exposure to lead in the environment presents a complex and dynamic picture. From a positive perspective, the elimination of residential lead-based paint (1978) and the phased removal of lead from gasoline (completed in 1986) have yielded dramatic reductions in pediatric blood-lead levels over the past forty years. However, over roughly the same period, our scientific knowledge of both the spectrum of adverse health effects caused by lead and dose-response relationships have advanced. The CDC blood-lead level of concern in 1975 was 30 ug/dL; in 2012, CDC set a Reference Value at 5 ug/dL with further reduction likely. At the same time, we know that stubborn pockets of elevated blood-lead levels in children still exist, mostly in environmentally overburdened, economically distressed communities - mainly from lead-based paint on older building stock, soil/dust-borne lead, and lead in drinking water from lead service pipes and solder. Accordingly, EPA-Region 2 continues to focus much of its efforts on reducing childhood lead exposure, with a particular focus on these communities.

This document summarizes some of Region 2's past lead-related actions and outreach, and identifies areas for additional future effort.

Drinking Water-Related Actions/Outreach

Division of Enforcement and Compliance Assistance (DECA) Lead in Drinking Water Efforts

Previous DECA Actions:

1) From 1998-2016, DECA worked to implement the "3Ts" (Training, Testing, Telling) Guidance to Reduce Lead in Drinking Water in Schools. Highlights of our work include:
    - working with more than 35 public school districts to implement the guidance, sample water outlets for lead, and address outlets with elevated lead levels;
    - assisting R2's tribal nations and testing their facilities for lead in drinking water (2004-2006).
2) We initiated contact with school districts with an opening letter through which we offered limited sampling assistance provided by Region 2's Division of Environmental Science and Assessment (DESA) on most projects. As our program evolved, our States also contributed by offering some sampling assistance with post-remedial testing.
3) We targeted our efforts by first working with the largest districts and then focused on areas with elevated blood-lead levels.
4) Over the years DECA and DESA have sampled thousands of outlets in hundreds of schools. Any outlet that exceeded the level in the guidance was turned off until it could be remediated.
5) In 2016, both NYS Health Department and NJ Department of Education enacted new state laws requiring public schools to test for lead in drinking water. Both states witnessed the benefits of the results that EPA Region 2's work achieved over the years and became two of the first states to develop actual regulations.

Future DECA Actions:

With the states initiating mandatory testing programs, Region 2 does not plan to carry on this effort in schools, but will provide guidance and technical assistance to schools and school districts if requested. (Continuing efforts in other types of facilities such as daycare and Head Start are described below.)

Lead and Copper Rule (LCR) Enforcement at Public Water Systems (PWS)

Previous DECA Actions:

1) EPA published the LCR in 1991 and since that time we have been working with states to address violations of the LCR at PWS. We have issued dozens of enforcement actions addressing failure to monitor violations, and in Puerto Rico we have issued enforcement actions for the failure to install corrosion control treatment. We also track any water system with LCR violations in our quarterly meetings with the states, and act if states fail to act. However, one of the biggest problems with the LCR is suspected under-reporting of violations. If water systems fail to select appropriate sampling sites or states fail to designate optimum water quality parameters, the rule is ineffective and violations will not be identified.
2) To address this deficiency following the Flint emergency, DECA drafted a Strategy to Review Lead and Copper Rule Compliance and Implementation in Region 2. The strategy called for Region 2's Clean Water Division (CWD) and Caribbean Environmental Protection Division (CEPD) to review state implementation of the LCR and committed DECA to on-site inspections of water systems to determine if water systems are implementing the rule correctly.
3) We have performed these inspections at 8 water systems and issued 6 enforcement actions for failures to implement the rule. These violations would not have been discovered without visiting the water systems. Additionally, these inspections showed potential endemic state implementation issues which have been identified to CWD, which has added these issues to the findings resulting from their audits of the states. CWD is actively tracking the state's correction of these issues.

Future DECA Actions:

1) DECA will continue to track compliance with the existing Orders issued to systems in NY and NJ.
2) If other communities of concern are identified, and resources allow, DECA will perform additional onsite inspections of water systems and take necessary action.
3) DECA will assist CWD as resources allow to help train states or water systems based on the expertise we've developed while performing these inspections.

Division of Environmental Science and Assessment (DESA)

Previous DESA Actions:

Over the past 15 years, DESA conducted sampling/analysis for lead in drinking water associated with the "3Ts" guidance (Training, Testing, Telling) Program at 24 public school districts. The annotated list includes:

New York School Districts	New Jersey School Districts
NYC Board of Education (BOE)	Newark City SD
Syracuse City School District (SD)	Paterson Public Schools (PS)
Newburgh Enlarged City SD	Jersey City Public SD
Utica City SD	Camden SD
Yonkers City SD	Trenton Public SD

In addition, the following Head Start and Child Care facilities have been sampled:

Head Start of Eastern Orange County, Newburgh, NY

Bayonne Head Start, NY

Celebration Children Center, Canastota, NY

Future Actions:

Since New York (2016) and New Jersey (2016) made it a law mandating testing for lead in drinking water for all public educational facilities, the focus has moved to Child Care/Head Start facilities coordinated with the Office of Strategic Programs (OSP) and partner(s). Furthermore, DESA's future plan to work with OSP and other partners to remove lead under the Lead Action Plan – Reducing Childhood Lead Exposure within EPA Region 2 is two-fold. Any future activity would be done in support of OSP and other programs upon request.

1) Conduct sampling for lead in drinking water in schools within Region 2 (no order):
   - A) New York & New Jersey: Child Care/Head Start Facilities
     Tribal Nations
   - B) Puerto Rico: School Districts
     Child Care/Head Start Facilities

C) US Virgin Islands: School Districts

Child Care/Head Start Facilities

2) Provide training to state and local agencies on lead sampling in schools under the 3T's Guidance on Reducing Lead in the Drinking Water in Schools, upon request.

Lead in Urban Soil Initiatives

Assessing soil lead contamination in the Region 2's highly urbanized Metropolitan areas is confounded because of elevated "urban background" lead concentration levels due to extensive historic leaded gasoline usage and exogenous fill operations. Just from leaded gasoline alone, it is not uncommon for surficial soil lead levels to range between 4,000 to 6,000 ppm adjacent to heavily traveled highways. Additionally, numerous former secondary lead smelters add to the problem, especially when their former locations are now playgrounds/ schools/ parks or low-income housing developments.

DESA-HWSB has been assisting ERRD's Removal Branch by developing tools to: 1) further define the areal extent of lead in soil contamination; and, 2) to incorporate environmental chemistry forensic techniques to determine the source of the elevated lead so that principal responsible parties can be identified to cover any remediation costs. A useful tool developed by DESA is a horizontal and vertical data visualization tool (using Excel) that provides an accurate illustration of where contamination exists and identifies where additional sampling or removal actions, if warranted, are needed. Also incorporated in the tool are interactive soil excavation volume and tonnage calculators to assist in cost estimating cleanup removal actions.

Future Plan:

Forensic techniques that DESA has successfully employed include the use of: 1) stable isotopes of lead (and other metals, when necessary); and, 2) characteristic metal ratios to "fingerprint" alloys produced by the historic smelter (i.e., lead/Sn, lead/Sb, etc.) and discriminate between native versus exogenous fill. These forensic applications, combined with 3-D data visualization, has allowed us to efficiently and most cost effectively address elevated soil lead issues in the Region. To date we have successfully applied this approach to over 15 lead contaminated sites in the Region, provided lead smelter forensic support and training to EPA Region 3, and we are looking to continue and expand these capabilities in the future.

Clean Water Division Efforts Regarding Lead in Drinking Water

Lead and Copper Rule (LCR) Implementation Oversight

Objective: Assess the progress made in Region 2 states implementing the LCR and identify areas of improvement.

Previous CWD Actions Taken:

1. In 2016 Region 2 developed a strategy to enhance oversight of our states implementation of the LCR, which included developing a Regional Lead Action Level Exceedance (ALE) list, conducting audits, reviewing and mining data, and having quarterly or monthly meetings to discuss these topics with our states.
2. In 2016 CWD conducted file reviews of LCR implementation in New York in May and June, and in New Jersey in April (small systems) and May (large systems).
    - Deficiencies were found in both state programs, including inconsistent implementation and incorrect data. CWD shared our file review findings with the state primacy agencies, along with recommendations for LCR implementation.
        - Both New York and New Jersey have taken steps in response to our recommendations. New Jersey has, for example, developed a LCR Action Plan that includes asking water systems to confirm their tier sites, and reviewing water quality parameter sampling plans. New York has, for example, asked systems to update their site sampling and corrosion control treatment plans, and is planning to have an in-house LCR workgroup will discuss future implementation and training needs.
3. Requested the submission of New York's application for primacy of the Lead and Copper Rule Minor Revisions and the Lead and Copper Short Term Regulatory Revisions and Clarifications, to ensure consistency with federal drinking water regulations.
4. Worked with the New Jersey Department of Environmental Protection (NJDEP) on their Intended Use Plan (IUP) for State Revolving Funds for lead service line replacement (LSLR) for federal fiscal years 2017 and 2018 (more info on Drinking Water State Revolving Fund (DWSRF) eligibility below).
    - NJDEP also has a LSLR Program that provides 90% principal forgiveness for drinking water systems to replace lead service lines in communities serving customers whose median household incomes are less than the county median household income.

Future CWD Actions:

- Review and act on New York's application for primacy of the Lead and Copper Rule Minor Revisions and the Lead and Copper Short Term Regulatory Revisions and Clarifications.
- Encourage and provide support to our states in their actions to address the LCR implementation deficiencies identified in the 2016 file review.
- Conduct file reviews for LCR implementation, in follow-up to Region 2's 2016 efforts, to ensure actions have been taken by the states and to verify that LCR implementation has improved.
- Work with the states to identify opportunities for training that will improve their ability to implement the LCR.

- Ensure states and Region 2 are uploading accurate lead data.
- Maintain and review a current lead Action Level Exceedance (ALE) list, and encourage states to upload all 90th percentile lead data to Safe Drinking Water Information System/Fed, even from small systems.
- Determine priority systems for conducting sanitary surveys and/or file reviews, and provide DECA with potential targets for lead inspections.

State and Water System Capacity Development Specific to LCR Compliance

Objectives: Assist water systems in reducing factors that lead to lead ALEs, including through providing Public Water System Supervision (PWSS) and Drinking Water State Revolving Fund (DW-SRF) grants.

Previous CWD Actions:

- Region 2 provided sanitary survey training to the state primacy agencies and Indian Nations on October 17-20, 2017.
- Region 2 provided LCR training to our state primacy agencies and rural water associations on October 24, 2017.

Future CWD Actions:

1) Work with Region 2 states to encourage greater participation in the Area-Wide Optimization Program (AWOP), a program that assists drinking water systems in meeting water quality goals through optimization efforts, such as improving operations.
2) Provide support, such as training (e.g., on sampling, water quality parameters, how to optimize corrosion control treatment, operator training), to the state primacy agencies to reduce lead ALEs.
3) Improve and distribute public education materials on lead in drinking water.
4) Continue to provide PWSS and DW-SRF grants to our states, ensuring the states understand financing eligibility and opportunities.
5) Encourage our states to publicize locations and replacements of lead service lines.
6) Conducting state oversight - past and future annual review and file reviews on state LCR implementation.
7) Ongoing coordination with our states (e.g. in-person meetings, answering LCR-related questions)

NOTE: DW-SRF can be used for lead service line replacement. Eligibility is for the service line from the publicly-owned portion of the pipe (often found under a street) to the point at which the service line connects with premise plumbing. DW-SRF eligibility includes:

- **DWSRF Loan Funds** can be used for lead service line replacement and corrosion control infrastructure projects
- **DWSRF Loan Funds and Set Asides Funds** can be used for corrosion control studies and identifying lead service line locations.
- **DWSRF Set Asides Funds** can be used for lead testing at schools and daycare centers (non-routine, not compliance related)

Lead-Based Paint Actions/Outreach

Region 2 Lead Team

Priority Area 1: Promote Protection of Vulnerable Populations in Targeted Region 2 Communities:

Objectives:

- Protect vulnerable populations from exposure to lead from lead-based paint hazards by:
    - Continuing to build and maintain critical lead abatement program training capacity in and around areas within Region 2 with elevated blood-lead levels (EBLLs), to ensure the availability of an adequate number of trained lead-based paint professionals to address lead-based paint hazards in target housing.
    - Continuing to award and administer grants for NJ and PR in support of their lead-based paint abatement programs.
    - Continuing to build and maintain critical renovator training capacity to ensure a cadre of trained renovators available to perform lead-safe renovations.
    - Building partnerships with local permitting/code offices in targeted communities to encourage contractors to obtain EPA-firm and renovator certification before undertaking renovation projects for which permits are required.
    - Conducting compliance monitoring activities in targeted communities to ensure contractors are following the lead-based paint regulations.
    - Continue implementing and enforcing the federal abatement program in NY by processing individual certifications, accrediting training providers, and conducting inspections.
    - Continue implementing and enforcing the federal RRP program in the Region 2 States and Territories.

Previous Actions Taken:

1) Keeping track of trainers' accreditation expiration dates and working with them to resubmit applications for accreditation.
2) Conduct annual inspections at a specified number of training providers.

3) The Region responded to tips and complaints both from the public and from local Health Departments through the referral process.
4) The Region has conducted outreach to building officials/permitting offices.
5) Actions taken to process individual certifications for lead-based paint activities disciplines. The Region processes between 1,200 and 1,300 individual certifications annually.
6) Inspections and enforcement actions taken. The Lead Team (including CEPD) conducted 127 inspections and issued 14 case initiations and 13 case conclusions in FY-17.

Potential Future Actions:

As resources permit:

- Contact training providers via e-mail or telephone to remind them of need to renew their accreditations.
- Conduct facility-specific compliance assistance to firms who apply for many permits through NYC Department of Buildings. This may be done through letters, webinars, office visits.

Priority Area 2: Build Partnerships with Other Federal/Local Agencies/Trade/Union Organizations to Address Lead Exposure in Vulnerable Populations:

Objectives:

- Develop and maintain partnerships to protect vulnerable populations from exposure to lead including:
    - Partnering with the U.S. Department of Housing and Urban Development (HUD) to conduct joint Lead Disclosure Rule and RRP compliance monitoring inspections in selected cities in Region 2;
    - Continuing Region 2's partnership with the New York City Department of Health and Mental Hygiene (DOHMH) and other local health departments within NY and NJ to receive and respond to tip/complaint referrals based on their knowledge of construction activities, EBLLs, or unsafe conditions;
    - Expanding partnerships with other city/county departments of health to address lead issues;
    - Working with upstate NY lead coalition agencies and NJ lead task force to develop a collaborative approach to addressing childhood lead poisoning;
    - Administering and overseeing the grants to abatement program authorized states/territories to ensure programs are as protective as the federal program and provide adequate enforcement;
    - Building partnerships with and encouraging local permitting/licensing agencies to adopt changes to building codes and to the process of issuing permits to incorporate EPA RRP certification and other requirements.

- Assisting states who express interest in obtaining program authorization for RRP and lead abatement.
- Developing partnership with tribal nations to address lead hazards on tribal lands.
- Outreach to building trades (plumbers, carpenters, home builders, etc.) and to unions representing workers potentially exposed to LBP hazards.
- Focusing on New York City Housing Authority and other large public housing entities in Region 2 to monitor compliance with lead-based paint regulations.

Previous Actions Taken:

1) Have conducted successful joint Lead Disclosure inspections with HUD in the past.
2) The Region receives and follows up on hundreds of tip/complaint referrals from local health departments (most of them from NYC) for violations of the RRP Rule. The Region receives on average approximately 300-400 tips/complaints annually. The Lead Team investigates these referrals to identify good candidates to conduct work practice inspections or to receive compliance assistance.
3) The Region has developed a good collaboration with the NYC DOHMH to provide EPA with copies of their inspection reports and dust sampling results in support of EPA's compliance monitoring, investigation, education, and enforcement efforts.
4) In 2015, the Region conducted a sweep of Utica, NY (selected because high density of pre-1978 housing stock, high rate of children living in poverty, and high incidence of elevated blood-lead levels) to conduct compliance monitoring inspections. A sweep involves the thorough research of a geographic area to identify firms for conducting office and/or work practice inspections.
5) The Region continues to give grants to New Jersey and Puerto Rico for building capacity in those areas and administering and enforcing their lead programs.

Potential Future Actions:

Partner with HUD to conduct joint inspections in NJ vulnerable population areas/rental addresses with documented EBLL children and take appropriate enforcement action against large property management firms/landlords.

Priority Area 3: Maintain a Viable Lead-Based Paint Program Enforcement Presence

Objectives:

Implement an Inspection Targeting Plan for Compliance with Federal Lead-based Paint Regulations by:

a. Conducting a minimum of 127 annual compliance monitoring inspections covering the entire Region. The inspection focus will be on renovation contractors but the Region will maintain presence monitoring compliance with the Federal Lead Disclosure and Lead Abatement Rules.
b. Focusing on repeat violators, large firms, firms in unchartered enforcement areas of the Region.

Based on inspection conducted, develop a flexible array of enforcement remedies – prioritized based on available resources and weight of evidence.

Previous Actions Taken:

1) Lead-based Paint Team developed and implemented a targeting plan in FY-17 and has developed a similar one for FY-18.
2) Lead-based Paint Team will work with Regional Counsel to triage cases based on most potential for harm to human health.

Potential Future Actions:

Continue conducting inspections identified in the Lead-based Paint Team's FY-18 targeting plan.

TSCA - Lead-Based Paint Disclosure (Historical 2006 – 2012)

Two (2) DESA staff were credentialed to conduct TSCA Section 1018 (Lead-Based Paint Disclosure) inspections for DECA.

Year of Inspection	City of Inspection	Number of Inspections
2006	Jersey City, NJ	10
2007	Albany City, NY	11
2008	Trenton, NJ	10
2009	Rome, NY	12
2010	Staten Island, NY	20
2011	Yonkers, NY	21
2012	Newark – Ironbound, NJ	21

Future Actions:

DESA will continue to be available to support DECA in conducting TSCA Section 1018 (Lead-Based Paint Disclosure) Inspection at Real Estate Agencies, Realtors, Rental Properties, & Apartment Complexes if there is a need within EPA Region 2 (New York and New Jersey). DESA can support DECA on this inspection activity anywhere within Region 2.

Community-Based Activities/Outreach

Region 2 was instrumental in establishing the Lead Safe Newburgh Coalition in 2014. Reacting to information from a weekly report that Newburgh, NY had amongst the highest rates of elevated blood-lead levels in children in New York State, Region 2 organized a roundtable with elected officials, regulators and community groups to address the problem. Working through the Lead Safe Newburgh Coalition, Region 2 spearheaded the following risk reduction activities:

1) 3Ts (testing drinking water for lead) implemented in the Newburgh Enlarged City School District
    a. Over 500 drinking water outlets sampled
    b. New state of the art drinking water fountains installed
2) 3Ts implemented in the Newburgh Head Start child care center
3) SoilSHOPs (testing residential soil for lead) in 2015, 2016, 2017 and 2018
    a. Test garden/yard soil for lead concentration
    b. Provide interpretation of sample results
    c. Provide outreach to the community on the hazards of lead contaminated soil
    d. Collaborative effort with ATSDR, NYSDOH and Brooklyn College
4) Organized Ground Rounds presentation at St Luke's/Cornwall Hospital (Newburgh, NY) on lead poison prevention by Maida Galvez, M.D. [Director, Region 2 Pediatric Environmental Health Specialty Unit (PEHSU)]
5) Partnered with Lead Safe Newburgh Coalition member, the Greater Hudson Valley Family Health Center, to provide blood-lead screening for children (mobile unit) at two SoilSHOPs.

Building on experience with the Lead Safe Newburgh, NY Coalition, EPA Regon 2 has been instrumental in assisting the cities of Utica, NY and Camden, NJ in growing their lead coalitions. Actions in Utica have included hosting a seminar (with HUD) targeted towards landlords to provide compliance requirements for the Renovation, Repair and Painting (RRP) Rule; and conducting 3Ts sampling at a child care center in nearby, Canastota, NY. In Camden, NJ, EPA has conducted a SoilSHOP to test residential soil samples for lead concentration and has a scheduled public presentation (5/1/2018) on soil Lead hazards. Region 2 will continue its efforts to focus on environmentally overburdened, economically distressed communities to reduce childhood lead exposure. Future actions will include partnering with local lead coalitions, promoting the 3Ts program in Head Start/Child Care facilities, and by educating communities on soil lead hazards including through SoilSHOPs. In addition, the Office of Children's Health Protection (OCHP) has provided each Region an additional $15,000 in FY 18 to work with our PEHSUs on childhood lead poison prevention activities. Over the past 5 years, SoilSHOPs (often in collaboration with ATSDR, NYSDOH and Brooklyn College) have been conducted in Newburgh, NY, Albany, NY, Staten Island, NY, Camden NJ, Newark, NJ, Closter, NJ and San Juan, PR.

An Environmental Compliance Screening Checklist for Schools and Child Care Centers was conducted at a representative group of public schools in Puerto Rico (2014 – 2016). School surveys queried for lead-based paint hazards and compliance with RRP rules during renovation activities.

Lead-Related Presentations

Updates to Default Exposure Variables in the Integrated Exposure Uptake Biokinetic Model for Lead in Children, Mark Maddaloni DrPH, DABT - U.S. EPA Region 2, AEHS Annual Conference, UMass-Amherst. October, 2013

How Children are Exposed to, and Impacted by, Lead in Their Environment. Renovation, Repair and Painting (RRP) Rule Workshop. Utica, NY October 2017

Soil Lead Hazards in Urban Environments. Southern Regional Lead and Healthy Homes Coalition. Camden, NJ, May 1, 2018

Federal Lead Strategy: EPA's Role and Associated Regulations/Guidance. Annual Lead Conference. Children's Hospital at Montefiore Medical Center. October, 12, 2018

Advisory and Research Activities

Region 2 toxicologist served as a member of the CDC's Lead Poison Prevention Advisory Committee (2015 - 2017)

Regional Applied Research Effort (RARE) Study. Lead Stabilization and Arsenic Mobilization by Phosphate and Alternative Soil Amendments: Implications for Urban Soil Remediation and Urban Agriculture. Regional Contact: Mark Maddaloni DrPH, ORD Project Officer: Kirk Scheckel PhD, Principal Investigator: Zhongqi (Joshua) Cheng PhD, Bklyn College

Lead-Contaminated Site Remedial Actions

Superfund

The Region 2 Superfund program has during the past decades carried out numerous remedial and removal response actions at sites with lead contamination. Ongoing and recent notable actions include the following:

Jewett White Lead Company, Staten Island, NY: Widespread soil lead contamination identified at a white lead manufacturing facility that operated from 1839 until 1943 was addressed by the Removal Program through soil excavation, off-site disposal and backfill with clean fill. Soil samples collected by EPA in the surrounding community, including in the residential backyards of the properties immediately adjacent to the Site, revealed elevated levels of lead. The lead

concentrations and lead isotopic composition of soil samples were used to identify considerable geochemical differences between on-site and off-site samples. The data indicated minimal off-site surface transport of lead from the Site into the neighboring residential area. The residents were notified of the findings through extensive public outreach and, because of a close working relationship, the New York City Department of Health assumed responsibility for future outreach efforts in this area.

Sherwin-Williams (residential properties), Camden County, NJ: It is anticipated that approximately 50 residential properties will be remediated at the Sherwin-Williams NPL Sites located in Gibbsboro and Vorhees, New Jersey. Soil remediation that involves the removal of soil containing lead, arsenic, and polycyclic aromatic hydrocarbons has been completed on eight properties. It is anticipated that additional properties will be remediated this coming summer and the remainder will be remediated in 2019.

Matteo & Sons, Inc., West Deptford, NJ: It is anticipated that approximately 25 residential properties will require remediation at Operable Unit (OU) 2 of the Matteo NPL Site located in West Deptford, New Jersey. Soil remediation involves the removal of battery-casing waste and soil containing lead, antimony, and PCBs. We anticipate USACE to award the remedial design (RD) contract shortly. The RD will include additional investigation for battery-casing material beneath the roads in the OU.

Mira Trucking, Deptford, NJ: A removal action is planned to cap (pave) an active trucking terminal contaminated with crushed battery casings from the Matteo & Sons, Inc., NPL site, which have resulted in lead concentrations in soil over 67 times above the screening level. The property is adjacent to a residential neighborhood and the removal action will mitigate exposure to employees and nearby residents via direct contact and inhalation from dust generation.

Lake Erie Smelting, Buffalo, NY**:** Presently negotiating a removal order for the cleanup of an 18-acre, Section 8, 360-unit public housing complex which has been contaminated by a secondary lead smelter which operated from the 1930s to 1960s.

Columbia Smelting & Refining Works, Brooklyn, NY**:** Oversight of a removal action totaling almost $30 million at five ballfields in a large, popular Brooklyn park, due to contamination from a 1920s lead smelter. EPA's assessment resulted in temporary closure of over half of the 52-acre park due to lead contamination, and compelled the City to undertake a $100 million long-term cleanup of the park.

Pittsburgh White Metal, Brooklyn, NY**:** Replacement or capping of soil within nine urban residential yards which were contaminated with lead from a historic smelter at up to 7 times the screening level. The removal action was technically and logistically challenging due to scheduling and space considerations as well as preserving numerous mature trees.

Reliance Lead Smelter and Babbitt Company, Buffalo, NY**:** A former secondary smelter facility situated in a mixed residential and industrial area. Assessment investigations conducted on 18 residential properties identified 15 properties to contain lead in soil samples exceeding federal and state criteria. EPA is evaluating the sample results to determine if the lead identified is attributable to the former smelter operations or from anthropogenic sources including leaded paints and gasoline.

Newburgh, NY**:** The site is a single family, newly constructed residential house built adjacent to a large parcel of land owned by the City of Newburgh that was used for disposal of ash and household trash. Assessment of the residential property determined that the property is removal eligible. It is believed that ash from the former disposal area was pushed onto the property during site grading. A removal order is being prepared and will be negotiated with the bank that owns the property.

Ithaca Gun/Fall Creek Nature Area, Ithaca, NY**:** The location of a former gun and munitions manufacturing facility that operated at the turn of the century. The razed facility was located on a cliff approximately 200 feet above the Falls Creek. Lead from the facilities operation was dumped from the cliff, accumulating in fractures on the cliff walls and horizontal plateaus which has migrated to the pedestrian path along Falls Creek. The facility site, as well as the pedestrian pathways, have been assessed and mitigated by both EPA and DEC; however, lead contamination persists in areas accessible to the public. EPA recently installed a stone cover over a previously mitigated pathway area due to re-contamination of the area. EPA is evaluating options to fully assess the cliff to identify and remove source material.

Former Kil-Tone Company NPL Site, Vineland, NJ**:** located in a mixed use area within the City of Vineland, NJ where a former operation manufactured arsenic-based pesticides from the late 1910s until the late 1930s. Elevated concentrations of arsenic and/or lead have been identified in soil on the property itself and at various residential and commercial properties surrounding the former Kil-Tone Company property, in sediment and surface water in the Tarkiln Branch of the Maurice River, in soil at properties located within the floodplain of the Tarkiln Branch, and in groundwater. Cleanup of residential properties contaminated with lead and/or arsenic is underway, and the investigation of additional areas is ongoing.

Raritan Bay Slag NPL Site, Monmouth County, NJ**:** is located on the southern shore of Raritan Bay. The site consists of three sectors: (1) the Seawall Sector, which contains a seawall about 2,300 feet long; (2) the Margaret's Creek Sector, which consists of a 47-acre wetland; and (3) the Jetty Sector, which consists of the approximately 750-foot long western jetty. The seawall and the western jetty were constructed using slag containing lead and other metals from blast furnace bottoms from secondary smelting operations in the late 1960s to early 1970s. Remedial action activities at the Margaret's Creek Sector are currently nearing completion, and the remedial design for the remaining sectors is ongoing.

Brownfields

Through the Brownfields competitive grant funding program, communities can address lead contamination by conducting: community outreach, soil sampling and cleanup/removal of contaminated soil. Region 2 also offers free technical assistance through the Targeted Brownfields Assessment program, where EPA can test soil and buildings for the presence of lead and provide recommendations for cleanup.

RCRA Cleanups

Region 2's Clean Air and Sustainability Division (CASD) will continue to work collaboratively with the States of New York and New Jersey in the implementation of the RCRA Corrective Action Cleanup Program and will give attention to sites where lead is a contaminant of concern that is presenting risk.

Team Work Exemplified

Puerto Rico Battery Recycling a/k/a Arecibo Battery Superfund Site

The Battery Recycling Corporation in Arecibo, PR represented a situation that required a truly cooperative, cross-divisional effort to resolve. The Puerto Rico Battery Recycling Facility was one of the last remaining battery recyclers remaining on the island. The facility was operating with negligible workplace and environmental safeguards and was the source of historical and on-going releases of lead via air, contamination tracked offsite by workers and off-site migration of contamination through surface water runoff. These conditions resulted in the subsequent contamination of the homes of workers and their cars and the contamination of a pasture and dairy cows that graze nearby.

Extensive regulatory enforcement actions resulted in some improvements and mitigation actions by the plant operator, but these were insufficient and, ultimately, the company was unwilling and/or financially unable to carry out the necessary actions. The regional enforcement program coordinated with the Superfund program to address the immediate risks.

Superfund removal actions have since been conducted at the site and included immediately preventing lead contaminated dust at the Facility from being transported off-site, the removal of lead contaminated slag, managing storm water runoff to prevent the further migration of lead contamination, the cleaning of the vehicles and homes of current and former employees and the removal of lead-contaminated soil from the cattle pasture.

Other actions conducted included: isolating cattle that tested positive for high levels of lead in their milk and blood, establishing decontamination procedures for workers leaving the Facility,

coordinating the assistance of CDC, the PR DOH and the Region 2 PEHSU for the testing of employees, their spouses and children and consulting with these families when elevated blood-lead was detected. The site has been added to the NPL and work is underway to identify and select further remedial cleanup measures.

Air Monitoring (PR): In 2010, Arecibo, PR was declared a nonattainment area for lead. This is the only non-attainment area for lead in Region 2. The only significant contributor of lead emissions in the Arecibo area was determined by the Puerto Rico Environmental Quality Board (EQB) to be Battery Recycling Company, Inc – a secondary lead smelter. The source stopped operating after its permits were pulled in August 2015. Continued air monitoring data prior to Hurricane Maria showed the area was meeting the standard. Hurricane Maria caused significant damage to EQB's air monitoring network. CASD is assisting EQB in restarting its ambient air monitoring network, with attention to the Arecibo area. The area is expected to continue attaining the standard, since the source in no longer operating.