EPA Lead Smelter Strategy Summary Report

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1.0 EXECUTIVE SUMMARY

The Environmental Protection Agency's (EPA) Superfund Program implemented the "Strategy for Addressing 464 Lead Smelter Sites" (Strategy) in FY 2012. The Strategy was created to ensure completion of Superfund site assessment work at a set of 464 historic lead smelters submitted to the Agency in the early 2000s. EPA Headquarters distributed lists of the sites to regional offices but did not establish any assessment requirements due to lack of site specific information. EPA Regions conducted assessments at these sites as resources and priorities permitted, completing initial assessments at about one-half of the sites prior to implementation of the Strategy.

The Strategy established milestones for completing, tracking and reporting required assessments, identifying sites posing an imminent and substantial threat to human health based on existing information, and determining whether to revise the Agency's Pre-CERCLIS Screening guidance. All milestones in the Strategy were met.

Final site assessment results show EPA and its state partners completed over 760 assessments at these sites (about one-third of the sites received a more complex assessment following the initial assessment). Assessment results for the 464 sites concluded no further Superfund interest at 361 sites (78 percent), potential short-or long-term cleanup was or is needed at 88 sites (19 percent), and more complex assessment is still needed at 15 sites (3 percent).

Implementation of the Strategy did not identify any candidate sites for placement on the National Priorities List (NPL), but did identify 66 additional sites needing potential Superfund removal work.

The EPA Office of Inspector General (OIG) evaluated EPA's implementation of the Strategy, releasing a report titled "EPA Has Made Progress in Assessing Historical Lead Smelter Sites But Needs to Strengthen Procedures" in June 2014 (www.epa.gov/oig/reports/2014/20140617-14-P-0302.pdf). The OIG report included several recommendations to strengthen guidance and procedures for managing contaminated sites. The Superfund program has implemented responsive actions to all recommendations, including posting this summary report on EPA's website.

Implementation of the Strategy and related OIG recommendations highlights challenges facing EPA when assessing historic lead smelters. The Superfund site assessment process is essentially a screening tool used to identify sites that are eligible for placement on the NPL and directs these sites to an appropriate cleanup program. The process also directs sites needing emergency or urgent cleanup work to EPA's Superfund removal program.

For longer-term cleanups, NPL eligibility is based on application of the Hazard Ranking System (HRS) component of the National Oil and Hazardous Substances Pollution

Contingency Plan (NCP). Historic lead smelters are often associated with lead contamination in soil. However, the HRS requires that the released hazardous substances (e.g., lead) in the soil be attributable to the site. In cases when there are multiple sources of lead in the vicinity of the smelter and the contaminant concentration distribution does not show an obvious link to the smelter, establishing attribution may not be possible

Further, many historic smelter locations have since been paved over or redeveloped, potentially blocking the soil exposure pathway which can be used under the HRS. When contamination is found, the HRS requires the level of contamination to be significantly greater than surrounding areas which can be challenging given historic smelters are often located in areas of ubiquitous anthropogenic lead sources such as industrial sources, lead paint, and leaded gasoline. These factors can result in HRS scores below the level needed for NPL consideration. When NPL listing and removal cleanup approaches are not options, site information is forwarded to state environmental programs for any additional attention.

Given the assessment challenges associated with historic lead smelters, EPA may consider additional steps under the Superfund program to ensure sites with contaminated soil are addressed under the appropriate program. Potential steps include:

- Exploring cost effective methods to associate contamination to sources;
- Improving public access to site information; and
- Evaluating communication of site data with partners.

2.0 INTRODUCTION

The purpose of this report is to summarize EPA's actions and strategy to address sites presented in a 2001 academic study of former secondary lead smelters in the United States. Several phases of evaluation and response occurred between 2001 and 2016, culminating in the completion of individual assessments for over 400 potential secondary smelter locations listed in the 2001 study.

The American Journal of Public Health published an academic study titled, *Discovering Unrecognized Lead-Smelting by Historical Methods* in April 2001. The study identified more than 400 potential secondary lead-smelting sites that were reportedly unknown to Federal and state regulators. The lead smelting sites were compiled from historic industry publications. Lead smelting is a process that extracts elemental lead from lead compounds. Secondary lead smelting refers to the production of lead and lead alloys from lead-bearing scrap material, such as from lead acid batteries.

EPA Headquarters (HQ) Superfund program staff reviewed the study shortly after it was published, conducted a search of the sites in EPA databases and distributed search results to regional Superfund staff in spring 2001. Following discussions between HQ and regional staff, HQ recommended regions review the list of sites and set regional priorities for further evaluation of the locations as resources allowed. HQ did not establish any formal strategy or requirements to assess the sites given the limited site-specific information in the study.

HQ obtained an updated list of 464 sites from one of the study's authors, William P. Eckel, in 2003 and distributed it to regional offices. HQ reviewed the CERCLIS database in 2003 and 2005 to evaluate how many of the site locations mentioned in the study had Superfund site assessments completed. In 2005, EPA assessed 31 sites on the list thought to most likely present human health risk as part of an EPA site identification project. The 31 sites were selected based on their location, population and proximity to schools. Results showed all 31 sites either did not require any Superfund involvement or were already being addressed under Superfund or another cleanup program. The results did not suggest a need for different approach for the remaining sites identified in the study.

Beginning in late 2010, EPA began responding to press requests for the status of Superfund involvement at all sites identified in the academic study. In early 2012, EPA was informed by the press of independent sampling results suggesting some of the unaddressed sites posed human health threats from lead contamination. EPA responded by creating the Lead Smelter Strategy to ensure the Superfund program evaluated every site in the study.

The Strategy included interim milestones to review and categorize the status of all 464 potential smelters, and to complete preliminary assessments by the end of October 2013. EPA completed this work on schedule.

EPA's OIG initiated an evaluation of the Strategy and released a report in June 2014 that included recommendations to strengthen the Superfund program's management of sites with potential lead contamination. The Superfund program has implemented responsive actions to all recommendations.

This report summarizes EPA's actions to evaluate 464 potential former secondary smelters, and resulting recommendations for the Superfund program. The report is presented in chronological order of activities between 2001 and 2016, starting with a brief description of the mission and operation of the Superfund program. This report includes a description of:

- Key points regarding the Superfund program's site assessment and removal processes;
- EPA's evaluation of sites in the 2001 academic study prior to the Strategy;
- Development of the 2012 Lead Smelter Strategy;
- The OIG's evaluation of the Strategy;
- Accomplishments resulting from the Strategy;
- Remaining work to be performed;
- Observations to consider when assessing historic lead smelters; and
- Recommendations for consideration.

3.0 SUPERFUND ASSESSMENT PROGRAMS

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly referred to as "Superfund", establishes Federal authority to respond directly to releases or threatened releases of hazardous substances, pollutants or contaminants that may endanger public health or the environment. The NCP is EPA's regulation for implementing the requirements of CERCLA. The NCP sets forth guidelines and procedures for responding to releases or potential releases, including guidelines for conducting Superfund remedial and removal site evaluations (assessments). Remedial assessments are driven by criteria outlined in the HRS regulation which is a component of the NCP.

The HRS is a numerically based screening system that uses information from initial limited investigations to assess the relative potential of a release to pose a threat to human health or the environment. It is the principal mechanism EPA uses to determine eligibility for inclusion on the NPL, EPA's list of national priorities among the known or threatened releases of hazardous substances, pollutants or contaminants throughout the United States. Releases (sites) with HRS scores of 28.50 or greater are eligible for placement on the NPL.

Only sites on the NPL are eligible for Superfund Trust Fund-financed remedial actions. Sites eligible for the NPL may be addressed using the NPL or through a non-NPL approach such as a state managed environmental cleanup program. Regardless of site status with respect to the NPL, any sites posing urgent risks may be addressed by, or in conjunction with, EPA's Superfund removal program. Contaminated sites determined not to be eligible for the NPL or require removal attention are referred back to state and tribal programs.

3.1 Remedial Assessment

<u>Process</u>

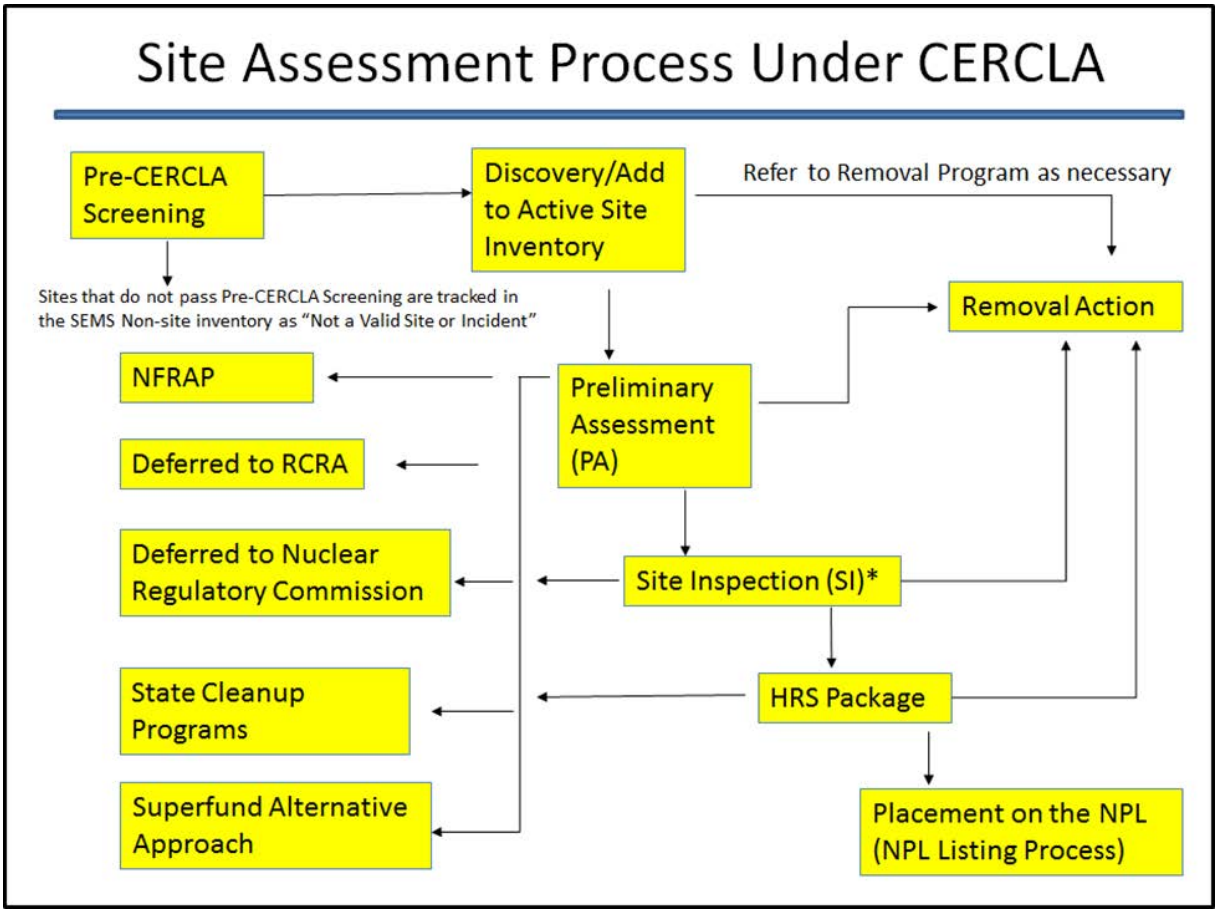
The Superfund remedial site assessment process evaluates potential or confirmed releases of hazardous substances that may pose a threat to human health or the environment to determine whether cleanup may be warranted under a Superfund managed or monitored

program. EPA learns about new sites primarily through referrals from state, tribal and other Federal regulators of environmental programs. A smaller number of sites are identified through EPA research and petitions for assessment of a potential release.

EPA regional staff work with their state and tribal partners as necessary to prioritize and assess sites. States serve as the lead agency for about 50 percent of Superfund remedial assessments performed each year, although this percentage varies significantly across EPA Regions (from 0 to 100 percent). EPA funds states to conduct this work using cooperative agreements.

The general principle applied during assessment is to assess worst sites first. EPA policy is to identify sites posing the highest (relative) risk or potential risk (to human health and/or the environment) and develop a strategy to assess those sites in a timely manner while balancing their other site assessment needs. Figure 1 shown below illustrates the Superfund site assessment process.

Figure 1: Superfund Remedial Assessment Process



While most sites identified for assessment are based on referrals from states and other federal programs, CERCLA established a petition option for any party to request assessment of a site. EPA's Petition for Preliminary Assessment fact sheet presents minimum information needed from requestors before taking action, including how the petitioner is affected by the release. The fact sheet discourages requestors from submitting large lists of sites without sufficient information to: 1) ensure only sites presenting serious environmental problems are added to the workload; and 2) avoid diverting time and limited resources from known and potentially more serious sites.

The screening-level assessments used in the Superfund remedial assessment process are limited in scope and are intended to collect the necessary information required to determine NPL eligibility. These assessments are not intended to fully characterize the nature and extent of potential contamination associated with a site. If required following completion of the remedial assessment process, comprehensive site characterization to determine the extent of contamination and human health and ecological risk assessments are generally conducted as part of the remedial cleanup process.

Assessments begin with Pre-CERCLA Screening (PCS) (formerly called "Pre-CERCLIS Screening) to determine whether a potential site needs to be included in the Superfund active site inventory for completion of a remedial Preliminary Assessment (PA). A PA and progressively more complex assessments such as Site Inspections (SI) are performed as needed until a decision can be made regarding NPL eligibility and the appropriate cleanup program. Sites determined to need urgent cleanup attention at any point during the remedial assessment process are routinely referred to EPA's Superfund removal program. Following completion of removal attention, sites may be returned for further remedial assessment.

HRS Methodology

Throughout the remedial assessment process, the HRS and related guidance is used to drive data collection and decision-making to screen and prioritize sites for further site-specific investigation. Those sites placed on the NPL based on an HRS score are then further investigated to determine site-specific risk. The HRS score is calculated by assigning numerical factors to potential contamination pathways (ground water migration, surface water migration, soil exposure, and air migration) based on conditions at the site. An HRS score is not a comparison of the severity of contamination at scored sites or reflective of a specific risk level; it is a value based on relative risk amongst candidate sites that determines whether a site is eligible for listing on the NPL.

Sites that obtain HRS evaluation scores of 28.50 or greater are eligible for placement on the NPL. Sites with an HRS score of less than 28.50 are not eligible for NPL proposal or further assessment under the remedial site assessment process and are typically assigned a No Further Remedial Action Planned (NFRAP) decision, although some of these sites may also be referred to EPA's Superfund removal program for potential removal interest. If no other Superfund remedial, removal and enforcement interest exists at a site, the site can be removed from the active inventory and placed in the archive inventory.

For HRS scoring purposes, a release of a hazardous substance by chemical analysis is established as being from a particular facility when the concentration of the hazardous

substance in a release sample is significantly greater than in background samples and is attributable to the site. Lacking either a representative background level or attribution of the hazardous substance to a facility being evaluated can significantly lower the HRS score, and therefore, adversely impact a site's eligibility for placement on the NPL. Establishing background concentrations can be problematic for metals in urban areas, particularly lead, because they can originate from multiple anthropogenic (i.e., human-contributing) sources in comparison to suburban or rural settings.

Attribution is a critical factor in determining site eligibility for the NPL using the HRS. Attribution ensures the significant increase of a hazardous substance concentration in the environment is due to the release from the facility being evaluated, and not from other possible contaminant sources in the vicinity.

In some cases, when the release of the lead in the soil cannot be clearly attributed to a smelter, the area of soil contamination itself may be evaluated as a site under the HRS. However, it is the EPA's policy that a minimum investigation effort should be conducted to attribute the contamination to a release from a facility prior to evaluating the contaminated soil as a site for the NPL with no known origin.

Contamination from non-site related sources can seriously complicate attribution of an elevated hazardous substance concentration to a release from a specific site. As noted, metals concentrations in urban soils, especially in the case of lead, have typically been impacted by many natural and anthropogenic sources over time. In the case of evaluating the soil exposure pathway of a site during HRS scoring, attributing the significant increase of a hazardous substance to the site can be essential to document that a site qualifies for the NPL. This evaluation can often be accomplished by sampling to determine the relative contribution of other sources to show the contaminant's concentration gradient identifies the site as the origin of the contamination. Another method that can be used in establishing attribution is to conduct analytical "fingerprinting" of hazardous substances (e.g., showing the ratio of the hazardous substances in the waste material at the facility and in the soil are similar).

Lead is handled differently than other hazardous substances in the HRS. Their toxicity factors, that are used in calculation of the HRS score, are directly assigned the highest value in the HRS regulation itself. For lead (and its compounds), "targets" that are used in calculation of the HRS score are based on the actual or potentially impacted population. For most other hazardous substances, "targets" may be increased by a multiplier of 10 when health-based soil benchmarks are exceeded. For HRS scoring purposes, "targets" accounts for the presence of people, physical resources (e.g., drinking water wells, surface water intakes), and environmental resources (e.g., sensitive environments, fisheries) that might be threatened by release of a hazardous substance from the site.

Site Assessment Workload

Since the start of the Superfund program in 1980, EPA and its state, tribal and other Federal partners have completed nearly 95,000 assessments at almost 53,000 unique sites (sites often receive more than one assessment). The 53,000 sites include over 7,000 sites screened from entry into the Superfund active site inventory, resulting in a total of 45,800 added to the inventory for further remedial assessment.

As shown in Figure 1 below, the level of Superfund remedial assessment work has been declining since 2000.

Figure 1: Remedial Site Assessment Trends (rounded to 00's)						
Time Period	<=FY2000	FY2001-FY2004	FY2005-FY2008	FY2009-FY2012	FY13-03/2017	Total
Total Assessments Completed	75,900	6,800	4,800	4,100	3,200	94,800
No. Sites Assessed and Not Added to Active Inventory	400	2,200	2,100	1,500	1,000	7,200
No. Sites Assessed and Added to Active Inventory	42,000	1,300	900	900	700	45,800
No. Sites in Active Inventory Needing Assessment (End of Time Period)	5,000	3,100	2,500	2,300	1,700	1,700

When the academic smelter study was released in 2001, the Superfund program had approximately 3,800 sites needing assessment. Progress has been made towards reducing this workload despite a declining Superfund budget, due in part to the decline in number of new sites added to the inventory.
EPA makes one of three types of decisions at the conclusion of each assessment. These types of decisions include:

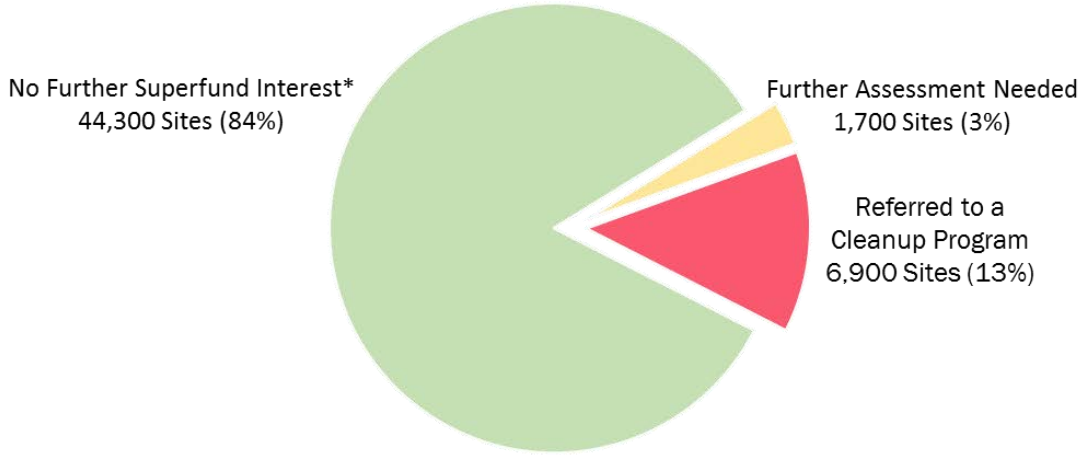
- No Further Remedial Action Planned (NFRAP) – remedial assessment determines the site is not eligible for the NPL based on currently available information. While these sites do not qualify for an NPL cleanup under Superfund, they may not be free of contamination and may need further cleanup attention under another state, tribal or other Federal cleanup program. A subset of sites assigned a NFRAP decision may require potential cleanup under EPA's Superfund removal program. New information can result in returning a NFRAP site back to the Superfund program for further remedial assessment. NFRAP sites are included in the "No Further Superfund Interest" category on subsequent charts and tables in this report;

- Further Assessment Needed – remedial assessment determines more complex assessment is needed to determine if a site is eligible for the NPL; and

- Refer to Cleanup Program – remedial assessment determines the site is eligible for the NPL and refers the site to a Superfund managed or monitored cleanup approach. This includes NPL and Non-NPL cleanup approaches. Non-NPL cleanup approaches include Superfund removal, RCRA Corrective Action, Superfund Alternative Approach, cleanup under the Nuclear Regulatory Commission and cleanup under a state, tribal, municipal or other federal governmental environmental cleanup program.

Figure 2 shows the current distribution of these decisions at the 53,000 sites assessed under the Superfund program:

Figure 2: Current Results of 53,000 Sites Assessed by the Superfund Program



*Includes 7,200 site assessed and not added to the Superfund Active site inventory. Also, sites in this category may need cleanup attention under a non-Superfund managed or monitored program.

Coordination with Other Programs

The remedial site assessment process generally involves coordination with other cleanup programs both internal and external to EPA. Coordination begins with site notification as the majority of new sites needing assessment are submitted by states and to a lesser extent, EPA's Superfund removal program. Given states carry out approximately one-half of the remedial assessments performed each year, the process offers ongoing opportunities for EPA/state coordination. Sites posing threats sufficient for listing on the NPL require additional coordination based on EPA's policy to seek governor support to propose a site to the NPL.

Information collected during the assessment process originates in several sources. In general, relevant site-specific information originating in state and local government agencies flows up to EPA and will already be shared or known by all regulators. At sites where EPA collects data, such as sampling information, assessment decisions are generally reported to or otherwise made available to states and the general public. Information collected on sites needing attention under an EPA managed or monitored cleanup program is provided to the agency or program that will handle cleanup investigation.

For sites being assessed that have potential lead contamination, the Agency for Toxic Substances and Disease Registry (ATSDR) may work directly with state and local government agencies on a site-by-site basis to gather blood lead level (BLL) data. This data collection occurs infrequently at sites in the Superfund remedial assessment process. When it does, EPA, state and local government staff are generally aware of this activity and are in close coordination on results. EPA uses this data along with other relevant site information collected or provided to EPA when determining next steps at a site.

The overall level of coordination between EPA and external cleanup programs may be stronger when some type of agreement has been established between EPA and the other

program. For example, cooperative agreements established with states to perform remedial assessments generally require frequent interactions and discussion on site work. Similarly, a memorandum of understanding covering agency roles and responsibilities can serve as a foundation for ensuring key site information is communicated and transferred in a timely manner.

3.2 Superfund Removal Program

Potential removal sites can be referred to the EPA's Superfund Emergency Response and Removal Program from various entities including local, State, other Federal Agencies and the remedial program. The primary purpose of a removal site evaluation is to collect information about site conditions to determine if a removal action is appropriate.

The first step is to conduct a site reconnaissance. The next step is to determine the scope and approach to collecting samples including what samples to collect and where to collect them. Information collected must be of sufficient quantity and quality to make a decision regarding the need for removal action.

The eight NCP removal factors are then applied:

1. actual or potential exposure to humans or animals or food chain;
2. actual or potential contamination of drinking water or sensitive ecosystems;
3. hazardous substances or pollutants or contaminants in containers with may pose a threat;
4. high levels of hazardous substances or pollutants or contaminants in surface soils that may migrate;
5. weather conditions may cause hazardous substance or pollutants or contaminants to migrate or be released;
6. threat of fire or explosion;
7. availability of other federal or state mechanisms; and,
8. other factors that may pose a threat.

Site access issues are next considered. Enforcement concerns are addressed as well as statutory limitations to the response. Removal site evaluations can have all of these considerations or a subset of such considerations. If it is determined that a site does not meet removal criteria, it is often referred back to the referring entity.

EPA has the authority to conduct removal actions if a site appears to pose a serious immediate threat to human health or the environment. A removal action may be conducted at any time during the Superfund process. In addition, EPA has the authority to conduct a removal action, whether or not it is a site listed on the NPL, to eliminate, control, or mitigate a threat posed to the public.

Removal actions are responses performed at NPL and non-NPL sites that eliminate or reduce threats to public health or the environment from the release, or potential release, of hazardous substances or pollutants or contaminants that may pose an imminent and substantial danger to public health or welfare.

These risk reduction activities can be conducted as emergency, time-critical, or non-time critical removal actions.

Emergencies:	Removals where the release requires that on-site activities be initiated within hours of the lead agency's determination that a removal action is appropriate. If the work is ongoing beyond a year, the removal type should be changed to Time-Critical or Non-Time-Critical.
Time-Critical:	Removals where, based on the site evaluation, the lead agency determines that a removal action is appropriate and that there is a period of less than six months available before on-site activities must be initiated.
Non-Time Critical:	Removals where, based on the site evaluation, the lead agency determines that a removal action is appropriate and that there is a planning period of more than six months available before on-site activities must begin. The lead agency will undertake an Engineering Evaluation/Cost Analysis (EE/CA) for non-time critical removals and provide the EE/CA for public comment. The remedial program typically leads these removal actions.

4.0 EPA PRE-STRATEGY ACTIVITIES

EPA learned of the potentially unrecognized secondary lead smelters following publication of an academic study titled, *Discovering Unrecognized Lead-Smelting by Historical Methods*, in April 2001. The study used the Standard Metal Directory (various years from 1931-1964) and Year Book of the American Bureau of Metal Statistics (1945-1990) as primary historical sources to identify battery lead, Babbitt metal, and solder smelters (secondary lead smelters) that were in operation at that time. The list of secondary lead smelters was then cross-checked against EPA and state environmental databases to create a master list of 430 sites that appeared unknown to government authorities. The study included investigating 12 of these sites, including soil sampling at eight sites, to determine if any posed potential health threats. The study reported seven of the eight sites sampled presented had lead levels exceeding EPA guidelines for residential areas and three exceeded EPA guidelines for industrial properties.

HQ discussed the study and site list with regional site assessment staff in Spring 2001, noting regions may receive petitions to conduct PAs on some or all of the sites. For the most part, site-specific petitions did not materialize.

HQ conducted a search for the sites in its CERCLIS and Envirofacts databases and distributed an annotated list of the 430 sites to regional offices in September 2001. The database search was challenged by a lack of specific addresses for a portion of the sites on the list with some sites only including a state or city.

As of September 2001, no region reported receiving a petition to conduct a PA. A few regions indicated they were pursuing assessments at some of the sites on the list as resources permitted. HQ concluded regional offices could assess sites on the list on a discretionary basis if necessary and as resources allowed. HQ did not recommend to the regions to add unaddressed sites to the Superfund database due to insufficient site-specific information.

In FY2003, HQ reached out to Dr. Eckel, primary author of the study, and obtained an updated list of 464 potential secondary lead smelters and distributed this information to regional offices. Nearly 25 percent of the sites on the updated list still had missing or questionable addresses. HQ was aware that regions were continuing to assess some of the sites on the list as resources permitted, but maintained its position that information did not warrant addition of all sites on the list to the Superfund database since the information still did not meet the requirements of a Petition for a PA.

Figure 3 shows the geographic distribution of the 464 potential secondary lead smelters. Approximately 78 percent of the sites were concentrated in four EPA regions (Regions 2, 3, 5 and 9).

Figure 3: Geographic Distribution of 464 Potential Secondary Lead Smelters											
EPA Region	1	2	3	4	5	6	7	8	9	10	Total
No. Sites	33	120	71	24	128	21	16	3	41	7	464

HQ studied progress at these sites again in FY 2005-2007 as part of internal site identification project to determine if a centralized approach would prove useful in identifying high human health risk sites that were unreported to EPA. The project focused on the smelting industry given its associated risk for lead in soils and surface water and the availability of the list of 464 potential secondary lead smelters. Database research at the beginning of this project determined 122 (26%) of the 464 sites were included in the Superfund database as of September 2005.

HQ selected a sample of 31 sites that were not in the database. The sample included sites in nine of the 10 regions. The sample was created by selecting sites that had the highest number of schools and populations within ¼ mile of the potential secondary lead smelter. HQ requested regional offices assess the sample sites to determine the need for Superfund involvement. Assessment results showed none of the 31 sites appeared to present human health risks that warranted Superfund remedial cleanup. Six of the sites were already being addressed by state clean-up programs or private parties, and the rest of the sites showed no imminent human health risks. Based on these results, HQ did not recommend to the regions to assess all sites, or add them to the Superfund database.

In FY 2011, HQ and regional offices received a series of Freedom of Information Act (FOIA) requests from a reporter representing a major news organization. The FOIAs focused on EPA's handling of the list of 464 sites and progress made addressing the sites under the Superfund program. HQ discussed the status of FOIAs and site progress with regional offices on multiple calls throughout FY 2011.

During follow-up discussions, the reporter indicated independent sampling had been performed for lead in soils using handheld X-Ray Fluorescence (XRF) analyzers and/or laboratory analysis of collected soil samples at around 20 of the sites located in urban areas with many showing high levels of lead contamination.

HQ and regions met in February 2012 and discussed the status of the sites and the need for a coordinated strategy to ensure any unassessed sites on the list of 464 sites get added to the Superfund database and receive an assessment. Figure 4 shows the assessment status of the 464 sites as of February 2012.

At this time, approximately 60 percent of sites still needed an initial or more complex assessment. The remaining 40 percent had completed assessment and were either determined to have no further Superfund interest or were referred to a cleanup program for potential cleanup work.

Figure 4 shows by February 2012, 18 of the 464 sites had completed assessment work and were referred to an EPA managed or monitored cleanup program.

Figure 4: Assessment Status of 464 Potential Secondary Lead Smelters
February 2012

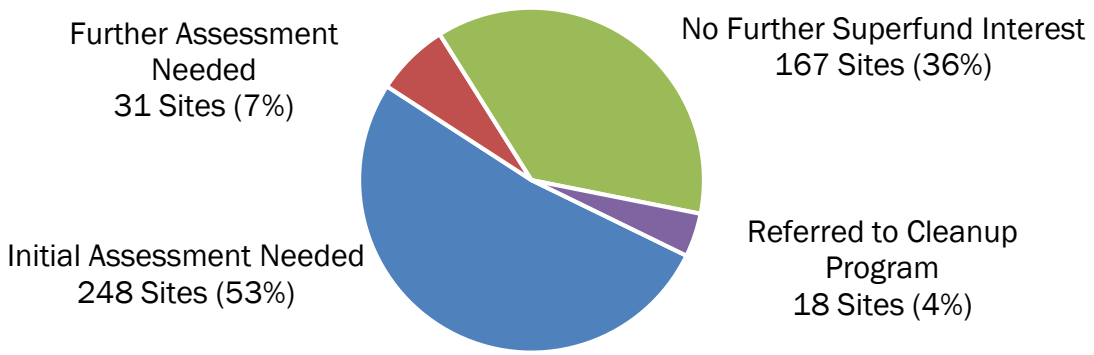


Figure 5 shows the distribution of the 18 sites across various cleanup program options. The 18 includes one site that had finished assessment work and needed cleanup attention but the appropriate cleanup program still needed to be determined.

Figure 5: Selection of Cleanup Program (18 sites) – February 2012					
Cleanup Option	NPL	Other Cleanup Activity	RCRA	Removal	To Be Determined
# Sites	7	3	4	3	1

The seven sites referred to the NPL included two sites proposed to the NPL and five sites on the NPL. EPA addressed six of these seven sites prior to publication of the academic study.

5.0 LEAD SMELTER STRATEGY

EPA formed a workgroup of HQ and regional Superfund assessment staff in February 2012 to help develop a coordinated assessment strategy designed to complete remaining assessment work at all 464 potential secondary lead smelters. The workgroup met monthly and focused on status updates and general issues surrounding the universe of sites. The strategy was titled "Strategy for Addressing 464 Lead Smelter Sites" and was finalized and distributed to regional offices on August 30, 2012. The Strategy is attached as Appendix B of this report.

The Strategy created a framework of steps and milestones to ensure all 464 sites are tracked and assessed under the Federal Superfund program. The Strategy focused on reviewing available information and collecting new information to determine if any of the 464 sites may pose a health threat requiring further assessment and possible cleanup. The Strategy included guidelines for prioritizing assessments; coordinating with state, tribal and other environmental and public health agencies; and communicating progress to key stakeholders such as members of the community and elected representatives. The Strategy served as the first formal requirement to track and assess all 464 potential secondary lead smelters.

In general, assessment milestones required regions to:

- Review files to determine the assessment status of all 464 sites;
- Conduct Pre-CERCLIS or equivalent screenings at 48 of the 464 sites that appeared to be "unrecognized" sites – not in the Superfund database and not referred to another program for assessment as of February 2012;
- Review existing information in consultation with EPA's Superfund removal program to determine if any sites could pose an imminent and substantial threat to human health that might require removal assessment and/or cleanup;
- Complete initial assessments at sites that had not been screened;
- Complete Preliminary Assessments at sites needing them; and
- Schedule more complex assessments at sites needing them;

The Strategy required HQ to:

- Develop database tracking reports and progress reports to monitor progress towards meeting the Strategy milestones;

- Consider communication and/or outreach tools the Regions could use to respond to concerns raised by community members and other stakeholders; and
- Explore the need to update EPA's guidance for pre-screening potential Superfund sites.

The Strategy established the following factors to consider when determining priorities for assessment and, as necessary, cleanup of secondary lead smelter sites:

- Sites where sample collection or collection of additional samples was recommended;
- Sites where impacts of prior industrial activities may not have been fully evaluated;
- Sites whose locations were difficult or impossible to determine based on available information;
- Sites previously referred to the state or other programs;
- Sites where sampling results indicated the presence of lead or other heavy metals attributable to past smelter operations and above risk-based screening levels and background;
- Sites where no previous assessment had been conducted;
- Sites located near where children may congregate or be active (e.g., residential areas, day care centers, schools);
- Sites where population density (e.g., population with ¼ mile of the listed address) is high; and
- Sites with potential Environmental Justice issues.

The first set of Strategy milestones required completion of the following activities by July 31, 2012: 1) development of a tracking report; 2) preliminary review of new site information; 3) updating site information in the Superfund database; and 4) pre-screening the 48 sites not accounted for by EPA or its state and tribal partners.

Subsequent deadlines applied primarily to completing assessments and reporting progress to EPA HQ senior managers.

The Strategy recognized limited resources (e.g., state and federal capacity and funding constraints) and new priorities could impact the ability of program staff to meet deadlines for assessing sites. Caveats were added to certain activities, requiring regions to complete work to the "maximum extent practicable" given these constraints.

HQ closely monitored implementation of the Strategy following its release in August 2012. Monitoring activities were built into the Strategy itself and included review of database tracking reports to gauge progress towards meeting Strategy deadlines and preparation of progress reports for senior managers.

6.0 OFFICE OF INSPECTOR GENERAL EVALUATION

EPA's OIG initiated an evaluation of the Strategy in July 2013. The OIG gathered source information from HQ and regional Superfund offices and released an independent report, *EPA Has Made Progress in Assessing Historical Lead Smelter Sites But Needs to Strengthen Procedures* (OIG Report No. 14-P-0302) on June 17, 2014. The OIG report included

recommendations intended to strengthen the Superfund program's management of contaminated sites.

EPA's Office of Land and Emergency Management (OLEM), formerly the Office of Solid Waste and Emergency Response, concurred with all of the recommendations in the report while noting concerns with the accuracy of several statements. The OIG's final report acknowledged a portion of these concerns. The OIG report recommendations included:

1. Establishing criteria for determining upfront whether to expend resources to conduct a Pre-CERCLA Screening and/or add a non-petitioned site that had been referred to the EPA Superfund program to EPA's existing workload. Document and communicate decisions made in EPA records.

2. Refine the process for tracking non-petitioned sites referred to the EPA Superfund site assessment program, including:
    a. Definition of a reasonable timeframe that Pre-CERCLIS Screenings and site assessments should be conducted. If needed, a discovery date should be entered as well as target dates for future assessments.
    b. Establishment of a tracking mechanism for any backlog of Pre-CERCLIS Screenings.
    c. Periodic reviews to ensure that sites in the assessment backlog have appropriate qualifiers that indicate priority level for further assessment.

3. Assess existing EPA guidance for addressing lead contamination in soil within the Superfund site assessment process and obtain input from the Regions to determine whether any updates are needed and revise as appropriate. Include the following issues in the assessment:
    a. Amount of resources, level of effort, and methods used to link lead contamination to a source.
    b. Cleanup or other actions needed at sites when background contamination levels are above screening levels, including those in urban areas.
    c. Determination of actual and/or potential health impact on communities, including whether a referral to another agency or program for further review or health-based testing is necessary.

4. Clearly post the August 2012 Lead Smelter Strategy document on EPA's website.

5. Following completion of the 2012 Strategy, create and post a summary of the results of EPA's efforts to address sites included in the strategy and, as applicable, any findings and recommendations on EPA's website.

The Superfund program has implemented responsive actions to all recommendations.

7.0 ACCOMPLISHMENTS

EPA closely monitored implementation of the Strategy from start to finish. The workgroup that helped develop the Strategy continued to convene monthly conference calls to discuss

progress on the OIG's recommendations. Senior EPA managers were informed of progress via the reporting requirements built into the Strategy itself.

7.1 Site Assessment and Removal Accomplishments

Regions completed all assessment milestones in the Strategy by the prescribed deadlines. The assessment work conducted per the Strategy ensured all 464 potential secondary lead smelters were included in EPA's Superfund database, each underwent a current file review, and those sites without assessments were addressed accordingly. Figure 6 displays the total number of assessments performed under the Superfund program at the 464 potential smelters, prior to and since implementation of the Strategy.

Figure 6: Superfund Assessments Completed at 464 Potential Secondary Lead Smelters[1]

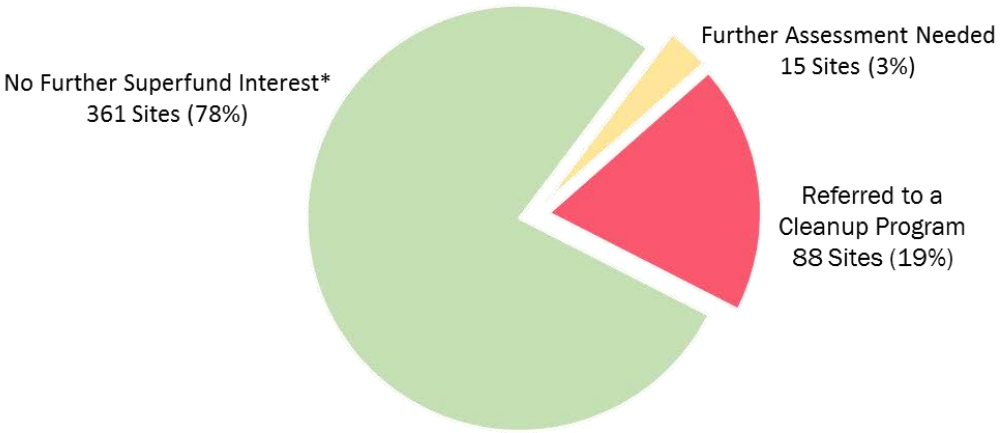
Assessment Type / Time Period	<=FY2000	FY2001-FY2004	FY2005-FY2008	FY2009-FY2012	FY2013-Current	Total
Pre-CERCLA Screening	0	73	115	82	114	384
Preliminary Assessment[2]	41	4	61	3	43	152
Site Inspection[3]	22	0	27	12	23	84
Site Reassessment	0	0	2	8	12	22
HRS Package	6	2	0	0	0	8
Removal Assessment	11	28	3	2	69	113
Total Assessments	80	107	208	107	261	763

[1] Includes multiple assessments at some sites.
[2] Includes PAs and Integrated Assessments.
[3] Includes SIs, Expanded SIs, Combined PA/SIs, and Site Inspection Prioritizations (SIPs).

Superfund assessments were completed at about 30 of the 464 sites prior to publication of the study. Several of these sites were tracked in the Superfund database under different site names than what was listed in the report. By the time the Strategy was issued near the end of FY2012, EPA and its partners had already completed nearly 500 assessments at about 340 of the smelters (about 150 sites had multiple assessments). Most (70%) of the 261 assessments completed since FY2013 occurred in FY2013-2014.

Figure 7 shows the breakout of decision outcomes of the 464 sites as of March 2017.

Figure 7: Assessment Results of 464 Potential Secondary Lead Smelters – March 2017



*Includes 7,200 site assessed and not added to the Superfund Active site inventory. Also, sites in this category may need cleanup attention under a non-Superfund managed or monitored program.

Figure 7 shows the majority (78%) of sites are currently determined to have no further Superfund interest based on current information in the Superfund database. Figure 7 also shows 19 percent of the sites were referred to a cleanup program and three percent are in need of additional assessment. As can occur with any type of site assessed under the Superfund program, EPA may receive new information on a site that was previously determined to have no further Superfund interest and may need to perform further assessment work. As a result, the current figures are expected to fluctuate slightly when decisions are made on the 15 sites currently needing assessment and if/when new information warrants reassessing any of the 464 sites.

Figure 7 shows 88 of the 464 sites have been referred to an EPA managed or monitored cleanup program as of March 2017. Figure 8 shows the distribution of these 88 sites.

Figure 8: Selection of Cleanup Program (88 sites) – March 2017

Cleanup Option	NPL	Other Cleanup Activity[1]	RCRA	Removal	To Be Determined
# Sites	9	7	3	69	0

[1]Includes two of the 464 potential smelters that are represented by a single site in the Superfund database.

The nine sites referred to the NPL includes two sites currently proposed to the NPL, five sites on the NPL, and two sites determined to part of existing NPL sites. All but one of these NPL sites (Price Battery Lead Smelter in Hamburg, PA), were being addressed by EPA prior to publication of the academic study.

Referrals to EPA's Superfund removal program accounted for the 69 (78%) of the 88 sites referred to a cleanup program. Of these 69 sites, all have been reviewed by the Superfund removal program and have had subsequent removal assessments or removal actions

started or completed except for two sites. One of the two sites has enforcement activity planned, the other site is being reviewed again for potential removal involvement. Further, 31 of these 69 sites have been moved to the Archive site inventory as of March 2017. The remaining 38 sites are in the Active site inventory and either have removal assessments or removal actions being considered, planned or ongoing (27 sites), awaiting completion of enforcement activity (1 site), or are candidates for moving to the Archive site inventory (10 sites). The 69 sites referred to the Superfund removal program exclude two sites with removal assessments ongoing and need further remedial assessment after completion of the removal assessments. These two sites are tracked as Further Assessment Needed in Figure 7.

If new information warrants reassessment of sites previously determined to have no further Superfund interest, the number of sites referred to a cleanup program may rise based on the outcome of subsequent assessments. In addition, sites that have been referred to the Superfund removal program, state clean-up, or other programs may be referred back to the site assessment program in cases where a potential longer-term cleanup component still exists.

Appendix A is a list of all 464 potential smelter sites tracked under the Strategy. The list shows the original site name as listed in the academic study (Eckel Site Name), the name of the site as it is tracked in the Superfund database, last assessment decision, and latest activity conducted at the site under the Superfund program.

Beyond assessment work, EPA's Superfund removal program has performed or overseen completion of 48 removal actions across 27 of the 464 smelters (more than one removal was performed at nine sites). Nearly one-half of these removals were completed at sites currently proposed to or on the NPL. Figure 9 shows the number of removal actions completed at these sites since inception of the Superfund program.

Figure 9: Superfund Removals Performed at 464 Potential Secondary Lead Smelters

Time Period	<=FY2000	FY2001-FY2004	FY2005-FY2008	FY2009-FY2012	FY2013-03/2017	Total
All Removal Actions	11	6	6	6	19	48
At NPL Sites[1]	9	4	5	5	0	23
At Non-NPL Sites	2	2	1	1	19	25

[1]Includes removal actions completed at Proposed and Final NPL sites and at sites addressed as part of an NPL site. Also includes multiple removals at some sites.

7.2 Other Accomplishments

The Strategy and the OIG's evaluation resulted in guidance and data tracking changes within the Superfund remedial assessment program. These changes and related accomplishments include:

FY 2014

- Revised the Pre-CERCLA Screening (PCS) section in the Superfund Program Implementation Manual (SPIM) to include:
    - Minimum requirements needed before starting a PCS.

    - Establishing a one-year time period to complete a PCS at a site.
    - Adding PCS reports to the list of core Superfund documents that must be tracked electronically in the Superfund records system.
    - Requiring timely transmittal of completed PCS information to states and tribes.
- Created a new database tracking report for sites needing PCS completions.

FY2015

- Completed analyzing HQ site assessment guidance documents issued to date for guidance on addressing lead contamination in soil and determined no change to existing guidance is necessary.

FY 2016

- EPA offered presentations on assessing sites with potential lead contamination in soil at the June 2016 National Site Assessment Symposium Training Program. Presentations included:
    - "Differentiating Sources of Lead in the Environment" which summarized investigative approaches for source attribution at sites with lead contamination; and
    - "Using Field Sampling Techniques in Site Assessment and HRS Scoring" which clarified the use of field screening approaches in the Superfund site assessment process.
- EPA updated the "Refer to Removal" section in the FY 2017 SPIM to encourage engagement of the Superfund removal program when remedial assessments find consistent exceedances of Superfund removal program screening values.

FY 2017

- EPA completed the "Pre-CERCLA Screening Guidance" document on December 19, 2016. This document replaces EPA's "Improving Site Assessment: Pre-CERCLIS Screening Assessments" guidance issued in October 1999.

8.0 REMAINING WORK

EPA's Superfund database shows 15 of the 464 sites still need additional remedial assessment work and 27 additional sites need completion of removal assessment or removal actions, including one site that needs additional review for potential removal work. In addition, five of the seven non-NPL sites being addressed under state or municipal government programs are still in the Superfund Active site inventory and could potentially need further Superfund involvement.

Since new information on site conditions can be discovered and submitted to EPA on any potential hazardous waste site previously assessed under Superfund, it is possible sites previously determined to have no further Superfund interest may be returned to the Superfund Program for additional work. As with other types of sites, EPA does not expect this to occur for the majority of sites assessed. Since the start of the Superfund Program, less

than 10 percent of sites previously determined to have no further Superfund interest have been returned to the program for further work.

Current Superfund database information on sites in the Active and Archive site inventories is posted on the internet at https://cumulis.epa.gov/supercpad/cursites/srchsites.cfm. Available information includes key indicators such as the site's NPL status and Non-NPL Status.

9.0 OBSERVATIONS

Source Information

Finding historic smelting locations proved challenging at many sites. The academic study cited use of historical industry publications to compile the list of potential secondary lead smelters. EPA's review of these documents found incomplete addresses for many sites, some displaying only a state or city.

The documents also lacked detail to determine if the address represented the physical location of smelting activities versus a sales office or some other non-producing facility related to a smelting company. EPA reviewed historic Sanborn maps and other sources to search for some of these sites but was not always successful in finding evidence that historical smelting operations actually took place at the reported location.

Historic industry and other publications may be useful to help identify potential sources of contamination but can yield false positives if not supported by other compelling information.

Site Setting

Locating historic smelting operations was also complicated by changes in site setting. In some cases, the street addresses had changed names or the street itself no longer existed. In many cases, smelting towers and other equipment have since been demolished or removed making it more challenging to confirm where historical smelting was performed. Further, historical changes in land use over time have resulted in reducing or eliminating exposure to potential lead in soil at some sites (e.g., area paved for parking lots and roadways, buildings erected, etc.). Many sites are located in urban areas where other sources beyond the smelting operation itself may have contributed to high levels of lead in soils which then can impact the Superfund remedial assessment process as described in the following section.

HRS Methodology

Attribution of the hazardous substance in a release to the site is an important factor in determining eligibility for the NPL when using the HRS, which uses screening level data gathered during the PA and SI, and was frequently problematic when attempting to evaluate the potential smelters using only screening level data. Many of the potential smelters were situated in urban areas where anthropogenic sources may have played a role in elevated lead-in-soil concentrations. For some sites, junkyards and scrap metal and recycling yards were occupying potential areas of contamination that could be associated with historic

smelting operations. These additional sources often prevented attribution of the elevated hazardous substance concentrations to the smelters themselves with limited data collected during site assessment.

The difficulty documenting the link between elevated lead-in-soil concentrations and a specific facility or facilities can complicate a site's NPL eligibility. In such cases, attempting to establish attribution of elevated lead-in-soil concentrations to a specific site can require extensive, time-consuming, and expensive sampling. In some cases, it might not even be possible due to the number of possible lead sources in the area, disturbance of the area, and the length of time since the lead release occurred.

If a link between contaminated soils and a facility cannot be established, it is still possible that a site may be evaluated using the HRS if the contamination is significantly greater than background levels. However, lead tends to be ubiquitous in the environment in urban and industrial areas in general due to the historical and current uses of lead by humans. In these areas, the background concentrations of lead-in-soil can be elevated sufficiently due to non-smelter sources such that soil samples collected to establish the release of lead to the soil from a smelter may not meet the HRS requirement of having concentrations significantly greater than the background level.

If a significant release from a smelter cannot be established for the HRS Soil Exposure Pathway, then the release from a smelter cannot be evaluated and scored for human exposure to the contamination in the soil. Additionally, other factors, such the actual or potentially impacted population level, can make it unlikely that a small site will obtain a score that makes it eligible for placement on the NPL. These possibilities can preclude the use of the Superfund remedial program as a viable cleanup approach at a site unless unacceptable threats due to other contaminant migration pathways are documented resulting in an HRS score at or above 28.50.

Two other uncommon mechanisms of placing a site on the NPL also exist. A site may qualify for listing based on an Agency for Toxic Substances and Disease Registry health advisory and a finding that it is not cost effective to address the site using removal authority. States may also designate one site to the NPL regardless of the site's HRS score. A total of 11 states and the District of Columbia have not assigned a site to the NPL as a state top-priority pick as of the date of this report.

10.0 RECOMMENDATIONS

Given the assessment challenges associated with historic lead smelters, EPA may consider additional steps under the Superfund program to ensure sites with contaminated soil are addressed under the appropriate program. Potential steps include:

1) Explore cost effective methods to associate contamination to sources. Investigative techniques to differentiate sources of lead in the environment are evolving. Current methods are often based on chemical testing (e.g., isotope ratios, speciation, trace metals analysis), geographic distribution (e.g., source air modeling, hyperspectral imagery, residential history and development patterns), and/or groundwater sampling approaches for private drinking water wells that exhibit elevated lead levels (groundwater purge sequence, filtered groundwater samples). In addition, examine the capacity of available resources to implement these methods. Research and communication of available and cost-effective methods may improve the ability of EPA to attribute contamination to a specific source.

2) Improve public access to site information. Review site-specific information collected and maintained by EPA's Superfund program at sites posing lead-based health threats, and determine if additional site information can be made available to the public through EPA's site-based national web services (e.g., Search Superfund Site Information web query).

3) Evaluate communication of site data with partners. Review processes in place to distribute Superfund collected site-specific information to appropriate cleanup program regulators (e.g., other federal, state and local agencies) and determine if improvements are needed in terms of content and timeliness of information exchange.

11.0 APPENDIX A

Assessment Status of 464 Potential Secondary Lead Smelters Addressed by the EPA Superfund Program

March 2017

Appendix A: Assessment Status of 464 Potential Secondary Lead Smelters Addressed by the EPA Superfund Program
March, 2017

ASSESS. DECISION	EPA REG	ST	ECKEL #	ECKEL SITE NAME	SEMS SITE NAME	CITY NAME	EPA ID	NPL STATUS	NON-NPL STATUS	NON-NPL DATE	SITE INVENTORY	LAST ACTION	ACTUAL START	ACTUAL COMPLETE	QUAL	LEAD
Further Assessment Needed	2	NJ	11	Barth Smelting Corp.	BARTH SMELTING CORP.	NEWARK	NJN008010373	N	Site Reassessment Start Needed	9/30/2013	ACTIVE	RV3	12/4/2013	9/24/2016		F
Further Assessment Needed	3	PA	310	Liberty Smelting Co.	LIBERTY SMELTING CO., LEAD SMELTER	PHILADELPHIA	PAN000306818	N	Site Reassessment Start Needed	3/14/2017	ACTIVE	PA1	12/12/2005	1/31/2007	L	F
Further Assessment Needed	5	IL	106	ASARCO	ASARCO	ALTON	ILP000510792	O	Subsequent Pre-CERCLA Screening Ongoing	10/23/2012	NON-SITE	HX1		10/23/2012		S
Further Assessment Needed	5	IL	107	Continental Smelting and Refining Co.	TARACORP IND MCCOOK PLT	MC COOK	ILD098983208	N	Site Reassessment Ongoing	9/29/1995	ARCHIVE	OO1	2/12/2014			F
Further Assessment Needed	5	MN	122	National Lead	NORTHWESTERN SHOT & LEAD	ST. PAUL	MND980609101	N	Site Reassessment Ongoing	7/24/2015	ARCHIVE	OO1	11/24/2012			F
Further Assessment Needed	5	WI	133	Allied Smelting Corp. a/k/a Wisconsin Lead Co.	ALLIED SMELTING CORPORATION, FORMER	WEST ALLIS	WIP000509222	N	Referred to Rmvl - Further Assess Needed	12/6/2016	ACTIVE	SI1	7/2/2015	12/6/2016	F	S
Further Assessment Needed	5	MN	405	Northwestern Smelting and Refining Co.	NORTHWESTERN SMELTING & REFINING #2	MINNEAPOLIS	MNP000508531	O	Subsequent Pre-CERCLA Screening Ongoing	11/24/2012	NON-SITE	HX3	11/24/2012			F
Further Assessment Needed	5	WI	416	Cream City Smelting Works	CREAM CITY SMELTING WORKS	MILWAUKEE	WIP000509223	O	Subsequent Pre-CERCLA Screening Ongoing	4/1/2016	NON-SITE	HX2	4/1/2016			S
Further Assessment Needed	5	WI	418	Jacob Bros. White Metal	JACOB BROS. WHITE METAL AKA JACOBS SCRAP & WHITE METAL CO & JACOB METAL	MILWAUKEE	WIP000509226	O	Subsequent Pre-CERCLA Screening Ongoing	4/1/2016	NON-SITE	HX2	4/1/2016			S
Further Assessment Needed	7	MO	150	Kansas City Smelting and Refining Co. (Eagle-Picher)	KCS & R ON GUINOTTE	KANSAS CITY	MON000706446	N	Referred to Rmvl - Further Assess Needed[1]	10/20/2016	ACTIVE	RS1	10/20/2016			F
Further Assessment Needed	9	CA	161	Morris P. Kirk and Son (National Lead)	MORRIS P. KIRK & SON (NATIONAL LEAD)	FRESNO	CAN000909463	O	Subsequent Pre-CERCLA Screening Ongoing	10/26/2016	NON-SITE	HX2	10/24/2016			S
Further Assessment Needed	9	CA	173	Smelter Supply Co. A/k/a C and S Battery and Lead Co. [CAD980496897]	C&S BATTERY & LEAD CO	W SACRAMENTO	CAD980496897	N	Site Reassessment Ongoing	10/26/2016	ACTIVE	OO1	10/26/2016			F
Further Assessment Needed	9	CA	439	Goldberg Metal Refining	GOLDBERG METAL REFINING	GARDENA	CAN000909435	O	Subsequent Pre-CERCLA Screening Ongoing	10/26/2016	NON-SITE	HX2	10/24/2016			S
Further Assessment Needed	9	CA	440	Sonken-Galamba Corp.	SONKEN-GALAMBA CORPORATION	GARDENA	CAN000908413	O	Subsequent Pre-CERCLA Screening Ongoing	10/26/2016	NON-SITE	HX3	10/26/2016			S
Further Assessment Needed	9	CA	449	Bercovich, A., Co. a/k/a Sunset Smelting and Refining Co.	BERCOVICH 18TH ST	OAKLAND	CAN000905957	N	Site Reassessment Ongoing[1]	2/1/2017	ACTIVE	OO1	2/1/2017			F
No Further Superfund Interest	1	MA	1	Harcon Corp.	HARCON CORP.	BOSTON	MAN000104488	O	Not a valid site or incident	5/16/2006	NON-SITE	HX1		6/21/2007		F
No Further Superfund Interest	1	MA	2	Harcon Corp.	HARCON CORP	BOSTON	MAN000106089	N	Rmvl Only Site (No Site Assess Work Needed)	9/19/2001	ARCHIVE	RS1	9/19/2001	9/30/2002		F
No Further Superfund Interest	1	MA	3	Vulcan Smelting Works	VULCAN SMELTING WORKS	CHELSEA	MAN000106090	N	Rmvl Only Site (No Site Assess Work Needed)	9/21/2001	ARCHIVE	RS1	9/19/2001	9/26/2002		F
No Further Superfund Interest	1	MA	4	Richards Corp. [state ID# 3-0018464]	RICHARDS CORP	MALDEN	MAN000106091	N	Rmvl Only Site (No Site Assess Work Needed)	9/1/2001	ARCHIVE	RS1	9/1/2001	9/26/2002		F

[1]Site has removal assessment or removal action ongoing or planned.

Appendix A: Assessment Status of 464 Potential Secondary Lead Smelters Addressed by the EPA Superfund Program
March, 2017

ASSESS. DECISION	EPA REG	ST	ECKEL #	ECKEL SITE NAME	SEMS SITE NAME	CITY NAME	EPA ID	NPL STATUS	NON-NPL STATUS	NON-NPL DATE	SITE INVENTORY	LAST ACTION	ACTUAL START	ACTUAL COMPLETE	QUAL	LEAD
No Further Superfund Interest	1	MA	5	David Feinburg Co.	DAVID FEINBERG CO	MEDFORD	MAN000106092	N	Rmvl Only Site (No Site Assess Work Needed)	9/1/2001	ARCHIVE	RS1	9/1/2001	9/26/2002		F
No Further Superfund Interest	1	MA	6	Arcade Smelting and Refining Corp. Victory Plant	ARCADE SMELTING & REFINING CORP VICTORY PLANT	SQUANTUM	MAN000106109	N	Rmvl Only Site (No Site Assess Work Needed)	9/19/2001	ARCHIVE	RS1	11/22/2016	11/30/2016		F
No Further Superfund Interest	1	MA	7	U.S. Smelting Refining and Mining Co. [office?]	U. S. SMELTING REFINING & MINING CO	BOSTON	MAN000106093	N	Rmvl Only Site (No Site Assess Work Needed)	9/1/2001	ARCHIVE	RS1	11/22/2016	11/22/2016		F
No Further Superfund Interest	1	MA	8	National Lead (of Mass.) A/k/a Salem Lead [MAD980520761]	SALEM LEAD CO	BOSTON (ROXBURY)	MAD980520761	N	NFRAP-Site does not qualify for the NPL	3/1/1984	ARCHIVE	PA1		3/1/1984	N	F
No Further Superfund Interest	1	CT	178	David C. Sanford Co.	DAVID C. SANFORD COMPANY	BRIDGEPORT	CTN000103603	O	Not a valid site or incident	9/22/2004	NON-SITE	DS1	9/22/2004	9/22/2004		S
No Further Superfund Interest	1	CT	179	Hamden Smelting Co. Inc	HAMDEN SMELTING COMPANY INC	HAMDEN	CTN000105982	O	Not a valid site or incident	8/12/2010	NON-SITE	HX1		9/22/2004		S
No Further Superfund Interest	1	CT	180	Lapides Metal Corp.	LAPIDES METAL CORPORATION	NEW HAVEN	CTN000103607	O	Not a valid site or incident	9/22/2004	NON-SITE	HX1		9/24/2004		S
No Further Superfund Interest	1	CT	181	Surf Metal Co. A/k/a Rykar Corp Great Meadows?	RYKAR CORPORATION	STRATFORD	CTD981069271	N	NFRAP-Site does not qualify for the NPL	3/22/1990	ARCHIVE	RS1	9/1/2001	10/22/2002		F
No Further Superfund Interest	1	MA	182	Eastern Smelting and Refining Corp. [state ID # 3-0004665]	EASTERN SMELTING & REFINING CORP	BOSTON	MAN000106108	N	Rmvl Only Site (No Site Assess Work Needed)	9/1/2001	ARCHIVE	RS1	9/1/2001	9/26/2002		F
No Further Superfund Interest	1	MA	183	General Metals and Smelting Co. [state ID# 3-0019130]	GENERAL METALS AND SMELTING	BOSTON	MAN000104487	O	Not a valid site or incident	6/21/2007	NON-SITE	HX1		6/21/2007		F
No Further Superfund Interest	1	MA	184	General Metals and Smelting Co.	Duplicate of Eckel Site #183						N/A					
No Further Superfund Interest	1	MA	185	Harcon Corp. a/k/a H. Cohen and Co., Inc.	HARCON CORP AKA H COHEN & CO INC	BOSTON	MAN000106100	N	Rmvl Only Site (No Site Assess Work Needed)	9/19/2001	ARCHIVE	RS1	9/19/2001	9/26/2002		F
No Further Superfund Interest	1	MA	186	Shawmut Smelting Co.	SHAWMUT SMELTING	CAMBRIDGE	MAN000104486	O	Not a valid site or incident	5/16/2006	NON-SITE	HX1		6/21/2007		F
No Further Superfund Interest	1	MA	187	Charlestown Smelting Co.	CHARLESTOWN SMELTING CO	CHARLESTOWN	MAN000106102	N	Rmvl Only Site (No Site Assess Work Needed)	9/1/2001	ARCHIVE	RS1	9/1/2001	12/6/2002		F
No Further Superfund Interest	1	MA	188	Harcon Corp.	HARCON CORP	CHELSEA	MAN000106103	N	Rmvl Only Site (No Site Assess Work Needed)	9/19/2001	ARCHIVE	RS1	9/19/2001	9/26/2002		F
No Further Superfund Interest	1	MA	189	Oscar Cutler Co. [has state ID]	OSCAR CULTER CO	CHELSEA	MAN000106104	N	Rmvl Only Site (No Site Assess Work Needed)	9/1/2001	ARCHIVE	RS1	11/22/2016	11/29/2016		F
No Further Superfund Interest	1	MA	190	Vulcan Smelting Works	VULCAN SMELTING WORKS	CHELSEA	MAN000106105	N	Rmvl Only Site (No Site Assess Work Needed)	9/19/2001	ARCHIVE	RS1	9/19/2001	9/26/2002		F
No Further Superfund Interest	1	MA	191	Butter, Harry, and Co. [has state ID]	HARRY BUTTER & CO	DORCHESTER	MAN000106106	N	Rmvl Only Site (No Site Assess Work Needed)	9/1/2001	ARCHIVE	RS1	11/22/2016	11/28/2016		F
No Further Superfund Interest	1	MA	192	Nick, Herman, and Co. Inc.	NICK HERMAN & CO INC	DORCHESTER	MAN000106101	N	Rmvl Only Site (No Site Assess Work Needed)	9/1/2001	ARCHIVE	RS1	9/1/2001	9/26/2002		F

[1]Site has removal assessment or removal action ongoing or planned.

ASSESS. DECISION	EPA REG	ST	ECKEL #	ECKEL SITE NAME	SEMS SITE NAME	CITY NAME	EPA ID	NPL STATUS	NON-NPL STATUS	NON-NPL DATE	SITE INVENTORY	LAST ACTION	ACTUAL START	ACTUAL COMPLETE	QUAL	LEAD
No Further Superfund Interest	1	MA	193	Massachusetts Smelting and Refining Co.	MASSACHUSETTS SMELTING & REFINING CO	EAST CAMBRIDGE	MAN000106099	N	Rmvl Only Site (No Site Assess Work Needed)	9/1/2001	ARCHIVE	RS1	9/26/2002	9/26/2002		F
No Further Superfund Interest	1	MA	194	Acme Smelting Co. of Mass. a/k/a Acme Type Metal Co.	ACME SMELTING CO OF MASS AKA ACME TYPE METAL CO	EVERETT	MAN000106097	N	Rmvl Only Site (No Site Assess Work Needed)	9/1/2001	ARCHIVE	RS1	9/1/2001	9/26/2002		F
No Further Superfund Interest	1	MA	195	Brackett, Chas. W. Co. [state ID# 4-0000615]	CHASE W BRACKETT CO	PLYMOUTH	MAN000106107	N	Rmvl Only Site (No Site Assess Work Needed)	9/1/2001	ARCHIVE	RS1	11/22/2016	11/30/2016		F
No Further Superfund Interest	1	MA	196	Acorn Type Foundry	ACORN TYPE FOUNDRY	REVERE	MAN000106096	N	Rmvl Only Site (No Site Assess Work Needed)	9/1/2001	ARCHIVE	RS1	9/1/2001	9/26/2002		F
No Further Superfund Interest	1	MA	197	Nick, Herman, Co., Inc.	NICK HERMAN CO INC	SOMERVILLE	MAN000106095	N	Rmvl Only Site (No Site Assess Work Needed)	9/1/2001	ARCHIVE	RS1	9/1/2001	9/26/2002		F
No Further Superfund Interest	1	MA	198	Brackett, Henry F. and Co.	HENRY F BRACKETT & CO	SOUTH BOSTON	MAN000106094	N	Rmvl Only Site (No Site Assess Work Needed)	9/1/2001	ARCHIVE	RS1	9/1/2001	9/26/2002		F
No Further Superfund Interest	1	MA	199	Coran Bros.Corp.	CORAN BROS CORP	SOUTH BOSOTN	MAN000106088	N	Rmvl Only Site (No Site Assess Work Needed)	9/19/2001	ARCHIVE	RS1	9/19/2001	9/30/2002		F
No Further Superfund Interest	1	MA	200	Bloomfield, B. and Co. [has state ID]	BABCO REALTY	WORCESTER	MAN000104485	O	Not a valid site or incident	10/30/2006	NON-SITE	HX1		8/9/2012		S
No Further Superfund Interest	1	RI	201	Union Smelting and Refining Works	UNION SMELTING & REFINING WORKS (FORMER)	PROVIDENCE	RIN000104194	O	Not a valid site or incident	11/16/2005	NON-SITE	HX1		11/16/2005		S
No Further Superfund Interest	1	RI	202	Union Smelting and Refining Works	UNION SMELTING & REFINING WORK	PROVIDENCE	RIN000106123	N	NFRAP-Site does not qualify for the NPL	10/10/2012	ARCHIVE	HX1		10/24/2012		F
No Further Superfund Interest	2	NJ	9	Magnolia Metal Co. A/k/a Bayway Smelting	MAGNOLIA METAL CO. A/K/A BAYWAY SMELTHING	ELIZABETH	NJN000206675	O	Not a valid site - state lead	12/19/2012	NON-SITE	HX1		12/19/2012		EP
No Further Superfund Interest	2	NJ	10	Balbach Smelting and Refining Co. a/ka PVSC sanitary LF?	PVSC SANITARY LF	NEWARK	NJD980529671	N	NFRAP-Site does not qualify for the NPL	6/26/1991	ARCHIVE	SI1	4/1/1991	6/26/1991	N	F
No Further Superfund Interest	2	NJ	12	Eagle-Picher Lead Co.	NORPAK CORP.	NEWARK	NJD056700487	N	NFRAP-Site does not qualify for the NPL	9/26/2005	ARCHIVE	OO1	7/30/2012	7/30/2012	N	S
No Further Superfund Interest	2	NJ	13	United States Smelting Refining and Mining Co.	UNITED STATES REFINING SMELTING & MINING WORKS CO.	NEWARK	NJN000206551	O	Not a valid site or incident	5/22/2012	NON-SITE	HX1		5/22/2012		S
No Further Superfund Interest	2	NJ	14	Hudson Smelting and Refining Co.	HUDSON SMELTING & REFINING COMPANY	NEWARK	NJN000206573	O	Not a valid site or incident	5/25/2012	NON-SITE	HX1		5/25/2012		S
No Further Superfund Interest	2	NJ	16	Metal Reduction Corp.	METAL REDUCTION CORP.	NORTH BERGEN	NJN000206565	O	Not a valid site or incident	6/8/2012	NON-SITE	HX1		6/8/2012		S
No Further Superfund Interest	2	NY	19	City Metal Smelting and Refining Co.	CITY METAL SMELTING & REFINING CO.	BROOKLYN	NYN000206659	N	Rmvl Only Site (No Site Assess Work Needed)	12/4/2012	ARCHIVE	RS1	7/17/2014	7/17/2014		F
No Further Superfund Interest	2	NY	21	Consolidated Smelting	CONSOLIDATED SMELTING	BROOKLYN	NYN000206657	O	Not a valid site or incident	12/4/2012	NON-SITE	RS1	7/14/2014	7/14/2014		F
No Further Superfund Interest	2	NY	23	Glaser Lead Co.	GLASER LEAD CO.	BROOKLYN	NYN000206610	O	Not a valid site or incident	10/18/2012	NON-SITE	HX1		10/18/2012		EP

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No Further Superfund Interest	2	NY	24	Kahn Bros. Smelting	KAHN BROS. SMELTING	BROOKLYN	NYN000206626	O	Not a valid site or incident	10/19/2012	NON-SITE	HX1		10/19/2012		EP
No Further Superfund Interest	2	NY	25	Lee-Zurich Alloys Corp. a/k/a Kelly Metal corp.	LEE-ZURICH ALLOYS CORP.	BROOKLYN	NYN000206628	O	Not a valid site or incident	10/19/2012	NON-SITE	HX1		10/19/2012		EP
No Further Superfund Interest	2	NY	26	United American Metals	Duplicate of Eckel Site #229						N/A					
No Further Superfund Interest	2	NY	27	United American Metals	UNITED AMERICAN METALS	BROOKLYN	NYN000206643	O	Not a valid site or incident	10/23/2012	NON-SITE	HX1		10/23/2012		EP
No Further Superfund Interest	2	NY	29	Michael Hayman	MICHAEL HAYMAN	BUFFALO	NYN000206560	O	Not a valid site or incident	6/21/2012	NON-SITE	HX1		6/21/2012		S
No Further Superfund Interest	2	NY	30	National Lead A/k/a Cornell Lead Co. [NYN000206595]	NATIONAL LEAD	BUFFALO	NYN000206595	O	Not a valid site or incident	9/11/2012	NON-SITE	HX1		9/10/2012		EP
No Further Superfund Interest	2	NY	33	Magnus Metals Div.	MAGNUS METALS DIV.	DEPEW	NYN000206594	O	Not a valid site or incident	9/10/2012	NON-SITE	HX1		9/10/2012		EP
No Further Superfund Interest	2	NY	34	Columbia Smelting and Refining Works Inc.	COLUMBIA SMELTING & REFINING WORKS INC.	LONG ISLAND CITY	NYN000206667	O	Not a valid site or incident	12/4/2012	NON-SITE	HX1		12/4/2012		F
No Further Superfund Interest	2	NY	35	Goldsmith Bros. Smelting and Refining	GOLDSMITH BROS. SMELTING & REFINING	LONG ISLAND CITY	NYN000206611	O	Not a valid site or incident	10/18/2012	NON-SITE	HX1		10/18/2012		EP
No Further Superfund Interest	2	NY	36	Balbach Smelting and Refining Co.	BALBACH SMELTING & REFINING CO.	NEW YORK	NYN000206619	O	Not a valid site or incident	10/18/2012	NON-SITE	HX1		10/18/2012		EP
No Further Superfund Interest	2	NY	37	Duquesne Smelting Co.	DUQUESNE SMELTING CO.	NEW YORK	NYN000206606	O	Not a valid site or incident	10/18/2012	NON-SITE	HX1		10/18/2012		EP
No Further Superfund Interest	2	NY	38	Magnolia Metal Co.	MAGNOLIA METAL CO.	NEW YORK	NYN000206665	N	Rmvl Only Site (No Site Assess Work Needed)	12/4/2012	ARCHIVE	RS1	1/12/2015	1/12/2015		F
No Further Superfund Interest	2	NY	39	Tottenville Copper Co.	TOTTENVILLE COPPER CO.	NEW YORK	NYN000206666	N	Rmvl Only Site (No Site Assess Work Needed)	12/4/2012	ARCHIVE	RS1	1/12/2015	1/12/2015		F
No Further Superfund Interest	2	NY	40	A.M.A. Div. of The Ore and Chemical Corp.	A.M.A. DIV. OF THE ORE AND CHEMICAL CORP.	OCEANSIDE	NYN000206673	N	NFRAP-Site does not qualify for the NPL	9/9/2013	ARCHIVE	SI1		9/4/2013	N	F
No Further Superfund Interest	2	NY	41	A.M.A. Corp.	A.M.A. CORP.	ROCKVILLE CENTRE	NYN000206672	O	Not a valid site or incident	12/4/2012	NON-SITE	HX1		12/4/2012		F
No Further Superfund Interest	2	NY	42	Nassau Smelting and Refining Co.	NASSAU SMELTING & REFINING CO.	NEW YORK	NYN000206658	N	Rmvl Only Site (No Site Assess Work Needed)	10/31/2016	ARCHIVE	RS1	1/12/2015	1/12/2015		F
No Further Superfund Interest	2	NJ	203	U.S. Metals Refining Co. [NJD000526525]	U.S. METALS REFINING CO.	CARTERET	NJD000526525	O	Not a valid site or incident	12/19/2012	NON-SITE	HX1		12/19/2012		EP
No Further Superfund Interest	2	NJ	204	Wolf, Jacques and Co.	WOLF, JACQUES & CO.	CLIFTON	NJN000206677	O	Not a valid site or incident	10/28/2016	NON-SITE	HX1		12/19/2012		EP
No Further Superfund Interest	2	NJ	205	Magnolia Metal Co.	MAGNOLIA METAL COMPANY	ELIZABETH	NJN000206555	O	Not a valid site or incident	6/6/2012	NON-SITE	HX1		6/6/2012		S

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No Further Superfund Interest	2	NJ	206	New Jersey Metals Co.	N.J. METALS	ELIZABETH	NJN000206563	O	Not a valid site or incident	5/25/2012	NON-SITE	HX1		5/25/2012		S
No Further Superfund Interest	2	NJ	207	Jackson Metal Co.	JACKSON METAL CO.	HOBOKEN	NJN000205872	O	Not a valid site or incident	9/28/2006	NON-SITE	HX1		9/28/2006		EP
No Further Superfund Interest	2	NJ	208	Jackson Metal Co.	Duplicate of Eckel Site #207						N/A					
No Further Superfund Interest	2	NJ	209	Lehman, Ira and Co. Inc.	IRA LEHMAN AND COMPANY	HOBOKEN	NJN000206569	O	Not a valid site or incident	5/22/2012	NON-SITE	HX1		5/22/2012		S
No Further Superfund Interest	2	NJ	211	Aetna Smelting and Refining Works, Inc.	AETNA SMELTING & REFINING WORKS, INC.	JERSEY CITY	NJN000206575	O	Not a valid site or incident	5/3/2012	NON-SITE	HX1		4/30/2012		S
No Further Superfund Interest	2	NJ	212	Richard Metal Refining	RICHARD METAL REFINING	JERSEY CITY	NJN000206571	O	Not a valid site or incident	6/6/2012	NON-SITE	HX1		6/6/2012		S
No Further Superfund Interest	2	NJ	213	B and S Metal Co.	B & S METAL CO.	NEWARK	NJN000206568	O	Not a valid site or incident	5/25/2012	NON-SITE	HX1		5/25/2012		S
No Further Superfund Interest	2	NJ	214	Canfield, M.C., Sons Co.	CANFIELD, M.C. SONS CO.	NEWARK	NJN000206557	N	NFRAP-Site does not qualify for the NPL	9/25/2015	ACTIVE	RV1	7/14/2014	9/30/2015	C	F
No Further Superfund Interest	2	NJ	215	Coleman, Thomas	COLEMAN THOMAS CO.	NEWARK	NJN000206567	O	Not a valid site or incident	5/25/2012	NON-SITE	HX1		5/25/2012		S
No Further Superfund Interest	2	NJ	216	Frema Smelting and Refining Co.	FREMA SMELTING & REFINING CO.	NEWARK	NJN000206572	O	Not a valid site or incident	6/6/2012	NON-SITE	HX1		6/6/2012		S
No Further Superfund Interest	2	NJ	217	Orchard Refining and Smelting Works Inc.	ORCHARD REFINING & SMELTING WORKS, INC.	NEWARK	NJN000206561	O	Not a valid site or incident	5/11/2012	NON-SITE	HX1		5/11/2012		S
No Further Superfund Interest	2	NJ	218	Orchard Refining and Smelting Works Inc.	ORCHARD REFINING & SMELTING WORKS, INC.	NEWARK	NJN000206562	O	Not a valid site or incident	5/11/2012	NON-SITE	HX1		5/11/2012		S
No Further Superfund Interest	2	NJ	219	Schroth, Emil A., Inc.	EMIL SCHROTH/TROJAN TUBE CO	HOWELL TWP	NJD011528346	N	NFRAP-Site does not qualify for the NPL	8/23/1994	ARCHIVE	SH1	8/1/1992	8/23/1994	N	S
No Further Superfund Interest	2	NJ	220	Sepenuk, J. and Sons	J. SEPENUK & SONS INCORPORATED	NEWARK	NJN000206570	O	Not a valid site or incident	5/11/2012	NON-SITE	HX1		5/11/2012		S
No Further Superfund Interest	2	NJ	221	The Riverside Metal Co.[NJD980755714]	RIVERSIDE METAL CORPORATION	RIVERSIDE	NJD980755714	N	NFRAP-Site does not qualify for the NPL	9/21/1993	ARCHIVE	RS1	4/15/1997	8/15/1997		F
No Further Superfund Interest	2	NJ	222	Mitchell, L.H. Co.	L.H. MITCHELL CO.	TRENTON	NJN000206554	O	Not a valid site or incident	5/11/2012	NON-SITE	HX1		5/11/2012		S
No Further Superfund Interest	2	NJ	223	Bohas Metals	BOHAS METALS	WOODBRIDGE TWP	NJN000206556	O	Not a valid site or incident	5/11/2012	NON-SITE	HX1		5/11/2012		S
No Further Superfund Interest	2	NY	224	Ney Smelting and Refining	NEY SMELTING & REFINING	ASTORIA	NYN000205869	O	Not a valid site or incident	7/7/2006	NON-SITE	HX1		9/29/2006		EP
No Further Superfund Interest	2	NY	225	Alloys and Products Inc.	ALLOYS & PRODUCTS INC.	BRONX	NYN000206615	O	Not a valid site or incident	10/18/2012	NON-SITE	HX1		10/18/2012		EP

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No Further Superfund Interest	2	NY	226	Merit Metal Smelting Co.	MERIT METAL SMELTING CO.	BRONX	NYN000206630	O	Not a valid site or incident	10/19/2012	NON-SITE	HX1		10/19/2012		EP
No Further Superfund Interest	2	NY	227	AAA Alloys of America	AAA ALLOYS OF AMERICA	BROOKLYN	NYN000206663	N	Rmvl Only Site (No Site Assess Work Needed)	12/4/2012	ARCHIVE	RS1	7/21/2014	7/21/2014		F
No Further Superfund Interest	2	NY	228	Alpha Metals and Rolling Mills	ALPHA METALS & ROLLING MILLS	BROOKLYN	NYN000205871	O	Not a valid site or incident	7/7/2006	NON-SITE	HX1		9/28/2006		EP
No Further Superfund Interest	2	NY	229	Anchor Metal Co.	ANCHOR METAL CO.	BROOKLYN	NYN000206618	O	Not a valid site - state lead	12/19/2012	NON-SITE	HX1		10/18/2012		EP
No Further Superfund Interest	2	NY	230	Anchor Metal Co.	ANCHOR METAL CO.	BROOKLYN	NYN000206652	N	Rmvl Only Site (No Site Assess Work Needed)	12/4/2012	ARCHIVE	RS1	6/10/2014	6/10/2014		F
No Further Superfund Interest	2	NY	232	Battaglia Bros., Inc.	BATTAGLIA BROS., INC.	BROOKLYN	NYN000206664	N	Rmvl Only Site (No Site Assess Work Needed)	12/4/2012	ARCHIVE	RS1	8/1/2014	8/1/2014		F
No Further Superfund Interest	2	NY	234	Brooklyn Scrap Metal Co.	BROOKLYN SCRAP METAL CO.	BROOKLYN	NYN000206621	N	NFRAP-Site does not qualify for the NPL	5/16/2014	ARCHIVE	RS1	1/12/2015	1/12/2015		F
No Further Superfund Interest	2	NY	235	Columbia Smelting and Refining Works a/k/a Roosevelt Metal Co.	Duplicate of Eckel Site #229						N/A					
No Further Superfund Interest	2	NY	236	Crescent Smelting Works	CRESCENT SMELTING WORKS	BROOKLYN	NYN000206604	N	Rmvl Only Site (No Site Assess Work Needed)	5/16/2014	ARCHIVE	RS1	9/30/2014	11/15/2016		F
No Further Superfund Interest	2	NY	237	Flynn, Michael Inc.	FLYNN, MICHAEL INC.	BROOKLYN	NYN000206651	N	Rmvl Only Site (No Site Assess Work Needed)	12/4/2012	ARCHIVE	RS1	1/12/2015	1/12/2015		F
No Further Superfund Interest	2	NY	238	Friedman Metal Co.	FRIEDMAN METAL CO.	BROOKLYN	NYN000206609	O	Not a valid site or incident	10/18/2012	NON-SITE	HX1		10/18/2012		EP
No Further Superfund Interest	2	NY	239	Henning Bros and Smith Inc	HENNING BROS & SMITH INC	BROOKLYN	NYN000206612	O	Not a valid site or incident	10/18/2012	NON-SITE	HX1		10/18/2012		EP
No Further Superfund Interest	2	NY	240	Interstate Metals Co.	INTERSTATE METALS CO.	BROOKLYN	NYN000206654	N	Rmvl Only Site (No Site Assess Work Needed)	12/4/2012	ARCHIVE	RS1	1/12/2015	1/12/2015		F
No Further Superfund Interest	2	NY	241	Jackson-Wheeler Metal Service Inc.	JACKSON-WHEELER METAL SERVICE INC.	BROOKLYN	NYN000206613	O	Not a valid site or incident	10/18/2012	NON-SITE	HX1		10/18/2012		EP
No Further Superfund Interest	2	NY	242	Jackson-Wheeler Metals Service, Inc. a/k/a Belmont Metals [NYD001306877]	BKLYN UNION GAS /BELMONT WORKS	BROOKLYN	NYD980532097	N	NFRAP-Site does not qualify for the NPL	9/24/1986	ARCHIVE	PA1		9/24/1986	N	F
No Further Superfund Interest	2	NY	244	Monroe Smelting Corp.	MONROE SMELTING CORP.	BROOKLYN	NYN000206661	N	Rmvl Only Site (No Site Assess Work Needed)	12/4/2012	ARCHIVE	RS1	7/2/2014	7/2/2014		F
No Further Superfund Interest	2	NY	246	Prospect Smelting and Refining Works	PROSPECT SMELTING & REFINING WORKS	BROOKLYN	NYN000206636	O	Not a valid site or incident	10/23/2012	NON-SITE	HX1		10/23/2012		EP
No Further Superfund Interest	2	NY	247	Rutgers Metal Co.	RUTGERS METAL CO.	BROOKLYN	NYN000206638	O	Not a valid site or incident	10/23/2012	NON-SITE	HX1		10/23/2012		EP
No Further Superfund Interest	2	NY	248	Standard Type Metals a/k/a Universal Metal and Smelting Corp.	STANDARD TYPE METALS A/K/A UNIVERSAL METAL & SMELTING CORP.	BROOKLYN	NYN000206640	O	Not a valid site or incident	10/23/2012	NON-SITE	HX1		10/23/2012		EP

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No Further Superfund Interest	2	NY	249	Valenti Metal Corp.	VALENTI METAL CORP.	BROOKLYN	NYN000206644	O	Not a valid site or incident	10/23/2012	NON-SITE	HX1		10/23/2012		EP
No Further Superfund Interest	2	NY	250	American Nickel Alloy Mfg. Co.	AMERICAN NICKEL ALLOY MFG. CO.	BROOKLYN	NYN000206616	O	Not a valid site or incident	10/18/2012	NON-SITE	HX1		10/18/2012		EP
No Further Superfund Interest	2	NY	251	Wallabout Smelting and Refining Co.	WALLABOUT SMELTING & REFINING CO.	BROOKLYN	NYN000205870	O	Not a valid site or incident	7/7/2006	NON-SITE	HX1		9/29/2006		EP
No Further Superfund Interest	2	NY	254	Merit Metals	MERIT METALS	BUFFALO	NYN000206588	O	Not a valid site or incident	9/10/2012	NON-SITE	HX1		9/10/2012		EP
No Further Superfund Interest	2	NY	256	Niagara Metal Co.	NIAGARA METAL CO.	BUFFALO	NYN000206589	O	Not a valid site or incident	9/10/2012	NON-SITE	HX1		9/10/2012		EP
No Further Superfund Interest	2	NY	258	Electro Refractories Alloys Corp.	ELECTRO REFACTORIES ALLOY CORP.	KELLOGG	NYN000206656	O	Not a valid site or incident	12/4/2012	NON-SITE	RS1		1/12/2015		F
No Further Superfund Interest	2	NY	259	The Andrews Lead Company Inc.	THE ANDREWS LEAD COMPANY INC.	LONG ISLAND CITY	NYN000206670	N	Rmvl Only Site (No Site Assess Work Needed)	12/4/2012	ARCHIVE	RS1	1/12/2015	1/12/2015		F
No Further Superfund Interest	2	NY	260	Central Smelting Co.	CENTRAL SMELTING CO.	LONG ISLAND CITY	NYN000206624	O	Not a valid site or incident	10/18/2012	NON-SITE	HX1		10/18/2012		EP
No Further Superfund Interest	2	NY	261	Flemm Lead Company Inc.	FLEMM LEAD COMPANY INC.	LONG ISLAND CITY	NYN000206608	O	Not a valid site or incident	10/18/2012	NON-SITE	HX1		10/18/2012		EP
No Further Superfund Interest	2	NY	262	Flemm Lead Co. [found by FOIA]	FLEMM LEAD CO.	LONG ISLAND CITY	NYN000206669	N	Rmvl Only Site (No Site Assess Work Needed)	12/4/2012	ARCHIVE	RS1	8/1/2014	8/1/2014		F
No Further Superfund Interest	2	NY	263	Lissberger, Marks and Son	LISSBERGER, MARKS & SON	LONG ISLAND CITY	NYN000206629	O	Not a valid site or incident	10/19/2012	NON-SITE	HX1		10/19/2012		EP
No Further Superfund Interest	2	NY	264	Ney Smelting and Refining	Duplicate of Eckel Site #224						N/A					
No Further Superfund Interest	2	NY	265	Ney Smelting and Refining	Duplicate of Eckel Site #224						N/A					
No Further Superfund Interest	2	NY	266	Stoll Metal Co. a/k/a Paragon Smelting Corp.	STOLL METAL CO. A/K/A PARAGON SMELTING CORP.	LONG ISLAND CITY	NYN000206641	O	Not a valid site or incident	10/23/2012	NON-SITE	RS1	1/12/2015	1/12/2015		F
No Further Superfund Interest	2	NY	267	Jack Rosen	JACK ROSEN	MOUNT VERNON	NYN000206558	O	Not a valid site or incident	6/21/2012	NON-SITE	HX1		6/21/2012		EP
No Further Superfund Interest	2	NY	268	Abbey Metal Corp.	ABBEY METAL CORP.	BRONX	NYN000206614	O	Not a valid site or incident	10/18/2012	NON-SITE	HX1		10/18/2012		EP
No Further Superfund Interest	2	NY	269	American Nickel Alloy Mfg. Co. [office]	AMERICAN NICKEL ALLOY MFG. CO. [OFFICE]	NEW YORK	NYN000206617	O	Not a valid site or incident	10/18/2012	NON-SITE	HX1		10/18/2012		EP
No Further Superfund Interest	2	NY	270	Barth Smelting Co.	BARTH SMELTING CO.	NEW YORK	NYN000206620	O	Not a valid site or incident	10/18/2012	NON-SITE	HX1		10/18/2012		EP
No Further Superfund Interest	2	NY	271	Caswell, Strauss and Co.	CASWELL, STRAUSS & CO.	NEW YORK	NYN000206623	O	Not a valid site or incident	10/18/2012	NON-SITE	HX1		10/18/2012		EP

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No Further Superfund Interest	2	NY	272	Dorfman Metal Co.	DORFMAN METAL CO.	NEW YORK	NYN000206605	O	Not a valid site or incident	10/18/2012	NON-SITE	HX1		10/18/2012		EP
No Further Superfund Interest	2	NY	273	Merit Metal Smelting Co.	MERIT METAL SMELTING CO.	BRONX	NYN000206671	N	Rmvl Only Site (No Site Assess Work Needed)	12/4/2012	ARCHIVE	RS1	1/12/2015	1/12/2015		F
No Further Superfund Interest	2	NY	274	Metal Reclaiming Co.	METAL RECLAIMING CO.	NEW YORK	NYN000206662	N	Rmvl Only Site (No Site Assess Work Needed)	12/4/2012	ARCHIVE	RS1	1/12/2015	1/12/2015		F
No Further Superfund Interest	2	NY	275	Monroe Smelting and Refining Works Inc.	MONROE SMELTING & REFINING WORKS INC.	NEW YORK	NYN000205873	O	Not a valid site or incident	7/7/2006	NON-SITE	HX1		9/29/2006		EP
No Further Superfund Interest	2	NY	276	Nassau Smelting and Refining Co. (ATandandT) [office?]	NASSAU SMELTING & REFINING CO. (AT&T)	NEW YORK	NYN000206631	O	Not a valid site or incident	10/19/2012	NON-SITE	HX1		10/19/2012		EP
No Further Superfund Interest	2	NY	277	National Lead Goldsmith Bros. Div. [office?]	NATIONAL LEAD GOLDSMITH BROS. DIV.	NEW YORK	NYN000206632	O	Not a valid site or incident	10/19/2012	NON-SITE	HX1		10/19/2012		EP
No Further Superfund Interest	2	NY	279	New York Solder Co. Inc.	NEW YORK SOLDER CO. INC.	NEW YORK	NYN000206660	N	Rmvl Only Site (No Site Assess Work Needed)	12/4/2012	ARCHIVE	RS1	1/12/2015	1/12/2015		F
No Further Superfund Interest	2	NY	280	Paymer Metal Co.	PAYMER METAL CO.	BRONX	NYN000206634	O	Not a valid site or incident	10/19/2012	NON-SITE	HX1		10/19/2012		EP
No Further Superfund Interest	2	NY	281	Standard Type Metals	STANDARD TYPE METALS	NEW YORK	NYN000206639	O	Not a valid site or incident	10/23/2012	NON-SITE	HX1		10/23/2012		EP
No Further Superfund Interest	2	NY	282	U.S. Smelting Refining and Mining Co. [office]	U.S. SMELTING REFINING & MINING CO. [OFFICE]	NEW YORK	NYN000206642	O	Not a valid site or incident	10/23/2012	NON-SITE	HX1		10/23/2012		EP
No Further Superfund Interest	2	NY	283	Rochester Lead Works	ROCHESTER LEAD WORKS	ROCHESTER	NYN000206637	O	Not a valid site or incident	10/23/2012	NON-SITE	HX1		10/23/2012		EP
No Further Superfund Interest	2	NY	286	Katzman,N. and Co.	KATZMAN,N. & CO.	UTICA	NYN000206655	N	Rmvl Only Site (No Site Assess Work Needed)	12/4/2012	ARCHIVE	RS1	1/12/2015	1/12/2015		F
No Further Superfund Interest	2	NY	288	Yonkers Metal Corp.	YONKERS METAL CORP	YONKERS	NYN000206559	O	Not a valid site or incident	6/21/2012	NON-SITE	HX1		6/21/2012		S
No Further Superfund Interest	3	MD	43	Industrial Metal Melting	INDUSTRIAL METAL SMELTING LEAD SMELTER	BALTIMORE	MDN000306816	N	NFRAP-Site does not qualify for the NPL	1/17/2013	ARCHIVE	SI1	11/30/2011	1/17/2013	N	F
No Further Superfund Interest	3	MD	44	Southern Smelting and Refining Works	SOUTHERN SMELTING & REFINING WORKS LEAD SMELTER	BALTIMORE	MDN000306836	N	NFRAP-Site does not qualify for the NPL	4/6/2012	ARCHIVE	OO1	11/21/2011	4/6/2012	N	S
No Further Superfund Interest	3	PA	45	Hammond Lead Products	HAMMOND LEAD PRODUCTS, LEAD SMELTER	CARNEGIE	PAN000306798	N	NFRAP-Site does not qualify for the NPL	5/2/2012	ARCHIVE	SI1	8/1/2005	9/12/2005	N	F
No Further Superfund Interest	3	PA	46	Schuylkill Valley Metals	SCHUYLKILL VALLEY METALS	CONSHOHOCKEN	PAN000306870	N	NFRAP-Site does not qualify for the NPL	6/5/2012	ARCHIVE	SI1	2/20/2006	2/1/2007	N	F
No Further Superfund Interest	3	PA	48	Penn Reduction and Refining Co.	PENN REDUCTION AND REFINERY	NEW CASTLE	PAN000306869	N	NFRAP-Site does not qualify for the NPL	5/24/2012	ARCHIVE	SI1	2/27/2006	2/28/2006	N	F
No Further Superfund Interest	3	PA	50	Bers and Co. Div. of Gould Inc. [known?]	BERS AND COMPANY LEAD SMELTER	PHILADELPHIA	PAN000306866	N	NFRAP-Site does not qualify for the NPL	5/24/2012	ARCHIVE	SI1	12/16/2005	3/22/2007	N	F

[1]Site has removal assessment or removal action ongoing or planned.

Appendix A: Assessment Status of 464 Potential Secondary Lead Smelters Addressed by the EPA Superfund Program
March, 2017

ASSESS. DECISION	EPA REG	ST	ECKEL #	ECKEL SITE NAME	SEMS SITE NAME	CITY NAME	EPA ID	NPL STATUS	NON-NPL STATUS	NON-NPL DATE	SITE INVENTORY	LAST ACTION	ACTUAL START	ACTUAL COMPLETE	QUAL	LEAD
No Further Superfund Interest	3	PA	51	Electric Storage Battery	ELECTRIC STORAGE BATTERY LEAD SMELTER 2	PHILADELPHIA	PAN000306810	O	Not a valid site or incident	1/18/2012	NON-SITE	HX1	8/1/2005	8/1/2005		F
No Further Superfund Interest	3	PA	53	Federated Metals Corp. [office?]	FEDERATED METALS CORP. LEAD SMELTER 2	PHILADELPHIA	PAN000306812	N	NFRAP-Site does not qualify for the NPL	5/30/2013	ARCHIVE	PA1	5/15/2013	5/30/2013	N	F
No Further Superfund Interest	3	PA	54	Federated Metals Corp.	FEDERATED METALS CORP. LEAD SMELTER	PHILADELPHIA	PAN000306811	N	NFRAP-Site does not qualify for the NPL	4/19/2013	ARCHIVE	PA1	4/9/2013	4/19/2013	N	EP
No Further Superfund Interest	3	PA	55	Girard Smelting and Refining Co. a/k/a Halpern, I., Bros. and Co.	GIRARD SMELTING COMPANY	PHILADELPHIA	PAN000306579	N	NFRAP-Site does not qualify for the NPL	10/6/2009	ARCHIVE	SI1	4/1/2008	6/30/2008	N	F
No Further Superfund Interest	3	PA	56	Halpern Metals Co.	Duplicate of Eckel Site #304						N/A					
No Further Superfund Interest	3	PA	58	Jos. Rosenthals Sons	JOS. ROSENTHAL'S SONS LEAD SMELTER 2	PHILADELPHIA	PAN000306802	N	NFRAP-Site does not qualify for the NPL	2/7/2007	ARCHIVE	SI1	8/1/2005	2/7/2007	N	F
No Further Superfund Interest	3	PA	59	Jos. Rosenthals Sons	JOS. ROSENTHAL'S SON LEAD SMELTER	PHILADELPHIA	PAN000306803	N	NFRAP-Site does not qualify for the NPL	4/19/2012	ARCHIVE	SI1	8/1/2005	2/7/2007	N	F
No Further Superfund Interest	3	PA	61	L. Goldsteins Sons Inc.	L. GOLDSTEIN'S SON LEAD SMELTER	PHILADELPHIA	PAN000306821	N	NFRAP-Site does not qualify for the NPL	5/2/2012	ARCHIVE	SI1	8/1/2005	4/5/2012	N	F
No Further Superfund Interest	3	PA	63	Morgan Smelters Inc.	MORGAN SMELTERS CO., LEAD SMELTER	PHILADELPHIA	PAN000306828	N	NFRAP-Site does not qualify for the NPL	5/17/2013	ARCHIVE	PA2	5/13/2013	5/17/2013	N	F
No Further Superfund Interest	3	PA	64	North American Smelting	NORTH AMERICAN LEAD SMELTING	PHILAELPHIA	PAN000306696	N	NFRAP-Site does not qualify for the NPL	5/2/2012	ARCHIVE	SI1	9/29/2009	5/19/2010	N	F
No Further Superfund Interest	3	PA	65	Pennsylvania Smelting and Refining Co.	PENNSYLVANIA SMELTING & REFINING	PHILADELPHIA	PAN000306867	N	NFRAP-Site does not qualify for the NPL	5/24/2012	ARCHIVE	SI1	12/16/2005	1/31/2007	N	F
No Further Superfund Interest	3	PA	66	Sall, George, Metals Co.	SALL, GEORGE, METALS CO., LEAD SMELTER	PHILADELPHIA	PAN000306804	N	NFRAP-Site does not qualify for the NPL	5/4/2012	ARCHIVE	SI1	8/1/2005	1/31/2007	N	F
No Further Superfund Interest	3	PA	69	Duquesne Smelting Corp.	DUQUESNE SMELTING CORP LEAD SMELTER	PITTSBURGH	PAN000306809	N	NFRAP-Site does not qualify for the NPL	3/27/2012	ARCHIVE	SI1	8/1/2005	9/12/2005	N	F
No Further Superfund Interest	3	PA	71	Pitt Metals Co. Inc. a/k/a Murdoch, M. and Co.	PITT METALS CO. INC., A/K/A/ MURDOUCH LEAD SMELTER	PITTSBURGH	PAN000306800	N	NFRAP-Site does not qualify for the NPL	5/10/2012	ARCHIVE	SI1	8/3/2005	9/12/2005	N	F
No Further Superfund Interest	3	PA	75	Laramie Metal Co.	LARAMIE METAL CO., 2 LEAD SMELTER	YORK	PAN000306819	N	NFRAP-Site does not qualify for the NPL	5/4/2012	ARCHIVE	SI1	8/1/2005	2/1/2007	N	F
No Further Superfund Interest	3	PA	76	Laramie Metal Co.	LARAMIE METAL CO., LEAD SMELTER	YORK	PAN000306820	N	NFRAP-Site does not qualify for the NPL	5/17/2012	ARCHIVE	SI1	8/1/2005	2/1/2007	N	F
No Further Superfund Interest	3	MD	289	Arundel Chemical Corp.	ARUNDEL CHEMICAL CORP	BALTMORE	MDN000306853	N	NFRAP-Site does not qualify for the NPL	4/24/2012	ARCHIVE	SI1	8/1/2005	8/23/2006	N	F
No Further Superfund Interest	3	MD	290	Dixie Metal Co. a/k/a K. Hettleman and Sons	DIXIE METAL CO LEAD SMELTER	BROOKLYN	MDN000306851	N	NFRAP-Site does not qualify for the NPL	1/18/2013	ARCHIVE	SI1	12/1/2011	1/18/2013	N	F
No Further Superfund Interest	3	MD	291	Dixie Metals Co. a/k/a K. Hettleman and Sons A/k/a Kopper Co. Inc. Eng Metal	KOPPERS CO INC-ENGR MET PROD G	BALTIMORE	MDD045677036	N	NFRAP-Site does not qualify for the NPL	5/4/2012	ARCHIVE	SI1	1/24/2006	8/23/2006	N	F

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ASSESS. DECISION	EPA REG	ST	ECKEL #	ECKEL SITE NAME	SEMS SITE NAME	CITY NAME	EPA ID	NPL STATUS	NON-NPL STATUS	NON-NPL DATE	SITE INVENTORY	LAST ACTION	ACTUAL START	ACTUAL COMPLETE	QUAL	LEAD
No Further Superfund Interest	3	MD	292	Hanover Metal Co. [MD000752220] active	HANOVER METAL COMPANY LEAD SMELTER	BALTIMORE	MDN000306856	N	NFRAP-Site does not qualify for the NPL	4/18/2012	ARCHIVE	OO1	11/30/2011	4/18/2012	N	F
No Further Superfund Interest	3	MD	293	National Lead A/k/a NL Industries Inc. Baltimore Metal Plt [MDD980537435]	NL INDUSTRIES INC BALTIMORE METAL PLT LEAD SMELTER	BALTIMORE	MDD980537435	N	NFRAP-Site does not qualify for the NPL	4/18/2012	ARCHIVE	OO1	11/30/2011	4/18/2012	N	F
No Further Superfund Interest	3	MD	294	Standard Metal Refining	STANDARD METAL REFINING LEAD SMELTER	BALTIMORE	MDN000306835	N	NFRAP-Site does not qualify for the NPL	5/10/2012	ARCHIVE	SI1	1/24/2006	8/22/2006	N	F
No Further Superfund Interest	3	MD	297	Wolfe, Herbert A. Metal Co.	WOLFE, HERBERT A METAL CO. (FAIRFIELD) LEAD SMELTER	FAIRFIELD	MDN000306887	O	Not a valid site or incident	10/24/2012	NON-SITE	HX1	9/20/2012	9/20/2012		F
No Further Superfund Interest	3	PA	298	Standard Metal Alloys	STANDARD METAL ALLOYS LEAD SMELTER	CONSHOHOCKEN	PAN000306900	N	NFRAP-Site does not qualify for the NPL	7/16/2013	ARCHIVE	PA1	6/25/2013	7/16/2013	N	F
No Further Superfund Interest	3	PA	300	Coslov Company	COSLOV-COMPANY LEAD SMELTER	GLASSPORT	PAN000306806	N	NFRAP-Site does not qualify for the NPL	3/27/2012	ARCHIVE	SI1	8/1/2005	2/22/2007	N	F
No Further Superfund Interest	3	PA	301	Penn-Harris Metals Corp.	PENN-HARRIS METALS CORP., LEAD SMELTER	HARRISBURG	PAN000306826	N	NFRAP-Site does not qualify for the NPL	5/2/2012	ARCHIVE	SI1	8/1/2005	2/7/2007	N	F
No Further Superfund Interest	3	PA	303	A. Perez and Son Div. of Abrams Metal Co.	A. PEREZ AND SON DIVISION OF ABRAMS METAL CO. LEAD SMELTER	PHILADELPHIA	PAN000306583	N	NFRAP-Site does not qualify for the NPL	5/10/2012	ARCHIVE	OO1	2/1/2007	3/15/2012	N	F
No Further Superfund Interest	3	PA	305	Atlantic Metals Corp.	ATLANTIC METALS CORPORATION	PHILADELPHIA	PAN000306199	N	NFRAP-Site does not qualify for the NPL	10/6/2009	ARCHIVE	SI1	12/30/2008	2/26/2009	N	F
No Further Superfund Interest	3	PA	307	Car-Mor Metal Co.	CAR-MOR METAL COMPANY LEAD SMELTER	PHILADELPHIA	PAN000306202	N	NFRAP-Site does not qualify for the NPL	6/30/2009	ARCHIVE	SI1	5/1/2009	6/30/2009	N	F
No Further Superfund Interest	3	PA	308	General Smelting Co.	GENERAL SMELTING COMPANY LEAD SMELTER	PHILADELPHIA	PAN000306637	N	NFRAP-Site does not qualify for the NPL	5/10/2012	ARCHIVE	SI1	2/7/2007	2/8/2011	N	F
No Further Superfund Interest	3	PA	309	Joseph Berliner Co.	JOSEPH BERLINGER COMPNAY LEAD SMELTER	PHILADELPHIA	PAN000306868	N	NFRAP-Site does not qualify for the NPL	5/24/2012	ARCHIVE	SI1	12/16/2005	3/22/2007	N	F
No Further Superfund Interest	3	PA	312	Metallurgical Products	SMELTER METALLURGICAL PRODUCTS LEAD SMELTER	PHILADELPHIA	PAN000306639	N	NFRAP-Site does not qualify for the NPL	5/2/2012	ARCHIVE	SI1	2/7/2007	7/30/2009	N	F
No Further Superfund Interest	3	PA	314	Philadelphia Smelting and Refining Co.	PHILADELPHIA SMELTING & REFINING LEAD SMELTER	PHILADELPHIA	PAN000306801	N	NFRAP-Site does not qualify for the NPL	5/4/2012	ARCHIVE	SI1	8/1/2005	1/31/2007	N	F
No Further Superfund Interest	3	PA	315	Reid Metal Refining Co.	REID METAL REFINING CO. LEAD SMELTER	PHILADELPHIA	PAN000306824	N	NFRAP-Site does not qualify for the NPL	5/2/2012	ARCHIVE	SI1	8/1/2005	4/5/2012	N	F
No Further Superfund Interest	3	PA	318	Standard Metal Alloy Co.	STANDARD METAL ALLOY	PHILADELPHIA	PAN000306855	N	NFRAP-Site does not qualify for the NPL	5/14/2012	ARCHIVE	OO1	5/1/2012	5/1/2012	N	EP
No Further Superfund Interest	3	PA	321	Cadman, A.W. Mfg. Co.	CADMAN, A.W. MFG. CO. 2 LEAD SMELTER	PITTSBURGH	PAN000306807	N	NFRAP-Site does not qualify for the NPL	5/2/2012	ARCHIVE	SI1	7/19/2005	9/12/2005	N	F
No Further Superfund Interest	3	PA	323	Imperial Type Metal Co.	IMPERIAL TYPE METAL CO. LEAD SMELTER	PITTSBURGH	PAN000306815	N	NFRAP-Site does not qualify for the NPL	5/4/2012	ARCHIVE	SI1	8/3/2005	9/12/2005	N	F
No Further Superfund Interest	3	PA	324	Magnolia Metal Co.	MAGNOLIA METAL CO., LEAD SMELTER	PITTSBURGH	PAN000306817	N	NFRAP-Site does not qualify for the NPL	5/2/2012	ARCHIVE	SI1	7/19/2005	9/12/2005	N	F

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ASSESS. DECISION	EPA REG	ST	ECKEL #	ECKEL SITE NAME	SEMS SITE NAME	CITY NAME	EPA ID	NPL STATUS	NON-NPL STATUS	NON-NPL DATE	SITE INVENTORY	LAST ACTION	ACTUAL START	ACTUAL COMPLETE	QUAL	LEAD
No Further Superfund Interest	3	PA	325	Pittsburgh White Metal	PITTSBURGH WHITE METAL CO., LEAD SMELTER	PITTSBURGH	PAN000306797	N	NFRAP-Site does not qualify for the NPL	5/2/2012	ARCHIVE	SI1	7/19/2005	9/12/2005	N	F
No Further Superfund Interest	3	VA	326	Glazier Metal Co.	GLAZIER METAL CO	RICHMOND	VAN000306814	O	Not a valid site or incident	1/18/2012	NON-SITE	HX1	8/1/2005	8/1/2005		F
No Further Superfund Interest	4	FL	78	Florida Smelting Co.	Duplicate of Eckel Site #079						N/A					
No Further Superfund Interest	4	FL	80	Russell, Roberts Metals Inc.	ROBERT RUSSELL	MIAMI	FLN000410784	O	Not a valid site or incident	10/25/2011	NON-SITE	HX1		10/25/2011		S
No Further Superfund Interest	4	GA	83	Evans Metals Co. [known?]	FORMER METALICO-EVANS	ATLANTA	GAN000410521	N	NFRAP-Site does not qualify for the NPL	4/15/2014	ARCHIVE	SI3	10/1/2012	4/15/2014	N	F
No Further Superfund Interest	4	GA	84	Evans Metals Co.	Duplicate of Eckel Site #083						N/A					
No Further Superfund Interest	4	GA	85	Miller Metal Co.	MILLER METAL CO.	ATLANTA	GAN000409871	O	Not a valid site or incident	5/3/2006	NON-SITE	HX1		12/21/2006		F
No Further Superfund Interest	4	GA	86	Miller Metal Co.	Duplicate of Eckel Site #085						N/A					
No Further Superfund Interest	4	KY	87	National Lead	NATIONAL LEAD	LOUISVILLE	KYN000410898	O	Not a valid site or incident	10/5/2012	NON-SITE	HX1	8/1/2012	10/5/2012		EP
No Further Superfund Interest	4	NC	88	Moore Smelting Co.	Duplicate of Eckel Site #089						N/A					
No Further Superfund Interest	4	NC	89	Willard Smelting Co.	WILLIARD SMELTING CO.	CHARLOTTE	NCD003151651	N	NFRAP-Site does not qualify for the NPL	3/12/1987	ARCHIVE	OO1		6/14/2005	N	S
No Further Superfund Interest	4	AL	327	Birmingham Lead and Smelting Co.	ELECTRICAL EQUIPMENT INC	BIRMINGHAM	ALD057390601	N	NFRAP-Site does not qualify for the NPL	11/1/1984	ARCHIVE	PA1		11/1/1984	N	S
No Further Superfund Interest	4	FL	328	Tampa Lead Industries	TAMPA TIRE CO., INC.	TAMPA	FLN000407515	O	Not a valid site or incident	9/20/2002	NON-SITE	HX1		8/14/2002		S
No Further Superfund Interest	4	KY	329	Precision Metals Co.	Duplicate of Eckel Site #087						N/A					
No Further Superfund Interest	4	KY	330	Certified Metals Mfg Co.	CERTIFIED METALS	NEWPORT	KYN000410899	O	Not a valid site or incident	10/30/2012	NON-SITE	HX1	8/1/2012	10/30/2012		EP
No Further Superfund Interest	4	KY	331	Certified Metals Mfg Co.	Duplicate of Eckel Site #330						N/A					
No Further Superfund Interest	4	NC	332	Southern Metals Co. Inc.	Duplicate of Eckel Site #333						N/A					
No Further Superfund Interest	4	NC	333	Southern Metals Co. Inc.	SOUTHERN METALS CO	CHARLOTTE	NCN000410906	O	Not a valid site or incident	1/8/2013	NON-SITE	HX1	8/30/2012	1/8/2013		S
No Further Superfund Interest	4	NC	334	Industrial Metals Alloy Co. [NCD986178382]	INDUSTRIAL METAL ALLOY	WINSTON-SALEM	NCN000409780	N	NFRAP-Site does not qualify for the NPL	9/28/2012	ACTIVE	PA1		9/28/2012	N	S

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No Further Superfund Interest	4	TN	335	Cline and Bernheim	CLINE & BERNHEIM	NASHVILLE	TNN000409880	O	Not a valid site or incident	6/1/2006	NON-SITE	HX1		10/30/2012		F
No Further Superfund Interest	5	IL	92	Ablin Bros.	ABLIN BROTHERS METAL CO	CHICAGO	ILNP00510010	O	Not a valid site or incident	9/28/2005	NON-SITE	HX1		9/28/2005		S
No Further Superfund Interest	5	IL	93	Bruco Co.	BRUCO CO	CHICAGO	ILP000510790	N	NFRAP-Site does not qualify for the NPL	2/21/2013	ACTIVE	PA1	4/1/2012	2/21/2013	N	S
No Further Superfund Interest	5	IL	94	Cohn, L.A. and Bro. Inc.	L.A. COHN & BROTHERS, INC	CICERO	ILN000510654	O	Not a valid site or incident	3/31/2009	NON-SITE	HX1		3/31/2009		S
No Further Superfund Interest	5	IL	95	Eagle-Picher Lead Co. [office?]	EAGLE PICHER	CHICAGO	ILNP00510037	O	Not a valid site or incident	9/30/2005	NON-SITE	HX1		9/30/2005		S
No Further Superfund Interest	5	IL	96	Federated Metals Corp.	FEDERATED METALS CORP	CHICAGO	ILNP00510034	O	Not a valid site or incident	9/29/2005	NON-SITE	HX1		9/29/2005		S
No Further Superfund Interest	5	IL	97	Goldsmith Bros. Smelting and Refining Co. [office?]	GOLDSMITH BROTHERS SMELTING AND REFINING	CHICAGO	ILNP00510033	O	Not a valid site or incident	9/29/2005	NON-SITE	HX1		9/29/2005		S
No Further Superfund Interest	5	IL	98	Illinois Smelting and Refining Co. [office?]	ILLINOIS SMELTING & REFINING	CHICAGO	ILNP00510040	O	Not a valid site or incident	9/30/2005	NON-SITE	HX1		9/30/2005		S
No Further Superfund Interest	5	IL	99	Imperial Type Metal Co.	Duplicate of Eckel Site #360						N/A					
No Further Superfund Interest	5	IL	101	Michigan Smelting and Refining Co. [office?]	MICHIGAN SMELTING & REFINING CO	CHICAGO	ILNP00510018	O	Not a valid site or incident	9/28/2005	NON-SITE	HX1		9/28/2005		S
No Further Superfund Interest	5	IL	102	National Lead Co.	NATIONAL LEAD CO	CHICAGO	ILP000509216	O	Not a valid site or incident	10/1/2004	NON-SITE	HX1		9/30/2004		S
No Further Superfund Interest	5	IL	103	Non-Ferrous Metals Inc. [office?]	NONFERROUS METALS INC	CHICAGO	ILNP00510021	O	Not a valid site or incident	9/29/2005	NON-SITE	HX1		9/29/2005		S
No Further Superfund Interest	5	IL	105	Lewin Metals Div. Cerro de Pasco Corp.	LEWIN METALS DIV CERRO DE PASCO CORP	SAUGET	ILP000510791	N	NFRAP-Site does not qualify for the NPL	7/3/2013	ACTIVE	PA1	4/1/2012	7/3/2013	N	S
No Further Superfund Interest	5	IN	110	International Lead Refining Co. (Anaconda Copper)	Duplicate of Eckel Site #109						N/A					
No Further Superfund Interest	5	IN	111	International Smelting and Refining Co.	Duplicate of Eckel Site #109						N/A					
No Further Superfund Interest	5	IN	112	PB Co. [known?]	PB COMPANY	SILVER LAKE	INP000508601	O	Not a valid site or incident	10/3/2002	NON-SITE	HX1		5/29/2012		S
No Further Superfund Interest	5	IN	113	Hammond Lead Products	HAMMOND LEAD PRODUCTS	HAMMOND	INP000508552	O	Not a valid site or incident	9/27/2002	NON-SITE	HX2		12/5/2012		S
No Further Superfund Interest	5	IN	114	Metals Refining Co. Inc. (Glidden)	METALS REFINING COMPANY	HAMMOND	INN000509964	N	NFRAP-Site does not qualify for the NPL	9/14/2011	ACTIVE	OO1	1/29/2010	9/14/2011	N	S
No Further Superfund Interest	5	MI	116	Detroit Lead Pipe Works	DETROIT LEAD PIPE WORKS	DETROIT	MIP000510680	O	Not a valid site - state lead	9/16/2003	NON-SITE	HX1	9/16/2003	9/30/2003		S

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No Further Superfund Interest	5	MI	117	Federated Metals Div. ASARCO [found by FOIA]	FEDERATED METAL DIVISION	DETROIT	MIP000510681	O	Not a valid site - state lead	9/16/2003	NON-SITE	HX1	9/16/2003	9/30/2003		S
No Further Superfund Interest	5	MI	118	Michigan Smelting and Refining Co. Div. of Bohn Aluminum and Brass Corp.	MICHIGAN SMELTING AND REFINING COMPANY	DETROIT	MIP000508556	O	Not a valid site or incident	9/27/2002	NON-SITE	HX1	9/16/2002	9/30/2002		S
No Further Superfund Interest	5	MN	119	Federated Metals Corp.	FEDERATED METALS	MINNEAPOLIS	MNP000510789	O	Not a valid site or incident	7/17/2012	NON-SITE	HX1		7/17/2012		S
No Further Superfund Interest	5	MN	120	Northwestern Smelting and Refining Co. a/k/a Midwest Steel Supply Co.	MIDWEST STEEL SUPPLY CO	MINNEAPOLIS	MND022920748	N	NFRAP-Site does not qualify for the NPL	2/7/1990	ARCHIVE	PA2		2/7/1990	N	S
No Further Superfund Interest	5	MN	121	General Smelting and Refining Co.	GENERAL SMELTING & REFINING CO	ST. PAUL	MNP000508532	O	Not a valid site or incident	9/19/2002	NON-SITE	HX1		9/3/2002		S
No Further Superfund Interest	5	MN	123	St. Paul Lead Co.	ST PAUL LEAD CO	ST PAUL	MNP000508538	O	Not a valid site or incident	9/25/2002	NON-SITE	HX1		9/3/2002		S
No Further Superfund Interest	5	MN	124	St. Paul Smelting and Refining Co.	ST PAUL SMELTING AND REFINING CO	ST PAUL	MNP000508539	O	Not a valid site or incident	9/25/2002	NON-SITE	HX1		9/3/2002		S
No Further Superfund Interest	5	OH	125	American Compressed Steel	AMERICAN COMPRESS STEEL COMPANY	CINCINNATI	OHP000508993	O	Not a valid site or incident	9/29/2003	NON-SITE	HX1		9/29/2003		S
No Further Superfund Interest	5	OH	127	Koblitz-Kohn Co.	KOBLITZ-KOHN CO.	CLEVELAND	OHP000509000	O	Not a valid site or incident	9/30/2003	NON-SITE	HX1		9/30/2003		S
No Further Superfund Interest	5	OH	129	Metals Refining Co.	METALS REFINING CO.	CLEVELAND	OHP000510187	O	Not a valid site or incident	3/30/2007	NON-SITE	HX1		3/30/2007		S
No Further Superfund Interest	5	OH	132	Edlow Lead Co.	EDLOW LEAD COMPANY	COLUMBUS	OHP000508986	O	Not a valid site or incident	9/24/2003	NON-SITE	HX1		9/24/2003		S
No Further Superfund Interest	5	WI	134	National Lead	CENTURY BUILDING AKA NATIONAL LEAD	MILWAUKEE	WIP000509221	O	Not a valid site - state lead	10/1/2004	NON-SITE	HX1		10/1/2004		S
No Further Superfund Interest	5	IL	336	Eagle-Picher	EAGLE PICHER ARGO PLANT	SUMMIT	ILN000510834	N	NFRAP-Site does not qualify for the NPL	8/9/2013	ACTIVE	PA1	10/26/2012	8/9/2013	N	S
No Further Superfund Interest	5	IL	337	Aurora Refining Co.	AURORA REFINING	AURORA	ILN000510795	N	NFRAP-Site does not qualify for the NPL	2/21/2013	ACTIVE	PA1	4/1/2012	2/21/2013	N	S
No Further Superfund Interest	5	IL	339	A.W. Cadman Mfg. Co. [office?]	AW CADMAN MFG CO	CHICAGO	ILNP00510015	O	Not a valid site or incident	9/28/2005	NON-SITE	HX1		9/28/2005		S
No Further Superfund Interest	5	IL	340	Ablin Bros. Scrap Metals	ABLIN BROTHERS SCRAP METAL	CHICAGO	ILNP00510011	O	Not a valid site or incident	9/28/2005	NON-SITE	HX1		9/28/2005		S
No Further Superfund Interest	5	IL	341	Ace Metal Co.	ACE METAL COMPANY	CHICAGO	ILNP00510012	O	Not a valid site or incident	9/28/2005	NON-SITE	HX1		9/28/2005		S
No Further Superfund Interest	5	IL	342	Allied Metal Co.	ALLIED METAL COMPANY	CHICAGO	ILNP00510016	O	Not a valid site or incident	9/28/2005	NON-SITE	HX1		9/28/2005		S
No Further Superfund Interest	5	IL	343	Alpha-Loy Corp. Midwest Div., Alpha Metals Inc.	ALPHA-LOY CORP MIDWEST DIVISION	CHICAGO	ILNP00510009	O	Not a valid site or incident	9/28/2005	NON-SITE	HX1		9/28/2005		S

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No Further Superfund Interest	5	IL	344	American Metal Co. of Illinois, Ltd. [office?]	AMERICAN METAL CO OF IL LTD	CHICAGO	ILNP00510014	O	Not a valid site or incident	9/28/2005	NON-SITE	HX1		9/28/2005		S
No Further Superfund Interest	5	IL	345	Ames Metal Products Co.	ALPHA METALS, INC	CHICAGO	ILNP00510008	O	Not a valid site or incident	9/28/2005	NON-SITE	HX1		9/28/2005		S
No Further Superfund Interest	5	IL	346	Braman, Chas. and Sons	BRAMAN CHAS & SONS	CHICAGO	ILNP00510017	O	Not a valid site or incident	9/28/2005	NON-SITE	HX1		9/28/2005		S
No Further Superfund Interest	5	IL	347	Century Smelting and Refining Corp.	CENTURY SMELTING & REFINING CO.	CHICAGO	ILP000510174	O	Not a valid site - state lead	2/9/2007	NON-SITE	HX1		2/9/2007		S
No Further Superfund Interest	5	IL	348	Chicago Smelting and Refining Corp.	CHICAGO SMELTING AND REFINING	CHICAGO	ILN000510825	N	NFRAP-Site does not qualify for the NPL	3/13/2013	ACTIVE	PA1	4/1/2012	3/13/2013	N	S
No Further Superfund Interest	5	IL	350	Cooke, Miller, Yoelin	COOKIE MILLER YOELIN	CHICAGO	ILP000510209	O	Not a valid site or incident	8/6/2007	NON-SITE	HX1	3/7/2007	8/6/2007		S
No Further Superfund Interest	5	IL	351	Delta Metals Inc.	DELTA METALS INC	CHICAGO	ILNP00510038	O	Not a valid site or incident	9/30/2005	NON-SITE	HX1		9/30/2005		S
No Further Superfund Interest	5	IL	352	Division Lead Co. (DIVCO)	DIVCO	CHICAGO	ILP000510828	O	Not a valid site or incident	10/23/2012	NON-SITE	HX1		10/23/2012		S
No Further Superfund Interest	5	IL	353	Elesco Smelting Corp. a/k/a Suppo Smelting and Refining	ELESCO SMELTING CORP/SUPPO SMELTING&REFINING	CHICAGO	ILNP00510039	O	Not a valid site or incident	9/30/2005	NON-SITE	HX1		9/30/2005		S
No Further Superfund Interest	5	IL	354	Elesco Smelting Corp.	ELESCO SMELTING CORP	CHICAGO	ILNP00510035	O	Not a valid site or incident	9/30/2005	NON-SITE	HX1		9/30/2005		S
No Further Superfund Interest	5	IL	355	Elesco Smelting Corp.	ELESCO SMELTING CORP #2	CHICAGO	ILNP00510036	O	Not a valid site or incident	9/30/2005	NON-SITE	HX1		9/30/2005		S
No Further Superfund Interest	5	IL	356	Ellis Metal Co.	ELLIS METAL COMPANY	CHICAGO	ILN000510836	N	NFRAP-Site does not qualify for the NPL	4/24/2013	ACTIVE	PA1		4/24/2013	N	S
No Further Superfund Interest	5	IL	357	I.A. Berkson Metal Co.	IA BERKSON METAL CO	CHICAGO	ILNP00510041	O	Not a valid site or incident	9/30/2005	NON-SITE	HX1		9/30/2005		S
No Further Superfund Interest	5	IL	358	I.A. Berkson Metal Co.	IA BERKSON METAL CO	CHICAGO	ILNP00510032	O	Not a valid site or incident	9/29/2005	NON-SITE	HX1		9/29/2005		S
No Further Superfund Interest	5	IL	359	Imperial Smelting Corp.	IMPERIAL SMELTING CORPORATION	CHICAGO	ILP000509112	O	Not a valid site or incident	4/13/2004	NON-SITE	HX1		4/13/2004		S
No Further Superfund Interest	5	IL	360	International Smelting and Refining Co. [office?]	IMPERIAL TYPE METAL CO	CHICAGO	ILNP00510031	O	Not a valid site or incident	9/29/2005	NON-SITE	HX1		9/29/2005		S
No Further Superfund Interest	5	IL	361	Interstate Smelting and Refining Co. [office?]	INTERSTATE SMELTING AND REFINING	CHICAGO	ILNP00510030	O	Not a valid site or incident	9/29/2005	NON-SITE	HX1		9/29/2005		S
No Further Superfund Interest	5	IL	362	J.Berkson and Sons Metal Co.	J BERKSON & SONS METAL COMPANY	CHICAGO	ILP000510829	O	Not a valid site or incident	10/23/2012	NON-SITE	HX1		10/23/2012		S
No Further Superfund Interest	5	IL	363	Kester Solder Co.	KESTER SOLDER CO	CHICAGO	ILNP00510029	O	Not a valid site or incident	9/29/2005	NON-SITE	HX1		9/29/2005		S

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No Further Superfund Interest	5	IL	364	L.D. Allen Metal Works	L.D. ALLEN METAL WORKS	CHICAGO	ILP000510080	O	Not a valid site or incident	9/27/2006	NON-SITE	HX1		9/27/2006		S
No Further Superfund Interest	5	IL	366	Lincoln Smelting and Refining Co.	LINCOLN SMELTING & REFINING COMPANY	CHICAGO	ILP000510108	O	Not a valid site or incident	9/27/2006	NON-SITE	HX1		9/27/2006		S
No Further Superfund Interest	5	IL	367	Metals Recovery Co.	METALS RECOVERY CO	CHICAGO	ILNP00510028	O	Not a valid site or incident	9/29/2005	NON-SITE	HX1		9/29/2005		S
No Further Superfund Interest	5	IL	368	Miller Yoelin Co. a/k/a North Branch Metal Products Inc.	MILLER YOELIN COMPANY	CHICAGO	ILP000510696	O	Not a valid site or incident	9/8/2006	NON-SITE	HX1	9/8/2006	9/29/2006		S
No Further Superfund Interest	5	IL	369	National Metal Co.	NATIONAL METAL COMPANY AKA LAKEWOOD ENGINEERING	CHICAGO	ILP000510274	O	Not a valid site or incident	3/31/2008	NON-SITE	HX1		3/31/2008		S
No Further Superfund Interest	5	IL	370	North Branch Metal Products Inc.	NORTH BRANCH METAL PRODUCTS	CHICAGO	ILNP00510022	O	Not a valid site or incident	9/29/2005	NON-SITE	HX1		9/29/2005		S
No Further Superfund Interest	5	IL	371	Seaway Metals Refining Corp.	SEAWAY METALS INC	CHICAGO	ILNP00510044	O	Not a valid site or incident	9/30/2004	NON-SITE	HX1		9/30/2004		S
No Further Superfund Interest	5	IL	372	Seligman, M., Co.	SELIGMAN M COMPANY	CHICAGO	ILNP00510042	O	Not a valid site or incident	9/30/2005	NON-SITE	HX1		9/30/2005		S
No Further Superfund Interest	5	IL	373	Silverstein and Pinsof [ILD005121439] active, 1996	SIPI METALS CORPORATION	CHICAGO	ILNP00510023	O	Not a valid site or incident	9/29/2005	NON-SITE	HX1		9/29/2005		S
No Further Superfund Interest	5	IL	374	Smith and Robinson	SMITH & ROBINSON #2	CHICAGO	ILNP00510025	O	Not a valid site or incident	9/29/2005	NON-SITE	HX1		9/29/2005		S
No Further Superfund Interest	5	IL	375	Smith and Robinson	SMITH & ROBINSON	CHICAGO	ILNP00510024	O	Not a valid site or incident	9/29/2005	NON-SITE	HX1		9/29/2005		S
No Further Superfund Interest	5	IL	376	United Refining and Smelting	UNITED REFINING AND SMELTING	CHICAGO	ILP000510787	O	Not a valid site or incident	7/17/2012	NON-SITE	HX1		7/17/2012		S
No Further Superfund Interest	5	IL	377	United Refining and Smelting Co.	UNITED REFINING AND SMELTING	CHICAGO	ILNP00510027	O	Not a valid site or incident	9/29/2005	NON-SITE	HX1		9/29/2005		S
No Further Superfund Interest	5	IL	378	Western Metal Co.	WESTERN METALS	CHICAGO	ILP000510464	O	Not a valid site or incident	6/16/2010	NON-SITE	HX1	4/1/2009	5/27/2010		S
No Further Superfund Interest	5	IL	379	Hi Grade Alloys Corp.	HI GRADE ALLOYS CORP	CHICAGO	ILNP00510043	O	Not a valid site or incident	9/30/2005	NON-SITE	HX1		9/30/2005		S
No Further Superfund Interest	5	IL	381	Saxon Metal Co.	SAXON METALS COMPANY	LANSING	ILN000510830	N	NFRAP-Site does not qualify for the NPL	3/28/2013	ACTIVE	PA1	4/1/2012	3/28/2013	N	S
No Further Superfund Interest	5	IL	382	Superior Metal Reclaiming	SUPERIOR METALS RECLAIMING COMPANY	LANSING	ILN000510831	N	NFRAP-Site does not qualify for the NPL	2/19/2013	ACTIVE	PA1	4/1/2012	2/19/2013	N	S
No Further Superfund Interest	5	IL	383	Dalkoff Metals	DALKOFF METALS	ROCK ISLAND	ILP000509201	O	Not a valid site or incident	9/13/2004	NON-SITE	HX1		9/13/2004		S
No Further Superfund Interest	5	IN	384	Inland Metals Refining	INLAND METALS REFINING	HAMMOND	INP000508551	O	Not a valid site or incident	9/27/2002	NON-SITE	HX1		9/27/2002		S

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No Further Superfund Interest	5	IN	385	U.S. Reduction Co.	U.S. REDUCTION COMPANY	EAST CHICAGO	INP000509994	O	Not a valid site or incident	9/20/2005	NON-SITE	HX1		9/20/2005		S
No Further Superfund Interest	5	IN	386	Wabash Smelting Co.	WABASH SMELTING COMPANY	FORT WAYNE	INP000509171	O	Not a valid site or incident	7/20/2004	NON-SITE	HX1		7/20/2004		S
No Further Superfund Interest	5	IN	387	Maynard Metals Co. Inc.	MAYNARD METALS COMPANY	HAMMOND	INP000505830	O	Not a valid site or incident	9/27/2002	NON-SITE	HX2		12/5/2012		S
No Further Superfund Interest	5	IN	388	Metals Supply Service	METALS SUPPLY SERVICE	HAMMOND	INP000509966	O	Not a valid site or incident	7/27/2005	NON-SITE	HX1		7/27/2005		S
No Further Superfund Interest	5	IN	389	Braman, Chas. and Sons	CHARLES BRAMAN & SONS	PLYMOUTH	INP000508600	O	Not a valid site or incident	9/27/2002	NON-SITE	HX2		3/22/2012		S
No Further Superfund Interest	5	IN	390	Max Schneider Co.	MAX SCHNEIDER COMPANY	SOUTH BEND	INP000509173	O	Not a valid site or incident	7/20/2004	NON-SITE	HX1		7/20/2004		S
No Further Superfund Interest	5	MI	391	Mindel, M. and Sons	FORMER MINDEL LEAD SITE	BENTON HARBOR	MIP000508553	O	Not a valid site or incident	9/27/2002	NON-SITE	HX2		5/9/2013		S
No Further Superfund Interest	5	MI	392	Acme Metal Co	ACME METAL COMPANY	DETROIT	MIP000508557	O	Not a valid site or incident	9/27/2002	NON-SITE	HX1		9/27/2002		S
No Further Superfund Interest	5	MI	393	Aetna Smelting and Refining Co.	AETNA SMELTING & REFINISHING COMPANY	DETROIT	MIP000510685	O	Not a valid site - state lead	9/15/2003	NON-SITE	HX1	9/15/2003	9/30/2003		S
No Further Superfund Interest	5	MI	394	City Metals Refining Co.	CITY METALS REFINING COMPANY	DETROIT	MIP000508554	O	Not a valid site or incident	9/27/2002	NON-SITE	HX1		9/27/2002		S
No Further Superfund Interest	5	MI	395	Continental Metal Co.	CONTINENTAL METAL COMPANY	DETROIT	MIP000510679	O	Not a valid site - state lead	9/16/2003	NON-SITE	HX1	9/16/2003	9/30/2003		S
No Further Superfund Interest	5	MI	396	Federal Alloys Corp.	FEDERAL ALLOY CORPORATION	DETROIT	MIP000508555	O	Not a valid site or incident	9/27/2002	NON-SITE	HX1		9/27/2002		S
No Further Superfund Interest	5	MI	398	Great Lakes Smelting Co.	GREAT LAKES SMELTING COMPANY	DETROIT	MIP000508558	O	Not a valid site or incident	9/27/2002	NON-SITE	HX1		9/27/2001		S
No Further Superfund Interest	5	MI	399	Industrial Smelting Co.	INDUSTRIAL SMELTING COMPANY	DETROIT	MIP000510682	O	Not a valid site - state lead	9/15/2003	NON-SITE	HX1	9/15/2003	9/30/2003		S
No Further Superfund Interest	5	MI	400	Industrial Smelting Co.	INDUSTRIAL SMELTING	DETROIT	MIP000510783	O	Not a valid site or incident	7/2/2012	NON-SITE	HX1		7/2/2012		F
No Further Superfund Interest	5	MI	401	Motex Metal Process Corp.	MOTEX METAL PROCESS CORP.	DETROIT	MIP000510683	O	Not a valid site - state lead	9/15/2003	NON-SITE	HX1	9/15/2003	9/30/2003		S
No Further Superfund Interest	5	MI	402	Standard Metals Co	STANDARD METAL COMPANY	DETROIT	MIP000510684	O	Not a valid site - state lead	9/15/2003	NON-SITE	HX1	9/15/2003	9/30/2003		S
No Further Superfund Interest	5	MI	403	Wolverine White Metal Co.	WOLVERINE WHITE METALS	DETROIT	MIP000508559	O	Not a valid site or incident	9/27/2002	NON-SITE	HX1		9/27/2002		S
No Further Superfund Interest	5	MN	404	Metals Refining Co.	METALS REFINING CO	MINNEAPOLIS	MNP000508540	O	Not a valid site or incident	9/25/2002	NON-SITE	HX1		9/3/2002		S

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No Further Superfund Interest	5	OH	406	Certified Metals Mfg. Co.	CERTIFIED METALS MANUFACTURING COMPANY	CINCINNATI	OHP000510100	O	Not a valid site or incident	8/25/2006	NON-SITE	HX1		8/25/2006		S
No Further Superfund Interest	5	OH	407	G.A.Avril Co.	G.A. AVRIL SMELTING CORP	CINCINNATI	OHP000508994	O	Not a valid site or incident	9/29/2003	NON-SITE	HX1		9/29/2003		S
No Further Superfund Interest	5	OH	408	Moskowitz Bros.	UNITED LEAD CO	CINCINNATI	OHD980611925	N	NFRAP-Site does not qualify for the NPL	9/1/1984	ARCHIVE	PA1		9/1/1984	N	S
No Further Superfund Interest	5	OH	409	Gibson and Price Co. (National Lead)	GIBSON & PRICE CO (NATIONAL LEAD CO.)	CLEVELAND	OHP000509001	O	Not a valid site or incident	9/29/2003	NON-SITE	HX1		9/29/2003		S
No Further Superfund Interest	5	OH	411	North American Smelting	NORTH AMERICAN SMELTING CO	BAY VILLAGE	OHP000508988	O	Not a valid site or incident	9/18/2003	NON-SITE	HX1		9/18/2003		S
No Further Superfund Interest	5	OH	412	Columbus Metal Co.	COLUMBUS METAL COMPANY - PARSONS	COLUMBUS	OHP000509004	O	Not a valid site or incident	9/30/2003	NON-SITE	HX1		9/30/2003		S
No Further Superfund Interest	5	OH	413	Columbus Metal Co.	COLUMBUS METAL COMPANY - GROVEPORT	COLUMBUS	OHP000509003	O	Not a valid site or incident	9/30/2003	NON-SITE	HX1		9/30/2003		S
No Further Superfund Interest	5	OH	414	Linver-Kripke Div. Wabash Scrap Material Co.	LINVER - KRIPKE DIVISION OF WABASH METAL	TOLEDO	OHP000508987	O	Not a valid site or incident	9/24/2003	NON-SITE	HX1		9/24/2003		S
No Further Superfund Interest	5	WI	415	Cassel, A.A., Metal Co.	CASSEL, A.A. METAL CO	MILWAUKEE	WIP000509220	O	Not a valid site - state lead	10/1/2004	NON-SITE	HX1		10/1/2004		S
No Further Superfund Interest	5	WI	417	Crown Metal Co.	CROWN METAL CO	MILWAUKEE	WIP000509224	O	Not a valid site - state lead	10/12/2004	NON-SITE	HX1		10/12/2004		S
No Further Superfund Interest	5	WI	419	Locher, R.E. and Shefrin	R.E. & SHERFIN LOCHER	MILWAUKEE	WIP000509219	O	Not a valid site - state lead	10/1/2004	NON-SITE	HX1		10/1/2004		S
No Further Superfund Interest	5	WI	420	Schiffman, Hy, Co.	SHIFFMAN, HY CO AKA VULCAN LEAD INC	MILWAUKEE	WIP000509225	O	Not a valid site - state lead	10/12/2004	NON-SITE	HX1		10/12/2004		S
No Further Superfund Interest	6	LA	135	Dixie Lead Co.	DIXIE LEAD CO.	PO BOX 1775	LAN000607360	O	Not a valid site or incident	9/21/2012	NON-SITE	HX1	1/9/2012	9/21/2012		EP
No Further Superfund Interest	6	LA	136	National Lead	NATIONAL LEAD	NEW ORLEANS	LAN000607384	O	Not a valid site or incident	9/21/2012	NON-SITE	HX1	1/9/2012	9/21/2012		F
No Further Superfund Interest	6	TX	137	Cedergren Metals	CEDERGREN METALS	DALLAS	TXN000606686	O	Not a valid site or incident	6/5/2002	NON-SITE	HX1		6/5/2002		S
No Further Superfund Interest	6	TX	138	Commercial Metals Co.	COMMERCIAL METALS COMPANY	DALLAS	TXN000606723	O	Not a valid site or incident	2/28/2002	NON-SITE	HX1		2/28/2002		S
No Further Superfund Interest	6	TX	139	Commercial Metals Co.	AMERICAN IRON & METAL COMPANY A.K.A COMMERCIAL METALS	DALLAS	TXN000606702	O	Not a valid site or incident	5/31/2002	NON-SITE	HX1		5/31/2002		S
No Further Superfund Interest	6	TX	140	National Lead Inc Storage Lead Alloys [TXD980626279]	NL INDUSTRIES INC-STORAGE LEAD ALLOYS	DALLAS	TXD980626279	N	NFRAP-Site does not qualify for the NPL	2/27/2001	ARCHIVE	PA1	7/1/1982	7/1/1982	N	F
No Further Superfund Interest	6	TX	141	Gachman Metals Co. [active]	GACHMAN METALS CO.	FORT WORTH	TXD005965363	O	Not a valid site or incident	5/8/2012	NON-SITE	HX1		5/8/2012		F

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ASSESS. DECISION	EPA REG	ST	ECKEL #	ECKEL SITE NAME	SEMS SITE NAME	CITY NAME	EPA ID	NPL STATUS	NON-NPL STATUS	NON-NPL DATE	SITE INVENTORY	LAST ACTION	ACTUAL START	ACTUAL COMPLETE	QUAL	LEAD
No Further Superfund Interest	6	TX	142	East Texas Lead Co.	EAST TEXAS LEAD CO.	HERDENSON	TXN000606726	O	Not a valid site or incident	9/29/2006	NON-SITE	HX1		6/17/2002		S
No Further Superfund Interest	6	TX	143	Gulf Coast Lead [known site]	GULF COAST LEAD	DEER PARK	TXN000606720	O	Not a valid site or incident	9/29/2006	NON-SITE	HX1		4/2/2002		S
No Further Superfund Interest	6	TX	144	Wilkinson Bros. Smelting	WILKINSON BROS. SMELTING - SANTA URSULA	LAREDO	TXN000606714	O	Not a valid site or incident	9/29/2006	NON-SITE	HX1		4/23/2002		S
No Further Superfund Interest	6	TX	145	Brunner Co.	BRUNNER COMPANY	SAN ANTONIO	TXN000607383	N	NFRAP-Site does not qualify for the NPL	11/14/2012	ARCHIVE	PA1		11/14/2012	N	S
No Further Superfund Interest	6	TX	147	Lipshitz Smelting and Refining Works [TXD027194315]	LIPSHITZ SMELTING & REFINING WORKS	WACO	TXN000606690	O	Not a valid site or incident	9/29/2006	NON-SITE	HX1		2/20/2002		S
No Further Superfund Interest	6	TX	421	Western Lead Inc.	WESTERN LEAD INC.,	AMARILLO	TXN000606693	O	Not a valid site or incident	9/29/2006	NON-SITE	HX1		4/2/2002		S
No Further Superfund Interest	6	TX	422	American Smelting and Refining Works	AMERICAN SMELTING & REFINING WORKS	DALLAS	TXD007347875	O	Not a valid site or incident	5/8/2012	NON-SITE	HX1		5/8/2012		F
No Further Superfund Interest	6	TX	423	Lead Products Co. [TXD008080715]	LEAD PRODUCTS COMPANY FACILITY	HOUSTON	TXD008080715	N	NFRAP-Site does not qualify for the NPL	4/30/1996	ARCHIVE	SI1	3/15/1996	4/30/1996	N	F
No Further Superfund Interest	6	TX	424	Grant and Tunnell Co.	GRANT & TUNNELL CCOMPANY	DALLAS	TXN000606705	O	Not a valid site or incident	9/29/2006	NON-SITE	HX1		6/5/2002		S
No Further Superfund Interest	6	TX	426	Eagle-Picher Co.	EAGLE-PICHER COMPANY	HOUSTON	TXN000606724	O	Not a valid site or incident	9/29/2006	NON-SITE	HX1		2/28/2002		S
No Further Superfund Interest	6	TX	427	Murdock Lead Products	MURDOCK LEAD PRODUCT	HOUSTON	TXN000606707	O	Not a valid site or incident	9/29/2006	NON-SITE	HX1		2/28/2002		S
No Further Superfund Interest	6	TX	428	Wilkinson Bros. Smelting	WILKINSON BROS. SMELTING	LAREDO	TXN000606710	O	Not a valid site or incident	9/29/2006	NON-SITE	HX1		4/23/2002		S
No Further Superfund Interest	7	MO	151	Price Metal Refining Co.	PRICE METAL REFINING	KANSAS CITY	MON000706445	O	Not a valid site or incident	5/24/2012	NON-SITE	HX1		5/11/2012		F
No Further Superfund Interest	7	MO	152	Eagle-Picher Lead Co.	Duplicate of Eckel Site #104						N/A					
No Further Superfund Interest	7	MO	153	Federated Metals Div. ASARCO	FEDERATED METALS DIVISION	ST. LOUIS	MON000705467	O	Not a valid site or incident	10/27/2006	NON-SITE	HX1		10/26/2006		S
No Further Superfund Interest	7	MO	154	Lewin-Mathes Corp. Div. of Cerro de Pasco Corp. [office]	LEWIN-MATHES CORP	ST. LOUIS	MON000706449	O	Not a valid site or incident	5/24/2012	NON-SITE	HX1		5/11/2012		F
No Further Superfund Interest	7	MO	155	Magnus-Farley Industries (National Lead) [office?]	MAGNUS-FARLEY INDUSTRIES	ST. LOUIS	MON000705465	O	Not a valid site or incident	10/27/2006	NON-SITE	HX1		10/26/2006		S
No Further Superfund Interest	7	MO	156	Theo. Hiertz Metal Co.	THEO. HIERTZ METAL CO.	ST. LOUIS	MON000705475	O	Not a valid site or incident	10/30/2006	NON-SITE	HX1		10/26/2006		S
No Further Superfund Interest	7	NE	158	Western Smelting and Refining Co.	WESTERN SMELTING & REFINING	OMAHA	NEN000706497	O	Not a valid site or incident	10/19/2012	NON-SITE	HX1		10/19/2012		F

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ASSESS. DECISION	EPA REG	ST	ECKEL #	ECKEL SITE NAME	SEMS SITE NAME	CITY NAME	EPA ID	NPL STATUS	NON-NPL STATUS	NON-NPL DATE	SITE INVENTORY	LAST ACTION	ACTUAL START	ACTUAL COMPLETE	QUAL	LEAD
No Further Superfund Interest	7	MO	429	Shostak Metal Corp.	SHOSTAK METAL	KANSAS CITY	MON000706450	O	Not a valid site or incident	5/24/2012	NON-SITE	HX1		5/11/2012		F
No Further Superfund Interest	7	MO	430	American Lead Products	AMERICAN LEAD PRODUCTS	ST. LOUIS	MON000705365	O	Not a valid site or incident	10/26/2006	NON-SITE	HX1		10/26/2006		S
No Further Superfund Interest	7	MO	431	Frictionless Metal Co.	FRICTIONLESS METAL CO	ST. LOUIS	MON000705471	O	Not a valid site or incident	10/27/2006	NON-SITE	HX1		10/26/2006		S
No Further Superfund Interest	7	MO	432	Holtzman, M., Metal Co.	M. HOLTZMAN METAL CO.	ST. LOUIS	MON000705472	O	Not a valid site or incident	10/27/2006	NON-SITE	HX1		10/26/2006		S
No Further Superfund Interest	7	MO	433	Shanfeld Bros. Metal Co.	SHANFELD BROS. METAL CO.	ST. LOUIS	MON000705466	O	Not a valid site or incident	10/27/2006	NON-SITE	HX1		10/26/2006		S
No Further Superfund Interest	8	CO	434	National Smelting and Refining Co.	DENVER SMELTING AND REFINING COMPANY	DENVER	CON000802205	O	Not a valid site or incident	7/14/2003	NON-SITE	HX1		11/6/2003		F
No Further Superfund Interest	8	UT	435	Lake Metals Co.	LAKE METALS	SALT LAKE CITY	UTN000802624	O	Not a valid site or incident	2/7/2006	NON-SITE	HX1	1/16/2013	2/27/2013		EP
No Further Superfund Interest	9	AZ	159	Morris P. Kirk and Son (National Lead)	MORRIS P KIRK AND SON (NATIONAL LEAD)	PHOENIX	AZN000909445	O	Not a valid site or incident	4/26/2012	NON-SITE	HX1	4/18/2012	7/31/2012		F
No Further Superfund Interest	9	CA	160	Morris P. Kirk and Son (National Lead)	MORRIS P. KIRK & SONS	EMERYVILLE	CAN000906007	O	Not a valid site or incident	7/21/2003	NON-SITE	HX2		5/4/2006		S
No Further Superfund Interest	9	CA	162	Atlas Lead Co.	ATLAS LEAD COMPANY	INGLEWOOD	CAN000909422	O	Not a valid site or incident	4/26/2012	NON-SITE	HX1	4/18/2012	7/31/2012		F
No Further Superfund Interest	9	CA	163	Aaron Ferer and Sons	AARON FERER AND SONS	LOS ANGELES	CAN000909420	O	Not a valid site or incident	4/26/2012	NON-SITE	HX1	4/18/2012	7/31/2012		F
No Further Superfund Interest	9	CA	166	Federated Metals Div. (ASARCO) [found by FOIA]	FEDERATED METALS DIV. (ASARCO)	LOS ANGELES	CAN000909510	O	Not a valid site or incident	10/17/2012	NON-SITE	HX1		1/10/2013		F
No Further Superfund Interest	9	CA	167	Federated Metals Div. (ASARCO)	FEDERATED METALS DIV. (ASARCO)	LOS ANGELES	CAN000909464	O	Not a valid site or incident	7/16/2012	NON-SITE	HX1	7/6/2012	10/15/2012		F
No Further Superfund Interest	9	CA	168	International Lead Co.	INTERNATIONAL LEAD CO.	LOS ANGELES	CAN000909465	O	Not a valid site or incident	7/16/2012	NON-SITE	HX1	7/6/2012	10/15/2012		F
No Further Superfund Interest	9	CA	169	Bunker Hill Co.	BUNKER HILL CO.	SAN FRANCISCO	CAN000908409	O	Not a valid site or incident	7/24/2006	NON-SITE	HX2		1/10/2013		F
No Further Superfund Interest	9	CA	171	Federated Metals Div. (ASARCO)	FEDERATED METALS DIV. (ASARCO)	SAN FRANCISCO	CAN000909433	O	Not a valid site or incident	4/26/2012	NON-SITE	HX1	4/18/2012	7/31/2012		F
No Further Superfund Interest	9	CA	172	Secondary Metal Dept. (ASARCO)	SECONDARY METAL DEPT. (ASARCO)	SAN FRANCISCO	CAN000908408	O	Not a valid site or incident	7/24/2006	NON-SITE	HX2		1/10/2013		F
No Further Superfund Interest	9	HI	174	National Metals Ltd.	Duplicate of Eckel Site #461						N/A					
No Further Superfund Interest	9	CA	442	Ben Chersky and Sons	BEN CHERSKY AND SONS	LOS ANGELES	CAN000909423	O	Not a valid site or incident	4/26/2012	NON-SITE	HX1	4/18/2012	7/31/2012		F

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No Further Superfund Interest	9	CA	444	Liberty Metal Co.	LIBERTY METAL COMPANY	LOS ANGELES	CAN000909440	O	Not a valid site or incident	4/26/2012	NON-SITE	HX1	4/18/2012	7/31/2012		F
No Further Superfund Interest	9	CA	445	Mobile Smelting Co.	MOBILE SMELTING COMPANY	LOS ANGELES	CAN000909443	O	Not a valid site or incident	4/26/2012	NON-SITE	HX1	4/18/2012	7/31/2012		F
No Further Superfund Interest	9	CA	448	Bercovich, A., Co.	BERCOVICH 2ND STREET	OAKLAND	CAN000906009	O	Not a valid site or incident	6/21/2006	NON-SITE	HX2		6/21/2006		S
No Further Superfund Interest	9	CA	450	Bunker Hill Co.	BUNKER HILL	OAKLAND	CAD981430564	O	Not a valid site or incident	2/6/2003	NON-SITE	HX2		6/20/2006		S
No Further Superfund Interest	9	CA	453	Asher Metal Co.	ASHER METAL COMPANY	SAN FRANCISCO	CAN000909421	O	Not a valid site or incident	4/26/2012	NON-SITE	HX1	4/18/2012	7/31/2012		F
No Further Superfund Interest	9	CA	457	Mars Metal Corp.	MARS METAL CORP.	BRISBANE	CAN000909442	O	Not a valid site or incident	4/26/2012	NON-SITE	HX1	4/18/2012	7/31/2012		F
No Further Superfund Interest	9	CA	458	Northwest Lead Co.	NORTHWEST LEAD COMPANY	SAN FRANCISCO	CAN000909446	O	Not a valid site or incident	4/26/2012	NON-SITE	HX1	4/18/2012	7/31/2012		F
No Further Superfund Interest	9	CA	459	Roto Metals Inc. [found by FOIA]	ROTOMETALS, INC.	SAN FRANCISCO	CAN000908644	O	Not a valid site or incident	12/9/2008	NON-SITE	HX1		1/9/2009		S
No Further Superfund Interest	9	HI	461	Hawaii Lead Co.	HAWAII LEAD COMPANY	HONOLULU	HIN000909437	O	Not a valid site or incident	4/26/2012	NON-SITE	HX1	4/18/2012	7/31/2012		F
No Further Superfund Interest	10	WA	175	Morris P. Kirk and Son (National Lead)	MORRIS P. KIRK & SON	SEATTLE	WAN001003023	O	Not a valid site - state lead	4/18/2012	NON-SITE	HX1		10/17/2001		EP
No Further Superfund Interest	10	WA	176	Federated Metals Corp.	FEDERATED METALS CORP	SEATTLE	WAN001003027	O	Not a valid site - state lead	4/18/2012	NON-SITE	HX1		10/17/2001		EP
No Further Superfund Interest	10	WA	177	Rex Metal Works	REX METALS	SEATTLE	WAN001003024	O	Not a valid site - state lead	4/18/2012	NON-SITE	HX1		10/17/2001		EP
No Further Superfund Interest	10	OR	462	The Bunker Hill Co. [state is aware]	THE BUNKER HILL CO.	PORTLAND	ORN001003022	O	Not a valid site - state lead	4/21/2003	NON-SITE	HX1		9/20/2001		EP
No Further Superfund Interest	10	OR	463	Multnomah Metal Co. [state is aware]	MULTNOMAH METAL CO.	PORTLAND	ORN001003026	O	Not a valid site - state lead	4/26/2013	NON-SITE	HX1		9/20/2001		EP
No Further Superfund Interest	10	OR	464	Pacific Metal Co. [state is aware]	PACIFIC METAL CO.	PORTLAND	ORN001003025	O	Not a valid site - state lead	4/21/2003	NON-SITE	HX1		9/20/2001		EP
Referred to Cleanup Program	2	NJ	15	Hudson Smelting and Refining Co.	HARVEY- NEWARK	NEWARK	NJD986610905	N	Rmvl Only Site (No Site Assess Work Needed)	4/27/1992	ARCHIVE	RV1	7/16/1991	4/27/1992	C	F
Referred to Cleanup Program	2	NJ	17	Metals Disintegrating Co.	METALS DISINTERGRATING, INC.	VERONA	NJN000206566	N	Other Cleanup Activity: State-Lead	9/30/2013	ACTIVE	PA1		9/30/2013	N	S
Referred to Cleanup Program	2	NJ	18	Metals Disintegrating Co.	METALS DISINTEGRATING CO.	UNION TWP	NJN000206564	N	Other Cleanup Activity: State-Lead	8/9/2013	ACTIVE	PA1	7/30/2012	8/9/2013	N	S
Referred to Cleanup Program	2	NY	20	Columbia Smelting and Refining Works	COLUMBIA SMELTING & REFINING WORKS	BROOKLYN	NYN000206593	N	Referred to Rmvl - NFRAP[1]	4/6/2015	ACTIVE	SI1	10/1/2014	3/31/2015	N	F

[1]Site has removal assessment or removal action ongoing or planned.

Appendix A: Assessment Status of 464 Potential Secondary Lead Smelters Addressed by the EPA Superfund Program
March, 2017

ASSESS. DECISION	EPA REG	ST	ECKEL #	ECKEL SITE NAME	SEMS SITE NAME	CITY NAME	EPA ID	NPL STATUS	NON-NPL STATUS	NON-NPL DATE	SITE INVENTORY	LAST ACTION	ACTUAL START	ACTUAL COMPLETE	QUAL	LEAD
Referred to Cleanup Program	2	NY	22	Fox and London Inc.	FOX & LONDON INC.	BROOKLYN	NYN000206649	N	Referred to Rmvl - NFRAP	6/26/2013	ARCHIVE	RS1	7/23/2014	7/17/2014		F
Referred to Cleanup Program	2	NY	28	Lake Erie Smelting Corp.	LAKE ERIE SMELTING CORP.	BUFFALO	NYN000206590	N	Referred to Rmvl - NFRAP[1]	4/7/2015	ACTIVE	RS1	5/31/2016	5/31/2016		F
Referred to Cleanup Program	2	NY	31	Reliance Lead, Solder and Babbitt Co. Inc.	RELIANCE LEAD, SOLDER & BABBITT CO. INC.	BUFFALO	NYN000206596	N	Referred to Rmvl - NFRAP[1]	5/14/2015	ACTIVE	RS1	10/1/2014		N	F
Referred to Cleanup Program	2	NY	32	Samuel Greenfield Co.	SAMUEL GREENFIELD CO.	BUFFALO	NYN000206597	N	Referred to Rmvl - NFRAP	5/15/2015	ARCHIVE	RS1	7/21/2016	7/21/2016		F
Referred to Cleanup Program	2	NJ	210	Caswell, Strauss and Co.	CASWELL, STRAUSS & CO.	EDISON TOWNSHIP	NJC200400968	N	Rmvl Only Site (No Site Assess Work Needed)	11/4/2011	ARCHIVE	RV1	9/13/2012	6/6/2014	C	F
Referred to Cleanup Program	2	NY	231	Atlas White Metal Co.	ATLAS WHITE METAL CO.	BROOKLYN	NYN000206668	N	Rmvl Only Site (No Site Assess Work Needed)[1]	12/4/2012	ACTIVE	RS1	7/14/2015	7/14/2015		F
Referred to Cleanup Program	2	NY	233	Brookhattan Smelting and Refining Co.	BROOKHATTAN SMELTING & REFINING CO.	BROOKLYN	NYN000206647	N	Referred to Rmvl - NFRAP	10/31/2013	ARCHIVE	OO1		10/31/2013	N	F
Referred to Cleanup Program	2	NY	243	Kornblum, Sidney	KORNBLUM, SIDNEY	BROOKLYN	NYN000206627	N	Referred to Rmvl - NFRAP	4/7/2015	ARCHIVE	RS1	10/30/2014	11/23/2016		F
Referred to Cleanup Program	2	NY	245	Pittsburgh White Metal	PITTSBURGH WHITE METAL	BROOKLYN	NYN000206635	N	Referred to Rmvl - NFRAP[1]	7/17/2015	ACTIVE	RS1	10/1/2015	7/5/2016		F
Referred to Cleanup Program	2	NY	252	Buffalo White Metal Co. a/k/a Harry Fox Metal Co.	BUFFALO WHITE METAL CO. A/K/A HARRY FOX METAL CO.	BUFFALO	NYN000206622	N	Referred to Rmvl - NFRAP	5/14/2015	ARCHIVE	RS1	8/10/2015	8/10/2015		F
Referred to Cleanup Program	2	NY	253	Luman Bearing Co.	LUMAN BEARING CO.	BUFFALO	NYN000206591	N	Referred to Rmvl - NFRAP[1]	5/14/2015	ACTIVE	RV2	6/27/2016	7/18/2016		F
Referred to Cleanup Program	2	NY	255	Niagara Falls Smelting and Refining Div. of Continental Copper and Steel	NIAGARA FALLS SMELTING & REFINING DIV. OF CONTINENTAL COPPER &	BUFFALO	NYN000206592	N	Referred to Rmvl - NFRAP	5/15/2015	ARCHIVE	RS1	7/16/2015	7/16/2015		F
Referred to Cleanup Program	2	NY	257	Glaser Lead Co. Inc.	GLASER LEAD CO. INC.	GARDEN CITY PARK	NYN000206650	N	Referred to Rmvl - NFRAP	6/26/2013	ARCHIVE	RS1	7/16/2014	7/16/2014		F
Referred to Cleanup Program	2	NY	278	New York Solder Co.	NEW YORK SOLDER CO.	BRONX	NYN000206633	N	Referred to Rmvl - NFRAP	4/7/2015	ARCHIVE	RS1	10/30/2014	11/22/2016		F
Referred to Cleanup Program	2	NY	284	Empire Metal Co.	EMPIRE METAL CO.	SYRACUSE	NYN000206607	N	Referred to Rmvl - NFRAP	5/15/2015	ARCHIVE	RS1	7/16/2015	7/16/2015		F
Referred to Cleanup Program	2	NY	285	Roth Bros. Metal Co.	ROTH BROS METAL CO.	SYRACUSE	NYN000206645	N	Referred to Rmvl - NFRAP	10/31/2016	ARCHIVE	RS1	8/5/2015	8/5/2015		F
Referred to Cleanup Program	2	NY	287	Neo Smelting and Refining	NEO SMELTING AND REFINING	WHITESTONE	NYN000206646	N	Referred to Rmvl - NFRAP	9/9/2013	ARCHIVE	RS1	12/18/2012	12/2/2013		F
Referred to Cleanup Program	3	PA	47	Price Battery Corp.	PRICE BATTERY LEAD SMELTER	HAMBURG	PAN000305679	F			ACTIVE	BE1	4/5/2016			RP
Referred to Cleanup Program	3	PA	49	American Alloys Co.	AMERICAN ALLOYS CO. LEAD SMELTER	PHILADELPHIA	PAN000306701	N	Referred to Rmvl - NFRAP[1]	4/4/2013	ACTIVE	OO1	4/1/2013	4/4/2013	W	EP

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Referred to Cleanup Program	3	PA	52	Electric Storage Battery A/k/a Remington Rand Univac PAD980539621]	ELECTRIC STORAGE BATTERY SITE LEAD SMELTER	PHILADELPHIA	PAN000306582	N	Referred to Rmvl - NFRAP[1]	9/24/2012	ACTIVE	SI1	4/1/2008	9/24/2012	W	F
Referred to Cleanup Program	3	PA	57	John T. Lewis and Bros. a/k/a National Lead a/k/a United Metals	JOHN T. LEWIS & BROS. LEAD SMELTER	PHILADELPHIA	PAN000306638	N	Referred to Rmvl - NFRAP[1]	6/30/2009	ACTIVE	RS1	3/1/2010			F
Referred to Cleanup Program	3	PA	60	Ladenson Metals Co. a/k/a Franklin Smelting and Refining [PAD002280725]	FRANKLIN SMELTING	PHILADELPHIA	PAD002280725	A			ACTIVE	SI1	12/16/2005	2/9/2007	A	F
Referred to Cleanup Program	3	PA	62	Metro Smelting Co.	METRO SMELTING CO., LEAD SMELTER	PHILADELPHIA	PAN000306832	N	Referred to Rmvl - NFRAP[1]	5/9/2013	ACTIVE	OO1	4/1/2013	5/9/2013	W	EP
Referred to Cleanup Program	3	PA	67	Thos. F. Lukens Metal Co. [PAD987308707]	THOS. F LUKENS METAL CO. LEAD SMELTER	PHILADELPHIA	PAN000306865	N	Referred to Rmvl - NFRAP[1]	8/2/2013	ACTIVE	PA1	1/16/2013	8/2/2013	W	F
Referred to Cleanup Program	3	PA	68	U.S.Smelting Works	U.S. SMELTING WORKS, LEAD SMELTER	PHILADELPHIA	PAN000306799	N	Referred to Rmvl - NFRAP[1]	8/9/2013	ACTIVE	OO1	4/1/2013	5/8/2013	W	EP
Referred to Cleanup Program	3	PA	70	Federated Metals Div. ASARCO	FEDERATED METALS DIV. ASARCO LEAD SMELTER	PITTSBURGH	PAN000306813	N	Referred to Rmvl - NFRAP[1]	8/13/2013	ACTIVE	PA1	8/3/2005	9/12/2005	W	F
Referred to Cleanup Program	3	PA	72	Pittsburgh Smelting and Refining Co.	PITTSBURGH SMELTING & REFINING CO., LEAD SMELTER	PITTSBURGH	PAN000306796	N	Referred to Rmvl - NFRAP[1]	8/13/2013	ACTIVE	PA1	8/3/2005	9/12/2005	W	F
Referred to Cleanup Program	3	PA	73	Bowers Battery and Spark Plug Co.	GENERAL BATTERY CORP	READING	PAD990753089	N	Deferred to RCRA	5/20/1987	ARCHIVE	PA1	5/20/1987	5/20/1987	D	S
Referred to Cleanup Program	3	PA	74	Euston Lead Co. Affil. Metals Refining Co. Hammond IN	EUSTON LEAD CO AFFIL METAL REFINING LEAD SMELTER	SCRANTON	PAN000306871	N	Referred to Rmvl - NFRAP[1]	4/4/2013	ACTIVE	OO1	4/1/2013	4/4/2013	W	EP
Referred to Cleanup Program	3	MD	295	United American Metals	UNITED AMERICAN METALS LEAD SMELTER	BALTIMORE	MDN000306831	N	NFRAP-Site does not qualify for the NPL	5/2/2012	ARCHIVE	VA1	8/22/2006	4/24/2012	N	PS
Referred to Cleanup Program	3	MD	296	United American Metals	UNITED AMERICAN METALS 2 LEAD SMELTER	BALTIMORE	MDN000306872	N	NFRAP-Site does not qualify for the NPL	6/11/2012	ARCHIVE	VA1	8/22/2006	4/24/2012	N	PS
Referred to Cleanup Program	3	PA	299	United States Metal Products Co.	UNITED STATES METAL PRODUCTS CO., LEAD SMELTER	ERIE	PAN000306833	N	Referred to Rmvl - NFRAP[1]	5/6/2013	ACTIVE	OO1	4/1/2013	5/6/2013	W	EP
Referred to Cleanup Program	3	PA	302	Lewistown Smelting and Refining Co. Inc.	JACKS CREEK/SITKIN SMELTING & REFINING, INC.	MAITLAND	PAD980829493	F			ACTIVE	FE3	3/25/2016	3/25/2016		F
Referred to Cleanup Program	3	PA	304	A. Perez and Son	A. PEREZ & SON LEAD SMELTER	PHILADELPHIA	PAN000306805	N	Referred to Rmvl - NFRAP[1]	4/25/2013	ACTIVE	PA1	10/13/2005	2/1/2007	W	F
Referred to Cleanup Program	3	PA	306	Cadman, A.W. Mfg. Co.	CADMAN, A.W. MFG. CO. LEAD SMELTER	PHILADELPHIA	PAN000306808	N	Referred to Rmvl - NFRAP[1]	4/4/2013	ACTIVE	OO1	4/1/2013	4/4/2013	W	EP
Referred to Cleanup Program	3	PA	311	Merchants and Evans Co.	MERCHANTS AND EVANS COMPANY LEAD SMELTER	PHILADELPHIA	PAN000306200	N	Referred to Rmvl - NFRAP[1]	4/29/2013	ACTIVE	OO1	4/1/2013	4/29/2013	W	EP
Referred to Cleanup Program	3	PA	313	Mink Smelting and Refining Works	MINK SMELTING AND REFINING WORKS LEAD SMELTER	PHILADELPHIA	PAN000306198	N	Referred to Rmvl - NFRAP[1]	8/9/2013	ACTIVE	OO1	4/1/2013	4/30/2013	W	EP
Referred to Cleanup Program	3	PA	316	Reliable Metals Refining	RELIABLE METALS REFINING LEAD SMELTER	PHILADELPHIA	PAN000306823	N	Referred to Rmvl - NFRAP[1]	6/28/2013	ACTIVE	OO1	4/1/2013	5/1/2013	W	EP

[1]Site has removal assessment or removal action ongoing or planned.

ASSESS. DECISION	EPA REG	ST	ECKEL #	ECKEL SITE NAME	SEMS SITE NAME	CITY NAME	EPA ID	NPL STATUS	NON-NPL STATUS	NON-NPL DATE	SITE INVENTORY	LAST ACTION	ACTUAL START	ACTUAL COMPLETE	QUAL	LEAD
Referred to Cleanup Program	3	PA	317	Sall, George, Metals Co.	SALL, GEORGE, METALS CO., 2 LEAD SMELTER	PHILADELPHIA	PAN000306822	N	Referred to Rmvl - NFRAP[1]	6/28/2013	ACTIVE	OO1	4/1/2013	5/1/2013	W	EP
Referred to Cleanup Program	3	PA	319	United Smelting and Refining Co.	UNITED SMELTING AND REFINING COMPANY/LEAD SMELTERS INITIATIVE	PHILADELPHIA	PAN000306201	N	Referred to Rmvl - NFRAP[1]	8/9/2013	ACTIVE	OO1	4/1/2013	4/30/2013	W	EP
Referred to Cleanup Program	3	PA	320	White Bros. Smelting	WHITE BROTHERS SMELTING COMPANY LEAD SMELTER	PHILADELPHIA	PAN000306850	N	Referred to Rmvl - NFRAP[1]	8/16/2013	ACTIVE	PA2	1/16/2013	8/16/2013	W	F
Referred to Cleanup Program	4	FL	77	Florida Smelting Co.	FLORIDA SMELTING COMPANY-BUFFALO AVE	JACKSONVILLE	FLN000407555	N	Other Cleanup Activity: State-Lead	2/14/2012	ACTIVE	VA1	12/1/2008			PS
Referred to Cleanup Program	4	FL	79	Florida Smelting Corp.	FLORIDA SMELTING COMPANY-BERMAN BROS	JACKSONVILLE	FLN000407485	N	Other Cleanup Activity: State-Lead	10/26/2016	ACTIVE	SI1	12/30/2003	11/25/2008	L	F
Referred to Cleanup Program	4	FL	81	Pure Lead Products Co.	FORMER PURE LEAD PRODUCTS	MIAMI	FLN000407409	N	OCA - Munc/Oth Govt Lead Clnup	12/6/2006	ACTIVE	VA1	12/6/2006			PS
Referred to Cleanup Program	4	FL	82	Gulf Coast Lead Co. [FLD984229773]	NORMANDY PARK APARTMENTS	TEMPLE TERRACE	FLD984229773	P	Remedial Activities	7/2/2008	ACTIVE	FE3	9/1/2015	8/9/2016		RP
Referred to Cleanup Program	4	NC	90	Winston Lead Smelting	DOUGLAS BATTERY MFG CO	WINSTON-SALEM	NCD003213030	N	Referred to Rmvl - NFRAP	9/23/2009	ACTIVE	OO1	9/22/2009	9/22/2009	W	S
Referred to Cleanup Program	4	TN	91	General Smelting and Refining Co. [known?]	GENERAL SMELTING & REFINERY	COLLEGE GROVE-CONFID	TND004048690	N	Deferred to RCRA	3/31/1986	ARCHIVE	SI1		3/31/1986	D	F
Referred to Cleanup Program	5	IL	100	Loewenthal Metals Corp.	LOEWENTHAL METALS CORP.	CHICAGO	ILP000510081	N	Referred to Rmvl - NFRAP	8/2/2012	ACTIVE	RV1	6/24/2013	10/22/2013	S	F
Referred to Cleanup Program	5	IL	104	Eagle-Picher Co.	EAGLE PITCHER RESIDENTIAL AREA	EAST ST. LOUIS	ILN000508196	N	Rmvl Only Site (No Site Assess Work Needed)	7/26/2001	ARCHIVE	HX1		7/3/2013		S
Referred to Cleanup Program	5	IN	108	Magnus Metals Div. National Lead [known?]	M. METAL COMPANY INCORPORATED	INDIANAPOLIS	IND102237773	N	Referred to Rmvl - NFRAP	10/27/2016	ARCHIVE	OO1		9/20/2005	N	S
Referred to Cleanup Program	5	IN	109	Eagle-Picher Co.	EAGLE PICHER COMPANY	EAST CHICAGO	INP000509993	A		11/15/2016	ACTIVE	HX1		9/20/2005		S
Referred to Cleanup Program	5	MI	115	Detroit Lead Co. (under remediation as of 2/4/03) Avg soil Pb 1.1% Max. soil	DETROIT LEAD	DETROIT	MIN000508679	N	Rmvl Only Site (No Site Assess Work Needed)	2/25/2003	ACTIVE	RV1	11/3/2003	8/20/2004	C	F
Referred to Cleanup Program	5	OH	126	H and L Metal Co.	H & L METAL CO.	CLEVELAND	OHP000508995	N	Referred to Rmvl - NFRAP	7/26/2012	ACTIVE	RS1	7/30/2014	7/31/2014		F
Referred to Cleanup Program	5	OH	128	Lockport Lead Co.	LOCKPORT LEAD CO.	CLEVELAND	OHP000509002	N	Referred to Rmvl - NFRAP	7/26/2012	ACTIVE	RS1	7/31/2014	7/31/2014		F
Referred to Cleanup Program	5	OH	130	The Atlas Metal Co.	ATLAS METALS COMPANY	CLEVELAND	OHP000509218	N	Referred to Rmvl - NFRAP	4/30/2016	ACTIVE	RS1	4/22/2016	4/29/2016		F
Referred to Cleanup Program	5	OH	131	Tyroler Metals Inc.	TYROLER METALS, INC	CLEVELAND	OHP000509090	N	Referred to Rmvl - NFRAP	7/26/2012	ACTIVE	RS1	7/24/2014	7/31/2014		F
Referred to Cleanup Program	5	IL	338	Federated Metals Div. ASARCO a/k/a Circle Smelting [NPL site]	CIRCLE SMELTING CORP.	BECKEMEYER	ILD050231976	P		5/27/1987	ACTIVE	CO2	4/1/2014			F

[1]Site has removal assessment or removal action ongoing or planned.

Appendix A: Assessment Status of 464 Potential Secondary Lead Smelters Addressed by the EPA Superfund Program
March, 2017

ASSESS. DECISION	EPA REG	ST	ECKEL #	ECKEL SITE NAME	SEMS SITE NAME	CITY NAME	EPA ID	NPL STATUS	NON-NPL STATUS	NON-NPL DATE	SITE INVENTORY	LAST ACTION	ACTUAL START	ACTUAL COMPLETE	QUAL	LEAD
Referred to Cleanup Program	5	IL	349	Cohn, H. and Sons A/k/a Allied Metal Co. [ILD005096532]	ALLIED METAL COMPANY	CHICAGO	ILD005096532	N	Deferred to RCRA	2/5/1993	ARCHIVE	PA1		2/5/1993	D	F
Referred to Cleanup Program	5	IL	365	Lake Calumet Smelting	LAKE CALUMET SMELTING	CHICAGO	ILN000509228	N	Referred to Rmvl - NFRAP	1/3/2012	ACTIVE	RV1	10/7/2013	12/20/2013	S	F
Referred to Cleanup Program	5	IL	380	Shanfeld, E. Metal Products	SHANFELD IRON METAL COMPANY	EAST ST LOUIS	ILN000505579	N	Rmvl Only Site (No Site Assess Work Needed)	10/22/2014	ACTIVE	RV1	3/16/2015	7/29/2015	S	F
Referred to Cleanup Program	5	MI	397	Federal-Mogul Corp	FEDERAL-MOGUL SITE	DETROIT	MIN000510764	N	Referred to Rmvl - NFRAP	6/19/2013	ACTIVE	RV1	4/15/2013	8/5/2013	S	F
Referred to Cleanup Program	5	OH	410	Mowery Metal Co.	MOWERY METAL CO.	CLEVELAND	OHP000508998	N	Referred to Rmvl - NFRAP	4/30/2016	ACTIVE	RS1	4/29/2016	4/29/2016		F
Referred to Cleanup Program	6	TX	146	Trottner Iron and Metal	TROTTNER IRON & METAL	SAN ANTONIO	TXN000607385	N	Referred to Rmvl - NFRAP[1]	12/20/2013	ACTIVE	RS1	8/23/2016			F
Referred to Cleanup Program	6	TX	425	Atlas Smelting and Refining Co.	ATLAS SMELTING & REFINING CO.	HOUSTON	TXN000607386	N	Referred to Rmvl - NFRAP[1]	3/3/2014	ACTIVE	SI1	1/14/2013	3/3/2014	W	S
Referred to Cleanup Program	7	MO	148	St. Louis Smelting and Refining Div. (National Lead)	MADISON COUNTY MINES	FREDERICKTOWN	MOD098633415	F			ACTIVE	RA3	9/16/2016			F
Referred to Cleanup Program	7	MO	149	Evans Wallower Lead Co.	ORONOGO-DUENWEG MINING BELT	JOPLIN	MOD980686281	F			ACTIVE	FE4	8/21/2016			F
Referred to Cleanup Program	7	NE	157	The Northwestern Metal Co	NORTHWESTERN METAL CO.	LINCOLN	NEN000706447	N	Referred to Rmvl - NFRAP[1]	9/20/2013	ACTIVE	RS1	7/2/2013			F
Referred to Cleanup Program	8	UT	436	Utah Metal Works	UTAH METAL SMELTER	SALT LAKE CITY	UTN000802637	N	Referred to Rmvl - NFRAP	7/31/2014	ARCHIVE	RV1	3/17/2014	9/16/2014	C	F
Referred to Cleanup Program	9	CA	164	Berg Metals Corp.	BERG METALS CORP	LOS ANGELES	CAN000909424	N	Referred to Rmvl - NFRAP	3/14/2017	ARCHIVE	RS1	9/29/2016	10/12/2016		F
Referred to Cleanup Program	9	CA	165	Electric Babbitt Metals.a/k/a Los Angeles Smelting Co.	ATLAS IRON AND METAL CO.	LOS ANGELES	CAN000908308	N	Rmvl Only Site (No Site Assess Work Needed)	10/26/2016	ARCHIVE	RS1	9/29/2016	10/12/2016		F
Referred to Cleanup Program	9	CA	170	Electric Smelting Co.	ELECTRIC SMELTING CO.	SAN FRANCISCO	CAN000909432	N	Referred to Rmvl - NFRAP	11/30/2016	ARCHIVE	RS1	10/3/2016	10/12/2016		F
Referred to Cleanup Program	9	CA	437	Cook Metal Co.	COOK METAL COMPANY	CULVER CITY	CAN000909429	N	Referred to Rmvl - NFRAP	11/30/2016	ARCHIVE	RS1	10/3/2016	10/12/2016		F
Referred to Cleanup Program	9	CA	438	Kramer, H. and Co.	H. KRAMER AND COMPANY	EL SEGUNDO	CAN000908412	N	Referred to Rmvl - NFRAP	12/1/2016	ARCHIVE	RS1	9/29/2016	9/29/2016		F
Referred to Cleanup Program	9	CA	441	J. Chersky and Sons a/k/a Universal Smelting and RefiningCo.	J. CHERSKY AND SONS A/K/A/ UNIVERSAL SMELTING AND REFINING	INGLEWOOD	CAN000909438	N	Referred to Rmvl - NFRAP	12/1/2016	ARCHIVE	RS1	10/3/2016	10/12/2016		F
Referred to Cleanup Program	9	CA	443	California By-Products	CALIFORNIA BY-PRODUCTS	LOS ANGELES	CAN000909427	N	Referred to Rmvl - NFRAP	11/30/2016	ARCHIVE	RS1	9/29/2016	10/12/2016		F
Referred to Cleanup Program	9	CA	446	California Smelting and Refining Co.	CALIFORNIA SMELTING AND REFINING CO	LOS ANGELES	CAN000909428	N	Referred to Rmvl - NFRAP	11/29/2016	ARCHIVE	RS1	9/29/2016	10/12/2016	H	F

[1]Site has removal assessment or removal action ongoing or planned.

ASSESS. DECISION	EPA REG	ST	ECKEL #	ECKEL SITE NAME	SEMS SITE NAME	CITY NAME	EPA ID	NPL STATUS	NON-NPL STATUS	NON-NPL DATE	SITE INVENTORY	LAST ACTION	ACTUAL START	ACTUAL COMPLETE	QUAL	LEAD
Referred to Cleanup Program	9	CA	447	Electric Babbitt Metals a/k/a Los Angeles Smelting Co.	ELECTRIC BABBITT METALS A/K/A/ LOS ANGELES SMELTING	LOS ANGELES	CAN000909430	N	Referred to Rmvl - NFRAP	11/30/2016	ARCHIVE	RS1	9/29/2016	10/12/2016		F
Referred to Cleanup Program	9	CA	451	Berg Metals Corp. [found by FOIA]	BERG METALS CORP.	SAN FRANCISCO	CAN000909425	N	Referred to Rmvl - NFRAP	11/29/2016	ARCHIVE	RS1	9/29/2016	10/12/2016		F
Referred to Cleanup Program	9	CA	452	Bondrat Metals Corp.	BONDRAT METALS CORP.	SAN FRANCISCO	CAN000909426	N	Referred to Rmvl - NFRAP	11/30/2016	ARCHIVE	RS1	10/3/2016	10/12/2016		F
Referred to Cleanup Program	9	CA	454	Finn, John, Metal Works	FINN, JOHN, METAL WORKS	SAN FRANCISCO	CAN000908410	N	Referred to Rmvl - NFRAP	11/30/2016	ARCHIVE	RS1	9/29/2016	10/12/2016		F
Referred to Cleanup Program	9	CA	455	Gollan Type Metal Co.	GOLLAN TYPE METAL COMPANY	SAN FRANCISCO	CAN000909436	N	Referred to Rmvl - NFRAP	11/30/2016	ARCHIVE	RS1	9/29/2016	10/12/2016		F
Referred to Cleanup Program	9	CA	456	Magnolia Metal Co.	MAGNOLIA METAL COMPANY	SAN FRANCISCO	CAN000909441	N	Referred to Rmvl - NFRAP	11/30/2016	ARCHIVE	RS1	10/3/2016	10/12/2016		F
Referred to Cleanup Program	9	CA	460	United American Metals Corp. of California	UNITED AMERICAN METALS CORP OF CALIFORNIA	SAN FRANCISCO	CAN000909448	N	Referred to Rmvl - NFRAP	11/30/2016	ARCHIVE	RS1	9/29/2016	10/12/2016		F
Referred to Cleanup Program	10	WA	465	Non-Ferrous Metals Inc. [found by FOIA]	HARBOR ISLAND (LEAD)	SEATTLE	WAD980722839	F			ACTIVE	FE4	5/7/2014	9/23/2015		F

[1]Site has removal assessment or removal action ongoing or planned.

Appendix A: Assessment Status of 464 Potential Secondary Lead Smelters Addressed by the EPA Superfund Program
March, 2017

ASSESS. DECISION	EPA REG	ST	ECKEL #	ECKEL SITE NAME	SEMS SITE NAME	CITY NAME	EPA ID	NPL STATUS	NON-NPL STATUS	NON-NPL DATE	SITE INVENTORY	LAST ACTION	ACTUAL START	ACTUAL COMPLETE	QUAL	LEAD

Report Code Key

NPL Status Code	NPL Status Term
F	Currently on the Final NPL
P	Proposed for NPL
N	Not on the NPL
A	Site is Part of NPL Site
O	Not Valid Site or Incident (Note: Includes sites screened and determined not to warrant inclusion in the Superfund active site inventory. Sites may reside in state/tribal site inventories for non-Superfund attention.)

Lead Code	Lead Name
EP	EPA Performed In-House
F	EPA Performed
PS	State Oversight
RP	EPA Oversight
S	State Performed

Action Qualifier Code	Action Qualifier Name
A	Addressed as part of an existing NPL site
C	Cleaned up
D	Deferred to RCRA (Subtitle C)
F	Referred to Removal, needs further Rmdl Asmt
H	Higher priority for further assessment
L	Low priority for further assessment
N	NFRAP-Site does not qualify for the NPL based on existing information
S	Stabilized
W	Referred to Removal, no further Rmdl Asmt

Site Inventory	Site Inventory Definition
Active	The Active site inventory consists of sites placed on the NPL, and sites not on the NPL where site assessment, removal, remedial, enforcement, cost recovery, or oversight activities are planned or are being monitored or conducted.
Archive	The Archive site inventory consists of non-NPL sites that were formerly in the Active site inventory which have no further site assessment, removal, remedial, enforcement, cost recovery or oversight needed under the federal Superfund program based on available information.
Non-Site	Sites that are pre-screened prior to entry into the Active site inventory and determined not to require further Superfund remedial assessment are tracked in the SEMS Non-Site site inventory. Minimal information is tracked on these sites to account for the pre-screening work and for future reference should a screened site be resubmitted to the federal Superfund program. The Non-Site inventory may also be used to track other non-site specific information.

Action Type	Action Name
BE	PRP RD
CO	GOVT RI/FS
DS	Remedial Site Initiation (Discovery)
FE	GOVT Five-Year Review
HX	Pre-CERCLA Screening Report
OO	Site Reassessment
PA	Preliminary Assessment
RS	GOVT Removal Assessment
RV	GOVT Removal
SH	Site Inspection Prioritization
SI	Site Inspection
VA	Other Cleanup Activity (OCA)

[1]Site has removal assessment or removal action ongoing or planned.

12.0 APPENDIX B

Strategy for Addressing 464 Lead Smelter Sites

April 30, 2012

Strategy for Addressing 464 Lead Smelter Sites
August 30, 2012

Purpose

This is a strategy for assessing lead smelter sites that had been the subject of a study conducted by William P. Eckel in 2001. Over the past decade, as a follow-up to the Eckel study, EPA has worked with State partners to identify and assess a number of lead smelters identified by Dr. Eckel, resulting in decisions that further federal involvement under the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (CERCLA) is warranted or, in certain cases, that cleanup is necessary. However, there remain lead smelters where the assessment process is ongoing. It will be necessary to determine the extent to which new information recently made available to EPA could affect planned, ongoing and completed assessments, including any decisions associated with these assessments. It will also be necessary to identify smelters that may pose a health threat requiring further assessment and, as necessary, cleanup. EPA recognizes that there exist lead smelter sites in addition to those identified in the Eckel study. As part of the national site assessment program, EPA will continue efforts to evaluate all sites, including other smelters, brought to the Agency's attention. However, this strategy focuses on the 464 smelters identified by Dr. Eckel.

Background

Dr. Eckel was the primary author of a report titled *Discovering Unrecognized Lead-Smelting Sites by Historical Methods*, which was published in the American Journal of Public Health in April 2001. Dr. Eckel developed this report from historical literature searches for secondary lead smelters and refined his findings to include 464 battery lead, babbitt metal, and solder smelters that were not in federal or state environmental databases at the time, based on records that documented smelters operating from 1931 through 1964. Smelters are a source of lead and possibly other heavy metals that have contributed to environmental contamination.

Lead Smelter Assessment Strategy

EPA has developed a strategy to ensure successful completion of remaining Superfund site assessment work at the 464 smelters, which includes identifying sites requiring no further evaluation beyond pre-CERCLIS screening, identifying sites to be entered into the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) active site inventory, performing remedial assessments, documenting final assessment decisions and identifying those smelters where cleanup may be required. When reviewing information associated with each of the smelters, EPA will consider the following circumstances when determining priorities for assessment and, as necessary, cleanup:

- Sites where sample collection or collection of additional samples was recommended
- Sites where impacts of prior industrial activities may not have been fully evaluated
- Sites whose location was difficult or impossible to determine based on available information
- Sites previously referred to the state or other programs
- Sites where sampling results indicate the presence of lead or other heavy metals, attributable to past smelter operations, above risk-based screening levels and background
- Sites where no previous assessment had been conducted
- Sites located near where children may congregate or be active (e.g., residential areas, day care centers, schools)
- Sites where population density (e.g., population within 1/4 mile of the listed address) is high

- Sites with potential Environmental Justice issues

It is important to note that the objective of pre-CERCLIS screening is to determine, based on a review of available information, whether a potential Superfund site should be entered into or excluded from the active CERCLIS inventory. If a site is placed in the active CERCLIS inventory, information obtained will be used to perform a preliminary assessment, which is a limited-scope, screening-type investigation that involves collection of additional information and performance of a site reconnaissance. The goal of a preliminary assessment is to determine whether further investigation under Superfund, such as a site inspection and/or evaluation under the hazard ranking system for potential placement on the National Priorities List (NPL), is warranted. Samples are typically not collected during a pre-CERCLIS screening or preliminary assessment, although existing sampling data, if available, would be reviewed. In certain instances, EPA regions may elect to collect samples as part of a pre-CERCLIS screening or preliminary assessment.

Implementation

In order to ensure continued progress, EPA has outlined an approach, as part of this strategy, that involves undertaking the following actions in consultation with state, tribal and other environmental and public health partners:

1. Review and properly categorize the status of 464 smelter sites (e.g., non-NPL status, action start/completion dates), in consultation with site assessment managers from each region, to ensure that data tracked in CERCLIS is up to date and accurate for each of the 464 sites where assessment or cleanup has been conducted under the federal Superfund program (January 27, 2012 – July 31, 2012).

   Output: EPA possesses timely and accurate information on the 464 smelter sites.

   Information tracked by EPA will allow a comprehensive evaluation of all 464 smelter sites in order to determine next steps in the assessment process.

2. Complete review of the 48 “unrecognized” lead smelter sites (without CERCLA IDs) reported by the Office of Superfund Remediation and Technology Innovation (OSRTI) in February 2012 as not having been assessed by EPA or referred to another program for assessment – applies only to Regions 2, 5 and 9 (July 31, 2012).

   Output: Pre-CERCLIS screening or equivalent will be completed at these 48 lead smelter sites. EPA will assure that documentation obtained as part of the pre-CERCLIS screening process, including equivalent screenings undertaken by states or other programs, is of sufficient quality to support decisions whether or not potential sites are added to the CERCLIS active inventory. Documentation will include clearly stated rationale supporting each decision and, in cases where sites are excluded from the CERCLIS active inventory, indicate whether these sites are being addressed by state, tribal or other programs.

   The status of these sites will be correctly reflected in CERCLIS to identify: (1) sites excluded from the CERCLIS active site inventory (no further evaluation necessary beyond pre-CERCLIS screening) and (2) sites entered into the CERCLIS active site inventory (requiring remedial and/or removal assessments).

3. Review existing information in consultation with the removal program to determine if any smelter sites could pose an imminent and substantial threat to human health requiring cleanup (August 31, 2012).

   Output: All smelters potentially posing an imminent and substantial threat will have been identified and referred to the removal program for evaluation to determine if cleanup is required. It is recognized that all removal assessments will not be completed before August 31st. Additionally, it is anticipated that this consultation process will continue in the future as new information is acquired for smelter sites. Smelters will be evaluated based on a review of available sampling results (e.g., data from EPA or other parties) and comparison to existing risk-based screening levels, as well as a consideration of data quality, naturally-occurring levels of heavy metals ("background" concentrations) and the potential presence of other (non-smelter-related) sources of contamination. During this process, regional toxicologists, regional representatives from the Agency for Toxic Substances and Disease Registry (ATSDR) and, as necessary, the lead Technical Review Workgroup (TRW) will be consulted. These technical specialists can assist in evaluating potential threats posed by contamination, deciding whether a site should be referred to the removal program and, as necessary, determining when cleanup is necessary. When evaluating exposures to lead, site managers and/or regional toxicologists are encouraged coordinate with the regional representative from the lead TRW.

   CERCLIS will be updated to reflect involvement of the Removal program and to document cleanup decisions.

4. Complete pre-CERCLIS screening at all remaining sites that are not in CERCLIS (without CERCLA IDs) and update CERCLIS accordingly (October 31, 2012).

   Output: To the maximum extent practicable given available resources and competing priorities, pre-CERCLIS screening or equivalent (if sites are being addressed by state, tribal or other programs) will be completed. EPA will assure that documentation obtained as part of the pre-CERCLIS screening process, including equivalent screenings undertaken by states or other programs, is of sufficient quality to support decisions whether or not potential sites are added to the CERCLIS active inventory. Documentation will include clearly stated rationale supporting each decision and, in cases where sites are excluded from the CERCLIS active inventory, indicate whether these sites are being addressed by state, tribal or other programs.

   The status of these sites will be correctly reflected in CERCLIS to identify: (1) sites excluded from the CERCLIS active site inventory (no further evaluation necessary beyond pre-CERCLIS screening) and (2) sites entered into the CERCLIS active site inventory (requiring remedial and/or removal assessments).

5. Continue ongoing smelter evaluation efforts to ensure review of file information for all 464 smelter sites, taking into account the aforementioned circumstances, thereby identifying any sites requiring further assessment or reassessment (January 27, 2012 – October 31, 2013).

   Output: In addition to the aforementioned sites, the remaining smelter sites, including those presently being evaluated, will have been assessed to determine whether response actions are required. As necessary, EPA will develop a plan of action for undertaking further assessment activities or, for sites where a final site assessment decision had previously been made, reassessments.

CERCLIS will also have been updated to reflect the current status of all 464 smelter sites. The assessment process will include, at a minimum, performance of a pre-CERCLIS screening (or equivalent). To the maximum extent practicable given available resources and competing priorities, EPA will ensure that a preliminary assessment has been performed for all sites entered into the CERCLIS active site inventory.

Outreach and Coordination

EPA regions will undertake assessment of smelters in close consultation with state, tribal and other environmental and public health partners, as well as key stakeholders such as members of the community and elected representatives. Outreach and coordination activities are intended to focus on sites that have progressed beyond the pre-CERCLIS screening assessment stage and that, based on existing information, may pose the most threat to human health and the environment.

Taking into account the current and future level of interest that may be anticipated at smelter sites, EPA headquarters will explore development of a "boilerplate" communications strategy, fact sheets or other communication/outreach tools for regional use in order to proactively respond to concerns raised by members of the community and other stakeholders.

Community Involvement

EPA regions, in close collaboration with EPA headquarters, will develop a communications strategy to address concerns that may arise at the following categories of smelter sites: (1) no further federal involvement under CERCLA warranted; (2) currently being assessed by the Agency under the remedial or removal programs; (3) referred to state, tribal or other programs and (4) CERCLA cleanup planned, ongoing or completed.

1. If no further federal involvement under CERCLA is warranted, the Agency will indicate the reason for making this determination (e.g., lack of CERCLA authority, levels of lead or other contaminants at the site do not pose a health threat necessitating further assessment, site being addressed by state, tribal or other programs). EPA will clearly communicate instances where the Agency lacks the CERCLA authority to respond to contamination (e.g., soil contamination resulting solely from lead-based paint) and identify other organizations/programs that may be in a position to address such contamination. EPA will also indicate when further remedial assessment is not warranted either because contaminants cannot be attributed to past smelter operations or because the number of people potentially affected by contamination is too low for the site to qualify for the National Priorities List.

2. For sites currently being assessed by the EPA, the Agency will be prepared to discuss the type of assessment activity planned or ongoing (removal assessment or remedial assessment) and provide the anticipated completion date. If sites are undergoing remedial assessment, EPA will indicate the particular assessment phase (pre-CERCLIS screening, preliminary assessment, site inspection, etc.) and whether the Agency or state/tribe (under Cooperative Agreement with EPA or absent Cooperative Agreement) is performing this work.

3. For sites referred to state, tribal or other programs, the Agency will identify a point-of-contact (at the state, tribal or local level) who can respond to questions from property owners or community members regarding the status of investigations and cleanups.

4. For sites where CERCLA cleanup is determined to be necessary, EPA will indicate the cleanup status (planned, ongoing or completed) and, if planned/ongoing, the anticipated completion date. If cleanup has been completed, EPA will be prepared to describe the nature of cleanup such as the particular response actions undertaken and hazardous substances addressed. EPA will also indicate whether further evaluation as part of the remedial assessment process is required.

At sites where EPA (or state/tribe under Cooperative Agreement) collected samples, when sharing results with property owners, the Agency will explain the significance of the results and indicate whether or not follow-on evaluation is planned. If no further federal involvement under CERCLA is warranted, the Agency will indicate the reason for making this determination and explain that these sites have been referred to state, tribal or other programs for follow-up. If further federal involvement under CERCLA is warranted, the Agency will discuss the type of assessment activity planned and provide the anticipated assessment completion date. EPA will also indicate whether the site is being evaluated for possible removal actions.

Consultation with Public Health Agencies

EPA will consult with public health agencies, such as ATSDR and/or other governmental health departments, which can assist the Agency by: (1) reviewing sample results; (2) providing recommendations for follow-on evaluations; (3) assessing threats/risks posed by contamination; (4) supporting decisions whether a removal action is necessary and (5) identifying a point-of-contact who can respond to questions from property owners or community members regarding potential health effects posed by contamination. Regional ATSDR representatives are available to assist in undertaking the aforementioned tasks and state health departments may also be able to provide support either independently or though existing agreements with ATSDR. The extent to which local health departments could assist will vary from locality to locality.

EPA headquarters will consult with the Centers for Disease Control (CDC) and Prevention's Advisory Committee on Childhood Lead Poisoning Prevention (ACCLPP) regarding new scientific knowledge and technical developments and the practical implications for childhood lead poisoning prevention efforts. EPA headquarters is reviewing the recommendations provided by the ACCLPP to the CDC regarding new strategies for defining elevated blood lead levels among children. If it is determined that changes to the Agency's approaches or policies are needed, impacts of such a change will be carefully evaluated. Findings will be shared with the regions.

Remedial/Removal Program Interaction

EPA regions will continue to rely upon existing internal coordination processes between remedial and removal programs when identifying sites where contamination could pose an imminent and substantial threat to human health. Regional removal programs will coordinate with the Headquarters' Office of Emergency Management on all lead cleanups involving nationally significant or precedent-setting issues. Communications will emphasize that, if at any time in the site evaluation process an imminent and substantial threat is identified, EPA is prepared to use its emergency removal authority. It is anticipated that a determination of such threats would also be made in consultation with regional EPA toxicologists or risk assessors, regional ATSDR representatives and, as necessary, the lead TRW.

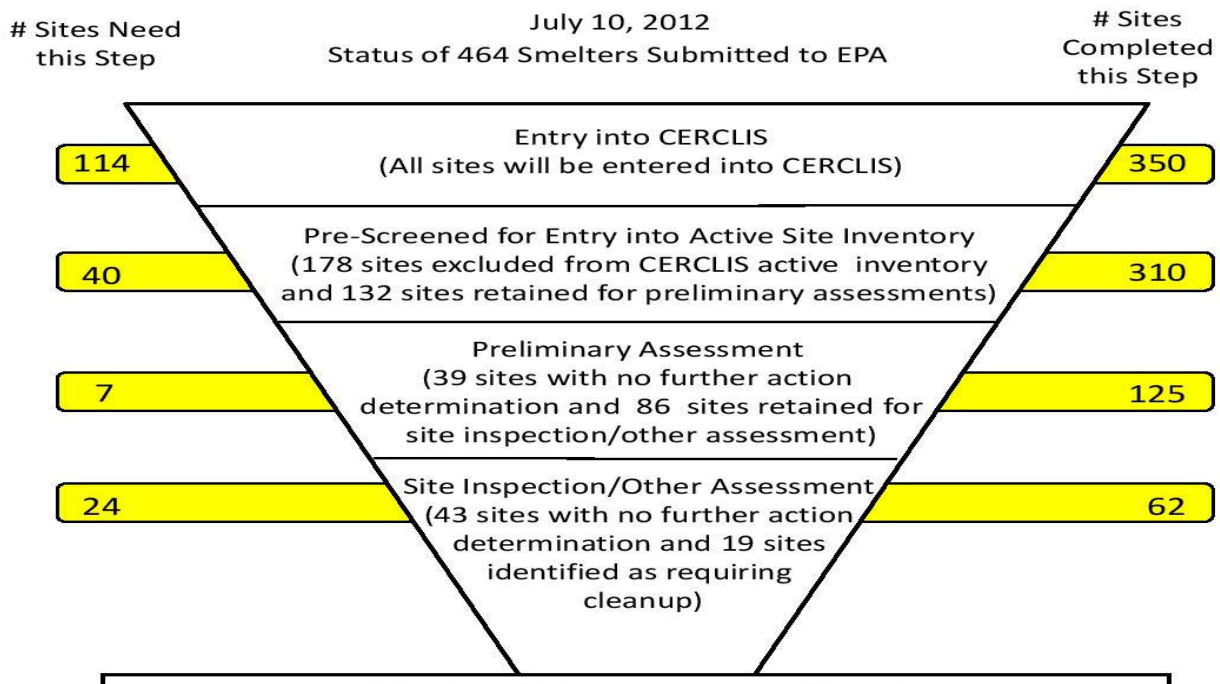
Referral to State or Tribal Governments

Whenever EPA refers sites to state or tribal governments for follow-up, the Agency will clearly explain the reason for the referral and will make available all releasable site-related information. This referral process will be documented as part of the final site assessment decision. For sites currently in the active CERCLIS inventory (undergoing pre-screening, preliminary assessments, site inspections, etc.), EPA regions should periodically follow-up with the party leading or managing investigations and cleanups to ensure adequate progress is being made.

Monitoring Progress (Status – July 10, 2012)

To the maximum extent practicable, given available resources and taking into account competing priorities, EPA makes every attempt to perform and complete evaluations as part of the remedial site assessment process within the time frames established under CERCLA, the National Contingency Plan and existing policy.

EPA headquarters (OSRTI) has developed the following flowchart that presents the current assessment status and progress made to date with respect to all 464 smelters:



Selection of Cleanup Program (19 sites)					
Cleanup Option	NPL	Other Cleanup Activity	RCRA	Removal	To Be Determined
# Sites	6	4*	3	4	2

* 2 of the 4 Other Cleanup Activity sites are represented by a single site in CERCLIS (Florida Smelting Co.)

Notes: (1) preliminary assessment includes remedial and removal assessment; (2) removal actions can occur at any point in the process and (3) no further action designation applies to the Federal Superfund program only [State and Tribal governments may perform further work at these sites under their own programs].

The flowchart depicts all 464 smelter sites and shows, in a sequential fashion, the number of sites falling into the various phases of the assessment process. Key decision points include entry of sites into CERCLIS (350 smelters already entered and 114 requiring entry), performance of pre-CERCLIS screening (310 smelters pre-screened and 40 requiring pre-screening) and the results of pre-screening (178 smelters excluded from the CERCLIS active inventory and 132 reaching the preliminary assessment stage).

Of the 132 smelters requiring preliminary assessments, 125 preliminary assessments have been completed and 7 preliminary assessments remain to be completed. Based on the completed preliminary assessments, a determination that no further federal action is required under CERCLA has been made at 39 smelters and 86 have reached the site inspection stage. Of the 86 smelters requiring site inspections (or other assessments), 62 site inspections (or other assessments) have been completed and 24 site inspections (or other assessments) remain to be completed. Based on the completed site inspections (or other assessments), a determination that no further federal action under CERCLA has been made at 43 smelters and 19 have been identified as requiring cleanup.

It is important to note that, as the remaining sites are continually entered into CERCLIS, the numbers of sites requiring pre-CERCLIS screening will change as will, in succession, the number of sites requiring a preliminary assessment and/or site inspection (or other assessments).

OSRTI will produce a tracking report, which will be updated quarterly, for use by EPA headquarters and the regions to monitor progress towards assessing smelters subject to this strategy. This report will identify sites requiring no further federal involvement under CERCLA, sites requiring further assessment and sites requiring cleanup (with cleanup program identified).

Timeline for Smelter-related Activities	
July 31, 2012	OSRTI develops CERCLIS tracking report to monitor progress at sites.
July 31, 2012	Using the spreadsheet prepared by OSRTI, regions undertake a preliminary review of new information, including sampling data, made available to the Agency to determine if any of these sites should be identified as high priorities for assessment or cleanup.
July 31, 2012	Regions review/update status and action data for each of the 464 smelters included on the CERCLIS active site inventory to reflect current information. CERCLIS pulls will form the basis for HQ reporting. For sites needing further remedial assessment, regions will add planned completion dates for ongoing assessments and planned start and completion dates for sites awaiting start of a new assessment.
July 31, 2012	Regions (where applicable) complete pre-CERCLIS screenings at the 48 sites unrecognized as of February 2012 and identify sites that should be entered into (or excluded from) the CERCLIS active site inventory.
August 31, 2012	Regions identify all smelters potentially posing an imminent and substantial threat to human health based on existing information. Sites will be evaluated as soon as practicable thereafter to determine if a removal action is necessary. It is recognized that all removal assessments will not be completed before August 31st.
September 30, 2012	OSRTI explores possibility of revising existing pre-CERCLIS screening guidance (OSWER Directive 9375.2-11FS); including approaches for improving the historical records search process.
October 2012	OSRTI submits initial quarterly report on status/progress for all 464 sites. Initial report address sites excluded from the CERCLIS active inventory, which require no further evaluation beyond pre-CERCLIS screening, and sites entered into the CERCLIS active inventory, which require remedial and/or removal assessments.
October 31, 2012	Regions ensure, to the maximum extent practicable given available resources and competing priorities, that pre-CERCLIS screenings or equivalent are completed at the remaining smelters (without CERCLA IDs) to identify sites that should be entered into (or excluded from) the active inventory.
November 30, 2012	Regions will identify sites where a preliminary assessment has been performed or will be performed.
January 2013	OSRTI submits quarterly progress report to HQ senior management. This report and subsequent reports focus on sites entered into the CERCLIS active inventory needing remedial and/or removal assessments.
March 31, 2013	Regions report status of sites where preliminary assessments have been completed or are ongoing.
April 2013	OSRTI submits quarterly progress report to HQ senior management.
June 30, 2013	Regions report status of sites where preliminary assessments have been completed or are ongoing.
July 2013	OSRTI submits quarterly progress report to HQ senior management.
October 2013	OSRTI submits quarterly progress report to HQ senior management.
October 31, 2013	Regions complete preliminary assessments, to the maximum extent practicable given available resources and competing priorities, at all smelter sites included on the CERCLIS active inventory and develop a plan of action for addressing those sites that need further assessment or reassessment.
January 2014	OSRTI submits quarterly progress report to HQ senior management.

Lead Smelters – Additional Considerations

The following factors should be taken into account, as appropriate or necessary (i.e., sample collection may not be required during site assessment), by EPA, state and tribal governments during the evaluation process to determine the next steps with respect to assessment and cleanup of smelters:

Approach to Document/Records Review

- Information sources (historical aerial photographs, Sanborn maps, existing reports, etc.)
- Information gathering techniques (Internet, libraries, interviews, etc.)
- Findings/conclusions presented in existing reports (including recommendations/rationale)

Physical Setting/Site Conditions

- Land use at/near the site at the time of sampling
- Current land use (if known to have changed since sampling)
- Development activities subsequent to smelter operations
- Presence of buildings constructed before 1978 (lead-based paint contribution to observed soil contamination)
- Other (non-smelter) sources potentially contributing to observed soil contamination
- Extent of vegetative cover (e.g., bare versus grassy) at locations where soil samples were tested/collected

Approach to Sample Collection/Analysis (if sampling is performed)

- Number of samples collected
- Depth of samples collected
- Biased versus non-biased sampling
- Discrete versus composite sampling
- Number of aliquots per composite
- Proximity of samples to building drip lines
- Presence of paint chips in samples
- Background samples

XRF Instrumentation

- Precision/accuracy limitations make results from *in situ* analysis more qualitative in nature, while results from *ex situ* analysis results can be quantitative (or at least semi-quantitative).
- Presence of metals other than lead (especially risk-drivers) in soil above screening concentrations might affect site assessment decisions.
- Issues associated with XRF data including, but not necessarily limited to, differentiating among peaks for certain metals/elements or peak overlap (e.g., lead versus arsenic) are sometimes encountered and could affect site assessment decisions, especially if decisions are based solely on XRF data.

Laboratory Analysis

- Presence of metals other than lead (especially risk-drivers) in soil above screening concentrations might affect site assessment decisions.

- Collection of samples for laboratory analysis at locations where XRF testing was performed could be used for confirmation purposes.
- Comparison (i.e., degree of correlation) between laboratory and XRF results would support XRF findings.

Approach to Data Evaluation

- Data limitations/usability (quality assurance/quality control measures employed)
- Exposure assumptions
- Risk-based screening levels
- Attribution from past smelter operations versus other anthropogenic sources

Contacts: The Headquarters contact for this strategy is Drew Lausch at lausch.robert@epa.gov or 703-603-0721. Specific questions regarding the reporting and tracking of CERCLIS accomplishments should be directed to Randy Hippen at hippen.randy@epa.gov or 703-603-8829.