



Indiana Department of Environmental Management

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Governor

Carol S. Comer
Commissioner

April 14, 2016

Mr. Robert Kaplan
Acting Regional Administrator
U.S. Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3950

Re: Request for Redesignation Petition and
Maintenance Plan for Lead Attainment for
the Muncie, Delaware County, Indiana
2008 Annual Lead Nonattainment Area

Dear Mr. Kaplan:

The Indiana Department of Environmental Management (IDEM) submits a Redesignation Petition and Maintenance Plan for the Muncie, Delaware County, Indiana Nonattainment Area, in reference to the 2008 annual lead standard. The public comment period concerning the Redesignation Petition and Maintenance Plan commenced on March 2, 2016 and concluded on April 12, 2016. IDEM scheduled a public hearing concerning the Redesignation Petition and Maintenance Plan on April 5, 2016. No comments were received during the public comment period. Additionally, there was no request for a public hearing during the comment period, thus a hearing was not held.

The attached enclosure consists of the following:

Redesignation Petition and Maintenance Plan

- A formal request that the Muncie, Delaware County, Indiana Nonattainment Area for the 2008 annual lead standard be redesignated to "attainment" and reclassified as "maintenance". It contains and meets the requirements set forth in Section 107 of the Clean Air Act and in U.S. EPA Redesignation Guidance.
- The appendices of the document contain historical air quality trend data and projected emission inventory data.
- A maintenance year of 2030 is established.

This submittal consists of one (1) hard copy of the required documentation. An electronic version of the submittal in PDF format that is identical to the hard copy has been sent to Doug Aburano, Chief of U.S. EPA Region 5's Attainment Planning and Maintenance Section and Chris Panos of U.S. EPA Region 5.

IDEM requests that U.S. EPA proceed with review and approval of this submittal. If you have any questions or need additional information, please contact Brian Callahan, Chief, Air Quality Standards and Implementation Section, Office of Air Quality at (317) 232-8244 or bcallaha@idem.IN.gov.

Sincerely,



Keith Baugues
Assistant Commissioner
Office of Air Quality

KB/sad/bec/gf

Enclosure:

Request for Redesignation Petition and Maintenance Plan for Lead Attainment
for the Muncie, Delaware County, Indiana 2008 Annual Lead Nonattainment Area

cc: Doug Aburano U.S. EPA Region 5 (no enclosure)
Chris Panos, U.S. EPA Region 5 (no enclosure)
Sarah Arra, U.S. EPA Region 5 (w/ enclosure)
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**REQUEST FOR REDESIGNATION AND
MAINTENANCE PLAN FOR LEAD
ATTAINMENT IN THE MUNCIE 2008
ANNUAL LEAD NONATTAINMENT
AREA**

Muncie, Delaware County, Indiana

**Prepared By:
The Indiana Department of Environmental Management**

April 2016

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ACRONYMS/ABBREVIATIONS LIST

AQS	Air Quality System
ASOS	Automated Surface Observing System
CAA	Clean Air Act
CFR	Code of Federal Regulations
CTG	Control Technology Guidelines
EMITS	Emission Inventory Tracking System
FR	Federal Register
IAC	Indiana Administrative Code
IDEM	Indiana Department of Environmental Management
mg/dscm	milligrams per dry standard cubic meter
NAAQS	National Ambient Air Quality Standard
NESHAP	National Emission Standards for Hazardous Air Pollutants
NSR	New Source Review
OAQ	Office of Air Quality
Pb	Lead
PSD	Prevention of Significant Deterioration
RACT	Reasonably Available Control Technology
SIP	State Implementation Plan
tpy	tons per year
U.S. EPA	United States Environmental Protection Agency
$\mu\text{g}/\text{m}^3$	micrograms per cubic meter

REQUEST FOR REDESIGNATION AND MAINTENANCE PLAN FOR ATTAINMENT IN THE MUNCIE 2008 ANNUAL LEAD NONATTAINMENT AREA

MUNCIE, DELAWARE COUNTY, INDIANA

1.0 INTRODUCTION

This document supports Indiana's request that the Muncie, Delaware County, Indiana lead nonattainment area ("Muncie Nonattainment Area") be redesignated from nonattainment to attainment for the 2008 annual lead standard. The Muncie Nonattainment Area has recorded three (3) years of complete, quality-assured ambient air quality monitoring data for the years 2013 – 2015 demonstrating attainment of the annual lead standard.

Indiana's request is based on Section 107(d)(3)(D) of the Clean Air Act (CAA), which states:

(D) The Governor of any State may, on the Governor's own motion, submit to the Administrator a revised designation of any area or portion thereof within the State. Within 18 months of receipt of a complete State redesignation submittal, the Administrator shall approve or deny such redesignation. The submission of a redesignation by a Governor shall not affect the effectiveness or enforceability of the applicable implementation plan for the State.

Section 107(d)(3)(E) of the CAA establishes specific requirements to be met in order for an area to be considered for redesignation; including:

- (a) A determination that the area (or a portion thereof) has attained the national ambient air quality standard (NAAQS).
- (b) A state implementation plan (SIP) for the area under Section 110(k) that is fully approved.
- (c) A determination that the improvement in air quality is due to permanent and enforceable reductions in emissions resulting from implementation of the SIP or other federal requirements.
- (d) A maintenance plan under Section 175A that is fully approved.
- (e) A determination that all Section 110 and Part D requirements have been met.

A maintenance plan provides for the continued attainment of the air quality standard by an area for a period of ten years after the United States Environmental Protection Agency (U.S. EPA) has formally redesignated the area to attainment. The plan also provides assurances that even if there is a subsequent exceedance of the air quality standard, measures in the maintenance plan will prevent any future occurrences through contingency measures that would be triggered.

Contingency measures are discussed in greater detail in Section 8.0 of this document. This document addresses each of these requirements and provides additional information to support continued compliance with the 2008 annual lead standard.

1.1 Health and Environmental Effects of Lead

Maintaining concentrations of lead below the health-based standard is important because lead is a serious human health threat. Lead that is emitted into the air can be inhaled or, after it settles out of the air, can be ingested. Ingestion of lead that has settled onto surfaces is the main route of human exposure to lead originally released into the air. Once in the body, lead is rapidly absorbed into the bloodstream and results in a broad range of adverse health effects. Children are most vulnerable to the damaging effects of lead because their bodies are developing rapidly and their frequent hand-to-mouth behaviors increase their risk of exposure. No safe level of lead in the blood has been identified.

Effects in children include:

- Impacts on the developing nervous system, including the brain. This can lead to IQ loss, poor academic achievement, permanent learning disabilities, and delinquent behavior. The effects can generally persist into early adulthood and can affect lifetime education and achievement;
- Damage to red blood cells;
- Storage in bones that can be released into the bloodstream later in life; and,
- Weakened immune system.

Effects in adults include:

- Increased blood pressure;
- Cardiovascular disease; and,
- Decreased kidney function.

1.2 Lead Sources

Lead is a naturally occurring toxic metal that is found in the air in the form of small particles. It is also emitted from some industrial processes and is present in some manufactured products. The major sources of lead emissions have historically been motor vehicles (such as cars and trucks) and industrial sources. Lead emissions from motor vehicles have been dramatically reduced with the phase-out of leaded gasoline. Lead is currently only used as a fuel additive for aviation gasoline in some general aviation aircraft, but not in commercial jet aircraft. Larger industrial sources of lead emissions currently include metals processing, particularly primary and secondary lead smelters. U.S. EPA's lead air quality monitoring strategy generally focuses on areas surrounding these industrial sources.

1.3 National Ambient Air Quality Standards

Lead is one of the six criteria air pollutants that scientists have identified as being particularly harmful to humans and the environment. NAAQS have been developed for these six pollutants and are used as measurements of air quality. The CAA requires U.S. EPA to set primary standards at a level judged to be “requisite to protect the public health with an adequate margin of safety,” and establish secondary standards that are requisite to protect public welfare from “any known or anticipated effects associated with the pollutant in the ambient air,” including effects on crops, vegetation, wildlife, buildings and national monuments, and visibility.

The CAA requires areas designated nonattainment for the NAAQS for lead to develop SIPs to expeditiously attain and maintain the standard. On October 15, 2008, U.S. EPA significantly strengthened the 1978 annual lead NAAQS in the November 12, 2008, *Federal Register* (FR) published at 73 FR 66964, with an effective date of January 12, 2009. The revised NAAQS was strengthened by a factor of 10, from 1.5 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) using a quarterly average, to 0.15 $\mu\text{g}/\text{m}^3$ using a maximum (not-to-be-exceeded) rolling three-month average evaluated over a three-year period (three-calendar years plus the two previous months). This three-year average is termed the “design value” for the monitor. The stronger primary standard provides increased protection against adverse health effects associated with exposure to lead in at-risk groups, including children. To provide increased protection against lead-related environmental and other welfare effects, U.S. EPA revised the secondary lead NAAQS to be identical to the revised primary standard. U.S. EPA determined that the pre-existing ambient lead monitoring network was inadequate for determining whether many areas were meeting the revised lead standards.

U.S. EPA also established new criteria for siting ambient lead monitors and new data collection requirements on December 27, 2010, to better assess compliance with the 2008 lead NAAQS (75 FR 81126).

Table 1.1: National Ambient Air Quality Standards for Lead

	Primary Standards		Secondary Standards	
	Level	Averaging Time	Level	Averaging Time
1978 Lead Standards	1.5 $\mu\text{g}/\text{m}^3$	Highest calendar quarter arithmetic average in a three-year period	Same as primary	
2008 Lead Standards	0.15 $\mu\text{g}/\text{m}^3$	Highest rolling three-month average in a three-year period	Same as primary	

On November 22, 2010, U.S. EPA promulgated the initial lead nonattainment areas for the revised lead standard, which became effective on December 31, 2010 (75 FR 71033). Section 191 of the CAA required states with lead nonattainment areas to submit a plan within eighteen (18) months of the effective date of designations (i.e., June 30, 2012) detailing how the lead standard would be attained by December 31, 2015.

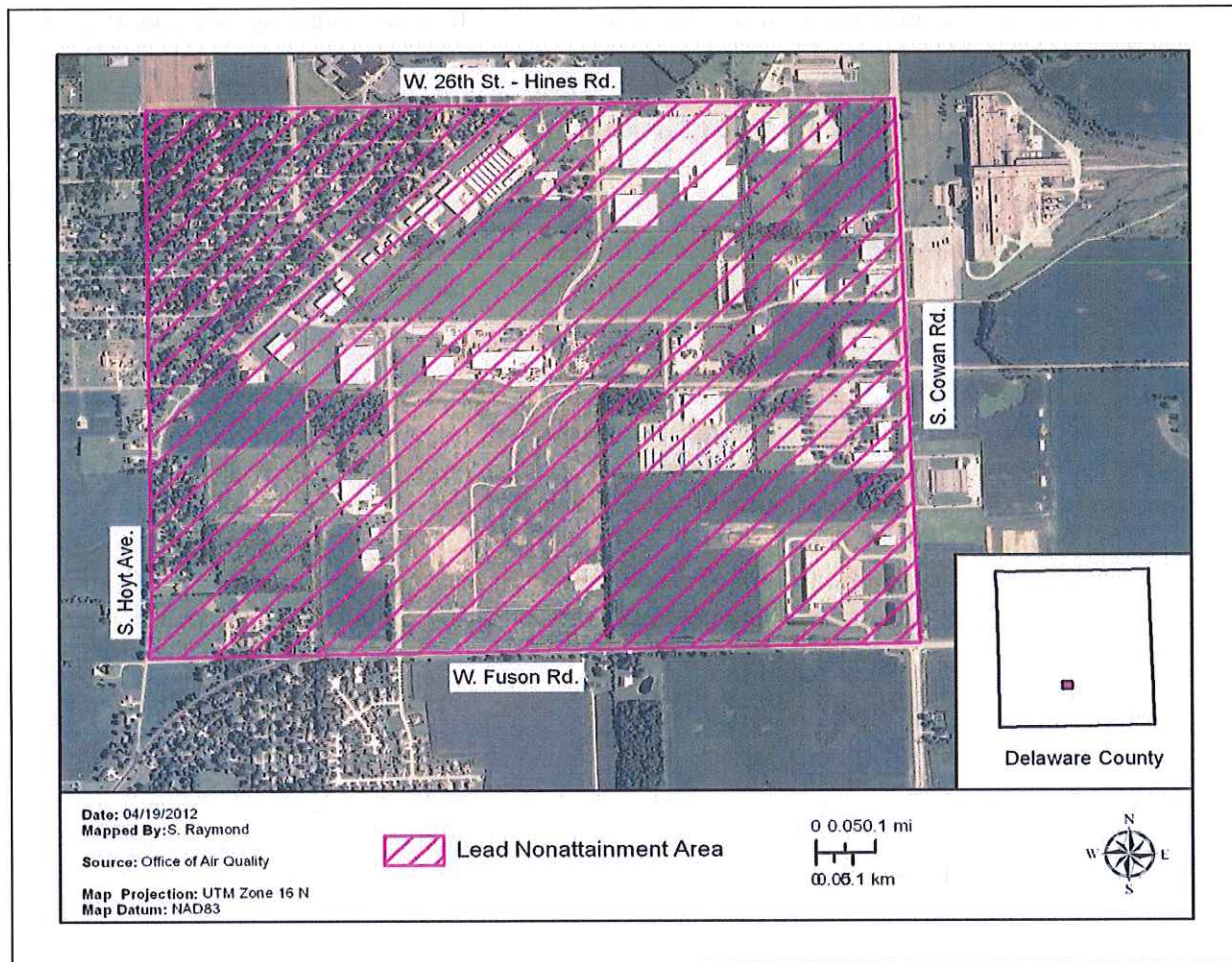
The Muncie Nonattainment Area, as defined in Section 1.4, has not previously been subject to nonattainment area rulemakings for lead. However, Delaware County had been subject to nonattainment area rulemakings under the 1997 8-hour ozone standard. The entire county was designated nonattainment under the 1997 8-hour ozone standard on June 15, 2004, and was subsequently redesignated to attainment and classified as “maintenance” on January 3, 2006 (70 FR 69443).

In order to support timely attainment of the 2008 Lead Standard for the Muncie Nonattainment Area, the Indiana Air Pollution Control Board adopted limits for the applicable sources to ensure timely attainment. These limits were phased-in between October 2013 and January 2014, and were submitted to U.S. EPA for SIP approval on March 14, 2013. At the close of 2015 the area did achieve compliance with the standard. IDEM requested U.S. EPA make a clean data determination finding for the area as soon as three (3) years of complete, quality-assured ambient air quality monitoring data were available. The Muncie Nonattainment Area attained the annual lead standard at the close of calendar year 2015 based on lead monitoring data certified in U.S. EPA’s Air Quality System (AQS) database for the years 2013 – 2015. This data was used in the calculations that determined the final lead design values for 2013 – 2015. This submittal satisfies IDEM’s request to make a clean data determination finding for the area.

1.4 Geographical Description

U.S. EPA designated a small portion of the City of Muncie in Delaware County as nonattainment for lead. As shown in Figure 1.1, the area includes the Exide Technologies facility and is bounded by the following city streets: West 26th Street/Hines Road to the north, Cowan Road to the east, West Fuson Road to the south, and South Hoyt Avenue extended to West 26th Street to the west.

Figure 1.1: Muncie, Delaware County, Indiana Lead Nonattainment Area



The nonattainment area was established in the immediate vicinity of Exide Technologies because lead is a heavy metal and airborne lead emissions do not travel far from the source of the emissions. Therefore, population exposure to airborne lead is minimal beyond the small area surrounding the source. The National Emission Standards for Hazardous Air Pollutants (NESHAP) for Secondary Lead Smelters at 40 Code of Federal Regulations (CFR) 63.544 requires facilities to operate process and other fugitive lead dust emission sources within total enclosures that are maintained under negative pressure and vented to a control device. Work practice standards at 40 CFR 63.545 require facilities to ensure fugitive dust is not generated outside of total enclosures and that fugitive dust generated inside total enclosures is not carried outside of the enclosures. Lead emissions from Exide Technologies are from a single, identifiable area, such as a stack or a vent and are minimized by pollution control devices.

1.5 Status of Air Quality

Monitoring data for the most recent three (3) years, 2013 – 2015, demonstrates air quality meets the 2008 annual NAAQS for lead in this nonattainment area. This fact, accompanied by the permanent and enforceable decreases in emission levels discussed in Section 4.0, justifies a redesignation to attainment for the Muncie Nonattainment Area based on Section 107(d)(3)(E) of the CAA.

2.0 REQUIREMENTS FOR REDESIGNATION

2.1 General

Section 110, as well as Part D, of the CAA lists a number of requirements that must be met by nonattainment areas prior to consideration for redesignation to attainment. In addition, U.S. EPA has published detailed guidance in a document entitled “Procedures for Processing Requests to Redesignate Areas to Attainment,” issued September 4, 1992, to Regional Air Directors. This document is hereafter referred to as “Redesignation Guidance.” This Request for Redesignation and Maintenance Plan is based on the Redesignation Guidance, supplemented with additional guidance received from U.S. EPA Region V staff. The specific requirements for redesignation are listed below.

2.2 Lead Monitoring

- 1) A demonstration that the NAAQS for lead, as published in 40 CFR 50.16, has been attained. Lead monitoring data must show that violations of the ambient standard are no longer occurring.
- 2) Ambient monitoring data quality assured in accordance with 40 CFR 58.15, have been recorded in U.S. EPA’s AQS database and made available for public view.
- 3) A showing that the maximum (not-to-be-exceeded) rolling three-month averages over a three-year period (January-March, February-April, March-May, etc.), based on data from all monitoring sites in the area or affected downwind environs, are less than or equal to $0.15 \mu\text{g}/\text{m}^3$. This showing must rely on three (3) complete, consecutive calendar years of quality assured data (i.e. three calendar years plus the two previous months).
- 4) A commitment that, once redesignated, the State will continue to operate an appropriate monitoring network to verify the maintenance of the attainment status.

2.3 Emission Inventory

- 1) A comprehensive emissions inventory of the lead sources completed for the base year.
- 2) A projection of the emissions inventory to a year at least ten years after redesignation.
- 3) A demonstration that the projected level of emissions is sufficient to maintain the lead standard.
- 4) A demonstration that improvement in air quality between the years that violations occurred and attainment was achieved is based on permanent and enforceable emission reductions and not on temporary adverse economic conditions or unusually favorable meteorology.
- 5) Provisions for future annual updates of the inventory to enable tracking of the emission levels, including an annual emission statement from major sources.

2.4 Modeling Demonstration

While no modeling is required for redesignating nonattainment areas, the redesignation guidance states it is “generally necessary” for lead redesignations in order to comprehensively evaluate sources’ impacts and to determine the area of expected high concentrations based upon current conditions. IDEM has incorporated air dispersion modeling information in Section 7.0 of this document to further support its request for the Muncie Nonattainment Area to be redesignated to attainment.

2.5 Controls and Regulations

- 1) A U.S. EPA approved SIP control strategy that includes Reasonably Available Control Technology (RACT) requirements for existing stationary sources covered by Control Technology Guidelines (CTG) and non-CTG RACT for all major sources.
- 2) Evidence that control measures required in past lead SIP revisions have been fully implemented.
- 3) Acceptable provisions to provide for new source review (NSR).
- 4) Assurances that existing controls will remain in effect after redesignation, unless the State demonstrates through modeling that the standard can be maintained without one or more controls.

- 5) If appropriate, a commitment to adopt a requirement that all transportation plans conform with and are consistent with the SIP.

2.6 Corrective Actions for Potential Future Violations of the Standard

- 1) A commitment to submit a revised plan eight (8) years after redesignation.
- 2) A commitment to expeditiously enact and implement additional contingency control measures in response to exceeding specified predetermined levels (triggers) or in the event that future violations of the ambient standards occur.
- 3) A list of potential contingency measures that would be implemented in such an event.
- 4) A list of lead sources potentially subject to future controls.

3.0 LEAD MONITORING

3.1 Lead Monitoring Network

There is one monitor currently measuring lead concentrations in the Muncie Nonattainment Area (Muncie-Mt. Pleasant Boulevard; Site ID# 18-035-0009). The monitor is operated by IDEM's Office of Air Quality (OAQ). Previously, an upwind and a downwind lead monitor were located near the Exide Technologies, Muncie, Delaware County, Indiana secondary lead smelter ("Exide Technologies"). Exide Technologies is the only significant source of lead emissions in the Muncie Nonattainment Area.

3.2 Ambient Lead Monitoring Data

Section 110(a)(2)(B) of the CAA requires a monitoring strategy for measuring, characterizing, and reporting lead. IDEM maintains a comprehensive network of air quality monitors throughout the state with the primary objective of being able to determine compliance with the lead NAAQS.

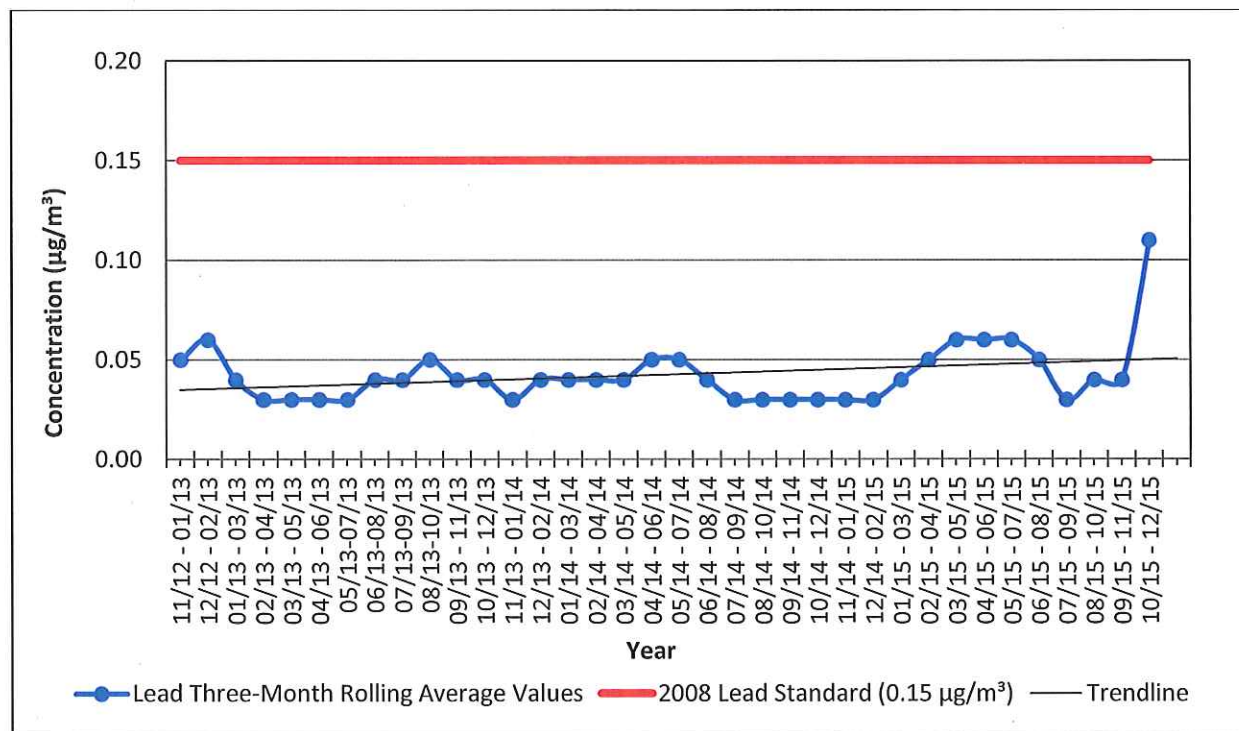
As explained in 40 CFR Part 50, Appendix R, three (3) complete years of lead monitoring data are required to demonstrate attainment at a monitoring site. The 2008 annual primary and secondary lead ambient air quality standards are met at an ambient air quality monitoring site when the maximum (not-to-be-exceeded) rolling three-month average evaluated over a three-year period (three-calendar years plus the two previous months) is equal to or less than $0.15 \mu\text{g}/\text{m}^3$. The three-month average is the average of three consecutive monthly averages (January-March, February-April, March-May, etc.). Each three-year period yields 36 three-month averages. A listing of the Muncie-Mt. Pleasant Boulevard monitoring site's rolling three-month averages was retrieved from U.S. EPA's AQS for the years 2013 – 2015. The averages are used to compare to the 2008 primary and secondary lead standards and are shown in Table 3.1.

Table 3.1: Lead Three-Month Rolling Average Values Data Summary, Muncie, Delaware County, Indiana

Site	Site ID#	Three-Month Rolling Average ($\mu\text{g}/\text{m}^3$)											
		11/12-01/13	12/12-02/13	01/13-03/13	02/13-04/13	03/13-05/13	04/13-06/13	05/13-07/13	06/13-08/13	07/13-09/13	08/13-10/13	09/13-11/13	10/13-12/13
Muncie-Mt. Pleasant Boulevard	18-035-0009	0.05	0.06	0.04	0.03	0.03	0.03	0.03	0.04	0.04	0.05	0.04	0.04
		11/13-01/14	12/13-02/14	01/14-03/14	02/14-04/14	03/14-05/14	04/14-06/14	05/14-07/14	06/14-08/14	07/14-09/14	08/14-10/14	09/14-11/14	10/14-12/14
		0.03	0.04	0.04	0.04	0.04	0.05	0.05	0.04	0.03	0.03	0.03	0.03
		11/14-01/15	12/14-02/15	01/15-03/15	02/15-04/15	03/15-05/15	04/15-06/15	05/15-07/15	06/15-08/15	07/15-09/15	08/15-10/15	09/15-11/15	10/15-12/15
		0.03	0.03	0.04	0.05	0.06	0.06	0.06	0.05	0.03	0.04	0.04	0.11

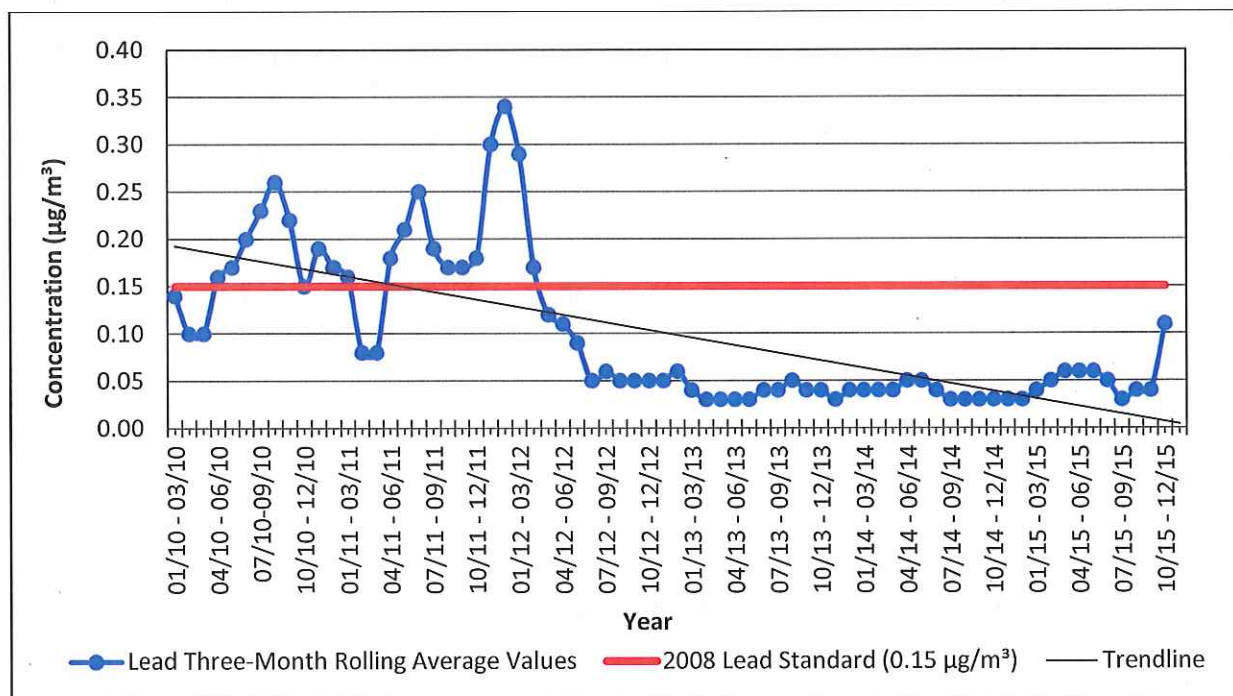
Graph 3.1 demonstrates 2013 – 2015 design values for this nonattainment area. The highest three-month rolling average value monitored within the nonattainment area is $0.11 \mu\text{g}/\text{m}^3$, demonstrating that the Muncie Nonattainment Area attained the 2008 annual lead standard at the end of 2015.

Graph 3.1: Lead Three-Month Rolling Average Values, Muncie, Delaware County, Indiana 2013 – 2015



Graph 3.2 shows the trend in lead three-month rolling average values for the Muncie Nonattainment Area over the past six years. A comprehensive list of the three-month rolling average lead values over this period is included in Appendix A. The area's three-month rolling average values have recently trended downward as existing lead emission control measures at Exide Technologies, including those implemented under the NESHAP for secondary lead smelters have resulted in significant stationary point source and fugitive dust emission reductions at the facility.

Graph 3.2: Historical Lead Three-Month Rolling Average Values, Muncie, Delaware County, Indiana 2010 – 2015



3.3 Quality Assurance

IDEM has quality assured all data shown in Appendix A in accordance with 40 CFR 58.15 and the Indiana Quality Assurance Manual. IDEM has recorded the data in U.S. EPA's AQS database and the data are available to the public.

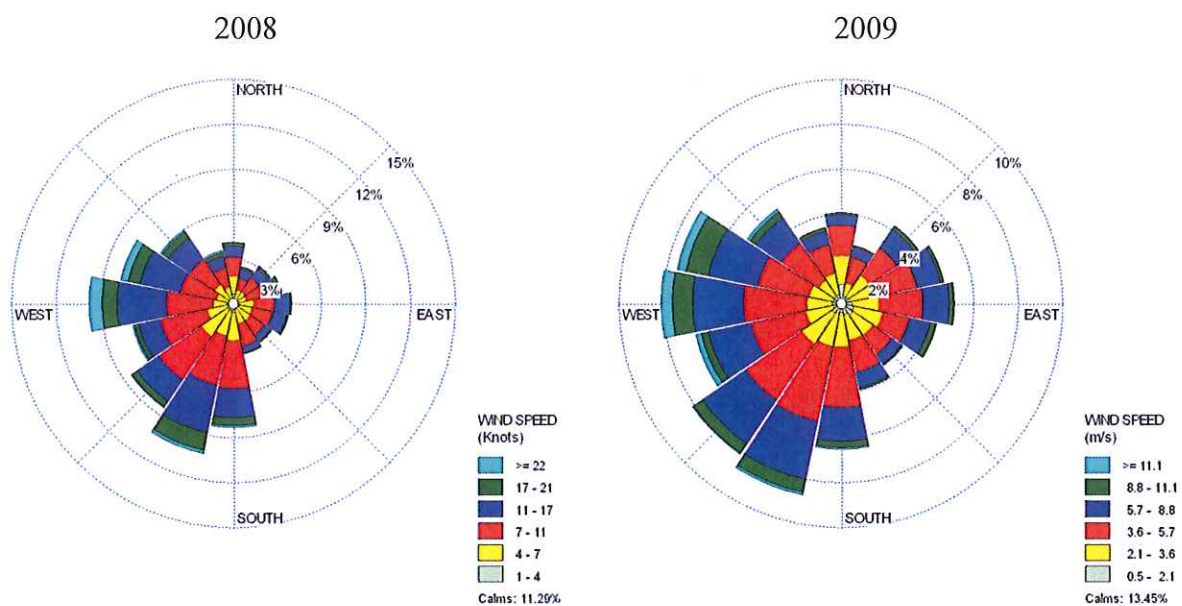
3.4 Continued Monitoring

Indiana commits to continue monitoring lead levels at the Muncie-Mt. Pleasant Boulevard monitoring site. IDEM will consult with U.S. EPA Region V staff prior to making changes to the existing monitoring network should changes become necessary in the future. IDEM will continue to quality assure the monitoring data to meet the requirements of 40 CFR 58 and enter all data into AQS in a timely manner in accordance with federal guidelines.

3.5 Wind Rose Analysis

In order to determine the meteorological effects on the elevated lead concentrations in the Muncie Nonattainment Area, meteorological data was gathered from the Delaware County – Johnson Automated Surface Observing System (ASOS), located approximately five miles to the north – northeast of Exide Technologies, for 2008, 2009, 2010, and 2011. This data was formatted in order to create wind roses to identify prevailing wind directions. Figure 3.1 shows the annual wind roses from the Delaware County ASOS station. The prevailing winds were found to be from the southwest, west, and northwest.

Figure 3.1: Annual Wind Roses for 2008-2011



The data shows lead concentrations were higher when there was no snow cover observed. However, relatively high lead concentrations still occurred on days when snow cover was observed, thereby lessening fugitive road dust impacts. Even more telling is the comparison of precipitation days. Table 3.3 compares the days when precipitation was observed with the days when no precipitation occurred. This includes precipitation amounts ranging from a trace to amounts in excess of 1 inch for the monitored day.

Table 3.3: Precipitation Recorded on Monitored Days (Delaware County – Johnson ASOS station) January 2008 – June 2011

	Exide East Site	Exide West Site
Concentrations when...	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)
No precipitation was recorded	0.440	0.126
Precipitation was recorded	0.913	0.193

At the Muncie – Exide East Site monitor, precipitation was recorded on eleven of the top twenty maximum lead concentration days. At the Muncie – Exide West Site monitor, precipitation was recorded six out of the top ten maximum lead concentration days. Tables 3.4 and 3.5 show the precipitation amounts and general wind conditions during the days the highest concentrations were recorded.

Table 3.4: Wind Conditions/Precipitation on the Highest Concentration Days at the Muncie – Exide East Site Monitor

Date / Day	Exide East Site	Exide West Site	Precipitation?	Wind Conditions
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(inches)	(direction and speed)
6/27/2008 - Friday	39.08	0.03	Yes - 0.21 rain	SW winds (3 to 13 mph) all day
6/5/2008 - Thursday	6.62	0.03	No	SSW to SW winds (6 to 15 mph) all day
5/26/2008 - Monday	4.26	0.04	Yes - trace rain	SW to WSW winds (3 to 20 mph) all day
7/3/2008 - Thursday	4.23	0.03	Yes - 1.03 rain	Wind shift at noon from SW (3 to 17 mph) to NE
6/9/2008 - Monday	3.99	0.03	Yes - 0.64 rain	SW to SSW winds (6 to 15 mph) all day
3/11/2008 - Tuesday	3.82	0.03	No	NW to W to SW winds (3 to 20 mph) all day
3/25/2008 - Tuesday	3.67	0.03	No	SW to WSW to W winds (6 to 28 mph) all day
5/14/2008 - Wednesday	3.47	0.03	Yes - 0.61 rain	SW to S to SW to NW winds (5 to 15 mph) all day

4/25/2009 - Saturday	2.98	0.03	No	SW winds (7 to 24 mph) all day
6/7/2008 - Saturday	2.79	0.03	Yes - 0.84 rain	W to SW to S winds (4 to 16 mph) all day
8/9/2009 - Sunday	2.64	0.03	No	SW to W to SW winds (6 to 15 mph) all day
6/29/2008 - Sunday	2.47	0.03	Yes - 0.08 rain	SW to WSW to W to NW winds (5 to 20 mph) all day
6/3/2008 - Tuesday	2.32	0.39	Yes - 0.52 rain	SSW to SW to NW to E winds (5 to 13 mph) all day
8/21/2009 - Friday	2.29	0.03	Yes - 0.03 rain	SW to NW winds (5 to 16 mph) all day
6/25/2008 - Wednesday	2.28	0.03	No	S to SW winds (3 to 15 mph) all day
7/11/2008 - Friday	2.14	0.05	Yes - trace rain	WSW to W to SW winds (3 to 13 mph) all day
7/7/2008 - Monday	1.94	0.14	No	S to SW to W to SW winds (3 to 11 mph) all day
6/8/2011 - Wednesday	1.80	N/A	No	S to SW to WSW to SW winds (6 to 15 mph) all day
5/30/2008 - Friday	1.78	0.04	Yes - 0.08 rain	S to SW winds (3 to 23 mph) all day
1/23/2008 - Wednesday	1.65	0.03	No	SW to W to SW winds (7 to 13 mph) all day

Table 3.5: Wind Conditions/Precipitation on the Highest Concentration Days at the Muncie – Exide West Site Monitor

Date / Day	Exide West Site	Exide East Site	Precipitation?	Wind Conditions
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(inches)	(direction and speed)
4/10/2008 - Thursday	5.80	N/A	Yes - 0.43 rain	E to SE winds (9 to 18 mph) all day
4/8/2008 - Tuesday	1.76	N/A	Yes - trace rain	NW to NE to SE to S winds (3 to 17 mph) all day
4/24/2008 - Thursday	1.55	N/A	Yes - 0.18 rain	SE to S winds (5 to 23 mph) all day
3/17/2008 - Monday	1.44	0.03	Yes - 0.1 rain	SE winds (9 to 18 mph) all day
3/21/2008 - Friday	1.01	0.44	Yes - 0.02 rain	E to SE to NE winds (5 to 17 mph) all day
9/23/2008 - Tuesday	0.59	0.04	No	SE to S to SE winds (calm to 10 mph) all day
10/7/2008 - Tuesday	0.57	0.17	Yes - 0.41 rain	SE to SW to S winds (6 to 13 mph) all day

9/19/2008 - Friday	0.56	0.06	No	ESE to E to SE to SW winds (calm to 5 mph) all day
7/14/2009 - Tuesday	0.50	0.031	No	SE winds (calm to 15 mph) all day
3/29/2008 - Saturday	0.49	0.03	No	NE to E to SE to E winds (3 to 18 mph) all day

The above snow cover and precipitation analysis does not negate the impacts from fugitive road dust on the lead monitors. However, on days when snow cover or precipitation was observed (events that would suppress fugitive dust impacts) relatively high lead concentrations were still monitored. This would indicate that emission sources, in addition to the fugitive road dust, may have larger impacts.

4.0 EMISSION INVENTORY

U.S. EPA's redesignation guidance requires the submittal of a comprehensive inventory of lead emissions representative of the year when the area achieves attainment of the annual lead air quality standard. In consultation with U.S. EPA and other stakeholders, the base year of 2010, "attainment year" of 2013, and a maintenance year of 2030 were selected. Indiana must also demonstrate that the improvement in air quality between the year that violations occurred (2010 base year) and the year that attainment was achieved (2013 – the first year from the 2013 – 2015 design value years of attainment) is based on permanent and enforceable emission reductions. Indiana must also demonstrate that the improvement in air quality between the years that violations occurred and the year that attainment was achieved is based on permanent and enforceable emission reductions. The 2010 emission inventory represents a comprehensive, accurate, and current inventory of actual emissions from all sources of the relevant pollutants in the 2008 annual lead nonattainment area. This submittal is required by Sections 172(c)(3) and 182(a)(1) of the Clean Air Act. Other emissions inventory related requirements include a projection of the emission inventory to a year at least ten (10) years following redesignation, a demonstration that the projected level of emissions is sufficient to maintain the lead standard, and a commitment to provide future updates of the inventory to enable tracking of emission levels during the ten (10) year maintenance period.

The comprehensive inventory includes emissions of lead from point sources. Indiana does not have area, mobile, non-road, or marine/air/rail sources of lead emissions that contribute to nonattainment. The only point source of emissions in this nonattainment area is the Exide facility.

4.1 Emission Trends

Point source data for the years 2010 and 2013 are taken from Indiana's Emission Inventory Tracking System (EMITS). EMITS is a tool made available to those companies that are required to report their air emissions under the Emission Reporting Rule found at 326 Indiana Administrative Code (IAC) 2-6. The data coincides with nonattainment air quality in the Muncie Nonattainment Area. Table 4.1 shows the lead emission's inventory information for the Muncie Nonattainment Area. As shown in the table, actual lead emissions for 2010 and 2013 were 0.82

tpy and 0.63 tpy, respectively. However, permitted allowable emissions for 2010, limited by Exide's Title V permit, issued September 7, 2007, were 3.48 tpy. Permitted allowable emissions for 2013 and projected emissions for 2030 are limited by the NESHAP for secondary lead smelters to 1.73 tpy.

Table 4.1: Muncie Nonattainment Area Lead Emission Inventory Totals for Base Year 2010, Attainment Year 2013, and Projected Year 2030 (Tons per Year)

Source	2010 ⁽¹⁾ (Base)	2013 (Attainment)	2030 (Maintenance)
Exide Technologies	0.82	0.63	1.73

⁽¹⁾ Permitted allowable lead emissions, taken from Exide Technologies Title V Permit 035-22535-00028, issued September 7, 2007, for the year 2010 are limited to 3.48 tons per year.

IDEM prepares a new periodic inventory for all applicable lead emission sources every three (3) years. These emission inventories will be prepared for 2017, 2020, and 2023 as necessary to comply with the inventory reporting requirements established in the CAA. Emissions information will be compared to the 2010 base year and the 2030 projected maintenance year inventories to assess emission trends as necessary to assure continued compliance with the lead standard.

4.2 Demonstration of Maintenance

Ambient air quality data from the Muncie-Mt. Pleasant Boulevard monitor indicates that air quality met the NAAQS for lead for the three (3)-year calendar period of 2013 – 2015. U.S. EPA's Redesignation Guidance (pg. 9) states, "A state may generally demonstrate maintenance of the NAAQS by either showing that future emissions of a pollutant or its precursors will not exceed the level of the attainment inventory, or by modeling to show that the future mix of sources and emissions rates will not cause a violation of the NAAQS."

Indiana's rulemaking for attainment of the lead standard amended requirements for secondary lead smelters by adding 326 IAC 20-13.1. Indiana's revisions to the lead rule, outlined in Section 6.2 of this document, incorporated text directly from the NESHAP to ensure Indiana's rule is permanent and enforceable and made necessary changes to address the federal revisions to the NESHAP, including an expedited compliance schedule for Exide Technologies. The NESHAP requires Exide Technologies to operate process and other fugitive lead dust emission sources within total enclosures that are maintained under negative pressure and vented to a control device ensuring fugitive dust is not carried outside of the enclosures.

IDEM performed an updated air quality analysis for Exide Technologies in October 2013, as outlined in Section 7.0 of this document, using each point source emission unit's permitted allowable maximum lead emission's rate under the NESHAP limit for secondary lead smelters. The NESHAP limits annual lead point source emissions at Exide to 1.73 tons per year (tpy). After the modeling was completed, LEADPOST was used to calculate the three-month rolling average. LEADPOST calculated a maximum three-month rolling average well below the 2008 annual lead standard (i.e. 0.09 µg/m³) for the period ending July 2008.

Point source emissions data for the years 2010 and 2013, as shown in Table 4.1, demonstrate Exide Technologies annual lead emissions are well below the NESHAP limit. Existing lead emission control measures at Exide Technologies, including those recently implemented under the NESHAP for secondary lead smelters, have resulted in significant stationary point source and fugitive dust emission reductions at Exide Technologies, ensuring continued compliance (maintenance) with the lead standard through the year 2030 with an increasing margin of safety over time.

4.3 Permanent and Enforceable Emission Reductions

Permanent and enforceable reductions of lead emissions at Exide Technologies have resulted in attainment of the 2008 annual lead standard in the Muncie Nonattainment Area. Exide Technologies is currently subject to the requirements of the Indiana Secondary Lead Smelter Rule found at 326 IAC 20-13.1. In addition to lead emission standards for individual emission units that are more stringent than those in the NESHAP for secondary lead smelters at 40 CFR 63, Subpart X, Indiana's rule for secondary lead smelters includes opacity limits and supplemental requirements for total enclosure monitoring. No additional sources of lead are expected in the future. Covered sources are prohibited from reducing or removing emissions controls (anti backsliding) following redesignation of the area unless such a change is first approved by U.S. EPA as a revision to Indiana's SIP, consistent with Section 110(1) of the CAA. Section 6.0 identifies the emission control measures specific to Exide Technologies, as well as the implementation status of each measure.

4.4 Provisions for Future Updates

As required by Section 175A(b) of the CAA, Indiana commits to submit to the Administrator, eight (8) years after redesignation, an additional revision of the SIP. The revision will contain Indiana's plan for maintaining the national primary 2008 annual NAAQS for lead for ten (10) years beyond the first ten (10) year period after redesignation, which will be 2040 in this case.

5.0 TRANSPORTATION CONFORMITY BUDGETS

Transportation conformity is required under Section 176(c) of the CAA to ensure that federally supported highway and transit project activities are consistent with ("conform to") the purpose of the SIP. Indiana's general conformity rules were approved into 176(c) of the CAA on January 14, 1998 (63 FR 2146). Transportation conformity applies to areas that are designated nonattainment, and those areas redesignated attainment after 1990 ("maintenance areas") with plans developed under Section 175A of the CAA) for transportation-related criteria pollutants. In light of the elimination of lead additives from gasoline used as motor vehicle fuel, mobile sources are not a significant contributor of lead emissions. As such, transportation conformity is not of concern for the 2008 annual lead NAAQS (73 FR 67043).

6.0 CONTROL MEASURES AND REGULATIONS

This section provides specific information on the control measures implemented in the Muncie Nonattainment Area, including CAA requirements and additional state or local measures implemented beyond CAA requirements.

6.1 Secondary Lead Smelting: National Emission Standards for Hazardous Air Pollutants (NESHAP)

On January 5, 2012, U.S. EPA finalized the NESHAP for secondary lead smelting. The rule establishes a facility-wide flow-weighted average lead emission's limit from stacks of 0.20 milligrams per dry standard cubic meter (mg/dscm) and an individual stack limit of 1.0 mg/dscm for each stack at existing sources. The standard also establishes modified and additional testing, monitoring, recordkeeping, reporting, notification requirements, and revisions to the regulatory provisions that are related to emissions during periods of startup, shutdown, and malfunction.

Existing sources were required to demonstrate compliance with the requirements of the revised NESHAP by no later than January 6, 2014. New sources were required to demonstrate compliance by no later than January 5, 2012. These standards have resulted in significant lead emission reductions from Exide Technologies as well as other secondary lead smelters currently operating in the United States.

6.2 Revisions to Indiana's Lead Rule

Indiana's rulemaking for the attainment of the lead standard amended requirements for secondary lead smelters by adding 326 IAC 20-13.1. Indiana's previous rule for secondary lead smelters incorporated portions of 40 CFR 63, Subpart X by reference, including certain operational standards and testing requirements.

Indiana's revisions to the lead rule incorporated text directly from the NESHAP to ensure Indiana's rule is permanent and enforceable. Indiana has made necessary changes to address the federal revisions to the NESHAP for secondary lead smelters at 40 CFR 63, Subpart X, including an expedited compliance schedule for Exide Technologies. Exide Technologies was required to demonstrate compliance with specified portions of the rule by no later than October 1, 2013. In addition to lead emission standards for individual emission units at secondary lead smelters that are more stringent than those in the NESHAP, Indiana's rule for secondary lead smelters includes opacity limits and supplemental requirements for total enclosure monitoring. These requirements have resulted in significant stationary point source and fugitive dust emission reductions at Exide Technologies, ensuring the Muncie Nonattainment Area attained the 2008 annual NAAQS for lead by the attainment date of December 31, 2015. Indiana's final promulgated lead rule (LSA Document#11-774(F)) was adopted by the Air Pollution Control Board on November 7, 2012. A copy of Indiana's final rule which was filed with the Publisher of the Indiana Register on February 27, 2013 (DIN: 20130227-IR-326110774FRA) is included as Appendix C. Indiana's revisions to the state implementation plan for lead were approved in the July 17, 2015, *Federal Register* (FR) published at 80 FR 42393. A copy of the Federal Register notice is included as Appendix D.

6.3 Implementation of Past SIP Revisions

There are no past control measures required in Indiana's SIP for this area.

6.4 Exide Technologies Consent Decree

On March 16, 2015, the Department of Justice lodged a proposed Consent Decree with the United States District Court for the Southern District of Indiana in the lawsuit entitled *United States and the State of Indiana v. Exide Technologies*, Civil Action No. 15-cv-433 (S.D. Ind.). A Complaint, that was filed along with the proposed Consent Decree, alleges that Exide Technologies ("Exide") in Muncie, Indiana violated the CAA and implementing regulations, and certain terms and conditions of its Title V operating permit, and corresponding requirements under Indiana state law. The proposed Consent Decree would resolve the claims alleged in the Complaint in exchange for Exide's commitment to make specific improvements to its air pollution control and monitoring systems at its Muncie facility. This includes installing a new furnace exhaust gas afterburner in order to comply with minimum temperature requirements established pursuant to the NESHAP for secondary lead smelters (Appendix F).

6.5 New Source Review (NSR) Provisions¹

Indiana has a long standing and fully implemented NSR program. NSR is outlined in 326 IAC 2. The rule includes provisions for the Prevention of Significant Deterioration (PSD) permitting program in 326 IAC 2-2 and the Emission Offset Permitting Program in 326 IAC 2-3. Indiana's PSD program was conditionally approved in the March 3, 2003, *Federal Register* (FR) published at 68 FR 9892 and received final approval on May 20, 2004 (69 FR 29071) by U.S. EPA as part of the SIP.

Any facility that is not listed in the 2013 emission inventory, or for which credit is taken for closing in demonstrating attainment, will not be allowed to construct, reopen, modify, or reconstruct without meeting all applicable permit rule requirements.

6.6 Prohibition on Gasoline Containing Lead or Lead Additives

On February 2, 1996, U.S. EPA issued a direct final rule to amend 40 CFR 80 to prohibit the introduction of gasoline which is produced with the use of any lead additive, or contains more than 0.05 grams of lead per gallon, into commerce for use as motor vehicle fuel, effective January 1, 1996, in accordance with Section 211(n) of the CAA.

6.7 Section 172(c) Clean Air Act (CAA) Requirements

Section 172(c) of the CAA contains general requirements for nonattainment plans. The requirements for reasonable further progress, identification of certain emissions increases, and other measures needed for attainment. Ambient air quality data for lead for the three (3)-year calendar period of 2013

¹ <https://www.federalregister.gov/articles/2004/05/20/04-11337/approval-and-promulgation-of-implementation-plans-indiana>

– 2015 for the Muncie Nonattainment Area attained the 2008 annual lead standard. Therefore, Section 172(c) requirements are no longer considered to be applicable, as long as the area continues to attain the standard until redesignation. The requirements for an emission inventory will be satisfied by the inventory requirements of the maintenance plan. Section 4.0 discusses this requirement in more detail.

6.8 Compliance with Section 110(a)(2)

Section 110(a)(2) provides that the implementation plan submitted by a state must have been adopted by the state after reasonable public notice and hearing, and that, among other things, it must include enforceable emission limitations and other control measures, means or techniques necessary to meet the requirements of the CAA; provide for establishment and operation of appropriate devices, methods, systems, and procedures necessary to monitor ambient air quality; provide for implementation of a source permit program to regulate the modification and construction of any stationary source within the areas covered by the plan; include provisions for the implementation of Part C, PSD and Part D, NSR permit programs; include criteria for stationary source emission control measures, monitoring, and reporting; include provisions for air quality modeling; and provide for public and local agency participation in planning and emission control rule development.

Section 110(a)(2)(D) also requires State plans to prohibit emissions from within the State which contribute significantly to nonattainment or maintenance areas in any other State, or which interfere with programs under Part C to prevent significant deterioration of air quality or to achieve reasonable progress toward the national visibility goal for Federal class I areas (national parks and wilderness areas).

IDEM has reviewed the requirements of Section 110(a)(2) of the CAA and have concluded that prior rule submittals, along with this submittal, address the relevant requirements associated with rule development, state implementation plan submissions, and implementation and enforcement of required control measures. Within a letter to U.S. EPA dated December 12, 2011, Indiana reaffirmed that it maintains the necessary infrastructure and resources to comply with Sections 110(a)(1) and (2) of the CAA for all criteria pollutants (Appendix E).

Based upon U.S. EPA's "Guidance on Infrastructure SIP Elements Required Under Sections 110(a)(1) and (2) for the 2008 Lead (Pb) National Ambient Air Quality Standards (NAAQS)" (dated 10/14/2011), the physical properties of lead prevent it from traveling far from the source of the emissions. Therefore, population exposure to airborne lead is minimal beyond the small area surrounding the source. As such, only large sources in close proximity to state boundaries should reasonably be anticipated to significantly contribute to nonattainment in, or interfere with maintenance by, any other state. The Muncie Nonattainment Area is not in close proximity to Indiana's border (i.e., approximately 30 miles from the Ohio State Line). Therefore, it is not anticipated that lead emissions from this area will contribute significantly to nonattainment or interfere with maintenance of the lead NAAQS in another state, or interfere with measures required to prevent significant deterioration of air quality.

6.9 Equivalent Techniques

IDEM has followed U.S. EPA guidance on procedures for modeling, preparing emission inventories, and plan submittals. Therefore, IDEM is not requesting approval for equivalent techniques, as allowed under Section 172(c)(8) of the CAA.

6.10 Controls to Remain in Effect

Indiana does not intend to relax any control measures already implemented. Indiana commits that any changes to its rules, or emission limits applicable to lead sources will be submitted to U.S. EPA for approval. Indiana intends to continue enforcing all rules that relate to emissions of lead in the Muncie Nonattainment Area.

7.0 MODELING ANALYSIS

Although U.S. EPA's Redesignation Guidance does not require modeling for lead nonattainment areas seeking redesignation, IDEM conducted an air quality analysis in October 2013 using the NESHAP for secondary lead smelters to provide modeled emission limits to Exide Technologies in order to install, operate, and maintain two additional bag houses on existing processes (i.e. Refinery Bag House #2 and Bin Room Bag House #2). The most recent version of AERMOD available at that time (BEEST Version 10.07) was used to conduct the analysis.

7.1 Air Quality Analysis

Pre-processed meteorological data from Indianapolis International Airport and upper air data from Wright-Patterson Air Force base in Dayton, Ohio, were used for the analysis. The data included 1-minute readings from 2006 – 2010.

All elevations for the buildings, sources, and receptors were calculated using U.S. EPA's AERMAP terrain preprocessor for AERMOD. Building downwash from stationary point sources at Exide Technologies was considered in this analysis. Fugitive dust emissions were not considered. Receptors were placed at 100 meter intervals along the fenceline. Receptors were also placed at 100 meter intervals to 2,000 meters away from Exide's fenceline and at 500 meter intervals up to 10,000 meters away from the fenceline. Monthly concentrations at 3,751 receptors were calculated.

After the air quality analysis was completed, LEADPOST was used to calculate the 3-month rolling average using the total tons per year emissions rate from Table 7.1. This tool calculates and outputs the rolling cumulative (all sources) 3-month average concentration at each modeled receptor with source group contributions and the maximum cumulative (all sources) rolling 3-month average concentration by receptor.

Table 7.1 lists each unit's permitted allowable maximum lead emission's rate in tpy under the NESHAP for secondary lead smelters.

Table 7.1: NESHAP for Secondary Lead Smelters Point Source Emission Limits – Exide Technologies

Description	NESHAP Lead Emission Limits (tpy)
Lead Battery Crusher/Breaker	0.29
Lead Reverberatory Furnace	0.48
Material Handling	0.13
Refinery Bag House #1	0.37
Refinery Bag House #2	0.37
Bin Room Bag House #1	0.045
Bin Room Bag House #2	0.045
Total Lead Emissions	1.73

Implementation of the NESHAP for secondary lead smelters requires Exide Technologies to operate process and other fugitive lead dust sources within total enclosures that are maintained under negative pressure ensuring fugitive dust generated inside the facility is not released outside of the enclosures. This will aid in minimizing residual airborne lead emissions reintroduced into the atmosphere from the property. For modeling purposes, maximum 3-month rolling average concentrations were modeled to provide a sufficient margin of error. Background concentrations were not added to modeled concentrations in this analysis. In order to determine any potential impacts background concentrations may have on lead concentrations at Exide Technologies, IDEM reviewed data from the lead monitoring network. Most sites are located in heavily industrialized areas, but two background/urban lead monitors could be considered representative of the impact at the facility (i.e., Evansville Civic Center/Post Office, Site ID # 18-163-0006/20, which was discontinued on March 22, 2011, and Indianapolis-Washington Park, Site ID# 18-097-0078). The most recent design value at both of these monitors was $0.01 \mu\text{g}/\text{m}^3$. When considering a conservative concentration of $0.01 \mu\text{g}/\text{m}^3$ for background purposes, and based on the fact that there are no significant local source contributions to lead levels modeled on the property, the modeled design value provides an ample margin of safety from any increase in lead levels that could occur from the reintroduction of lead into the atmosphere from the property.

7.2 Analysis Results

LEADPOST calculated the maximum 3-month rolling average at $0.09 \mu\text{g}/\text{m}^3$ for the period ending February 2010. The maximum impact is located on the northern fenceline of Exide's property. As such, calculated modeling results demonstrate that point source emissions from Exide Technologies should not contribute to an exceedance of the 2008 annual lead standard under the secondary NESHAP for secondary lead smelters.

8.0 CORRECTIVE ACTIONS

8.1 Commitment to Revise Plan

As noted in Section 4.4 above, Indiana commits to review its Maintenance Plan eight (8) years after redesignation, as required by Section 175A of the CAA.

8.2 Commitment for Contingency Measures

Indiana commits to adopt and expeditiously implement necessary corrective actions in the following circumstances:

Warning Level Response

A Warning Level Response shall be prompted whenever a lead three (3)-month rolling average concentration of $0.143 \mu\text{g}/\text{m}^3$ occurs within the maintenance area. A Warning Level Response will consist of a study to determine whether the lead value indicates a trend toward higher lead values or whether emissions appear to be increasing. The study will evaluate whether the trend, if any, is likely to continue and, if so, the control measures necessary to reverse the trend, taking into consideration ease and timing for implementation, as well as economic and social considerations. Implementation of necessary controls in response to a Warning Level Response trigger will take place as expeditiously as possible, but in no event later than twelve (12) months from the conclusion of the most recent calendar year.

Should it be determined through the Warning Level Study that action is necessary to reverse the noted trend, procedures for control selection and implementation outlined under “Action Level Response” shall be followed.

Action Level Response

An Action Level Response shall be prompted whenever a violation of the standard (any three (3)-month rolling average greater than $0.15 \mu\text{g}/\text{m}^3$ over a thirty-six (36)-month rolling average period) occurs within the maintenance area. In the event that the Action Level is triggered and is not found to be due to an exceptional event, malfunction, or noncompliance with a permit condition or rule requirement, IDEM will evaluate additional control measures needed to assure future attainment of the lead NAAQS. In this case, measures that can be implemented in a short time will be selected and be in place within eighteen (18) months from the close of the calendar year that prompted the Action Level.

Control Measure Selection and Implementation

Adoption of any additional control measures is subject to the necessary administrative and legal process. This process will include posting of notices, an opportunity for public hearing, and other measures required by Indiana law for rulemaking by the State of Indiana’s Environmental Rules Board.

If a new measure or control is already promulgated and scheduled to be implemented at the federal or state level, and that measure or control is determined to be sufficient to address the upward trend in air quality, additional local measures may be unnecessary. Furthermore, Indiana will submit to U.S. EPA an analysis to demonstrate that the proposed measure(s) are adequate to return the area to attainment.

8.3 Contingency Measures

Contingency measures to be considered will be selected from an analysis of the suspected cause of the elevated lead levels from the entity(ies) suspected to be contributing to the elevated levels. The selection of measures will be based upon cost-effectiveness, emission reduction potential, economic and social considerations, or other factors that IDEM deems appropriate. IDEM will solicit input from all interested and affected persons in the maintenance area prior to selecting appropriate contingency measures. Measures may include improvements in existing control devices, addition of secondary control devices, or improvements in housekeeping and maintenance, among other measures. It is not possible to fully develop an appropriate list of contingency measures until the cause(s) of the elevated lead levels is known. Any contingency measure(s) implemented will require a compliance plan and expeditious compliance timeline for the entity(ies) involved. Because it is not possible at this time to determine what control measure(s) will be appropriate at an unspecified time in the future, the list of contingency measures outlined below is not comprehensive. Indiana anticipates that if contingency measures should ever be necessary, it is unlikely that a significant number (i.e., all those listed below) will be required.

- 1) Examples of contingency measures for controlling area source fugitive emissions may include stabilizing additional storage piles.
- 2) Examples of contingency measures for process-related fugitive emissions include increasing the enclosure of buildings, increasing air flow in hoods, and/or modifying operation and maintenance procedures.
- 3) Examples of contingency measures for stack sources include reducing hours of operation, changing the feed material to lower lead content, and reducing the occurrence of malfunctions by modifying operations and maintenance procedures.

No contingency measure(s) shall be implemented without providing the opportunity for full public participation during which the relative costs and benefits of individual measures, at the time they are under consideration, can be fully evaluated.

9.0 PUBLIC PARTICIPATION

In accordance with 40 CFR 51.102, public participation in this request was provided as follows:

Notice of availability of the complete document and a request for the opportunity for a public hearing was made available on IDEM's website on March 2, 2016 at <http://www.in.gov/idem/6398.htm>. It remained posted on the site until at least April 12, 2016.

No comments were received during the public comment period. There was not a request for a public hearing during the public comment period and the hearing was not required to be held.

A copy of the legal public notice and certification of publication can be found in Appendix G.

10.0 CONCLUSIONS

The Muncie Nonattainment Area has attained the 2008 annual lead standard. This petition demonstrates that the Muncie Nonattainment Area has complied with the applicable provisions of the CAA regarding redesignation of lead nonattainment areas. IDEM has prepared a Redesignation Request and Maintenance Plan that meet the requirements of Section 110(a)(1) of the CAA.

Based on this presentation, the Muncie, Delaware County, Indiana lead nonattainment area meets the requirements for redesignation under Section 107(d)(3) of the CAA and U.S. EPA guidance. Indiana has performed an analysis that shows the air quality improvements are due to permanent and enforceable measures. Existing lead emission control measures at Exide Technologies, including those recently implemented under the NESHAP for secondary lead smelters will ensure continued compliance (maintenance) with the standard. Indiana has ensured that all CAA requirements necessary to support redesignation have been met.

Consistent with the authority granted to U.S. EPA under Section 107(d)(3) of the CAA, Indiana requests that the Muncie Nonattainment Area be redesignated from nonattainment to attainment for the 2008 annual lead standard simultaneously with U.S. EPA approval of the Redesignation Request and Maintenance Plan provisions contained herein.

Appendix A

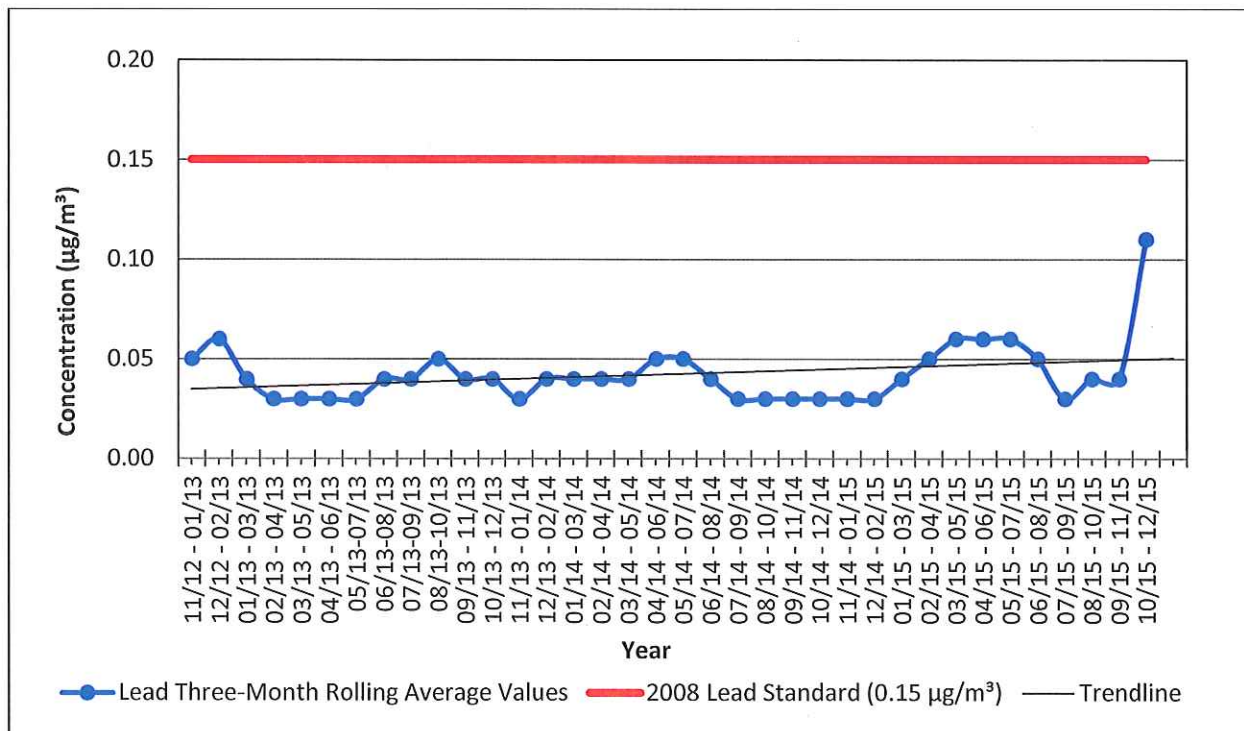
Air Quality System (AQS) Monitor Data Values for the Muncie, Delaware County, Indiana 2008 Annual Lead Nonattainment Area

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**Lead Three-Month Rolling Average Values Data Summary, Muncie,
Delaware County, Indiana, 2013-2015**

Site	Site ID#	Three-Month Rolling Average ($\mu\text{g}/\text{m}^3$)											
		11/12- 01/13	12/12- 02/13	01/13- 03/13	02/13- 04/13	03/13- 05/13	04/13- 06/13	05/13- 07/13	06/13- 08/13	07/13- 09/13	08/13- 10/13	09/13- 11/13	10/13- 12/13
Muncie- Mt. Pleasant Boulevard	18-035-0009	0.05	0.06	0.04	0.03	0.03	0.03	0.03	0.04	0.04	0.05	0.04	0.04
		11/13- 01/14	12/13- 02/14	01/14- 03/14	02/14- 04/14	03/14- 05/14	04/14- 06/14	05/14- 07/14	06/14- 08/14	07/14- 09/14	08/14- 10/14	09/14- 11/14	10/14- 12/14
		0.03	0.04	0.04	0.04	0.04	0.05	0.05	0.04	0.03	0.03	0.03	0.03
		11/14- 01/15	12/14- 02/15	01/15- 03/15	02/15- 04/15	03/15- 05/15	04/15- 06/15	05/15- 07/15	06/15- 08/15	07/15- 09/15	08/15- 10/15	09/15- 11/15	10/15- 12/15
		0.03	0.03	0.04	0.05	0.06	0.06	0.06	0.05	0.03	0.04	0.04	0.11

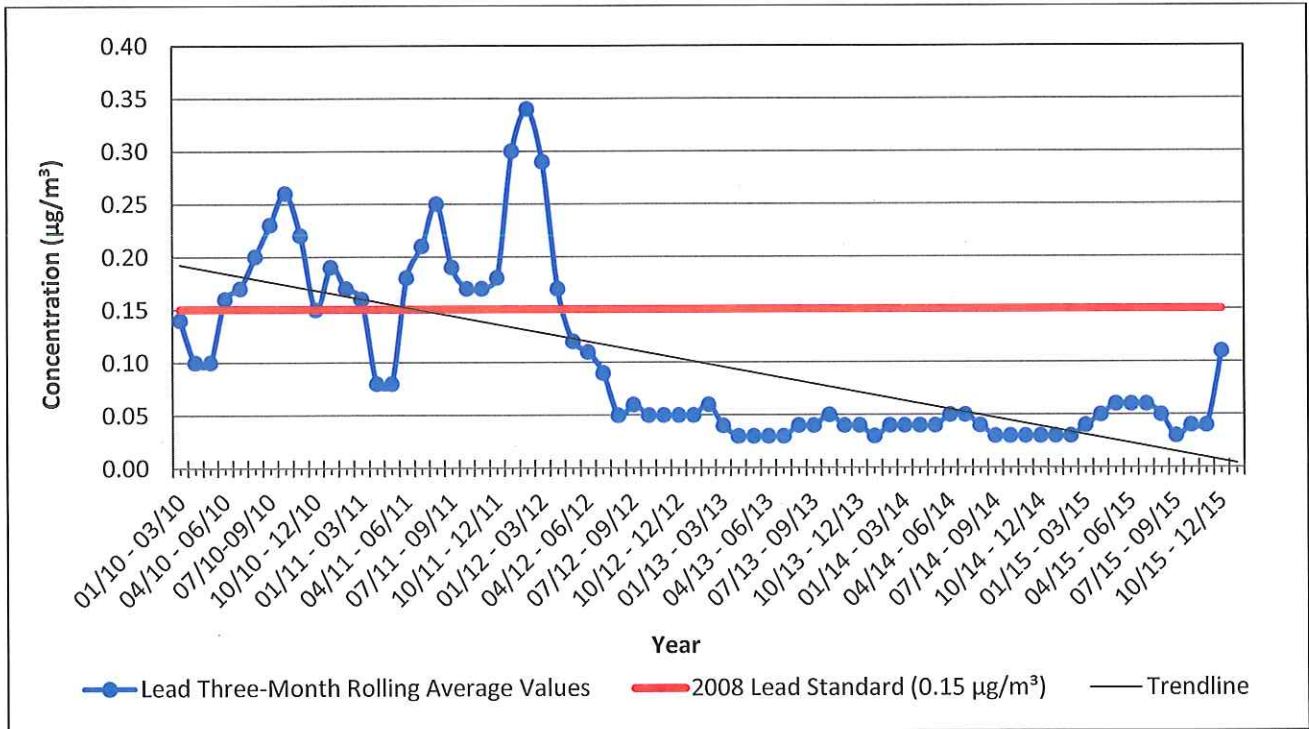
**Lead Three-Month Rolling Average Values, Muncie,
Delaware County, Indiana, 2013-2015**



Historical Lead Three-Month Rolling Average Values, Muncie, Delaware County, Indiana 2010-2015

Site	Site ID#	Three-Month Rolling Average (µg/m³)											
		11/09-01/10	12/09-02/10	01/10-03/10	02/10-04/10	03/10-05/10	04/10-06/10	05/10-07/10	06/10-08/10	07/10-09/10	08/10-10/10	09/10-11/10	10/10-12/10
Muncie-Mt. Pleasant Boulevard	18-035-0009	Monitor began operation in 2010.		0.14	0.10	0.10	0.16	0.17	0.20	0.23	0.26	0.22	0.15
		11/10-01/11	12/10-02/11	01/11-03/11	02/11-04/11	03/11-05/11	04/11-06/11	05/11-07/11	06/11-08/11	07/11-09/11	08/11-10/11	09/11-11/11	10/11-12/11
		0.19	0.17	0.16	0.08	0.08	0.18	0.21	0.25	0.19	0.17	0.17	0.18
		11/11-01/12	12/11-02/12	01/12-03/12	02/12-04/12	03/12-05/12	04/12-06/128	05/12-07/12	06/12-08/12	07/12-09/12	08/12-10/12	09/12-11/12	10/12-12/12
		0.30	0.34	0.29	0.17	0.12	0.11	0.09	0.05	0.06	0.05	0.05	0.05
		11/12-01/13	12/12-02/13	01/13-03/13	02/13-04/13	03/13-05/13	04/13-06/13	05/13-07/13	06/13-08/13	07/13-09/13	08/13-10/13	09/13-11/13	10/13-12/13
		0.05	0.06	0.04	0.03	0.03	0.03	0.03	0.04	0.04	0.05	0.04	0.04
		11/13-01/14	12/13-02/14	01/14-03/14	02/14-04/14	03/14-05/14	04/14-06/14	05/14-07/14	06/14-08/14	07/14-09/14	08/14-10/14	09/14-11/14	10/14-12/14
		0.03	0.04	0.04	0.04	0.04	0.05	0.05	0.04	0.03	0.03	0.03	0.03
		11/14-01/15	12/14-02/15	01/15-03/15	02/15-04/15	03/15-05/15	04/15-06/15	05/15-07/15	06/15-08/15	07/15-09/15	08/15-10/15	09/15-11/15	10/15-12/15
		0.03	0.03	0.04	0.05	0.06	0.06	0.06	0.05	0.03	0.04	0.04	0.11
		Highlighted red numbers are rolling three-month averages above the 2008 lead standard of 0.15 µg/m³											

**Historical Lead Three-Month Rolling Average Values, Muncie,
Delaware County, Indiana 2010-2015**



APPENDIX B

Historic Lead Emission Inventories for the Muncie, Delaware County, Indiana 2008 Annual Lead Nonattainment Area

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**Muncie Nonattainment Area Lead Emissions Inventory Totals for Base Year 2010,
Attainment Year 2013, and Project Year 2030 (Tons per Year)**

Source	2010⁽¹⁾ (Base)	2013⁽²⁾ (Attainment)	2030⁽²⁾ (Maintenance)
Exide Technologies	0.82	0.63	1.73

⁽¹⁾ Permitted allowable lead emissions, taken from Exide Technologies Title V Permit 035-22535-00028, issued September 7, 2007, for the year 2010 are limited to 3.48 tons per year.

⁽²⁾ Permitted allowable emissions for 2013 and projected emissions for 2030 are limited by the NESHAP for secondary lead smelters to 1.73 tons per year.

