Air Quality Dispersion Modeling Protocol
For Lead NAAQS Attainment Demonstration

Prepared for:
Missouri Department of Natural Resources
Jefferson City, Missouri

On behalf of:
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ENVIRON

Contents

1	**Introduction**	**1**
1.1	Description of Current Operations	1
1.2	Document Organization	1
1.3	Contact Information	2
2	**Modeling Methodologies, Settings, and Input**	**3**
2.1	Model Selection and Settings	3
2.2	Modeled Pollutants and Averaging Periods	3
2.3	Modeled Sources and Their Release Parameters	4
2.4	Terrain Data	6
2.5	Building Downwash	7
2.6	Meteorological Data Set	7
2.6.1	Surface Parameters	8
2.7	Receptors	8
3	**Model Input, Output, and Results Submittal**	**10**
3.1	Modeling File Submittal	10
3.2	Background Lead Concentration	10
3.3	Post Processing in LEADPOST	10
3.4	Description of Modeling Results	11
4	**References**	**12**

List of Tables

Table 1: Point Source Emissions Calculations
Table 2: Point Source Inputs to AERMOD
Table 3: Process Fugitive Emissions (Controlled)
Table 4: Volume Source Parameter Calculations for Use in AERMOD
Table 5: Volume Source Inputs to AERMOD
Table 6: Area Source Release Parameter Calculations
Table 7: Haul Road Area Source Inputs to AERMOD
Table 8: Hour of Day Emission Factor Calculations
Table 9: Building Inputs to AERMOD
Table 10: Meteorological Data Completeness
Table 11: Receptor Inputs to AERMOD

List of Figures

Figure 1: Site Location Map
Figure 2: Point Sources for Use in AERMOD
Figure 3: Process Fugitive Volume Sources
Figure 4: Haul Road Area Sources
Figure 5: Domain of Terrain Files for AERMAP
Figure 6: Building Profiles
Figure 7: Distances to Local Airports
Figure 8: Receptors
Figure 9: Background Exclusion Area

List of Appendices

Appendix A: Facility Negative Pressure Calculations
Appendix B: Haul Road Traffic Patterns
Appendix C: Example Haul Road Emission Calculation

Acronyms and Abbreviations

AAQ	Ambient Air Quality
ACGIH	American Conference of Governmental Industrial Hygienists
AERMET	The meteorological preprocessor to AERMOD
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
BPIPPRM	Building Profile Input Program Plume Rise Model enhancements
CFR	Code of Federal Regulations
ENVIRON	ENVIRON International Corporation
Exide	Exide Technologies
HAP	Hazardous Air Pollutant
ISCST3	Industrial Source Complex-Short Term
ISO	International Standards Organization
MACT	Maximum Achievable Control Technology
MDNR	Missouri Department of Natural Resources
NED	National Elevation Dataset
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NLCD	National Land Cover Database
NSPS	New Source Performance Standards
NWS	National Weather Service
Pb	Lead
PMI	Point of Maximum Impact
REL	Reference Exposure Levels
TSP	Total Suspended Particulate
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey

Units

dscm	dry standard cubic meter
g	gram
g/s	grams per second
kg	kilogram
km	kilometer
L	liter
m	meter
m^3	cubic meter
mg	milligram
s	second
yr	year
μg	microgram

1 Introduction

Exide Technologies (Exide) owns and operates a secondary lead smelting facility at HWY 11 and Canon Hollow Road, in Forest City, Holt County, Missouri (Exide – Canon Hollow). Figure 1 provides an illustration of the site's location.

The lead National Ambient Air Quality Standard (NAAQS) was revised by the USEPA in October 2008 from 1.5 $\mu g/m^3$ on a calendar quarter average to 0.15 $\mu g/m^3$ on a consecutive three-month average. Monitoring data from March through September 2012 have measured concentrations above the 2008 lead National Ambient Air Quality Standard (NAAQS). The Missouri Department of Natural Resources' Air Pollution Control Program and Exide are working cooperatively on developing a plan to address this issue and reduce concentrations to below the 2008 lead NAAQS as expeditiously as practicable. The Air Program, Exide and EPA Region 7 met on November 6, 2012 to kick off this planning process. The group agreed to submit the plan to EPA on an expedited timeline.

The attainment demonstration will include the background lead concentration in air and the impact of future emissions from Exide. An air dispersion modeling analysis will show that Exide will attain and maintain the lead NAAQS based on proposed control measures taken by the facility, largely based on implementation of the revised National Emission Standards for Hazardous Air Pollutants (NESHAP) for Secondary Lead Smelting. Because Exide has already begun the design process to implement these control measures and is not in a designated nonattainment area for lead, this modeling protocol will only reflect post-control emission rates and design.

1.1 Description of Current Operations

Exide is an active facility that recycles lead-acid storage batteries and other lead-bearing raw materials by smelting the material to produce finished lead alloys. The facility uses a blast furnace to smelt the recycled lead components. The plastic and acid are collected and shipped off site. The installation uses baghouses, an after-burner, a scrubber, and vacuum sweepers for internal plant roadways to control sulfur, lead, volatile organic compounds and particulate matter emissions.

1.2 Document Organization

This Modeling Protocol is divided into five sections as follows:

Section 1.0 – Introduction: describes the purpose and scope of the Ambient Air Quality Modeling and outlines the report organization.

Section 2.0 – Modeling Methodologies, Settings, and Input: discusses the emissions estimate to be used for dispersion modeling, the selection of the dispersion model, the data used in the dispersion model (terrain, meteorology, source characterization) and the identification of receptors evaluated in this analysis.

Section 3.0 – Model Input, Output, and Results Submittal: discusses the documentation that will be provided with the final application for MDNR review.

Section 4.0 – References: includes all references cited in this report.

1.3 Contact Information

Exide Technologies has contracted with ENVIRON International Corporation to perform the air quality analyses for this project. The ENVIRON contact for this project is:

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2 Modeling Methodologies, Settings, and Input

This section of this document will summarize our selection of the dispersion model that will be used in this analysis along with its operational settings and input.

2.1 Model Selection and Settings

The ambient air lead concentrations will be estimated using dispersion modeling techniques. To estimate off-property ambient air concentrations, ENVIRON will employ the most recent version of AERMOD (version 13350), the USEPA's recommended air dispersion model (USEPA 2004a and USEPA 2009c). AERMOD was developed as a replacement for USEPA's Industrial Source Complex Short Term (ISCST3) air dispersion model to improve the accuracy of air dispersion model results for routine regulatory applications and to incorporate the progress in scientific knowledge of atmospheric turbulence and dispersion. This change was made in November 2005 (USEPA 2005b). After a one-year transition period for the change in model (i.e., as of November 9, 2006), ISCST3 is no longer considered a USEPA-approved model for certain regulatory applications. For these and the following reasons, ENVIRON proposes using AERMOD to determine ambient lead concentrations for this analysis.

AERMOD is appropriate for use in estimating ground-level short-term ambient air concentrations resulting from non-reactive buoyant emissions from sources located in simple and complex terrain. This analysis will be conducted using AERMOD with all regulatory defaults. The following regulatory default modeling control options were included:

- adjusting stack heights for stack-tip downwash,
- using upper-bound concentration estimates for sources influenced by building downwash from super-squat buildings,
- incorporating the effects of elevated terrain,
- employing the calms processing routine,
- employing the missing data processing routine, and

Air modeling concentrations will be estimated using AERMOD in conjunction with information about the site, the locations of the lead emitting stacks, nearby land uses, representative meteorological data, and receptors.

This dispersion modeling project will utilize the Universal Transverse Mercator (UTM) Coordinate System which includes the inherent benefit of not using negative numbers or east/west designations. In addition, the UTM coordinate system provides a constant distance relationship anywhere on the map or domain. This project will utilize Zone 15 of the North American Datum of 1983 (NAD83) in the UTM coordinate system. The units of the coordinates will be meters.

2.2 Modeled Pollutants and Averaging Periods

The only pollutant that will be modeled is lead (CAS Number: 7439-92-1). Calculation of chemical concentrations for use in demonstrating attainment of the 2008 Lead NAAQS (USEPA 2008b) requires the selection of appropriate concentration averaging times. To demonstrate

agreement with the 2008 Lead NAAQS, ENVIRON will execute the AERMOD model and generate POST files using a monthly averaging period. These POST files will be processed through the USEPA's LEADPOST (Version 12114) FORTRAN based computer program to generate consecutive three-month averages for comparison against the lead NAAQS.

2.3 Modeled Sources and Their Release Parameters

We propose this modeling analysis include the following lead emitting sources at the Exide facility: the current Wheelabrator air pollution control system, two newly constructed baghouses (CD005 and CD006), and an acid demister (CD007). The source identifiers for the point sources used in this AERMOD modeling were chosen based on the designations used by the facility. We will also model fugitive emissions and emissions from haul roads area sources and process fugitives as volume sources. The following sections describe the how the emission rates and model parameters will be determined for each type of source.

2.3.1 Point Sources

In order to demonstrate ambient impacts less than the 2008 Lead NAAQS and all relevant federal New Source Performance Standard (NSPS) and NESHAP standards applicable to the sources involved, the Wheelabrator Air Pollution Control System is proposed to be modeled based on a lead concentration of 1 mg/dscm, and the other point sources are proposed to be modeled based on 0.2 mg/dscm, with exception of Negative Pressure Baghouse No. 2 (BH-02, North Baghouse) which will be modeled based on 0.17 mg/dscm. The proposed emission rate for the Wheelabrator Air Pollution Control System is the maximum allowed for any one source under the NESHAP, and it is higher than the most recent measured emission rate in order to ensure that normal operational variations would not create a condition where the NAAQS are exceeded. The proposed emission rates for the two negative pressure baghouses and the acid demister are set in accordance with the facility wide, flow weighted average lead emission limit set in the NESHAP for secondary lead smelters; however, the actual emission rates from these sources are expected to be less than the modeled values. The proposed emission rate for each source is calculated in Table 1. All of the stacks will be modeled as vertical point sources with unrestricted flow. Table 2 includes a list of the point source inputs that will be included in this modeling exercise. The modeled stack velocities for the two new baghouses (CD005 and CD006) will correspond to conservatively assumed flow rates that still achieve the negative pressure requirements of § 63.544(c)(1) of 40 CFR 63 Subpart X; however, the emission rates for those two sources will be conservatively modeled assuming 100 percent flow.

2.3.2 Volume Sources

The source group designated FUG has been included to represent process fugitive emissions from the furnace, refining, and casting that may escape through openings in the facility buildings. § 63.544(c)(1) of 40 CFR 63 Subpart X requires continuous ventilation of the total enclosure to ensure negative pressure values of at least 0.007 inches of water. Assuming a worst case scenario with all external equipment doors open at the same time, the facility's future negative pressure total enclosure design will achieve the minimum of 0.007 inches water column (Appendix A). However, as explained below, measures will be put in place to ensure that under normal operating conditions, all exterior doors will not be open at the same time, and the facility will exceed the minimum of 0.007 inches of water.

Additionally, Exide will implement design and housekeeping provisions that go beyond the NESHAP requirements; these provisions include equipment door designs that minimize building inflow and the use of local exhaust ventilation (LEV) hooding. Service vehicle or equipment door openings will be equipped with airlocks, speed doors, dock seals, metal roll up doors, or other controls to minimize changes in differential pressure or building inflow during occasional but necessary traffic. Exide intends to keep all doors closed during normal operation barring the protection of employee welfare. LEV hooding is in place for the facility's fugitive generating processes and will remain in place after installation of the new baghouses. USEPA's Secondary Lead Smelting Background Information Document for Proposed Standards (USEPA 1994, page D-58) suggests that the capture efficiency of local exhaust ventilation hoods is 95%; however 80% was used as a conservative estimate to calculate emissions for this model. In their letter to MDNR dated September 17, 2012 regarding building fugitive capture efficiency for SIP modeling at the Buick Resource Recycling facility in Boss, Missouri, USEPA approved the use of up to 99% building fugitive capture efficiency from the new negative pressure total enclosure in modeling for sources controlled within the building (Doolan 2012).

The effect of the local exhaust ventilation hoods and the negative pressure total enclosure reduce the fugitive emissions from this source group to less than 20 lb/yr. Table 3 shows the calculation of the process fugitive emissions, both before and after the installation of the total enclosure negative pressure ventilation system. The emission rate in Table 3 will be divided evenly across all of the modeled volume sources in the source group FUG.

The fugitive process emissions will be characterized as volume sources with square area footprints. It is assumed that fugitive emissions that may escape the building will escape from open equipment doors to the manufacturing area; therefore, those equipment doors will be represented as volume sources in the model (Figure 2). The height and width of each door will be used to calculate the initial lateral dimension and the initial vertical dimension for each volume source (Table 4). Per USEPA's *User's Guide for the AMS/EPA Regulatory Model – AERMOD* (USEPA 2004), the initial lateral dimension will be set as the length of the square area footprint divided by 4.3, and the initial vertical dimension will be set as the doorway height divided by 2.15. Table 5 includes a listing of the fugitive volume sources and their parameters for input into AERMOD.

2.3.3 Area Sources

In addition to the fugitive process emissions, fugitive emissions due to reentrainment of surface dust from traffic will be taken into account in the model. Semi-trailers, roll-offs, dump trucks, loaders, and forklifts will regularly drive on the facility roads and contribute to these fugitive emissions. Vehicular fugitive emissions are to be modeled as ground level area sources with input parameters calculated according to the guidance provided in the USEPA's Haul Road Workgroup Final Report (March 2, 2012). The haul roads will be split into rectangular road segments of equal width to represent the area sources (Figures 4). All of the haul roads were assumed to be eight meters wide and have two lanes; therefore the width of each area source was set to 14 meters (six meters plus the road width). The other release parameters of each area source (release height, initial vertical dimension, etc.) were calculated based on the fleet average vehicle height for each road segment, as shown in Table 6.

A description of the traffic patterns including the vehicle type, number of trips, frequency of trips, and hours of day are included in Appendix B. Table 7 lists the haul road area sources and their release parameters for use in AERMOD.

Traffic fugitive emissions will be quantified using the Paved Roads section of Chapter 13.2.1 from AP-42 (USEPA 2011). The equations in AP-42 require site specific data including the fleet average vehicle weight, vehicle kilometers traveled, and a silt loading value for each segment of paved road. The version of the equation used for this site's calculations takes precipitation into account by applying a precipitation correction term. The equation and a description of the values used in it are shown in Appendix C. This equation yields total suspended particulate (TSP) emission factors in grams per vehicle kilometer traveled (g/VKT) for each road segment.

Site-specific silt and lead content sampling have recently been completed for a similar Exide facility in Vernon, California which is currently totally enclosed, consistent with the pending NESHAP. These parameters were used in the AP-42 equations to estimate the future traffic fugitive emissions on paved roads at the Canon Hollow facility when the enclosure project is completed. Exide conducted site-specific sampling for silt loading and lead content on the landfill at the Canon Hollow facility to estimate the emissions from dump trucks driving on the landfill.

The TSP emission factors found for each road segment are multiplied by the path length and number of passes per year in the future facility configuration to estimate annual emissions of TSP. The percentage of particulate measured to be lead is then used to estimate the annual lead emissions from each roadway segment. The lead emission rates are then divided by the area of each area source for input to AERMOD. An example of these calculations is provided in Appendix C. The lead emissions from each area source will be distributed throughout the hours of the day based on the fraction of traffic through each road segment that occurs during restricted hours (7 AM – 7 PM) or unrestricted hours (24 hours per day) using the HROFDAY emissions scaling factor in AERMOD (Table 8).

2.4 Terrain Data

Terrain elevations will be incorporated into the model using version 11103 of AERMAP, AERMOD's terrain preprocessor, as per USEPA guidance (2009). Terrain elevation data for the entire modeling domain will be extracted from 1/3-arc second National Elevation Data (NED) files with a resolution of approximately 10 meters. These NED files will be obtained from the U.S. Geological Survey's Seamless Data Server (http://seamless.usgs.gov). AERMAP will be configured to assign elevations for all roadway volume sources and receptors in the modeling domain. The extent of the terrain file used is presented in Figure 5. Because the terrain varies across the facility, elevations of buildings, point sources, and volume sources above mean sea level will be assigned based on data provided by Exide's own surveying. Elevations used for the sources are provided in Tables 2, 5 and 7; elevations assigned to the buildings are provided in Table 9.

Because there is no distinction in AERMOD between elevated terrain below release height (simple terrain) and terrain above release height (complex terrain), as with earlier regulatory models that distinguished between simple terrain and complex terrain (USEPA 2004a), we have

not included in this protocol a description of complex terrain within 50 kilometers of the Exide site. For applications involving elevated terrain, the user must input a hill height scale along with the receptor elevation. To accomplish this, AERMAP will be configured to automatically calculate and assign Hill Height Scale values for all receptors.

2.5 Building Downwash

Building downwash algorithms incorporated into AERMOD account for the plume dispersion effects of the aerodynamic wakes and eddies produced by buildings and structures. The Building Profile Input Program - Plume Rise Model Enhancements (BPIPPRM) model (incorporated into AERMOD) is used to determine the direction-specific building downwash parameters.

ENVIRON will model onsite buildings for downwash analysis. These buildings will be placed into the model then the BPIPPRM program (Version 04274) will be executed on the point sources. Table 9 shows the heights of each building that will be incorporated into the model. Figure 6 presents labeled building locations. In addition, the facility's processes are controlled by several outdoor fabric filter bag houses. These structures are physically large due to the quantity and configuration of the fabric filter bags used to filter the process exhaust. The bag houses will be input into the model as buildings to allow for the model to account for the anticipated plume downwash from the baghouse structures.

2.6 Meteorological Data Set

AERMOD requires a meteorological input file to characterize the transport and dispersion of pollutants in the atmosphere. Surface and upper air meteorological data inputs as well as surface parameter data describing the land use and surface characteristics near the site are first processed using AERMET, the meteorological preprocessor to AERMOD. The output file generated by AERMET is the meteorological input file required by AERMOD. Details of AERMET and AERMOD meteorological data needs are described in USEPA guidance documents (USEPA 2004a, 2004b).

Based on USEPA modeling guidance, it is preferable that one year or more, up to five years, of on-site meteorological data be used in the dispersion modeling exercise (40 CFR Part 51 Appendix W (November 2005)). USEPA's *Meteorological Monitoring Guidance for Regulatory Modeling Applications* (USEPA 2000) describes the criteria that should be considered when siting meteorological instruments for modeling purposes. Typically, wind instruments should be placed on a boom that is located at least two meters away from an open lattice ten-meter tower in an area that is free from obstructions. The placement of wind instruments on buildings, cooling towers or stacks should be avoided due to the potential for downwash influences. The effect on the wind speed and direction can be significant and can result in non-representative, poor quality data. If an instrument is placed on a building, the probe would have to be clear of any wake zones that are present and should be representative of the conditions that are occurring at the point of release (minimum of ten meters). Due to the fact that Exide's meteorological station is located on a roof of a building, it was determined that data collected by it is not appropriate for a SIP attainment demonstration modeling evaluation, and the collection one year of on-site meteorological data is not feasible at this time. Instead, meteorological data collected at a representative airport should be used for the SIP modeling analysis.

MDNR evaluated three airports' meteorological data (Kansas City International Airport, Rosecrans Memorial Airport, and Brenner Field located near Falls City, Nebraska) to determine which data most closely represent conditions at the facility (Figure 7). These airports were selected since they are the closest to Exide while other airports, located farther away, have weather patterns which are quite different from that of the facility.

By taking into account the distance from the site and comparing the surface roughness, albedo, and Bowen ratio at each airport to those parameters at the site, MDNR determined that the Brenner Field Airport station (KFNB), in Nebraska, is the best choice for meteorological data for the modeling demonstration. Wind speed, wind direction, ambient temperature, atmospheric pressure, and cloud cover data were chosen from KFNB the five years from 2007 to 2011 as the most representative available data for use in the air dispersion analysis of the Exide facility.

The 2007 to 2011 surface data for KFNB were prepared using TD-3505 surface data and TD-6805 AERMINUTE data. The data were processed using the AERMET meteorological data processor (version 12345). Table 10 outlines the quarterly and annual data completeness for the AERMET surface files. All 20 quarters exceed the "valid data retrieval requirements" provided in EPA's *Meterorological Monitoring Guidance for Regulatory Modeling Applications* (EPA 2000), which requires 90% data completeness by quarter based on joint capture of the variables required for model simulations.

Upper air data for the period of 2007 to 2011 was selected by MDNR from the Topeka, KS Airport station (KTOP). KTOP was chosen based on its proximity to both Brenner Field and the facility; it is the closest upper air station to both locations.

2.6.1 Surface Parameters

Prior to running AERMET, it is necessary to specify the surface characteristics for the meteorological monitoring site and/or the project area. The surface parameters include surface roughness, Albedo, and Bowen ratio, and are used to compute fluxes and stability of the atmosphere (USEPA 2004b) and require the evaluation of nearby land use and temporal impacts on these surface parameters. Surface parameters supplied to the model will be specified for the area surrounding the meteorological monitoring site, rather than the project area (the nonattainment area), as recommended by USEPA (USEPA 2005a, 2009b)[1]. Because of the close proximity of the selected meteorological station to the facility and because both the facility and the airport are in relatively rural areas, surface parameters calculated for the meteorological station are assumed to be representative of the area to be modeled.

2.7 Receptors

With exception of the path of Canon Hollow Road, ground-level lead concentrations located inside the facility boundaries will be excluded from the impact assessment because the general public does not have ready access to the Exide property. The Exide Technologies property within the proposed fenced perimeter shown in Figure 1 will be considered on-site for purposes

[1] The AERMOD Implementation Guide (USEPA 2005a, 2009b) suggests using surface parameters at the meteorological site for constructing AERMOD's meteorological profiles if the both the source and the meteorological tower site are located in rural areas.

of determining the area of precluded access as recommended by MDNR and USEPA. We will place ground level receptors along the proposed fence line and Canon Hollow Road at 10 meter and 25 meter spacing intervals respectively.

In addition to the fence line receptors, we will utilize a Cartesian grid of receptors with 50 meter spacing extending radially from the fence line to approximately 250 meters from the fence line. Receptors with 100 meter spacing will extend radially from approximately 250 meters to 500 meters from the fence line. Lastly, a receptor grid with 200 meter spacing will extend from approximately 500 meters to 1000 meters from the face line. In addition to the aforementioned fence line and gridded discrete receptors, one ground-level, discrete receptor will be placed at the approximate location of the ambient lead monitor, located southwest of the site (UTMx = 309221, UTMy = 4433181). Table 11 provides a list of all of the receptors and their elevations for use in AERMOD, and Figure 8 depicts the layout of the receptors with respect to the facility.

All receptor elevations and Hill Height Scales were assigned by AERMAP (Version 11103) using NED 1/3 Arc Second resolution elevation data from USGS's Seamless Data Server.

3 Model Input, Output, and Results Submittal

3.1 Modeling File Submittal

The dispersion modeling input, output and post processing files will be submitted to MDNR with this report to document the modeling methodology and results. A computer disc will be attached to this report and will contain all model input and output files, supporting emission calculations and stack test summary tables for point sources. The disc will also include LEADPOST post processing data files. Meteorological and BPIPPRM input files will be included on the disc as well.

3.2 Background Lead Concentration

Per 40 CFR 51, Appendix W, background concentrations must be considered when determining compliance with the NAAQS compliance. Background concentrations include impacts attributable to natural sources, nearby sources (excluding the dominant source(s)), and unidentified sources. This calculated background concentration includes all sources of lead not already included in the model run script.

Ambient monitoring for lead near the Exide Technologies Canon Hollow facility only began in May 2012 for low-volume lead-in-PM10 sampling (Pb-PM10) and in August 2012 for hi-volume lead-in-TSP sampling (Pb-TSP). This short history of available monitoring data has generated a dataset which is not yet sufficient for the calculation of a site-specific background lead concentration on the basis of evaluating measured concentrations on days when the nearby monitor is upwind of the facility. Exide proposes that background be calculated by averaging the hi-volume ambient monitoring data near the facility on days in which the monitor is upwind of the facility and there is a minimum wind speed to preclude the inclusion of calm conditions. The monitor will be upwind of the facility on days in which there are no one-hour wind averages blowing from the facility toward the monitor. Therefore, monitored values that include corresponding winds from the 180 degree sector upwind of the monitor location will be excluded from consideration as a representative background value (40 CFR 51 Appendix W Section 8.2.2(b)). Winds from this sector are defined as those between 285 degrees and 105 degrees, where zero degrees is defined as true north. Figure 9 shows the ambient monitor, the facility, and the proposed wind directions to exclude from the background calculation.

Due to the current placement of Exide's current on-site meteorological station on the roof of a building, the current on-site station's wind readings may be affected by downwash; therefore, Exide proposes to use wind directions and speeds from KFNB, the same airport station that will be used in the modeling. Wind recorded at KFNB will be unobstructed, and it will therefore be more representative of conditions at the ambient lead monitor.

3.3 Post Processing in LEADPOST

As stated previously in this document, AERMOD will be executed to generate POSTFILE output data files. The averaging period chosen for this model was monthly as recommended by USEPA (2009d) for use with USEPA's LEADPOST software program. The POSTFILE outputs will be processed through the LEADPOST program to calculate three month average lead concentrations for each receptor location. The software will create two output text files corresponding to total receptor average concentrations across all source groups (a Source

Group ALL will be created to represent facility-wide emissions) and receptor average concentrations for each source group to allow for culpability analyses.

3.4 Description of Modeling Results

The LEADPOST output file of modeled maximum three month average lead concentrations for all source groups will be added to the background concentration (that will be determined according to the steps described in section 3.2), to determine the cumulative impact at each receptor. This data will then be plotted to generate a contour map of the three month average lead concentrations. A table including the maximum impacted receptor, and other sensitive receptors will be presented to demonstrate attainment of the lead NAAQS.

4 References

American Conference of Governmental Industiral Hygenists (ACGIH). 2001. Industrial Ventilation: A Manual of Recommended Practice. 24th Edition. Table 7-2.

Doolan, Stephanie, B. 2012. RE: Building Fugitive Capture Eiffiency for SIP Modeling, Buick Resource Recycling Facility, Boss, Missouri. United States Environmental Protection Agency, Air Planning and Development Branch. September 17, 2012.

Haul Road Workgroup Final Report Submission to EPA-OAQPS, March 12, 2012.

United States Environmental Protection Agency. 2011. AP 42, Fifth Edition, Volume I, Chapter 13: Miscellaneous Sources: 13.2.1 Paved Roads.

United States Environmental Protection Agency, Office of Air and Radiation. 2000. Meterological Monitoring Guidance for Regulatory Modeling Applications. http://www.epa.gov/scram001/guidance/met/mmgrma.pdf

United States Environmental Protection Agency, Office of Air Quality Planning and Standards. 2004. User's Guide for the AMS/EPA Regulatory Model – AERMOD.

United States Environmental Protection Agency, Office of Air Quality Planning and Standards. 1994. Secondary lead Smelting Background Information Document for Proposed Standards Volume 2 - Appendices.(p. D-58).

Tables

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 1. Point Source Emissions Calculations

Emission Point/ID	Description	Air Flow			Capacity	Modeled Lead Concentration	Modeled Lead Emission Rate	
		acfm	m^3/s	dscfm	%	mg/dscm	lb/hr	g/s
AD	Acid Demister	32000	15.10	--	100%	0.20	0.02	3.02E-03
WBH	Wheelabrator Air Pollution Control System	83160	39.25	86074	100%	1.00	0.32	4.06E-02
BH01	Negative Pressure Baghouse 1	315000	148.66	--	100%	0.20	0.24	2.97E-02
BH02	Negative Pressure Baghouse 2	315000	148.66	--	100%	0.17	0.20	2.47E-02

Conversions

453.59237	g/lb
60	seconds/minute
60	minutes/hour
0.000471947	cms/cfm
1000	mg/g

Footnotes

The dry standard air flow for WBH was used in the emissions calculations because stack test data were available. The design flow was used for the other sources that have yet to be constructed.

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 2. Point Source Inputs to AERMOD

Source ID	Description	X-Coordinate (m)	Y-Coordinate (m)	Base Elevation (m)	Emission Rate (g/s)	Stack Height Above Grade (m)	Stack Temp. (K)[a]	Stack Velocity (m/s)	Stack Diameter (m)
AD	Acid Demister	309533.77	4433697.58	279.81	3.02E-03	12.19	0	15.40	1.12
WBH	Wheelabrator Air Pollution Control System	309412.20	4433607.01	285.92	4.06E-02	39.00	326.11	14.94	1.83
BH01	Negative Pressure Baghouse 1	309383.71	4433596.53	286.05	2.97E-02	27.89	299.82	18.19	2.79
BH02	Negative Pressure Baghouse 2	309556.87	4433717.66	280.26	2.47E-02	25.45	299.82	18.19	2.79

Footnotes

a The Acid Demister stack is assumed to be at ambient temperature were given a value of 0; therefore, AERMOD will apply the hourly ambient temperature to the stack.

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 3. Process Fugitive Emissions (Controlled)

Source	AP-42 Factor[a] (lb/ton)	Annual Process Rate (tons)	Uncontrolled emissions (lb/yr)	Hood % Capture[b]	Current Fugitive (lb/yr)	Future Bldg Capture %	Controlled Emissions (lb/yr)	Controlled Emissions (lb/hr)[c]	Controlled Emissions (g/s)
Furnace	0.2	58,400	11,680	95	584	95	29.2	3.33E-03	4.20E-04
Refining	0.0006	58,400	35.04	95	1.752	95	0.0876	1.00E-05	1.26E-06
Casting	0.0007	58,400	40.88	0	40.88	95	2.044	2.33E-04	2.94E-05
				Sum	**627**		**31**	**3.58E-03**	**4.51E-04**

Footnotes

a AP42, Fifth Edition, Volume I, Chapter 12: Metallurgical Industery, 12.11 Secondary Lead Processing.

b EPA guidance says that 95% is the appropriate value to use for hood capture (*Secondary lead Smelting Background Information Document for Proposed Standards Volume 2 - Appendices.* 1994. Page D-58.)

c Annual emitting hours: 8760

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 4. Volume Source Parameter Calculations for Use in AERMOD

Source ID	Description	Door Width (m)	Door Height (m)	Release Height (m)	Initial Lateral Dimension (m)[a,b]	Initial Vertical Dimension (m)[a,c]
FUG1	Exterior Door A	4.27	4.27	2.13	0.99	1.98
FUG2	Exterior Door B	4.88	4.67	2.34	1.13	2.17
FUG3	Exterior Door C	4.27	4.11	2.06	0.99	1.91
FUG4	Exterior Door D	4.27	4.11	2.06	0.99	1.91
FUG5	Exterior Door J	3.66	2.74	1.37	0.85	1.28
FUG6	Exterior Door K	1.22	0.61	0.30	0.28	0.28
FUG7	Exterior Door N	4.27	4.88	2.44	0.99	2.27
FUG8	Exterior Door Q	2.74	3.05	1.52	0.64	1.42
FUG9	Exterior Door R	2.74	3.05	1.52	0.64	1.42
FUG10	Exterior Door S	5.03	4.88	2.44	1.17	2.27
FUG11	Exterior Door W	6.40	4.27	2.13	1.49	1.98
FUG12	Exterior Door X	3.66	4.27	2.13	0.85	1.98
FUG13	Exterior Door Y	5.79	4.27	2.13	1.35	1.98
FUG14	Exterior Door Z	5.79	4.27	2.13	1.35	1.98
FUG15	Exterior Door AA	4.88	4.27	2.13	1.13	1.98

Footnotes

a Values taken from Table 3-1 (Summary of Suggested Procedures for Estimating Initial LAteral DImensions and Initial Vertical Dimensions for Volume and Line Soruces) of EPA's User's Guide for AERMOD (September 2004).

b Initial lateral dimension for a single volume source equals the length of the side divided by 4.3

c Initial vertical dimension of a surface-based volume source (h_e ~0) equals the vertical dimension divided by 2.15

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 5. Volume Source Inputs to AERMOD

Source Group	Source ID	Description	X-Coordinate (m)	Y-Coordinate (m)	Elevation (m)	Emission Rate (g/s)[a]	Release Height (m)	Initial Lateral Dimension (m)	Initial Vertical Dimension (m)
FUG	FUG1	Exterior Door A	309430.36	4433662.71	277.37	3.00E-05	2.13	0.99	1.98
FUG	FUG2	Exterior Door B	309440.73	4433686.63	277.37	3.00E-05	2.34	1.13	2.17
FUG	FUG3	Exterior Door C	309456.82	4433712.77	276.15	3.00E-05	2.06	0.99	1.91
FUG	FUG4	Exterior Door D	309463.59	4433709.70	276.15	3.00E-05	2.06	0.99	1.91
FUG	FUG5	Exterior Door J	309442.14	4433645.06	284.99	3.00E-05	1.37	0.85	1.28
FUG	FUG6	Exterior Door K	309451.30	4433641.13	284.99	3.00E-05	0.30	0.28	0.28
FUG	FUG7	Exterior Door N	309461.54	4433623.08	284.99	3.00E-05	2.44	0.99	2.27
FUG	FUG8	Exterior Door Q	309531.32	4433620.90	283.77	3.00E-05	1.52	0.64	1.42
FUG	FUG9	Exterior Door R	309534.39	4433619.63	283.77	3.00E-05	1.52	0.64	1.42
FUG	FUG10	Exterior Door S	309539.79	4433619.21	283.77	3.00E-05	2.44	1.17	2.27
FUG	FUG11	Exterior Door W	309590.17	4433606.81	284.38	3.00E-05	2.13	1.49	1.98
FUG	FUG12	Exterior Door X	309513.01	4433642.07	282.24	3.00E-05	2.13	0.85	1.98
FUG	FUG13	Exterior Door Y	309503.07	4433666.52	282.24	3.00E-05	2.13	1.35	1.98
FUG	FUG14	Exterior Door Z	309506.92	4433685.97	277.06	3.00E-05	2.13	1.35	1.98
FUG	FUG15	Exterior Door AA	309506.24	4433701.76	277.06	3.00E-05	2.13	1.13	1.98

Footnotes

Emission rates for Source Group FUG were obtained by dividing the total process fugitive emissions found in Table 3 by the total number of sources in the source group.

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 6. Area Source Release Parameter Calculations

	Activity	Vehcle Type	Approx Vehicle Height (meters)	Trips per Hour		Road Segment ID				
						1	2	3	4	5
1	Cores/Scrap	Semi-Trailer	4.11	0.4155	VKT/hr	1.71E-02	1.76E-02	1.80E-02	8.57E-02	3.99E-02
2	Industrials	Semi-Trailer	4.11	0.0890		3.66E-03	3.78E-03	3.85E-03	1.84E-02	8.54E-03
3	Furnace Coke	Semi-Trailer	4.11	0.0237		9.77E-04	1.01E-03	1.03E-03	4.90E-03	2.28E-03
4	Lime (bulk)	Semi-Trailer	4.11	0.0237		9.77E-04	1.01E-03	1.03E-03	4.90E-03	2.28E-03
5	Trash	Roll-Off	3.66	0.0297		1.22E-03	1.26E-03	1.28E-03	6.12E-03	2.85E-03
6	Cement (bulk)	Semi-Trailer	4.11	0.0178		7.33E-04	7.56E-04	7.69E-04	3.67E-03	1.71E-03
7	Acid (bulk)	Semi-Trailer	4.11	0.0356		1.47E-03	1.51E-03	1.54E-03	7.35E-03	3.42E-03
8	Oxygen (liquid)	Semi-Trailer	4.11	0.0119		4.88E-04	5.04E-04	5.13E-04	2.45E-03	1.14E-03
9	Furnace Fluxes	Semi-Trailer	4.11	0.0712		2.93E-03	3.03E-03	3.08E-03	1.47E-02	6.84E-03
10	Lead Products	Semi-Trailer	4.11	0.3562		1.47E-02	1.51E-02	1.54E-02	7.35E-02	3.42E-02
11	Plastic Chips	Semi-Trailer	4.11	0.0178		7.33E-04	7.56E-04	7.69E-04	3.67E-03	1.71E-03
12	Slag Mix Landfill	Dump Truck	3.44	0.2968		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	Service	Loader & Forklift	2.97	0.0356		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Total VKT/hr		4.49E-02	4.64E-02	4.72E-02	2.25E-01	1.05E-01
				%Semi-Trailer		97%	97%	97%	97%	97%
				%Roll-Off		3%	3%	3%	3%	3%
				%Dump Truck		0%	0%	0%	0%	0%
				%Loader & Forklift		0%	0%	0%	0%	0%
				Weighted Avg Vehicle Height		4.10	4.10	4.10	4.10	4.10
				Top of Plume Height (1.7 x Vehicle Height)		6.97	6.97	6.97	6.97	6.97
				Release Height (0.5 x Top of Plume Height)		3.49	3.49	3.49	3.49	3.49
				Sigma Z/Initial Vertical Dimension (Top of Plume Height/2.15)		3.24	3.24	3.24	3.24	3.24

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 6. Area Source Release Parameter Calculations

	Activity	Vehcle Type	Approx Vehicle Height (meters)	Trips per Hour		Road Segment ID				
						6	7	8	9	10
1	Cores/Scrap	Semi-Trailer	4.11	0.4155	VKT/hr	1.62E-02	2.45E-02	8.30E-02	1.23E-02	2.72E-02
2	Industrials	Semi-Trailer	4.11	0.0890		3.47E-03	5.25E-03	1.78E-02	2.63E-03	5.82E-03
3	Furnace Coke	Semi-Trailer	4.11	0.0237		9.25E-04	1.40E-03	4.74E-03	7.02E-04	1.55E-03
4	Lime (bulk)	Semi-Trailer	4.11	0.0237		9.25E-04	1.40E-03	4.74E-03	7.02E-04	1.55E-03
5	Trash	Roll-Off	3.66	0.0297		1.16E-03	1.75E-03	5.93E-03	8.77E-04	1.94E-03
6	Cement (bulk)	Semi-Trailer	4.11	0.0178		6.94E-04	1.05E-03	3.56E-03	5.26E-04	1.16E-03
7	Acid (bulk)	Semi-Trailer	4.11	0.0356		1.39E-03	2.10E-03	7.11E-03	1.05E-03	2.33E-03
8	Oxygen (liquid)	Semi-Trailer	4.11	0.0119		4.63E-04	7.00E-04	2.37E-03	3.51E-04	7.76E-04
9	Furnace Fluxes	Semi-Trailer	4.11	0.0712		2.78E-03	4.20E-03	1.42E-02	2.11E-03	4.66E-03
10	Lead Products	Semi-Trailer	4.11	0.3562		1.39E-02	2.10E-02	7.11E-02	1.05E-02	2.33E-02
11	Plastic Chips	Semi-Trailer	4.11	0.0178		6.94E-04	1.05E-03	3.56E-03	5.26E-04	1.16E-03
12	Slag Mix Landfill	Dump Truck	3.44	0.2968		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	Service	Loader & Forklift	2.97	0.0356		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
					Total VKT/hr	4.26E-02	6.44E-02	2.18E-01	3.23E-02	7.14E-02
					%Semi-Trailer	97%	97%	97%	97%	97%
					%Roll-Off	3%	3%	3%	3%	3%
					%Dump Truck	0%	0%	0%	0%	0%
					%Loader & Forklift	0%	0%	0%	0%	0%
					Weighted Avg Vehicle Height	4.10	4.10	4.10	4.10	4.10
					Top of Plume Height (1.7 x Vehicle Height)	6.97	6.97	6.97	6.97	6.97
					Release Height (0.5 x Top of Plume Height)	3.49	3.49	3.49	3.49	3.49
					Sigma Z/Initial Vertical Dimension (Top of Plume Height/2.15)	3.24	3.24	3.24	3.24	3.24

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 6. Area Source Release Parameter Calculations

Activity		Vehcle Type	Approx Vehicle Height (meters)	Trips per Hour		Road Segment ID				
						11	12	13	14	15
1	Cores/Scrap	Semi-Trailer	4.11	0.4155	VKT/hr	1.08E-02	2.80E-02	3.60E-02	3.38E-02	1.93E-02
2	Industrials	Semi-Trailer	4.11	0.0890		2.31E-03	6.00E-03	7.72E-03	7.24E-03	4.15E-03
3	Furnace Coke	Semi-Trailer	4.11	0.0237		6.17E-04	1.60E-03	2.06E-03	1.93E-03	1.11E-03
4	Lime (bulk)	Semi-Trailer	4.11	0.0237		6.17E-04	1.60E-03	2.06E-03	1.93E-03	1.11E-03
5	Trash	Roll-Off	3.66	0.0297		7.71E-04	2.00E-03	2.57E-03	2.41E-03	1.38E-03
6	Cement (bulk)	Semi-Trailer	4.11	0.0178		4.62E-04	1.20E-03	1.54E-03	1.45E-03	0.00E+00
7	Acid (bulk)	Semi-Trailer	4.11	0.0356		9.25E-04	2.40E-03	3.09E-03	2.90E-03	1.66E-03
8	Oxygen (liquid)	Semi-Trailer	4.11	0.0119		3.08E-04	8.00E-04	1.03E-03	9.65E-04	0.00E+00
9	Furnace Fluxes	Semi-Trailer	4.11	0.0712		1.85E-03	4.80E-03	6.18E-03	5.79E-03	3.32E-03
10	Lead Products	Semi-Trailer	4.11	0.3562		9.25E-03	2.40E-02	3.09E-02	2.90E-02	1.66E-02
11	Plastic Chips	Semi-Trailer	4.11	0.0178		4.62E-04	1.20E-03	1.54E-03	1.45E-03	8.29E-04
12	Slag Mix Landfill	Dump Truck	3.44	0.2968		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	Service	Loader & Forklift	2.97	0.0356		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
					Total VKT/hr	2.84E-02	7.36E-02	9.47E-02	8.88E-02	4.95E-02
					%Semi-Trailer	97%	97%	97%	97%	97%
					%Roll-Off	3%	3%	3%	3%	3%
					%Dump Truck	0%	0%	0%	0%	0%
					%Loader & Forklift	0%	0%	0%	0%	0%
					Weighted Avg Vehicle Height	4.10	4.10	4.10	4.10	4.10
					Top of Plume Height (1.7 x Vehicle Height)	6.97	6.97	6.97	6.97	6.97
					Release Height (0.5 x Top of Plume Height)	3.49	3.49	3.49	3.49	3.49
					Sigma Z/Initial Vertical Dimension (Top of Plume Height/2.15)	3.24	3.24	3.24	3.24	3.24

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 6. Area Source Release Parameter Calculations

	Activity	Vehcle Type	Approx Vehicle Height (meters)	Trips per Hour		Road Segment ID				
						16	17	18	19	20
1	Cores/Scrap	Semi-Trailer	4.11	0.4155	VKT/hr	5.88E-03	1.87E-02	1.52E-02	1.63E-02	1.02E-02
2	Industrials	Semi-Trailer	4.11	0.0890		1.26E-03	4.00E-03	3.26E-03	3.49E-03	2.19E-03
3	Furnace Coke	Semi-Trailer	4.11	0.0237		3.36E-04	1.07E-03	8.68E-04	9.31E-04	5.83E-04
4	Lime (bulk)	Semi-Trailer	4.11	0.0237		3.36E-04	1.07E-03	8.68E-04	9.31E-04	5.83E-04
5	Trash	Roll-Off	3.66	0.0297		4.20E-04	1.33E-03	1.09E-03	1.16E-03	7.29E-04
6	Cement (bulk)	Semi-Trailer	4.11	0.0178		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	Acid (bulk)	Semi-Trailer	4.11	0.0356		5.04E-04	1.60E-03	1.30E-03	1.40E-03	8.74E-04
8	Oxygen (liquid)	Semi-Trailer	4.11	0.0119		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9	Furnace Fluxes	Semi-Trailer	4.11	0.0712		1.01E-03	3.20E-03	2.61E-03	2.79E-03	1.75E-03
10	Lead Products	Semi-Trailer	4.11	0.3562		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
11	Plastic Chips	Semi-Trailer	4.11	0.0178		2.52E-04	8.01E-04	6.51E-04	6.99E-04	4.37E-04
12	Slag Mix Landfill	Dump Truck	3.44	0.2968		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	Service	Loader & Forklift	2.97	0.0356		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
					Total VKT/hr	9.99E-03	3.18E-02	2.58E-02	2.77E-02	1.73E-02
					%Semi-Trailer	96%	96%	96%	96%	96%
					%Roll-Off	4%	4%	4%	4%	4%
					%Dump Truck	0%	0%	0%	0%	0%
					%Loader & Forklift	0%	0%	0%	0%	0%
					Weighted Avg Vehicle Height	4.10	4.10	4.10	4.10	4.10
					Top of Plume Height (1.7 x Vehicle Height)	6.96	6.96	6.96	6.96	6.96
					Release Height (0.5 x Top of Plume Height)	3.48	3.48	3.48	3.48	3.48
					Sigma Z/Initial Vertical Dimension (Top of Plume Height/2.15)	3.24	3.24	3.24	3.24	3.24

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 6. Area Source Release Parameter Calculations

	Activity	Vehcle Type	Approx Vehicle Height (meters)	Trips per Hour		Road Segment ID				
						21	22	23	24	25
1	Cores/Scrap	Semi-Trailer	4.11	0.4155	VKT/hr	2.77E-02	3.01E-02	0.00E+00	0.00E+00	0.00E+00
2	Industrials	Semi-Trailer	4.11	0.0890		5.93E-03	6.44E-03	3.71E-03	0.00E+00	0.00E+00
3	Furnace Coke	Semi-Trailer	4.11	0.0237		1.58E-03	1.72E-03	9.89E-04	7.64E-04	2.33E-03
4	Lime (bulk)	Semi-Trailer	4.11	0.0237		1.58E-03	1.72E-03	9.89E-04	7.64E-04	2.33E-03
5	Trash	Roll-Off	3.66	0.0297		1.98E-03	2.15E-03	0.00E+00	0.00E+00	0.00E+00
6	Cement (bulk)	Semi-Trailer	4.11	0.0178		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	Acid (bulk)	Semi-Trailer	4.11	0.0356		2.37E-03	2.58E-03	0.00E+00	0.00E+00	0.00E+00
8	Oxygen (liquid)	Semi-Trailer	4.11	0.0119		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9	Furnace Fluxes	Semi-Trailer	4.11	0.0712		4.74E-03	5.16E-03	2.97E-03	2.29E-03	6.98E-03
10	Lead Products	Semi-Trailer	4.11	0.3562		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
11	Plastic Chips	Semi-Trailer	4.11	0.0178		1.19E-03	1.29E-03	0.00E+00	0.00E+00	0.00E+00
12	Slag Mix Landfill	Dump Truck	3.44	0.2968		1.98E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	Service	Loader & Forklift	2.97	0.0356		2.37E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
					Total VKT/hr	6.92E-02	5.11E-02	8.66E-03	3.82E-03	1.16E-02
					%Semi-Trailer	65%	96%	100%	100%	100%
					%Roll-Off	3%	4%	0%	0%	0%
					%Dump Truck	29%	0%	0%	0%	0%
					%Loader & Forklift	3%	0%	0%	0%	0%
					Weighted Avg Vehicle Height	3.87	4.10	4.11	4.11	4.11
					Top of Plume Height (1.7 x Vehicle Height)	6.58	6.96	7.00	7.00	7.00
					Release Height (0.5 x Top of Plume Height)	3.29	3.48	3.50	3.50	3.50
					Sigma Z/Initial Vertical Dimension (Top of Plume Height/2.15)	3.06	3.24	3.25	3.25	3.25

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 6. Area Source Release Parameter Calculations

	Activity	Vehcle Type	Approx Vehicle Height (meters)	Trips per Hour		Road Segment ID				
						26	27	28	29	30
1	Cores/Scrap	Semi-Trailer	4.11	0.4155	VKT/hr	0.00E+00	0.00E+00	0.00E+00	5.33E-03	0.00E+00
2	Industrials	Semi-Trailer	4.11	0.0890		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	Furnace Coke	Semi-Trailer	4.11	0.0237		5.17E-04	1.42E-03	3.64E-04	0.00E+00	0.00E+00
4	Lime (bulk)	Semi-Trailer	4.11	0.0237		5.17E-04	1.42E-03	3.64E-04	0.00E+00	0.00E+00
5	Trash	Roll-Off	3.66	0.0297		0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.81E-04
6	Cement (bulk)	Semi-Trailer	4.11	0.0178		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	Acid (bulk)	Semi-Trailer	4.11	0.0356		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	Oxygen (liquid)	Semi-Trailer	4.11	0.0119		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9	Furnace Fluxes	Semi-Trailer	4.11	0.0712		1.55E-03	4.27E-03	1.09E-03	0.00E+00	0.00E+00
10	Lead Products	Semi-Trailer	4.11	0.3562		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
11	Plastic Chips	Semi-Trailer	4.11	0.0178		0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.89E-04
12	Slag Mix Landfill	Dump Truck	3.44	0.2968		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	Service	Loader & Forklift	2.97	0.0356		0.00E+00	0.00E+00	0.00E+00	4.57E-04	0.00E+00
					Total VKT/hr	2.58E-03	7.11E-03	1.82E-03	5.79E-03	7.70E-04
					%Semi-Trailer	100%	100%	100%	92%	38%
					%Roll-Off	0%	0%	0%	0%	63%
					%Dump Truck	0%	0%	0%	0%	0%
					%Loader & Forklift	0%	0%	0%	8%	0%
					Weighted Avg Vehicle Height	4.11	4.11	4.11	4.02	3.83
					Top of Plume Height (1.7 x Vehicle Height)	7.00	7.00	7.00	6.84	6.51
					Release Height (0.5 x Top of Plume Height)	3.50	3.50	3.50	3.42	3.25
					Sigma Z/Initial Vertical Dimension (Top of Plume Height/2.15)	3.25	3.25	3.25	3.18	3.03

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 6. Area Source Release Parameter Calculations

	Activity	Vehcle Type	Approx Vehicle Height (meters)	Trips per Hour		Road Segment ID				
						31	32	33	34	35
1	Cores/Scrap	Semi-Trailer	4.11	0.4155	VKT/hr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	Industrials	Semi-Trailer	4.11	0.0890		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	Furnace Coke	Semi-Trailer	4.11	0.0237		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	Lime (bulk)	Semi-Trailer	4.11	0.0237		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	Trash	Roll-Off	3.66	0.0297		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	Cement (bulk)	Semi-Trailer	4.11	0.0178		0.00E+00	8.28E-04	0.00E+00	5.49E-04	0.00E+00
7	Acid (bulk)	Semi-Trailer	4.11	0.0356		5.42E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	Oxygen (liquid)	Semi-Trailer	4.11	0.0119		0.00E+00	0.00E+00	0.00E+00	3.66E-04	4.56E-04
9	Furnace Fluxes	Semi-Trailer	4.11	0.0712		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
10	Lead Products	Semi-Trailer	4.11	0.3562		0.00E+00	0.00E+00	6.29E-03	1.10E-02	0.00E+00
11	Plastic Chips	Semi-Trailer	4.11	0.0178		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
12	Slag Mix Landfill	Dump Truck	3.44	0.2968		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	Service	Loader & Forklift	2.97	0.0356		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
					Total VKT/hr	5.42E-04	8.28E-04	6.29E-03	1.19E-02	4.56E-04
					%Semi-Trailer	100%	100%	100%	100%	100%
					%Roll-Off	0%	0%	0%	0%	0%
					%Dump Truck	0%	0%	0%	0%	0%
					%Loader & Forklift	0%	0%	0%	0%	0%
					Weighted Avg Vehicle Height	4.11	4.11	4.11	4.11	4.11
					Top of Plume Height (1.7 x Vehicle Height)	7.00	7.00	7.00	7.00	7.00
					Release Height (0.5 x Top of Plume Height)	3.50	3.50	3.50	3.50	3.50
					Sigma Z/Initial Vertical Dimension (Top of Plume Height/2.15)	3.25	3.25	3.25	3.25	3.25

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 6. Area Source Release Parameter Calculations

	Activity	Vehcle Type	Approx Vehicle Height (meters)	Trips per Hour		Road Segment ID				
						36	37	38	39	40
1	Cores/Scrap	Semi-Trailer	4.11	0.4155	VKT/hr	1.98E-02	1.17E-02	1.10E-02	1.55E-02	1.42E-02
2	Industrials	Semi-Trailer	4.11	0.0890		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	Furnace Coke	Semi-Trailer	4.11	0.0237		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	Lime (bulk)	Semi-Trailer	4.11	0.0237		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	Trash	Roll-Off	3.66	0.0297		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	Cement (bulk)	Semi-Trailer	4.11	0.0178		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	Acid (bulk)	Semi-Trailer	4.11	0.0356		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	Oxygen (liquid)	Semi-Trailer	4.11	0.0119		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9	Furnace Fluxes	Semi-Trailer	4.11	0.0712		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
10	Lead Products	Semi-Trailer	4.11	0.3562		1.70E-02	1.00E-02	9.43E-03	1.33E-02	1.21E-02
11	Plastic Chips	Semi-Trailer	4.11	0.0178		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
12	Slag Mix Landfill	Dump Truck	3.44	0.2968		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	Service	Loader & Forklift	2.97	0.0356		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
					Total VKT/hr	3.67E-02	2.18E-02	2.04E-02	2.88E-02	2.63E-02
					%Semi-Trailer	100%	100%	100%	100%	100%
					%Roll-Off	0%	0%	0%	0%	0%
					%Dump Truck	0%	0%	0%	0%	0%
					%Loader & Forklift	0%	0%	0%	0%	0%
					Weighted Avg Vehicle Height	4.11	4.11	4.11	4.11	4.11
					Top of Plume Height (1.7 x Vehicle Height)	7.00	7.00	7.00	7.00	7.00
					Release Height (0.5 x Top of Plume Height)	3.50	3.50	3.50	3.50	3.50
					Sigma Z/Initial Vertical Dimension (Top of Plume Height/2.15)	3.25	3.25	3.25	3.25	3.25

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 6. Area Source Release Parameter Calculations

	Activity	Vehcle Type	Approx Vehicle Height (meters)	Trips per Hour		Road Segment ID				
						41	42	43	44	45
1	Cores/Scrap	Semi-Trailer	4.11	0.4155	VKT/hr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	Industrials	Semi-Trailer	4.11	0.0890		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	Furnace Coke	Semi-Trailer	4.11	0.0237		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	Lime (bulk)	Semi-Trailer	4.11	0.0237		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	Trash	Roll-Off	3.66	0.0297		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	Cement (bulk)	Semi-Trailer	4.11	0.0178		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	Acid (bulk)	Semi-Trailer	4.11	0.0356		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	Oxygen (liquid)	Semi-Trailer	4.11	0.0119		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9	Furnace Fluxes	Semi-Trailer	4.11	0.0712		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
10	Lead Products	Semi-Trailer	4.11	0.3562		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
11	Plastic Chips	Semi-Trailer	4.11	0.0178		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
12	Slag Mix Landfill	Dump Truck	3.44	0.2968		1.68E-02	3.34E-02	1.99E-02	2.18E-02	6.05E-03
13	Service	Loader & Forklift	2.97	0.0356		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
					Total VKT/hr	1.68E-02	3.34E-02	1.99E-02	2.18E-02	6.05E-03
					%Semi-Trailer	0%	0%	0%	0%	0%
					%Roll-Off	0%	0%	0%	0%	0%
					%Dump Truck	100%	100%	100%	100%	100%
					%Loader & Forklift	0%	0%	0%	0%	0%
					Weighted Avg Vehicle Height	3.44	3.44	3.44	3.44	3.44
					Top of Plume Height (1.7 x Vehicle Height)	5.86	5.86	5.86	5.86	5.86
					Release Height (0.5 x Top of Plume Height)	2.93	2.93	2.93	2.93	2.93
					Sigma Z/Initial Vertical Dimension (Top of Plume Height/2.15)	2.72	2.72	2.72	2.72	2.72

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 6. Area Source Release Parameter Calculations

	Activity	Vehcle Type	Approx Vehicle Height (meters)	Trips per Hour		Road Segment ID				
						46	47	48	49	50
1	Cores/Scrap	Semi-Trailer	4.11	0.4155	VKT/hr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	Industrials	Semi-Trailer	4.11	0.0890		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	Furnace Coke	Semi-Trailer	4.11	0.0237		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	Lime (bulk)	Semi-Trailer	4.11	0.0237		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	Trash	Roll-Off	3.66	0.0297		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	Cement (bulk)	Semi-Trailer	4.11	0.0178		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	Acid (bulk)	Semi-Trailer	4.11	0.0356		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	Oxygen (liquid)	Semi-Trailer	4.11	0.0119		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9	Furnace Fluxes	Semi-Trailer	4.11	0.0712		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
10	Lead Products	Semi-Trailer	4.11	0.3562		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
11	Plastic Chips	Semi-Trailer	4.11	0.0178		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
12	Slag Mix Landfill	Dump Truck	3.44	0.2968		5.75E-03	9.29E-03	1.80E-02	1.03E-02	9.29E-03
13	Service	Loader & Forklift	2.97	0.0356		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
					Total VKT/hr	5.75E-03	9.29E-03	1.80E-02	1.03E-02	9.29E-03
					%Semi-Trailer	0%	0%	0%	0%	0%
					%Roll-Off	0%	0%	0%	0%	0%
					%Dump Truck	100%	100%	100%	100%	100%
					%Loader & Forklift	0%	0%	0%	0%	0%
					Weighted Avg Vehicle Height	3.44	3.44	3.44	3.44	3.44
					Top of Plume Height (1.7 x Vehicle Height)	5.86	5.86	5.86	5.86	5.86
					Release Height (0.5 x Top of Plume Height)	2.93	2.93	2.93	2.93	2.93
					Sigma Z/Initial Vertical Dimension (Top of Plume Height/2.15)	2.72	2.72	2.72	2.72	2.72

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 6. Area Source Release Parameter Calculations

Activity		Vehcle Type	Approx Vehicle Height (meters)	Trips per Hour		Road Segment ID			
						51	52	53	54
1	Cores/Scrap	Semi-Trailer	4.11	0.4155	VKT/hr	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	Industrials	Semi-Trailer	4.11	0.0890		0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	Furnace Coke	Semi-Trailer	4.11	0.0237		0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	Lime (bulk)	Semi-Trailer	4.11	0.0237		0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	Trash	Roll-Off	3.66	0.0297		0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	Cement (bulk)	Semi-Trailer	4.11	0.0178		0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	Acid (bulk)	Semi-Trailer	4.11	0.0356		0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	Oxygen (liquid)	Semi-Trailer	4.11	0.0119		0.00E+00	0.00E+00	0.00E+00	0.00E+00
9	Furnace Fluxes	Semi-Trailer	4.11	0.0712		0.00E+00	0.00E+00	0.00E+00	0.00E+00
10	Lead Products	Semi-Trailer	4.11	0.3562		0.00E+00	0.00E+00	0.00E+00	0.00E+00
11	Plastic Chips	Semi-Trailer	4.11	0.0178		0.00E+00	0.00E+00	0.00E+00	0.00E+00
12	Slag Mix Landfill	Dump Truck	3.44	0.2968		1.03E-02	8.08E-03	1.85E-02	5.55E-03
13	Service	Loader & Forklift	2.97	0.0356		0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total VKT/hr						1.03E-02	8.08E-03	1.85E-02	5.55E-03
%Semi-Trailer						0%	0%	0%	0%
%Roll-Off						0%	0%	0%	0%
%Dump Truck						100%	100%	100%	100%
%Loader & Forklift						0%	0%	0%	0%
Weighted Avg Vehicle Height						3.44	3.44	3.44	3.44
Top of Plume Height (1.7 x Vehicle Height)						5.86	5.86	5.86	5.86
Release Height (0.5 x Top of Plume Height)						2.93	2.93	2.93	2.93
Sigma Z/Initial Vertical Dimension (Top of Plume Height/2.15)						2.72	2.72	2.72	2.72

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 7. Haul Road Area Source Inputs to AERMOD

Road Segment ID	SrcID	X	Y	Elevation	Area (m2)	Width (m)	Length (km)	Pb Emission Rate (g/sm2)	Release Height	Initial Vert. Dim.
1	HR01	308867.94	4433711.35	261.65	575.91	14.00	4.11E-02	4.17E-08	3.49	3.24
2	HR02	308899.51	4433668.52	262.41	594.63	14.00	4.25E-02	4.17E-08	3.49	3.24
3	HR03	308937.53	4433628.71	264.06	604.92	14.00	4.32E-02	4.17E-08	3.49	3.24
4	HR04	308975.06	4433587.93	263.93	2887.68	14.00	2.06E-01	4.17E-08	3.49	3.24
5	HR05	309281.6	4433339.76	265.86	1343.45	14.00	9.60E-02	4.17E-08	3.49	3.24
6	HR06	309281.11	4433339.87	265.86	545.59	14.00	3.90E-02	4.63E-09	3.49	3.24
7	HR07	309317.97	4433304.43	266.13	825.48	14.00	5.90E-02	4.63E-09	3.49	3.24
8	HR08	309377.52	4433256.5	266.09	2795.57	14.00	2.00E-01	4.63E-09	3.49	3.24
9	HR09	309283.97	4433382.58	264.79	413.81	14.00	2.96E-02	4.63E-08	3.49	3.24
10	HR10	309284.12	4433379.92	264.92	915.56	14.00	6.54E-02	4.63E-08	3.49	3.24
11	HR11	309274.78	4433464.7	266.49	363.53	14.00	2.60E-02	4.63E-08	3.49	3.24
12	HR12	309273.72	4433499.08	267.29	943.26	14.00	6.74E-02	4.63E-08	3.49	3.24
13	HR13	309305.08	4433579.75	269.78	1214.14	14.00	8.67E-02	4.63E-08	3.49	3.24
14	HR14	309343.89	4433687.11	270.15	1138.43	14.00	8.13E-02	4.63E-08	3.49	3.24
15	HR15	309413.82	4433762.09	273.66	651.94	14.00	4.66E-02	3.09E-08	3.49	3.24
16	HR16	309432.13	4433826.13	272.86	198.03	14.00	1.41E-02	2.99E-08	3.48	3.24
17	HR17	309506.25	4433837.19	275.15	629.45	14.00	4.50E-02	2.99E-08	3.48	3.24
18	HR18	309547.76	4433813.41	278.18	512.02	14.00	3.66E-02	2.99E-08	3.48	3.24
19	HR19	309576.12	4433770.76	280.75	549.13	14.00	3.92E-02	2.99E-08	3.48	3.24
20	HR20	309581.79	4433737.45	283.11	343.71	14.00	2.46E-02	2.99E-08	3.48	3.24
21	HR21	309503.12	4433702.86	279.51	932.16	14.00	6.66E-02	3.95E-08	3.29	3.06
22	HR22	309536.87	4433651.1	284.34	1013.22	14.00	7.24E-02	2.99E-08	3.48	3.24
23	HR23	309543.5	4433622.24	286.62	583.37	14.00	4.17E-02	8.80E-09	3.50	3.25
24	HR24	309590.63	4433616.33	287.77	450.23	14.00	3.22E-02	5.03E-09	3.50	3.25
25	HR25	309582.83	4433575.11	290.10	1372.16	14.00	9.80E-02	5.03E-09	3.50	3.25
26	HR26	309458.58	4433615.02	294.24	304.80	14.00	2.18E-02	5.03E-09	3.50	3.25
27	HR27	309459.87	4433622.87	291.78	838.52	14.00	5.99E-02	5.03E-09	3.50	3.25

Table 7. Haul Road Area Source Inputs to AERMOD

Road Segment ID	SrcID	X	Y	Elevation	Area (m2)	Width (m)	Length (km)	Pb Emission Rate (g/sm2)	Release Height	Initial Vert. Dim.
28	HR28	309391.87	4433571.98	284.86	214.79	14.00	1.53E-02	5.03E-09	3.50	3.25
29	HR29	309539.21	4433633.23	285.79	179.68	14.00	1.28E-02	1.82E-08	3.42	3.18
30	HR30	309535.81	4433646.71	284.72	226.87	14.00	1.62E-02	2.01E-09	3.25	3.03
31	HR31	309522.27	4433672.42	282.84	213.10	14.00	1.52E-02	1.51E-09	3.50	3.25
32	HR32	309465.16	4433744.97	276.15	650.95	14.00	4.65E-02	7.55E-10	3.50	3.25
33	HR33	309460.09	4433734.84	276.79	247.38	14.00	1.77E-02	1.51E-08	3.50	3.25
34	HR34	309423.8	4433747.03	274.57	431.40	14.00	3.08E-02	1.63E-08	3.50	3.25
35	HR35	309435.83	4433692.24	280.15	538.16	14.00	3.84E-02	5.03E-10	3.50	3.25
36	HR36	309426.1	4433753.19	274.50	666.53	14.00	4.76E-02	1.98E-09	3.50	3.25
37	HR37	309469.11	4433798.59	274.23	394.87	14.00	2.82E-02	1.98E-09	3.50	3.25
38	HR38	309449.29	4433823.61	273.33	370.57	14.00	2.65E-02	1.98E-09	3.50	3.25
39	HR39	309420.76	4433779.42	273.85	522.62	14.00	3.73E-02	1.98E-09	3.50	3.25
40	HR40	309392.53	4433796.56	271.71	476.93	14.00	3.41E-02	1.98E-09	3.50	3.25
41	HR41	309552.33	4433650.9	284.32	791.34	14.00	5.65E-02	9.02E-09	2.93	2.72
42	HR42	309603.08	4433707.57	287.03	1573.59	14.00	1.12E-01	9.02E-09	2.93	2.72
43	HR43	309754.81	4433705.47	303.86	937.27	14.00	6.69E-02	9.02E-09	2.93	2.72
44	HR44	309800.32	4433635.98	316.15	1026.45	14.00	7.33E-02	2.84E-08	2.93	2.72
45	HR45	309810.05	4433640.74	312.60	285.46	14.00	2.04E-02	2.84E-08	2.93	2.72
46	HR46	309828.96	4433628	315.06	271.17	14.00	1.94E-02	2.84E-08	2.93	2.72
47	HR47	309815.46	4433582.8	324.27	438.39	14.00	3.13E-02	2.84E-08	2.93	2.72
48	HR48	309809.59	4433544.49	324.93	848.14	14.00	6.06E-02	2.84E-08	2.93	2.72
49	HR49	309893.22	4433563.73	310.58	484.05	14.00	3.46E-02	2.84E-08	2.93	2.72
50	HR50	309863.34	4433563.38	319.40	438.42	14.00	3.13E-02	2.84E-08	2.93	2.72
51	HR51	309846.04	4433608.26	315.84	486.21	14.00	3.47E-02	2.84E-08	2.93	2.72
52	HR52	309801.33	4433542.37	323.67	381.21	14.00	2.72E-02	2.84E-08	2.93	2.72
53	HR53	309821.14	4433503.98	326.79	872.70	14.00	6.23E-02	2.84E-08	2.93	2.72
54	HR54	309903.4	4433530.83	314.54	261.92	14.00	1.87E-02	2.84E-08	2.93	2.72

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 8. Hour of Day Emission Factor Calculations

Activity		(trips/hr)	% Restricted		Road Segment ID			
#	Description				5	6	7	8
1	Cores/Scrap	0.416	100%	VKT/hr	3.99E-02	1.62E-02	2.45E-02	8.30E-02
2	Industrials	0.089	100%		8.54E-03	3.47E-03	5.25E-03	1.78E-02
3	Furnace Coke	0.024	95%		2.28E-03	9.25E-04	1.40E-03	4.74E-03
4	Lime (bulk)	0.024	95%		2.28E-03	9.25E-04	1.40E-03	4.74E-03
5	Trash	0.030	95%		2.85E-03	1.16E-03	1.75E-03	5.93E-03
6	Cement (bulk)	0.018	95%		1.71E-03	6.94E-04	1.05E-03	3.56E-03
7	Acid (bulk)	0.036	95%		3.42E-03	1.39E-03	2.10E-03	7.11E-03
8	Oxygen (liquid)	0.012	95%		1.14E-03	4.63E-04	7.00E-04	2.37E-03
9	Furnace Fluxes	0.071	95%		6.84E-03	2.78E-03	4.20E-03	1.42E-02
10	Lead Products	0.356	95%		3.42E-02	1.39E-02	2.10E-02	7.11E-02
11	Plastic Chips	0.018	95%		1.71E-03	6.94E-04	1.05E-03	3.56E-03
12	Slag Mix Landfill	0.297	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	Service	0.036	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Total VKT	1.05E-01	4.26E-02	6.44E-02	2.18E-01
				% VKT Resricted	97.31%	97.31%	97.31%	97.31%
				% VKT Unrestricted	2.69%	2.69%	2.69%	2.69%
				Unrestricted HROFDY Emission Factor (hrs 0-24)	0.027	0.027	0.027	0.027
				Restricted HROFDY Emission Factor (hrs 7-19) from Restricted Traffic Only	1.946	1.946	1.946	1.946
				Total Restricted HROFDY Emission Factor (hrs 7-19) from All Traffic	1.973	1.973	1.973	1.973

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 8. Hour of Day Emission Factor Calculations

Activity		(trips/hr)	% Restricted		Road Segment ID			
#	Description				9	10	11	12
1	Cores/Scrap	0.416	100%	VKT/hr	1.23E-02	2.72E-02	1.08E-02	2.80E-02
2	Industrials	0.089	100%		2.63E-03	5.82E-03	2.31E-03	6.00E-03
3	Furnace Coke	0.024	95%		7.02E-04	1.55E-03	6.17E-04	1.60E-03
4	Lime (bulk)	0.024	95%		7.02E-04	1.55E-03	6.17E-04	1.60E-03
5	Trash	0.030	95%		8.77E-04	1.94E-03	7.71E-04	2.00E-03
6	Cement (bulk)	0.018	95%		5.26E-04	1.16E-03	4.62E-04	1.20E-03
7	Acid (bulk)	0.036	95%		1.05E-03	2.33E-03	9.25E-04	2.40E-03
8	Oxygen (liquid)	0.012	95%		3.51E-04	7.76E-04	3.08E-04	8.00E-04
9	Furnace Fluxes	0.071	95%		2.11E-03	4.66E-03	1.85E-03	4.80E-03
10	Lead Products	0.356	95%		1.05E-02	2.33E-02	9.25E-03	2.40E-02
11	Plastic Chips	0.018	95%		5.26E-04	1.16E-03	4.62E-04	1.20E-03
12	Slag Mix Landfill	0.297	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	Service	0.036	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Total VKT	3.23E-02	7.14E-02	2.84E-02	7.36E-02
				% VKT Resricted	97.31%	97.31%	97.31%	97.31%
				% VKT Unrestricted	2.69%	2.69%	2.69%	2.69%
				Unrestricted HROFDY Emission Factor (hrs 0-24)	0.027	0.027	0.027	0.027
				Restricted HROFDY Emission Factor (hrs 7-19) from Restricted Traffic Only	1.946	1.946	1.946	1.946
				Total Restricted HROFDY Emission Factor (hrs 7-19) from All Traffic	1.973	1.973	1.973	1.973

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 8. Hour of Day Emission Factor Calculations

Activity		(trips/hr)	% Restricted		Road Segment ID			
#	Description				13	14	15	16
1	Cores/Scrap	0.416	100%	VKT/hr	3.60E-02	3.38E-02	1.93E-02	5.88E-03
2	Industrials	0.089	100%		7.72E-03	7.24E-03	4.15E-03	1.26E-03
3	Furnace Coke	0.024	95%		2.06E-03	1.93E-03	1.11E-03	3.36E-04
4	Lime (bulk)	0.024	95%		2.06E-03	1.93E-03	1.11E-03	3.36E-04
5	Trash	0.030	95%		2.57E-03	2.41E-03	1.38E-03	4.20E-04
6	Cement (bulk)	0.018	95%		1.54E-03	1.45E-03	0.00E+00	0.00E+00
7	Acid (bulk)	0.036	95%		3.09E-03	2.90E-03	1.66E-03	5.04E-04
8	Oxygen (liquid)	0.012	95%		1.03E-03	9.65E-04	0.00E+00	0.00E+00
9	Furnace Fluxes	0.071	95%		6.18E-03	5.79E-03	3.32E-03	1.01E-03
10	Lead Products	0.356	95%		3.09E-02	2.90E-02	1.66E-02	0.00E+00
11	Plastic Chips	0.018	95%		1.54E-03	1.45E-03	8.29E-04	2.52E-04
12	Slag Mix Landfill	0.297	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	Service	0.036	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total VKT					9.47E-02	8.88E-02	4.95E-02	9.99E-03
% VKT Resricted					97.31%	97.31%	97.37%	98.57%
% VKT Unrestricted					2.69%	2.69%	2.63%	1.43%
Unrestricted HROFDY Emission Factor (hrs 0-24)					0.027	0.027	0.026	0.014
Restricted HROFDY Emission Factor (hrs 7-19) from Restricted Traffic Only					1.946	1.946	1.947	1.971
Total Restricted HROFDY Emission Factor (hrs 7-19) from All Traffic					1.973	1.973	1.974	1.986

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 8. Hour of Day Emission Factor Calculations

Activity		(trips/hr)	% Restricted		Road Segment ID			
#	Description				17	18	19	20
1	Cores/Scrap	0.416	100%	VKT/hr	1.87E-02	1.52E-02	1.63E-02	1.02E-02
2	Industrials	0.089	100%		4.00E-03	3.26E-03	3.49E-03	2.19E-03
3	Furnace Coke	0.024	95%		1.07E-03	8.68E-04	9.31E-04	5.83E-04
4	Lime (bulk)	0.024	95%		1.07E-03	8.68E-04	9.31E-04	5.83E-04
5	Trash	0.030	95%		1.33E-03	1.09E-03	1.16E-03	7.29E-04
6	Cement (bulk)	0.018	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	Acid (bulk)	0.036	95%		1.60E-03	1.30E-03	1.40E-03	8.74E-04
8	Oxygen (liquid)	0.012	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
9	Furnace Fluxes	0.071	95%		3.20E-03	2.61E-03	2.79E-03	1.75E-03
10	Lead Products	0.356	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
11	Plastic Chips	0.018	95%		8.01E-04	6.51E-04	6.99E-04	4.37E-04
12	Slag Mix Landfill	0.297	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	Service	0.036	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Total VKT	3.18E-02	2.58E-02	2.77E-02	1.73E-02
				% VKT Resricted	98.57%	98.57%	98.57%	98.57%
				% VKT Unrestricted	1.43%	1.43%	1.43%	1.43%
				Unrestricted HROFDY Emission Factor (hrs 0-24)	0.014	0.014	0.014	0.014
				Restricted HROFDY Emission Factor (hrs 7-19) from Restricted Traffic Only	1.971	1.971	1.971	1.971
				Total Restricted HROFDY Emission Factor (hrs 7-19) from All Traffic	1.986	1.986	1.986	1.986

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 8. Hour of Day Emission Factor Calculations

Activity #	Activity Description	(trips/hr)	% Restricted		Road Segment ID 21	22	23	24
1	Cores/Scrap	0.416	100%	VKT/hr	2.77E-02	3.01E-02	0.00E+00	0.00E+00
2	Industrials	0.089	100%		5.93E-03	6.44E-03	3.71E-03	0.00E+00
3	Furnace Coke	0.024	95%		1.58E-03	1.72E-03	9.89E-04	7.64E-04
4	Lime (bulk)	0.024	95%		1.58E-03	1.72E-03	9.89E-04	7.64E-04
5	Trash	0.030	95%		1.98E-03	2.15E-03	0.00E+00	0.00E+00
6	Cement (bulk)	0.018	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	Acid (bulk)	0.036	95%		2.37E-03	2.58E-03	0.00E+00	0.00E+00
8	Oxygen (liquid)	0.012	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
9	Furnace Fluxes	0.071	95%		4.74E-03	5.16E-03	2.97E-03	2.29E-03
10	Lead Products	0.356	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
11	Plastic Chips	0.018	95%		1.19E-03	1.29E-03	0.00E+00	0.00E+00
12	Slag Mix Landfill	0.297	95%		1.98E-02	0.00E+00	0.00E+00	0.00E+00
13	Service	0.036	95%		2.37E-03	0.00E+00	0.00E+00	0.00E+00
				Total VKT	6.92E-02	5.11E-02	8.66E-03	3.82E-03
				% VKT Resricted	97.43%	98.57%	97.14%	95.00%
				% VKT Unrestricted	2.57%	1.43%	2.86%	5.00%
				Unrestricted HROFDY Emission Factor (hrs 0-24)	0.026	0.014	0.029	0.050
				Restricted HROFDY Emission Factor (hrs 7-19) from Restricted Traffic Only	1.949	1.971	1.943	1.900
				Total Restricted HROFDY Emission Factor (hrs 7-19) from All Traffic	1.974	1.986	1.971	1.950

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 8. Hour of Day Emission Factor Calculations

Activity		(trips/hr)	% Restricted		Road Segment ID			
#	Description				25	26	27	28
1	Cores/Scrap	0.416	100%	VKT/hr	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	Industrials	0.089	100%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	Furnace Coke	0.024	95%		2.33E-03	5.17E-04	1.42E-03	3.64E-04
4	Lime (bulk)	0.024	95%		2.33E-03	5.17E-04	1.42E-03	3.64E-04
5	Trash	0.030	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	Cement (bulk)	0.018	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	Acid (bulk)	0.036	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	Oxygen (liquid)	0.012	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
9	Furnace Fluxes	0.071	95%		6.98E-03	1.55E-03	4.27E-03	1.09E-03
10	Lead Products	0.356	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
11	Plastic Chips	0.018	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
12	Slag Mix Landfill	0.297	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	Service	0.036	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Total VKT	1.16E-02	2.58E-03	7.11E-03	1.82E-03
				% VKT Resricted	95.00%	95.00%	95.00%	95.00%
				% VKT Unrestricted	5.00%	5.00%	5.00%	5.00%
				Unrestricted HROFDY Emission Factor (hrs 0-24)	0.050	0.050	0.050	0.050
				Restricted HROFDY Emission Factor (hrs 7-19) from Restricted Traffic Only	1.900	1.900	1.900	1.900
				Total Restricted HROFDY Emission Factor (hrs 7-19) from All Traffic	1.950	1.950	1.950	1.950

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 8. Hour of Day Emission Factor Calculations

Activity		(trips/hr)	% Restricted		Road Segment ID			
#	Description				29	30	31	32
1	Cores/Scrap	0.416	100%	VKT/hr	5.33E-03	0.00E+00	0.00E+00	0.00E+00
2	Industrials	0.089	100%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	Furnace Coke	0.024	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	Lime (bulk)	0.024	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	Trash	0.030	95%		0.00E+00	4.81E-04	0.00E+00	0.00E+00
6	Cement (bulk)	0.018	95%		0.00E+00	0.00E+00	0.00E+00	8.28E-04
7	Acid (bulk)	0.036	95%		0.00E+00	0.00E+00	5.42E-04	0.00E+00
8	Oxygen (liquid)	0.012	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
9	Furnace Fluxes	0.071	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
10	Lead Products	0.356	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
11	Plastic Chips	0.018	95%		0.00E+00	2.89E-04	0.00E+00	0.00E+00
12	Slag Mix Landfill	0.297	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	Service	0.036	95%		4.57E-04	0.00E+00	0.00E+00	0.00E+00
				Total VKT	5.79E-03	7.70E-04	5.42E-04	8.28E-04
				% VKT Resricted	99.61%	95.00%	95.00%	95.00%
				% VKT Unrestricted	0.39%	5.00%	5.00%	5.00%
				Unrestricted HROFDY Emission Factor (hrs 0-24)	0.004	0.050	0.050	0.050
				Restricted HROFDY Emission Factor (hrs 7-19) from Restricted Traffic Only	1.992	1.900	1.900	1.900
				Total Restricted HROFDY Emission Factor (hrs 7-19) from All Traffic	1.996	1.950	1.950	1.950

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 8. Hour of Day Emission Factor Calculations

Activity		(trips/hr)	% Restricted		Road Segment ID			
#	Description				33	34	35	36
1	Cores/Scrap	0.416	100%	VKT/hr	0.00E+00	0.00E+00	0.00E+00	1.98E-02
2	Industrials	0.089	100%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	Furnace Coke	0.024	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	Lime (bulk)	0.024	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	Trash	0.030	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	Cement (bulk)	0.018	95%		0.00E+00	5.49E-04	0.00E+00	0.00E+00
7	Acid (bulk)	0.036	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	Oxygen (liquid)	0.012	95%		0.00E+00	3.66E-04	4.56E-04	0.00E+00
9	Furnace Fluxes	0.071	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
10	Lead Products	0.356	95%		6.29E-03	1.10E-02	0.00E+00	1.70E-02
11	Plastic Chips	0.018	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
12	Slag Mix Landfill	0.297	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	Service	0.036	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Total VKT	6.29E-03	1.19E-02	4.56E-04	3.67E-02
				% VKT Resricted	95.00%	95.00%	95.00%	97.69%
				% VKT Unrestricted	5.00%	5.00%	5.00%	2.31%
				Unrestricted HROFDY Emission Factor (hrs 0-24)	0.050	0.050	0.050	0.023
				Restricted HROFDY Emission Factor (hrs 7-19) from Restricted Traffic Only	1.900	1.900	1.900	1.954
				Total Restricted HROFDY Emission Factor (hrs 7-19) from All Traffic	1.950	1.950	1.950	1.977

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 8. Hour of Day Emission Factor Calculations

Activity		(trips/hr)	% Restricted		Road Segment ID			
#	Description				37	38	39	40
1	Cores/Scrap	0.416	100%	VKT/hr	1.17E-02	1.10E-02	1.55E-02	1.42E-02
2	Industrials	0.089	100%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	Furnace Coke	0.024	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	Lime (bulk)	0.024	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	Trash	0.030	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	Cement (bulk)	0.018	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	Acid (bulk)	0.036	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	Oxygen (liquid)	0.012	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
9	Furnace Fluxes	0.071	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
10	Lead Products	0.356	95%		1.00E-02	9.43E-03	1.33E-02	1.21E-02
11	Plastic Chips	0.018	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
12	Slag Mix Landfill	0.297	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	Service	0.036	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Total VKT	2.18E-02	2.04E-02	2.88E-02	2.63E-02
				% VKT Resricted	97.69%	97.69%	97.69%	97.69%
				% VKT Unrestricted	2.31%	2.31%	2.31%	2.31%
				Unrestricted HROFDY Emission Factor (hrs 0-24)	0.023	0.023	0.023	0.023
				Restricted HROFDY Emission Factor (hrs 7-19) from Restricted Traffic Only	1.954	1.954	1.954	1.954
				Total Restricted HROFDY Emission Factor (hrs 7-19) from All Traffic	1.977	1.977	1.977	1.977

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 8. Hour of Day Emission Factor Calculations

Activity		(trips/hr)	% Restricted		Road Segment ID			
#	Description				41	42	43	44
1	Cores/Scrap	0.416	100%	VKT/hr	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	Industrials	0.089	100%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	Furnace Coke	0.024	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	Lime (bulk)	0.024	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	Trash	0.030	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	Cement (bulk)	0.018	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	Acid (bulk)	0.036	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	Oxygen (liquid)	0.012	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
9	Furnace Fluxes	0.071	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
10	Lead Products	0.356	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
11	Plastic Chips	0.018	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
12	Slag Mix Landfill	0.297	95%		1.68E-02	3.34E-02	1.99E-02	2.18E-02
13	Service	0.036	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Total VKT	1.68E-02	3.34E-02	1.99E-02	2.18E-02
				% VKT Resricted	95.00%	95.00%	95.00%	95.00%
				% VKT Unrestricted	5.00%	5.00%	5.00%	5.00%
				Unrestricted HROFDY Emission Factor (hrs 0-24)	0.050	0.050	0.050	0.050
				Restricted HROFDY Emission Factor (hrs 7-19) from Restricted Traffic Only	1.900	1.900	1.900	1.900
				Total Restricted HROFDY Emission Factor (hrs 7-19) from All Traffic	1.950	1.950	1.950	1.950

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 8. Hour of Day Emission Factor Calculations

Activity		(trips/hr)	% Restricted		Road Segment ID			
#	Description				45	46	47	48
1	Cores/Scrap	0.416	100%	VKT/hr	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	Industrials	0.089	100%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	Furnace Coke	0.024	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	Lime (bulk)	0.024	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	Trash	0.030	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	Cement (bulk)	0.018	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	Acid (bulk)	0.036	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	Oxygen (liquid)	0.012	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
9	Furnace Fluxes	0.071	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
10	Lead Products	0.356	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
11	Plastic Chips	0.018	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
12	Slag Mix Landfill	0.297	95%		6.05E-03	5.75E-03	9.29E-03	1.80E-02
13	Service	0.036	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Total VKT	6.05E-03	5.75E-03	9.29E-03	1.80E-02
				% VKT Resricted	95.00%	95.00%	95.00%	95.00%
				% VKT Unrestricted	5.00%	5.00%	5.00%	5.00%
				Unrestricted HROFDY Emission Factor (hrs 0-24)	0.050	0.050	0.050	0.050
				Restricted HROFDY Emission Factor (hrs 7-19) from Restricted Traffic Only	1.900	1.900	1.900	1.900
				Total Restricted HROFDY Emission Factor (hrs 7-19) from All Traffic	1.950	1.950	1.950	1.950

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 8. Hour of Day Emission Factor Calculations

Activity		(trips/hr)	% Restricted		Road Segment ID			
#	Description				49	50	51	52
1	Cores/Scrap	0.416	100%	VKT/hr	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	Industrials	0.089	100%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	Furnace Coke	0.024	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	Lime (bulk)	0.024	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	Trash	0.030	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	Cement (bulk)	0.018	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	Acid (bulk)	0.036	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	Oxygen (liquid)	0.012	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
9	Furnace Fluxes	0.071	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
10	Lead Products	0.356	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
11	Plastic Chips	0.018	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
12	Slag Mix Landfill	0.297	95%		1.03E-02	9.29E-03	1.03E-02	8.08E-03
13	Service	0.036	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Total VKT	1.03E-02	9.29E-03	1.03E-02	8.08E-03
				% VKT Resricted	95.00%	95.00%	95.00%	95.00%
				% VKT Unrestricted	5.00%	5.00%	5.00%	5.00%
				Unrestricted HROFDY Emission Factor (hrs 0-24)	0.050	0.050	0.050	0.050
				Restricted HROFDY Emission Factor (hrs 7-19) from Restricted Traffic Only	1.900	1.900	1.900	1.900
				Total Restricted HROFDY Emission Factor (hrs 7-19) from All Traffic	1.950	1.950	1.950	1.950

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 8. Hour of Day Emission Factor Calculations

Activity		(trips/hr)	% Restricted		Road Segment ID	
#	Description				53	54
1	Cores/Scrap	0.416	100%	VKT/hr	0.00E+00	0.00E+00
2	Industrials	0.089	100%		0.00E+00	0.00E+00
3	Furnace Coke	0.024	95%		0.00E+00	0.00E+00
4	Lime (bulk)	0.024	95%		0.00E+00	0.00E+00
5	Trash	0.030	95%		0.00E+00	0.00E+00
6	Cement (bulk)	0.018	95%		0.00E+00	0.00E+00
7	Acid (bulk)	0.036	95%		0.00E+00	0.00E+00
8	Oxygen (liquid)	0.012	95%		0.00E+00	0.00E+00
9	Furnace Fluxes	0.071	95%		0.00E+00	0.00E+00
10	Lead Products	0.356	95%		0.00E+00	0.00E+00
11	Plastic Chips	0.018	95%		0.00E+00	0.00E+00
12	Slag Mix Landfill	0.297	95%		1.85E-02	5.55E-03
13	Service	0.036	95%		0.00E+00	0.00E+00
				Total VKT	1.85E-02	5.55E-03
				% VKT Resricted	95.00%	95.00%
				% VKT Unrestricted	5.00%	5.00%
				Unrestricted HROFDY Emission Factor (hrs 0-24)	0.050	0.050
				Restricted HROFDY Emission Factor (hrs 7-19) from Restricted Traffic Only	1.900	1.900
				Total Restricted HROFDY Emission Factor (hrs 7-19) from All Traffic	1.950	1.950

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 8. Hour of Day Emission Factor Calculations

Activity		(trips/hr)	% Restricted		Road Segment ID			
#	Description				1	2	3	4
1	Cores/Scrap	0.416	100%	VKT/hr	1.71E-02	1.76E-02	1.80E-02	8.57E-02
2	Industrials	0.089	100%		3.66E-03	3.78E-03	3.85E-03	1.84E-02
3	Furnace Coke	0.024	95%		9.77E-04	1.01E-03	1.03E-03	4.90E-03
4	Lime (bulk)	0.024	95%		9.77E-04	1.01E-03	1.03E-03	4.90E-03
5	Trash	0.030	95%		1.22E-03	1.26E-03	1.28E-03	6.12E-03
6	Cement (bulk)	0.018	95%		7.33E-04	7.56E-04	7.69E-04	3.67E-03
7	Acid (bulk)	0.036	95%		1.47E-03	1.51E-03	1.54E-03	7.35E-03
8	Oxygen (liquid)	0.012	95%		4.88E-04	5.04E-04	5.13E-04	2.45E-03
9	Furnace Fluxes	0.071	95%		2.93E-03	3.03E-03	3.08E-03	1.47E-02
10	Lead Products	0.356	95%		1.47E-02	1.51E-02	1.54E-02	7.35E-02
11	Plastic Chips	0.018	95%		7.33E-04	7.56E-04	7.69E-04	3.67E-03
12	Slag Mix Landfill	0.297	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	Service	0.036	95%		0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Total VKT	4.49E-02	4.64E-02	4.72E-02	2.25E-01
				% VKT Resricted	97.31%	97.31%	97.31%	97.31%
				% VKT Unrestricted	2.69%	2.69%	2.69%	2.69%
				Unrestricted HROFDY Emission Factor (hrs 0-24)	0.027	0.027	0.027	0.027
				Restricted HROFDY Emission Factor (hrs 7-19) from Restricted Traffic Only	1.946	1.946	1.946	1.946
				Total Restricted HROFDY Emission Factor (hrs 7-19) from All Traffic	1.973	1.973	1.973	1.973

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 9. Building Inputs to AERMOD

AERMOD Building ID	Description	Building Base Elevation (meters)[a]	Building Height Above Grade (feet)[a]	Building Height (meters)[a]
B01	Storage Area	284.38	22	6.71
B02	New Battery Storage	284.38	27	8.23
B03	Air Pollution System	284.99	60	18.29
B04	Main Office	271.27	12	3.66
B05	Shops	276.15	24	7.32
B06	Battery Recycling Area	282.24	21	6.40
B07	Smelting/Casting Area	277.37	35	10.67
B08	Charge Floor	284.99	30	9.14
B09	Slag Product Work Area	282.24	21	6.40
B10	Plate Storage Area, Battery Breaking, Misc.	284.99	25	7.62
B11	Furnace/Refinery	284.99	21	6.40
B12	Dock Entry Building	283.77	23	7.01
B13	Battery Storage	283.77	27	8.23
B14	Stabilization Area, Slag Treatment, Slag Storage	277.06	25	7.62
B15	Reagent Building	276.15	25	7.62
B16	Finished Goods	276.15	25	7.62
B17	North Baghouse (BH-2)	282.24	43	13.11
B18	Demister Building	279.81	20	6.10
B19	South Baghouse (BH-1)	285.90	60	18.29

Footnotes

a Building heights and base elevations provided by Exide.

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 10. Meteorological Data Completeness

Year	Quarter	Total Hours	Calm Hours	Missing Hours	% Complete
2007	1	2160	1	123	94.26%
2007	2	2184	9	124	93.91%
2007	3	2208	9	132	93.61%
2007	4	2208	28	135	92.62%
2007	ANNUAL	8760	47	514	93.60%
2008	1	2184	23	93	94.69%
2008	2	2184	19	109	94.14%
2008	3	2208	17	99	94.75%
2008	4	2208	24	13	98.32%
2008	ANNUAL	8784	83	314	95.48%
2009	1	2160	1	93	95.65%
2009	2	2184	0	128	94.14%
2009	3	2208	9	31	98.19%
2009	4	2208	0	66	97.01%
2009	ANNUAL	8760	10	318	96.26%
2010	1	2160	4	31	98.38%
2010	2	2184	5	90	95.65%
2010	3	2208	17	98	94.79%
2010	4	2208	10	47	97.42%
2010	ANNUAL	8760	36	266	96.55%
2011	1	2160	10	22	98.52%
2011	2	2184	14	33	97.85%
2011	3	2208	17	197	90.31%
2011	4	2208	22	18	98.19%
2011	ANNUAL	8760	63	270	96.20%

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 11. Receptor Inputs to AERMOD

Description	X	Y	Elevation	Hill
Facility Fence	309300	4433352	265.86	327.95
Facility Fence	309299	4433362	266.06	327.95
Facility Fence	309298	4433372	265.66	327.95
Facility Fence	309297	4433382	265.52	327.95
Facility Fence	309296	4433392	266.44	327.95
Facility Fence	309295	4433402	266.51	327.95
Facility Fence	309294	4433412	266.19	327.95
Facility Fence	309293	4433422	266.54	327.95
Facility Fence	309292	4433432	266.40	327.95
Facility Fence	309291	4433442	266.25	327.95
Facility Fence	309290	4433452	266.58	327.95
Facility Fence	309289	4433462	267.06	327.95
Facility Fence	309289	4433472	267.98	327.95
Facility Fence	309289	4433482	268.21	327.95
Facility Fence	309289	4433492	268.16	327.95
Facility Fence	309289	4433502	268.08	327.95
Facility Fence	309292	4433511	268.41	327.95
Facility Fence	309294	4433521	268.38	327.95
Facility Fence	309297	4433531	269.25	327.95
Facility Fence	309299	4433540	270.04	327.95
Facility Fence	309302	4433550	270.59	327.95
Facility Fence	309304	4433560	270.39	327.95
Facility Fence	309307	4433569	270.13	327.95
Facility Fence	309309	4433579	269.87	327.95
Facility Fence	309312	4433589	269.90	327.95
Facility Fence	309317	4433598	269.74	327.95
Facility Fence	309321	4433607	269.75	327.95
Facility Fence	309325	4433616	269.93	327.95
Facility Fence	309329	4433625	270.17	327.95
Facility Fence	309333	4433634	270.49	327.95
Facility Fence	309337	4433643	270.70	327.95
Facility Fence	309341	4433652	270.82	327.95
Facility Fence	309345	4433662	270.69	327.95
Facility Fence	309349	4433671	270.67	327.95
Facility Fence	309352	4433677	270.68	327.95
Facility Fence	309351	4433696	270.27	327.95
Facility Fence	309354	4433700	270.35	327.95
Facility Fence	309355	4433710	270.30	327.95
Facility Fence	309356	4433720	270.19	327.95
Facility Fence	309356	4433730	270.10	327.95
Facility Fence	309357	4433740	270.23	329.26
Facility Fence	309358	4433750	270.32	329.40
Facility Fence	309359	4433760	270.32	329.60
Facility Fence	309359	4433770	270.21	329.60
Facility Fence	309362	4433779	270.28	329.60
Facility Fence	309367	4433788	270.40	329.60
Facility Fence	309371	4433797	270.54	329.60
Facility Fence	309375	4433807	270.71	329.60
Facility Fence	309380	4433815	271.14	329.60
Facility Fence	309386	4433823	271.70	329.60
Facility Fence	309392	4433831	271.99	329.60
Facility Fence	309398	4433839	272.15	329.60

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 11. Receptor Inputs to AERMOD

Description	X	Y	Elevation	Hill
Facility Fence	309405	4433846	272.13	329.60
Facility Fence	309414	4433851	271.77	329.60
Facility Fence	309423	4433855	271.49	329.60
Facility Fence	309433	4433856	271.54	329.60
Facility Fence	309443	4433857	271.52	329.60
Facility Fence	309453	4433857	271.50	329.60
Facility Fence	309463	4433857	271.47	329.60
Facility Fence	309473	4433856	271.52	329.60
Facility Fence	309483	4433855	271.81	329.26
Facility Fence	309493	4433854	272.95	327.95
Facility Fence	309503	4433853	274.00	327.95
Facility Fence	309512	4433851	274.50	327.95
Facility Fence	309522	4433850	274.70	327.95
Facility Fence	309532	4433849	274.91	327.95
Facility Fence	309542	4433847	275.37	327.95
Facility Fence	309552	4433846	275.98	327.95
Facility Fence	309562	4433845	276.76	327.95
Facility Fence	309572	4433844	277.19	327.95
Facility Fence	309582	4433844	277.27	327.95
Facility Fence	309592	4433846	277.11	327.95
Facility Fence	309601	4433848	276.92	327.95
Facility Fence	309611	4433846	277.01	327.95
Facility Fence	309620	4433841	277.07	327.95
Facility Fence	309629	4433837	277.09	327.95
Facility Fence	309638	4433834	277.17	327.95
Facility Fence	309648	4433830	277.33	327.95
Facility Fence	309657	4433827	277.56	327.95
Facility Fence	309666	4433823	277.97	327.95
Facility Fence	309676	4433820	278.37	327.95
Facility Fence	309685	4433818	278.72	328.32
Facility Fence	309692	4433810	279.40	328.32
Facility Fence	309702	4433807	279.68	328.32
Facility Fence	309711	4433806	279.78	328.32
Facility Fence	309721	4433805	279.89	328.32
Facility Fence	309731	4433803	279.95	333.42
Facility Fence	309741	4433802	280.20	334.14
Facility Fence	309751	4433801	280.71	334.14
Facility Fence	309761	4433799	281.68	334.14
Facility Fence	309771	4433798	282.74	334.14
Facility Fence	309781	4433796	283.63	334.14
Facility Fence	309791	4433795	285.14	334.14
Facility Fence	309801	4433794	286.74	334.14
Facility Fence	309810	4433792	288.18	328.32
Facility Fence	309820	4433791	289.62	328.32
Facility Fence	309830	4433790	290.58	328.32
Facility Fence	309840	4433788	291.26	328.32
Facility Fence	309850	4433787	291.69	334.14
Facility Fence	309860	4433786	292.27	334.14
Facility Fence	309869	4433782	293.22	334.14
Facility Fence	309878	4433777	294.06	334.14
Facility Fence	309886	4433772	294.58	334.14
Facility Fence	309895	4433767	295.27	334.14

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 11. Receptor Inputs to AERMOD

Description	X	Y	Elevation	Hill
Facility Fence	309903	4433761	296.29	334.14
Facility Fence	309912	4433756	297.45	334.14
Facility Fence	309920	4433751	298.23	334.14
Facility Fence	309929	4433746	298.84	334.14
Facility Fence	309937	4433740	299.30	334.14
Facility Fence	309946	4433735	300.31	334.14
Facility Fence	309954	4433730	301.18	334.14
Facility Fence	309963	4433725	302.14	334.14
Facility Fence	309971	4433719	302.11	334.14
Facility Fence	309980	4433714	302.59	334.14
Facility Fence	309988	4433709	303.36	334.14
Facility Fence	309992	4433701	303.47	334.14
Facility Fence	309991	4433691	302.76	334.14
Facility Fence	309990	4433681	302.65	334.14
Facility Fence	309990	4433671	303.16	334.14
Facility Fence	309989	4433661	303.31	334.14
Facility Fence	309989	4433651	303.83	334.14
Facility Fence	309988	4433641	305.23	328.32
Facility Fence	309987	4433631	308.42	328.32
Facility Fence	309985	4433621	312.58	327.75
Facility Fence	309983	4433611	315.31	327.75
Facility Fence	309981	4433602	316.89	327.75
Facility Fence	309979	4433592	319.12	327.75
Facility Fence	309977	4433582	321.13	327.54
Facility Fence	309975	4433572	322.78	327.48
Facility Fence	309973	4433562	323.72	327.48
Facility Fence	309971	4433553	324.10	327.48
Facility Fence	309969	4433543	324.19	327.54
Facility Fence	309967	4433533	324.03	327.56
Facility Fence	309965	4433523	323.80	327.75
Facility Fence	309963	4433514	323.77	327.75
Facility Fence	309960	4433504	323.72	327.75
Facility Fence	309958	4433494	323.30	327.75
Facility Fence	309956	4433484	321.95	327.75
Facility Fence	309954	4433474	319.82	327.75
Facility Fence	309952	4433465	317.17	327.75
Facility Fence	309950	4433455	313.38	327.95
Facility Fence	309945	4433446	309.41	327.95
Facility Fence	309940	4433438	305.83	327.95
Facility Fence	309934	4433430	304.11	327.95
Facility Fence	309929	4433421	302.09	327.95
Facility Fence	309923	4433413	298.47	327.95
Facility Fence	309918	4433404	294.99	328.06
Facility Fence	309912	4433396	292.23	328.32
Facility Fence	309907	4433388	290.72	328.32
Facility Fence	309901	4433379	290.54	328.32
Facility Fence	309896	4433371	290.30	328.32
Facility Fence	309890	4433363	290.16	328.06
Facility Fence	309885	4433354	289.76	327.95
Facility Fence	309879	4433346	289.66	327.95
Facility Fence	309874	4433338	289.35	327.95
Facility Fence	309868	4433329	289.06	327.95

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 11. Receptor Inputs to AERMOD

Description	X	Y	Elevation	Hill
Facility Fence	309863	4433321	288.81	327.95
Facility Fence	309857	4433313	288.89	327.95
Facility Fence	309852	4433304	289.81	327.95
Facility Fence	309846	4433296	292.07	327.95
Facility Fence	309841	4433288	293.87	327.95
Facility Fence	309835	4433279	295.52	327.95
Facility Fence	309830	4433271	296.58	327.95
Facility Fence	309824	4433262	298.17	327.95
Facility Fence	309819	4433254	298.94	327.95
Facility Fence	309813	4433246	300.00	327.95
Facility Fence	309808	4433237	300.69	327.67
Facility Fence	309802	4433229	302.13	324.52
Facility Fence	309797	4433221	303.16	323.65
Facility Fence	309791	4433212	304.41	323.65
Facility Fence	309786	4433204	305.12	323.65
Facility Fence	309780	4433196	305.08	323.65
Facility Fence	309775	4433187	304.41	323.65
Facility Fence	309765	4433187	299.49	323.65
Facility Fence	309755	4433188	294.83	327.67
Facility Fence	309745	4433188	290.74	327.95
Facility Fence	309735	4433188	287.42	327.95
Facility Fence	309725	4433189	284.00	327.95
Facility Fence	309715	4433189	280.72	327.95
Facility Fence	309705	4433189	278.11	327.95
Facility Fence	309695	4433190	276.60	327.95
Facility Fence	309685	4433190	276.51	327.95
Facility Fence	309675	4433190	278.01	327.95
Facility Fence	309665	4433191	280.06	327.95
Facility Fence	309655	4433191	281.93	327.95
Facility Fence	309645	4433191	282.85	327.95
Facility Fence	309635	4433192	283.11	327.95
Facility Fence	309625	4433192	282.83	327.95
Facility Fence	309617	4433186	281.35	327.95
Facility Fence	309610	4433180	280.27	327.95
Facility Fence	309610	4433170	278.20	327.95
Facility Fence	309610	4433160	276.08	327.95
Facility Fence	309608	4433150	274.02	327.95
Facility Fence	309604	4433141	270.28	327.95
Facility Fence	309601	4433131	266.84	327.95
Facility Fence	309598	4433122	264.34	327.95
Facility Fence	309593	4433117	263.49	327.95
Facility Fence	309585	4433123	264.21	327.95
Facility Fence	309576	4433128	264.07	327.95
Facility Fence	309568	4433134	263.97	327.95
Facility Fence	309560	4433140	263.73	327.95
Facility Fence	309552	4433146	264.11	327.95
Facility Fence	309544	4433151	264.06	327.95
Facility Fence	309536	4433157	264.93	327.95
Facility Fence	309528	4433163	265.65	327.95
Facility Fence	309519	4433169	265.79	327.95
Facility Fence	309511	4433175	265.67	327.95
Facility Fence	309503	4433180	265.14	327.95

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 11. Receptor Inputs to AERMOD

Description	X	Y	Elevation	Hill
Facility Fence	309495	4433186	266.13	327.95
Facility Fence	309487	4433192	267.01	327.95
Facility Fence	309479	4433198	267.42	327.95
Facility Fence	309470	4433204	267.29	327.95
Facility Fence	309462	4433209	266.84	327.95
Facility Fence	309454	4433215	266.80	327.95
Facility Fence	309446	4433221	266.91	327.95
Facility Fence	309438	4433227	267.55	327.95
Facility Fence	309430	4433233	267.23	327.95
Facility Fence	309422	4433239	268.38	327.95
Facility Fence	309414	4433245	267.98	327.95
Facility Fence	309407	4433252	268.65	327.95
Facility Fence	309399	4433258	267.76	327.95
Facility Fence	309391	4433264	267.60	327.95
Facility Fence	309383	4433271	268.45	327.95
Facility Fence	309376	4433277	268.48	327.95
Facility Fence	309368	4433283	267.70	327.95
Facility Fence	309360	4433290	267.64	327.95
Facility Fence	309353	4433296	269.67	327.95
Facility Fence	309345	4433303	269.20	327.95
Facility Fence	309337	4433309	268.56	327.95
Facility Fence	309330	4433316	268.30	327.95
Facility Fence	309322	4433322	266.71	327.95
Facility Fence	309315	4433329	266.49	327.95
Facility Fence	309308	4433336	266.27	327.95
Facility Fence	309301	4433343	266.00	327.95
Roadway	309282	4433356	265.80	327.95
Roadway	309281	4433368	265.34	327.95
Roadway	309279	4433393	264.43	327.95
Roadway	309274	4433442	265.61	327.95
Roadway	309272	4433467	266.58	327.95
Roadway	309272	4433492	267.09	327.95
Roadway	309277	4433518	267.56	327.95
Roadway	309284	4433542	268.31	327.95
Roadway	309316	4433637	269.33	327.95
Roadway	309337	4433683	270.12	327.95
Roadway	309348	4433705	269.99	327.95
Roadway	309351	4433730	269.83	327.95
Roadway	309353	4433755	269.98	329.60
Roadway	309357	4433780	269.82	329.60
Roadway	309368	4433802	270.05	329.60
Roadway	309380	4433824	270.87	329.60
Roadway	309396	4433843	271.96	329.60
Roadway	309417	4433857	271.45	329.60
Roadway	309441	4433861	271.31	329.60
Roadway	309466	4433859	271.34	329.60
Roadway	309491	4433857	272.46	327.95
Roadway	309516	4433854	274.25	327.95
Roadway	309541	4433851	274.82	327.95
Roadway	309565	4433847	276.64	327.95
Roadway	309590	4433849	276.97	327.95
Roadway	309611	4433862	276.95	327.95

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 11. Receptor Inputs to AERMOD

Description	X	Y	Elevation	Hill
Roadway	309619	4433885	278.67	327.95
Roadway	309622	4433910	281.08	327.95
Roadway	309625	4433934	282.75	325.86
Roadway	309627	4433959	285.01	324.55
Roadway	309630	4433984	285.49	324.45
Roadway	309632	4434009	285.35	324.45
Roadway	309633	4434034	285.44	324.45
Roadway	309634	4434059	284.81	324.45
Roadway	309634	4434084	282.60	324.45
Roadway	309636	4434109	279.94	324.55
Roadway	309638	4434134	277.36	324.58
Roadway	309640	4434159	276.60	324.58
Roadway	309642	4434184	276.37	324.55
Roadway	309650	4434207	276.55	324.45
Roadway	309667	4434225	276.99	324.45
Roadway	309689	4434237	277.43	324.45
Roadway	309711	4434248	277.34	324.45
Roadway	309734	4434259	278.04	324.45
Roadway	309757	4434270	280.46	324.45
Roadway	309779	4434280	282.38	324.45
Roadway	309802	4434290	286.55	324.45
Roadway	309827	4434294	288.63	324.45
Roadway	309852	4434293	289.04	324.45
Roadway	309877	4434293	291.70	324.45
Roadway	309902	4434293	291.16	324.45
Roadway	309926	4434293	289.35	324.45
Roadway	309949	4434301	287.14	324.45
Roadway	309964	4434321	283.75	324.45
Roadway	309971	4434345	281.86	324.45
Roadway	309975	4434370	280.34	324.45
Roadway	309977	4434395	278.23	324.45
Roadway	309978	4434420	278.14	324.45
Roadway	309979	4434445	279.62	321.42
Roadway	309980	4434470	280.88	317.82
Roadway	309985	4434494	286.49	308.92
Roadway	309994	4434517	288.81	308.92
Roadway	310003	4434540	287.06	317.78
Roadway	310012	4434564	285.88	317.78
NW Fence	308804	4434020	275.03	330.27
NW Fence	308804	4434014	274.25	330.27
NW Fence	308809	4434005	273.42	330.27
NW Fence	308814	4434020	276.94	330.27
NW Fence	308814	4433996	271.61	330.27
NW Fence	308818	4433987	269.36	330.27
NW Fence	308823	4433979	268.90	330.27
NW Fence	308824	4434020	278.95	330.27
NW Fence	308828	4433970	270.20	330.27
NW Fence	308833	4433961	269.61	330.27
NW Fence	308834	4434020	280.66	330.27
NW Fence	308837	4433952	267.72	330.27
NW Fence	308842	4433943	269.17	330.27
NW Fence	308844	4434020	281.87	330.27

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 11. Receptor Inputs to AERMOD

Description	X	Y	Elevation	Hill
NW Fence	308847	4433934	271.10	330.27
NW Fence	308852	4433926	271.86	330.27
NW Fence	308854	4434019	282.73	330.27
NW Fence	308856	4433917	271.21	330.27
NW Fence	308861	4433908	271.50	330.27
NW Fence	308864	4434019	283.11	330.27
NW Fence	308866	4433899	271.26	330.27
NW Fence	308869	4433890	271.36	330.27
NW Fence	308873	4433880	272.74	330.27
NW Fence	308874	4434019	283.82	330.27
NW Fence	308876	4433871	273.94	330.27
NW Fence	308880	4433862	274.09	330.19
NW Fence	308883	4433852	272.98	330.27
NW Fence	308884	4434019	284.63	330.27
NW Fence	308885	4433843	273.66	329.60
NW Fence	308888	4433833	273.82	329.60
NW Fence	308890	4433823	270.86	329.60
NW Fence	308892	4433813	269.10	330.27
NW Fence	308894	4434019	285.52	330.27
NW Fence	308894	4433804	271.33	329.60
NW Fence	308897	4433794	273.04	329.60
NW Fence	308899	4433784	270.29	329.60
NW Fence	308901	4433774	268.66	329.60
NW Fence	308903	4433765	269.03	329.60
NW Fence	308904	4434019	286.54	330.27
NW Fence	308906	4433755	270.05	329.60
NW Fence	308908	4433745	269.72	329.60
NW Fence	308909	4433735	268.29	329.60
NW Fence	308909	4433725	266.41	329.60
NW Fence	308909	4433715	265.07	329.60
NW Fence	308909	4433705	264.67	329.60
NW Fence	308909	4433695	264.54	329.60
NW Fence	308909	4433685	263.93	329.60
NW Fence	308913	4433677	263.65	329.60
NW Fence	308914	4434019	288.13	330.27
NW Fence	308920	4433670	263.33	329.60
NW Fence	308924	4434018	289.83	330.27
NW Fence	308927	4433663	263.30	329.60
NW Fence	308933	4434018	291.41	329.60
NW Fence	308934	4433656	264.10	329.60
NW Fence	308941	4433649	264.86	329.60
NW Fence	308943	4434018	293.36	329.60
NW Fence	308948	4433642	264.49	329.60
NW Fence	308953	4434018	295.48	329.60
NW Fence	308955	4433635	264.47	329.60
NW Fence	308962	4433628	265.50	327.80
NW Fence	308963	4434018	297.77	329.60
NW Fence	308970	4433621	265.73	319.56
NW Fence	308973	4434018	300.18	329.60
NW Fence	308977	4433614	265.61	319.56
NW Fence	308983	4434018	302.99	329.37
NW Fence	308984	4433607	265.68	319.56

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 11. Receptor Inputs to AERMOD

Description	X	Y	Elevation	Hill
NW Fence	308991	4433600	265.80	319.56
NW Fence	308993	4434017	306.00	319.56
NW Fence	308998	4433593	265.89	319.56
NW Fence	309003	4434017	309.12	319.56
NW Fence	309005	4433586	266.15	319.56
NW Fence	309012	4433579	266.22	318.58
NW Fence	309013	4434017	311.07	318.58
NW Fence	309019	4433572	266.23	318.58
NW Fence	309023	4434017	312.88	318.23
NW Fence	309027	4433565	266.77	318.23
NW Fence	309033	4434017	314.72	318.14
NW Fence	309034	4433558	266.63	318.23
NW Fence	309041	4433551	267.66	318.14
NW Fence	309043	4434017	316.33	316.59
NW Fence	309049	4433544	267.69	318.14
NW Fence	309053	4434016	316.71	316.75
NW Fence	309056	4433538	266.98	318.14
NW Fence	309063	4434016	315.61	318.14
NW Fence	309064	4433532	267.21	318.14
NW Fence	309072	4433526	268.79	318.14
NW Fence	309073	4434016	312.93	318.14
NW Fence	309080	4433519	268.41	318.14
NW Fence	309083	4434016	310.31	318.14
NW Fence	309088	4433513	268.71	318.14
NW Fence	309093	4434016	307.66	318.58
NW Fence	309095	4433507	267.74	318.14
NW Fence	309103	4434016	304.91	327.80
NW Fence	309103	4433500	267.23	318.14
NW Fence	309111	4433494	267.30	318.19
NW Fence	309113	4434016	302.17	329.60
NW Fence	309119	4433488	266.93	318.28
NW Fence	309123	4434015	299.44	329.60
NW Fence	309126	4433481	266.96	318.28
NW Fence	309133	4434015	297.12	329.60
NW Fence	309134	4433475	266.45	318.28
NW Fence	309142	4433469	265.94	318.28
NW Fence	309143	4434015	294.59	329.60
NW Fence	309150	4433463	265.50	320.29
NW Fence	309153	4434015	291.87	329.60
NW Fence	309157	4433456	265.39	320.53
NW Fence	309163	4434015	289.13	329.60
NW Fence	309165	4433450	265.28	320.53
NW Fence	309173	4434015	286.70	330.27
NW Fence	309173	4433444	264.98	321.46
NW Fence	309181	4433437	265.05	323.65
NW Fence	309183	4434015	285.93	330.27
NW Fence	309189	4433431	264.88	323.65
NW Fence	309193	4434014	285.47	330.27
NW Fence	309196	4433425	264.72	323.65
NW Fence	309203	4434014	284.62	330.27
NW Fence	309204	4433419	265.13	323.65
NW Fence	309212	4433412	265.20	326.76

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 11. Receptor Inputs to AERMOD

Description	X	Y	Elevation	Hill
NW Fence	309213	4434014	284.06	330.27
NW Fence	309220	4433406	265.55	327.32
NW Fence	309223	4434014	283.95	330.27
NW Fence	309227	4433400	265.04	327.90
NW Fence	309233	4434013	283.53	330.27
NW Fence	309235	4433393	265.30	327.95
NW Fence	309243	4434013	283.16	330.27
NW Fence	309243	4433387	263.61	327.95
NW Fence	309251	4433381	262.08	327.95
NW Fence	309253	4434012	282.71	330.27
NW Fence	309258	4433374	263.64	327.95
NW Fence	309263	4433543	267.06	327.95
NW Fence	309263	4434012	282.41	330.27
NW Fence	309266	4433552	266.66	327.95
NW Fence	309266	4433368	265.06	327.95
NW Fence	309269	4433538	267.42	327.95
NW Fence	309269	4433562	266.38	327.95
NW Fence	309272	4433478	266.91	327.95
NW Fence	309272	4433488	267.04	327.95
NW Fence	309272	4433570	266.46	327.95
NW Fence	309273	4433458	266.29	327.95
NW Fence	309273	4433498	267.24	327.95
NW Fence	309273	4434011	281.98	330.27
NW Fence	309274	4433448	265.85	327.95
NW Fence	309275	4433438	265.63	327.95
NW Fence	309275	4433507	267.43	327.95
NW Fence	309276	4433428	265.41	327.95
NW Fence	309277	4433418	265.10	327.95
NW Fence	309278	4433358	265.74	327.95
NW Fence	309278	4433408	264.92	327.95
NW Fence	309279	4433393	264.43	327.95
NW Fence	309279	4433398	264.71	327.95
NW Fence	309279	4433527	267.70	327.95
NW Fence	309279	4433535	267.82	327.95
NW Fence	309280	4433378	264.64	327.95
NW Fence	309280	4433388	264.42	327.95
NW Fence	309281	4433368	265.34	327.95
NW Fence	309282	4433567	268.16	327.95
NW Fence	309283	4434011	281.58	330.27
NW Fence	309290	4433567	269.17	327.95
NW Fence	309292	4433576	269.36	327.95
NW Fence	309293	4434010	280.99	330.27
NW Fence	309295	4433586	269.43	327.95
NW Fence	309299	4433595	269.35	327.95
NW Fence	309302	4433605	269.11	327.95
NW Fence	309303	4434010	280.37	330.27
NW Fence	309306	4433614	268.87	327.95
NW Fence	309310	4433623	268.96	327.95
NW Fence	309313	4434009	279.43	330.27
NW Fence	309314	4433632	269.20	327.95
NW Fence	309318	4433641	269.41	327.95
NW Fence	309322	4433650	269.58	327.95

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 11. Receptor Inputs to AERMOD

Description	X	Y	Elevation	Hill
NW Fence	309323	4434009	278.38	330.27
NW Fence	309326	4433660	269.74	327.95
NW Fence	309330	4433669	269.88	327.95
NW Fence	309333	4434009	277.36	330.27
NW Fence	309334	4433678	270.04	327.95
NW Fence	309338	4433687	270.07	327.95
NW Fence	309342	4433696	269.97	327.95
NW Fence	309343	4434008	276.35	330.27
NW Fence	309345	4433706	269.81	327.95
NW Fence	309346	4433716	269.66	327.95
NW Fence	309347	4433726	269.62	327.95
NW Fence	309347	4433736	269.65	329.37
NW Fence	309348	4433746	269.74	329.60
NW Fence	309350	4433756	269.80	329.60
NW Fence	309351	4433766	269.70	329.60
NW Fence	309352	4433776	269.45	329.60
NW Fence	309353	4434008	275.49	330.27
NW Fence	309355	4433785	269.33	329.60
NW Fence	309358	4433795	268.96	329.60
NW Fence	309362	4433804	268.98	329.60
NW Fence	309363	4434008	274.77	330.27
NW Fence	309367	4433813	269.34	329.60
NW Fence	309372	4433821	269.79	329.60
NW Fence	309373	4434007	273.67	330.27
NW Fence	309378	4433829	270.03	329.60
NW Fence	309383	4434007	272.19	330.27
NW Fence	309384	4433837	270.64	329.60
NW Fence	309389	4433846	271.07	329.60
NW Fence	309393	4434006	271.29	330.27
NW Fence	309395	4433854	271.46	329.60
NW Fence	309402	4433860	271.59	329.60
NW Fence	309403	4434006	271.49	330.27
NW Fence	309411	4433865	271.24	329.60
NW Fence	309413	4434006	271.87	330.27
NW Fence	309421	4433868	270.83	329.60
NW Fence	309423	4434005	272.12	330.27
NW Fence	309431	4433867	270.89	329.60
NW Fence	309433	4434005	272.22	330.27
NW Fence	309441	4433867	270.90	329.60
NW Fence	309443	4434005	272.00	329.77
NW Fence	309451	4433866	270.90	329.60
NW Fence	309453	4434004	271.66	329.60
NW Fence	309461	4433866	270.87	329.60
NW Fence	309463	4434004	271.21	329.60
NW Fence	309471	4433865	270.98	329.60
NW Fence	309473	4434004	270.59	329.60
NW Fence	309481	4433864	271.28	329.60
NW Fence	309483	4434003	269.94	329.60
NW Fence	309490	4433863	272.01	329.26
NW Fence	309493	4434003	268.96	329.60
NW Fence	309500	4433862	273.00	327.95
NW Fence	309503	4434003	266.86	330.27

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 11. Receptor Inputs to AERMOD

Description	X	Y	Elevation	Hill
NW Fence	309510	4433861	273.48	327.95
NW Fence	309513	4434002	265.03	330.27
NW Fence	309520	4433860	273.68	327.95
NW Fence	309523	4434002	265.88	329.77
NW Fence	309530	4433858	273.93	327.95
NW Fence	309533	4434002	269.54	329.60
NW Fence	309540	4433857	274.11	327.95
NW Fence	309543	4434001	271.98	329.60
NW Fence	309550	4433856	274.58	327.95
NW Fence	309553	4434001	273.26	329.60
NW Fence	309560	4433855	275.45	327.95
NW Fence	309563	4434000	274.94	327.88
NW Fence	309570	4433854	276.20	327.95
NW Fence	309573	4434000	277.12	324.66
NW Fence	309580	4433853	276.59	327.95
NW Fence	309583	4434000	278.73	324.58
NW Fence	309590	4433855	276.64	327.95
NW Fence	309593	4433999	280.07	324.55
NW Fence	309598	4433860	276.66	327.95
NW Fence	309603	4433999	281.62	324.55
NW Fence	309606	4433866	276.90	327.95
NW Fence	309611	4433874	277.42	327.95
NW Fence	309613	4433999	283.39	324.45
NW Fence	309614	4433884	278.33	327.95
NW Fence	309617	4433893	279.24	327.95
NW Fence	309618	4433903	280.15	327.95
NW Fence	309619	4433913	281.16	327.95
NW Fence	309620	4433923	282.11	327.90
NW Fence	309621	4433933	282.72	325.86
NW Fence	309622	4433943	283.21	325.25
NW Fence	309623	4433998	284.62	324.45
NW Fence	309624	4433953	284.05	324.55
NW Fence	309625	4433963	285.12	324.45
NW Fence	309626	4433973	285.31	324.45
NW Fence	309627	4433983	285.23	324.45
NW Fence	309627	4433993	285.07	324.45
50 m Grid	308729	4434242	276.18	336.68
50 m Grid	308779	4434242	285.74	330.27
50 m Grid	308829	4434242	289.85	330.27
50 m Grid	308879	4434242	290.02	330.27
50 m Grid	308929	4434242	294.38	330.27
50 m Grid	308979	4434242	305.38	330.27
50 m Grid	309029	4434242	317.64	329.60
50 m Grid	309079	4434242	326.97	329.37
50 m Grid	309129	4434242	321.94	329.60
50 m Grid	309179	4434242	315.09	329.60
50 m Grid	309229	4434242	301.10	330.27
50 m Grid	309279	4434242	289.58	330.27
50 m Grid	309329	4434242	284.25	330.27
50 m Grid	309379	4434242	280.66	330.27
50 m Grid	309429	4434242	279.46	330.27
50 m Grid	309479	4434242	277.61	330.27

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 11. Receptor Inputs to AERMOD

Description	X	Y	Elevation	Hill
50 m Grid	309529	4434242	275.31	330.27
50 m Grid	309579	4434242	268.82	330.27
50 m Grid	309629	4434242	269.75	329.60
50 m Grid	309679	4434242	276.69	324.45
50 m Grid	308629	4434192	264.85	336.68
50 m Grid	308679	4434192	267.37	336.68
50 m Grid	308729	4434192	273.94	334.45
50 m Grid	308779	4434192	283.26	330.27
50 m Grid	308829	4434192	284.92	330.27
50 m Grid	308879	4434192	287.75	330.27
50 m Grid	308929	4434192	296.15	330.27
50 m Grid	308979	4434192	306.64	330.27
50 m Grid	309029	4434192	319.15	329.60
50 m Grid	309079	4434192	317.10	329.60
50 m Grid	309129	4434192	318.25	329.60
50 m Grid	309179	4434192	305.80	329.60
50 m Grid	309229	4434192	298.14	330.27
50 m Grid	309279	4434192	287.88	330.27
50 m Grid	309329	4434192	282.88	330.27
50 m Grid	309379	4434192	279.51	330.27
50 m Grid	309429	4434192	277.95	330.27
50 m Grid	309479	4434192	275.77	330.27
50 m Grid	309529	4434192	273.55	330.27
50 m Grid	309579	4434192	270.21	329.77
50 m Grid	309629	4434192	275.52	326.68
50 m Grid	309679	4434192	279.48	324.45
50 m Grid	309729	4434192	283.55	324.45
50 m Grid	309779	4434192	287.64	324.45
50 m Grid	308629	4434142	264.30	334.45
50 m Grid	308679	4434142	265.86	336.11
50 m Grid	308729	4434142	271.40	333.14
50 m Grid	308779	4434142	282.28	330.27
50 m Grid	308829	4434142	279.73	330.27
50 m Grid	308879	4434142	287.82	330.27
50 m Grid	308929	4434142	294.34	330.27
50 m Grid	308979	4434142	307.33	329.60
50 m Grid	309029	4434142	317.54	326.99
50 m Grid	309079	4434142	308.25	329.60
50 m Grid	309129	4434142	312.09	329.60
50 m Grid	309179	4434142	309.59	329.60
50 m Grid	309229	4434142	299.20	329.60
50 m Grid	309279	4434142	286.84	330.27
50 m Grid	309329	4434142	281.04	330.27
50 m Grid	309379	4434142	278.32	330.27
50 m Grid	309429	4434142	275.98	330.27
50 m Grid	309479	4434142	273.45	330.27
50 m Grid	309529	4434142	272.23	330.27
50 m Grid	309579	4434142	268.50	329.77
50 m Grid	309629	4434142	276.47	324.58
50 m Grid	309679	4434142	280.01	324.58
50 m Grid	309729	4434142	287.09	324.45
50 m Grid	309779	4434142	293.82	324.45

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 11. Receptor Inputs to AERMOD

Description	X	Y	Elevation	Hill
50 m Grid	308579	4434092	262.29	330.27
50 m Grid	308629	4434092	264.08	330.27
50 m Grid	308679	4434092	264.05	333.65
50 m Grid	308729	4434092	270.49	330.27
50 m Grid	308779	4434092	274.63	330.27
50 m Grid	308829	4434092	279.12	330.27
50 m Grid	308879	4434092	284.13	330.27
50 m Grid	308929	4434092	293.14	330.27
50 m Grid	308979	4434092	308.24	329.60
50 m Grid	309029	4434092	317.40	318.15
50 m Grid	309079	4434092	306.11	329.60
50 m Grid	309129	4434092	303.11	329.60
50 m Grid	309179	4434092	305.72	329.60
50 m Grid	309229	4434092	298.37	329.60
50 m Grid	309279	4434092	295.59	329.60
50 m Grid	309329	4434092	282.35	330.27
50 m Grid	309379	4434092	276.36	330.27
50 m Grid	309429	4434092	275.18	330.27
50 m Grid	309479	4434092	271.59	330.27
50 m Grid	309529	4434092	266.47	330.27
50 m Grid	309579	4434092	267.46	329.60
50 m Grid	309629	4434092	281.36	324.45
50 m Grid	309679	4434092	284.56	324.55
50 m Grid	309729	4434092	290.85	324.45
50 m Grid	309779	4434092	300.14	324.45
50 m Grid	309829	4434092	295.81	324.55
50 m Grid	308579	4434042	260.63	330.27
50 m Grid	308629	4434042	261.00	330.27
50 m Grid	308679	4434042	262.05	330.27
50 m Grid	308729	4434042	262.89	330.27
50 m Grid	308779	4434042	273.25	330.27
50 m Grid	308829	4434042	279.35	330.27
50 m Grid	308879	4434042	283.71	330.27
50 m Grid	308929	4434042	291.39	330.27
50 m Grid	308979	4434042	303.88	329.60
50 m Grid	309029	4434042	315.51	318.23
50 m Grid	309079	4434042	308.70	319.56
50 m Grid	309129	4434042	294.07	329.60
50 m Grid	309179	4434042	292.92	329.60
50 m Grid	309229	4434042	290.78	329.60
50 m Grid	309279	4434042	285.14	330.27
50 m Grid	309329	4434042	278.93	330.27
50 m Grid	309379	4434042	274.07	330.27
50 m Grid	309429	4434042	273.66	330.27
50 m Grid	309479	4434042	270.84	330.27
50 m Grid	309529	4434042	269.10	329.60
50 m Grid	309579	4434042	278.02	324.55
50 m Grid	309629	4434042	285.02	324.45
50 m Grid	309679	4434042	289.58	324.45
50 m Grid	309729	4434042	296.04	324.45
50 m Grid	309779	4434042	307.61	324.29
50 m Grid	309829	4434042	313.66	315.00

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 11. Receptor Inputs to AERMOD

Description	X	Y	Elevation	Hill
50 m Grid	308579	4433992	258.70	330.27
50 m Grid	308629	4433992	261.29	330.27
50 m Grid	308679	4433992	260.89	330.27
50 m Grid	308729	4433992	261.06	330.27
50 m Grid	308779	4433992	261.37	330.27
50 m Grid	309629	4433992	285.26	324.45
50 m Grid	309679	4433992	294.43	324.45
50 m Grid	309729	4433992	305.31	306.40
50 m Grid	309779	4433992	301.56	324.45
50 m Grid	309829	4433992	305.09	324.45
50 m Grid	309879	4433992	317.28	324.45
50 m Grid	309929	4433992	323.84	323.84
50 m Grid	309979	4433992	316.67	324.45
50 m Grid	308579	4433942	258.61	330.27
50 m Grid	308629	4433942	259.07	330.27
50 m Grid	308679	4433942	261.10	330.27
50 m Grid	308729	4433942	260.26	330.27
50 m Grid	308779	4433942	260.81	330.27
50 m Grid	308829	4433942	264.26	330.27
50 m Grid	309629	4433942	283.23	325.40
50 m Grid	309679	4433942	293.99	324.45
50 m Grid	309729	4433942	291.31	324.78
50 m Grid	309779	4433942	295.18	324.78
50 m Grid	309829	4433942	308.26	324.45
50 m Grid	309879	4433942	313.41	324.45
50 m Grid	309929	4433942	318.55	324.45
50 m Grid	309979	4433942	320.87	320.87
50 m Grid	310029	4433942	316.27	324.58
50 m Grid	310079	4433942	304.16	334.14
50 m Grid	308629	4433892	258.28	330.27
50 m Grid	308679	4433892	258.79	330.27
50 m Grid	308729	4433892	260.51	330.27
50 m Grid	308779	4433892	261.00	330.27
50 m Grid	308829	4433892	261.22	330.27
50 m Grid	309629	4433892	279.75	327.95
50 m Grid	309679	4433892	285.39	327.95
50 m Grid	309729	4433892	287.36	327.95
50 m Grid	309779	4433892	293.77	324.78
50 m Grid	309829	4433892	300.30	324.78
50 m Grid	309879	4433892	303.12	324.78
50 m Grid	309929	4433892	309.20	324.78
50 m Grid	309979	4433892	317.89	324.62
50 m Grid	310029	4433892	322.52	324.48
50 m Grid	310079	4433892	315.34	324.78
50 m Grid	310129	4433892	298.89	334.14
50 m Grid	308629	4433842	258.55	330.27
50 m Grid	308679	4433842	258.64	330.27
50 m Grid	308729	4433842	260.48	330.27
50 m Grid	308779	4433842	259.98	330.27
50 m Grid	308829	4433842	261.38	330.27
50 m Grid	308879	4433842	269.76	330.27
50 m Grid	309679	4433842	278.59	327.95

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 11. Receptor Inputs to AERMOD

Description	X	Y	Elevation	Hill
50 m Grid	309729	4433842	283.50	327.95
50 m Grid	309779	4433842	287.31	327.95
50 m Grid	309829	4433842	292.26	327.95
50 m Grid	309879	4433842	297.35	326.79
50 m Grid	309929	4433842	306.04	324.78
50 m Grid	309979	4433842	315.45	324.78
50 m Grid	310029	4433842	324.61	324.61
50 m Grid	310079	4433842	319.63	324.78
50 m Grid	310129	4433842	302.35	334.14
50 m Grid	310179	4433842	311.99	334.14
50 m Grid	308679	4433792	258.51	330.27
50 m Grid	308729	4433792	258.59	330.27
50 m Grid	308779	4433792	261.24	330.27
50 m Grid	308829	4433792	260.72	330.27
50 m Grid	308879	4433792	266.93	330.27
50 m Grid	309829	4433792	290.51	328.32
50 m Grid	309879	4433792	295.11	328.32
50 m Grid	309929	4433792	301.88	328.32
50 m Grid	309979	4433792	311.57	324.78
50 m Grid	310029	4433792	316.74	324.78
50 m Grid	310079	4433792	323.31	324.43
50 m Grid	310129	4433792	309.77	334.14
50 m Grid	310179	4433792	312.72	334.14
50 m Grid	308679	4433742	258.46	329.60
50 m Grid	308729	4433742	258.60	329.60
50 m Grid	308779	4433742	258.74	330.27
50 m Grid	308829	4433742	260.74	330.27
50 m Grid	308879	4433742	262.06	330.27
50 m Grid	309979	4433742	305.58	328.32
50 m Grid	310029	4433742	312.13	328.32
50 m Grid	310079	4433742	322.82	324.67
50 m Grid	310129	4433742	321.56	327.35
50 m Grid	310179	4433742	316.69	334.14
50 m Grid	310229	4433742	326.48	334.14
50 m Grid	308679	4433692	258.54	329.60
50 m Grid	308729	4433692	258.54	329.60
50 m Grid	308779	4433692	258.31	329.60
50 m Grid	308829	4433692	258.67	329.60
50 m Grid	308879	4433692	262.35	329.60
50 m Grid	310029	4433692	308.55	334.14
50 m Grid	310079	4433692	315.57	328.32
50 m Grid	310129	4433692	326.38	327.08
50 m Grid	310179	4433692	327.48	327.48
50 m Grid	310229	4433692	321.99	334.14
50 m Grid	308679	4433642	258.48	319.56
50 m Grid	308729	4433642	258.60	328.67
50 m Grid	308779	4433642	258.55	329.60
50 m Grid	308829	4433642	258.37	329.60
50 m Grid	308879	4433642	259.49	329.60
50 m Grid	308922	4433636	263.50	329.60
50 m Grid	310029	4433642	309.45	328.32
50 m Grid	310079	4433642	319.14	328.32

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 11. Receptor Inputs to AERMOD

Description	X	Y	Elevation	Hill
50 m Grid	310129	4433642	326.57	328.06
50 m Grid	310179	4433642	320.09	334.11
50 m Grid	310229	4433642	308.00	337.14
50 m Grid	308679	4433592	258.44	318.58
50 m Grid	308729	4433592	258.56	319.56
50 m Grid	308779	4433592	258.69	319.56
50 m Grid	308829	4433592	259.12	321.76
50 m Grid	308879	4433592	259.59	328.67
50 m Grid	308929	4433592	261.59	326.99
50 m Grid	308970	4433583	264.87	319.56
50 m Grid	310029	4433592	314.36	328.32
50 m Grid	310079	4433592	318.39	328.32
50 m Grid	310129	4433592	325.31	327.15
50 m Grid	310179	4433592	312.59	337.10
50 m Grid	310229	4433592	301.92	337.14
50 m Grid	308729	4433542	258.64	318.14
50 m Grid	308779	4433542	258.84	318.58
50 m Grid	308829	4433542	259.39	318.96
50 m Grid	308879	4433542	260.21	319.56
50 m Grid	308929	4433542	261.04	319.56
50 m Grid	308979	4433542	262.28	318.58
50 m Grid	309029	4433542	265.53	318.23
50 m Grid	309979	4433542	326.11	327.32
50 m Grid	310029	4433542	322.92	327.75
50 m Grid	310079	4433542	319.27	327.22
50 m Grid	310129	4433542	318.94	327.73
50 m Grid	310179	4433542	307.82	337.14
50 m Grid	308779	4433492	259.00	318.14
50 m Grid	308829	4433492	259.57	318.14
50 m Grid	308879	4433492	260.39	318.14
50 m Grid	308929	4433492	261.22	318.14
50 m Grid	308979	4433492	261.84	318.14
50 m Grid	309029	4433492	263.23	318.14
50 m Grid	309079	4433492	265.99	318.14
50 m Grid	309979	4433492	325.62	327.06
50 m Grid	310029	4433492	323.06	327.75
50 m Grid	310079	4433492	308.17	328.32
50 m Grid	310129	4433492	308.85	337.14
50 m Grid	310179	4433492	297.18	337.14
50 m Grid	308829	4433442	259.74	316.55
50 m Grid	308879	4433442	260.56	317.94
50 m Grid	308929	4433442	261.40	318.14
50 m Grid	308979	4433442	262.03	318.14
50 m Grid	309029	4433442	262.57	318.14
50 m Grid	309079	4433442	263.18	318.28
50 m Grid	309129	4433442	264.45	319.30
50 m Grid	309979	4433442	318.73	327.75
50 m Grid	310029	4433442	317.72	327.75
50 m Grid	310079	4433442	305.75	337.12
50 m Grid	310129	4433442	300.00	337.14
50 m Grid	310179	4433442	290.70	337.14
50 m Grid	308879	4433392	260.72	315.65

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 11. Receptor Inputs to AERMOD

Description	X	Y	Elevation	Hill
50 m Grid	308929	4433392	261.54	315.65
50 m Grid	308979	4433392	262.24	315.65
50 m Grid	309029	4433392	262.99	317.53
50 m Grid	309079	4433392	263.03	318.28
50 m Grid	309129	4433392	263.71	320.53
50 m Grid	309179	4433392	264.98	323.65
50 m Grid	309219	4433380	265.57	327.83
50 m Grid	309929	4433392	299.63	327.95
50 m Grid	309979	4433392	318.06	320.45
50 m Grid	310029	4433392	310.11	327.75
50 m Grid	310079	4433392	299.07	337.14
50 m Grid	310129	4433392	290.00	337.14
50 m Grid	310179	4433392	284.22	339.92
50 m Grid	308929	4433342	261.41	315.65
50 m Grid	308979	4433342	262.16	315.65
50 m Grid	309029	4433342	262.66	315.65
50 m Grid	309079	4433342	262.87	318.28
50 m Grid	309129	4433342	262.86	320.53
50 m Grid	309179	4433342	263.68	323.65
50 m Grid	309229	4433342	263.25	327.95
50 m Grid	309274	4433337	265.86	327.95
50 m Grid	309879	4433342	289.10	327.95
50 m Grid	309929	4433342	299.87	327.95
50 m Grid	309979	4433342	317.63	317.63
50 m Grid	310029	4433342	301.93	327.95
50 m Grid	310079	4433342	290.15	337.14
50 m Grid	310129	4433342	280.91	339.28
50 m Grid	308979	4433292	261.58	315.65
50 m Grid	309029	4433292	262.05	315.65
50 m Grid	309079	4433292	262.23	318.28
50 m Grid	309129	4433292	262.31	320.53
50 m Grid	309179	4433292	262.87	323.65
50 m Grid	309229	4433292	263.08	327.67
50 m Grid	309279	4433292	263.34	327.95
50 m Grid	309329	4433292	265.51	327.95
50 m Grid	309879	4433292	283.51	336.98
50 m Grid	309929	4433292	300.90	327.95
50 m Grid	309979	4433292	311.58	318.05
50 m Grid	310029	4433292	293.68	337.14
50 m Grid	310079	4433292	282.11	337.14
50 m Grid	310129	4433292	284.25	337.14
50 m Grid	309029	4433242	261.43	315.65
50 m Grid	309079	4433242	261.64	317.60
50 m Grid	309129	4433242	261.79	320.53
50 m Grid	309179	4433242	263.08	323.65
50 m Grid	309229	4433242	263.66	323.65
50 m Grid	309279	4433242	262.88	327.95
50 m Grid	309329	4433242	262.92	327.95
50 m Grid	309379	4433242	263.82	327.95
50 m Grid	309829	4433242	292.99	327.95
50 m Grid	309879	4433242	280.62	337.12
50 m Grid	309929	4433242	300.61	327.58

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 11. Receptor Inputs to AERMOD

Description	X	Y	Elevation	Hill
50 m Grid	309979	4433242	304.29	319.74
50 m Grid	310029	4433242	285.53	337.14
50 m Grid	310079	4433242	276.34	337.14
50 m Grid	309129	4433192	261.40	320.53
50 m Grid	309179	4433192	263.67	321.46
50 m Grid	309229	4433192	264.27	323.65
50 m Grid	309279	4433192	262.12	327.95
50 m Grid	309329	4433192	261.98	327.95
50 m Grid	309379	4433192	262.09	327.95
50 m Grid	309429	4433192	263.11	327.95
50 m Grid	309629	4433192	282.93	327.95
50 m Grid	309779	4433192	304.92	323.65
50 m Grid	309829	4433192	289.75	327.95
50 m Grid	309879	4433192	279.44	336.98
50 m Grid	309929	4433192	299.31	323.65
50 m Grid	309979	4433192	297.49	324.08
50 m Grid	310029	4433192	282.29	337.14
50 m Grid	309179	4433142	262.33	321.46
50 m Grid	309229	4433142	261.99	323.65
50 m Grid	309279	4433142	261.91	327.32
50 m Grid	309329	4433142	261.30	327.95
50 m Grid	309379	4433142	261.02	327.95
50 m Grid	309429	4433142	261.62	327.95
50 m Grid	309479	4433142	262.78	327.95
50 m Grid	309529	4433142	262.66	327.95
50 m Grid	309629	4433142	274.13	327.95
50 m Grid	309679	4433142	272.23	327.95
50 m Grid	309729	4433142	283.88	327.95
50 m Grid	309779	4433142	298.75	323.65
50 m Grid	309829	4433142	285.36	327.95
50 m Grid	309879	4433142	279.15	327.95
50 m Grid	309929	4433142	297.44	317.79
50 m Grid	309979	4433142	289.85	327.75
50 m Grid	310029	4433142	279.24	337.14
50 m Grid	309229	4433092	261.27	323.65
50 m Grid	309279	4433092	261.00	323.65
50 m Grid	309329	4433092	261.92	327.67
50 m Grid	309379	4433092	260.61	327.95
50 m Grid	309429	4433092	260.05	327.95
50 m Grid	309479	4433092	260.40	327.95
50 m Grid	309529	4433092	260.67	327.95
50 m Grid	309579	4433092	261.04	327.95
50 m Grid	309629	4433092	264.08	327.95
50 m Grid	309679	4433092	270.27	327.95
50 m Grid	309729	4433092	277.42	327.95
50 m Grid	309779	4433092	283.89	327.95
50 m Grid	309829	4433092	282.60	327.95
50 m Grid	309879	4433092	278.17	327.95
50 m Grid	309929	4433092	289.50	323.65
50 m Grid	309979	4433092	282.29	336.92
50 m Grid	309279	4433042	260.89	323.65
50 m Grid	309329	4433042	260.55	324.75

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 11. Receptor Inputs to AERMOD

Description	X	Y	Elevation	Hill
50 m Grid	309379	4433042	261.54	327.83
50 m Grid	309429	4433042	259.44	327.95
50 m Grid	309479	4433042	259.56	327.95
50 m Grid	309529	4433042	259.73	327.95
50 m Grid	309579	4433042	260.30	327.95
50 m Grid	309629	4433042	261.11	327.95
50 m Grid	309679	4433042	263.50	327.95
50 m Grid	309729	4433042	269.59	327.95
50 m Grid	309779	4433042	275.80	327.95
50 m Grid	309829	4433042	278.73	327.95
50 m Grid	309879	4433042	275.54	327.95
50 m Grid	309929	4433042	279.42	327.83
50 m Grid	309379	4432992	260.43	325.18
50 m Grid	309429	4432992	260.52	327.90
50 m Grid	309479	4432992	259.13	327.95
50 m Grid	309529	4432992	259.36	327.95
50 m Grid	309579	4432992	259.55	327.95
50 m Grid	309629	4432992	260.05	327.95
50 m Grid	309679	4432992	260.84	327.95
50 m Grid	309729	4432992	262.25	327.95
50 m Grid	309779	4432992	269.34	327.95
50 m Grid	309829	4432992	270.39	327.95
50 m Grid	309879	4432992	274.14	327.95
50 m Grid	309929	4432992	274.65	327.83
50 m Grid	309429	4432942	260.38	324.37
50 m Grid	309479	4432942	259.10	327.95
50 m Grid	309529	4432942	258.98	327.95
50 m Grid	309579	4432942	258.98	327.95
50 m Grid	309629	4432942	259.51	327.95
50 m Grid	309679	4432942	260.29	327.95
50 m Grid	309729	4432942	261.64	327.95
50 m Grid	309779	4432942	264.02	327.95
50 m Grid	309529	4432892	258.24	327.83
100 m Grid	308654	4434467	278.53	342.78
100 m Grid	308754	4434467	285.06	342.78
100 m Grid	308854	4434467	293.88	342.78
100 m Grid	308954	4434467	311.03	330.27
100 m Grid	309054	4434467	321.79	330.27
100 m Grid	309154	4434467	301.53	342.73
100 m Grid	309254	4434467	303.66	334.39
100 m Grid	309354	4434467	309.33	313.16
100 m Grid	309454	4434467	286.21	342.73
100 m Grid	309554	4434467	278.39	342.73
100 m Grid	309654	4434467	281.50	324.78
100 m Grid	309754	4434467	270.75	328.03
100 m Grid	308454	4434367	264.02	342.78
100 m Grid	308554	4434367	267.54	342.78
100 m Grid	308654	4434367	274.02	342.78
100 m Grid	308754	4434367	283.03	342.78
100 m Grid	308854	4434367	301.22	330.27
100 m Grid	308954	4434367	320.24	330.27
100 m Grid	309054	4434367	324.85	329.77

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 11. Receptor Inputs to AERMOD

Description	X	Y	Elevation	Hill
100 m Grid	309154	4434367	306.86	330.27
100 m Grid	309254	4434367	293.36	336.57
100 m Grid	309354	4434367	287.58	336.57
100 m Grid	309454	4434367	283.02	334.24
100 m Grid	309554	4434367	277.99	329.60
100 m Grid	309654	4434367	272.04	327.27
100 m Grid	309754	4434367	273.33	324.45
100 m Grid	309854	4434367	280.44	324.45
100 m Grid	309954	4434367	280.53	324.45
100 m Grid	308454	4434267	262.75	330.82
100 m Grid	308554	4434267	265.63	342.57
100 m Grid	308654	4434267	268.82	342.78
100 m Grid	308754	4434267	281.85	334.02
100 m Grid	308954	4434267	299.06	330.27
100 m Grid	309054	4434267	327.15	329.60
100 m Grid	309154	4434267	321.98	329.40
100 m Grid	309254	4434267	295.03	330.27
100 m Grid	309354	4434267	283.23	330.27
100 m Grid	309454	4434267	279.88	330.27
100 m Grid	309554	4434267	272.71	330.27
100 m Grid	309654	4434267	267.48	329.60
100 m Grid	309754	4434267	280.40	324.45
100 m Grid	309854	4434267	298.45	320.74
100 m Grid	309954	4434267	292.65	324.45
100 m Grid	308354	4434167	259.07	330.27
100 m Grid	308454	4434167	260.06	330.27
100 m Grid	308554	4434167	263.39	330.72
100 m Grid	309854	4434167	304.82	323.77
100 m Grid	309954	4434167	301.32	324.45
100 m Grid	310054	4434167	285.72	334.14
100 m Grid	310154	4434167	308.83	318.59
100 m Grid	308354	4434067	258.83	258.83
100 m Grid	308454	4434067	258.89	330.27
100 m Grid	308554	4434067	260.49	330.27
100 m Grid	309954	4434067	312.05	324.45
100 m Grid	310054	4434067	287.70	334.14
100 m Grid	310154	4434067	307.35	325.17
100 m Grid	310254	4434067	316.08	321.94
100 m Grid	308354	4433967	258.43	258.43
100 m Grid	308454	4433967	258.49	330.27
100 m Grid	308554	4433967	258.63	330.27
100 m Grid	310054	4433967	308.15	324.78
100 m Grid	310154	4433967	303.52	334.14
100 m Grid	310254	4433967	324.89	324.89
100 m Grid	310354	4433967	301.44	334.14
100 m Grid	308354	4433867	258.41	258.41
100 m Grid	308454	4433867	257.54	319.56
100 m Grid	308554	4433867	258.32	330.27
100 m Grid	310254	4433867	327.86	333.45
100 m Grid	310354	4433867	315.50	334.14
100 m Grid	310454	4433867	293.17	340.03
100 m Grid	308454	4433767	258.33	258.33

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 11. Receptor Inputs to AERMOD

Description	X	Y	Elevation	Hill
100 m Grid	308554	4433767	258.25	326.99
100 m Grid	310254	4433767	331.66	334.14
100 m Grid	310354	4433767	321.13	334.14
100 m Grid	310454	4433767	300.86	340.03
100 m Grid	308454	4433667	257.93	257.93
100 m Grid	308554	4433667	258.27	318.14
100 m Grid	308654	4433667	258.39	319.56
100 m Grid	310254	4433667	316.13	334.14
100 m Grid	310354	4433667	327.72	333.56
100 m Grid	310454	4433667	303.97	340.03
100 m Grid	308454	4433567	258.15	258.15
100 m Grid	308554	4433567	258.30	315.65
100 m Grid	308654	4433567	258.41	318.14
100 m Grid	310254	4433567	312.33	337.14
100 m Grid	310354	4433567	330.01	330.01
100 m Grid	310454	4433567	325.40	337.14
100 m Grid	308554	4433467	258.40	258.40
100 m Grid	308654	4433467	258.56	315.65
100 m Grid	308754	4433467	258.98	315.78
100 m Grid	310254	4433467	305.89	337.14
100 m Grid	310354	4433467	329.81	337.14
100 m Grid	310454	4433467	335.17	335.17
100 m Grid	308554	4433367	258.45	258.45
100 m Grid	308654	4433367	258.83	315.65
100 m Grid	308754	4433367	259.26	315.65
100 m Grid	308854	4433367	260.39	315.65
100 m Grid	310254	4433367	311.41	337.14
100 m Grid	310354	4433367	327.66	336.44
100 m Grid	308654	4433267	258.82	258.82
100 m Grid	308754	4433267	259.28	259.28
100 m Grid	308854	4433267	260.28	315.65
100 m Grid	308954	4433267	260.95	315.65
100 m Grid	310154	4433267	290.97	337.14
100 m Grid	310254	4433267	321.19	321.19
100 m Grid	310354	4433267	311.65	337.14
100 m Grid	308754	4433167	259.16	259.16
100 m Grid	308854	4433167	259.92	259.92
100 m Grid	308954	4433167	260.33	260.33
100 m Grid	309054	4433167	260.45	260.45
100 m Grid	310154	4433167	307.89	318.03
100 m Grid	310254	4433167	298.10	337.14
100 m Grid	310354	4433167	287.92	339.96
100 m Grid	308854	4433067	259.11	259.11
100 m Grid	308954	4433067	259.35	259.35
100 m Grid	309054	4433067	259.87	259.87
100 m Grid	309154	4433067	262.35	262.58
100 m Grid	310054	4433067	276.36	337.14
100 m Grid	310154	4433067	284.78	337.14
100 m Grid	310254	4433067	273.71	339.96
100 m Grid	309054	4432967	260.02	260.02
100 m Grid	309154	4432967	262.50	262.50
100 m Grid	309254	4432967	260.58	320.53

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 11. Receptor Inputs to AERMOD

Description	X	Y	Elevation	Hill
100 m Grid	309354	4432967	260.29	323.65
100 m Grid	309954	4432967	273.73	329.00
100 m Grid	310054	4432967	269.22	337.14
100 m Grid	310154	4432967	270.34	337.14
100 m Grid	309154	4432867	260.61	260.61
100 m Grid	309254	4432867	260.46	260.46
100 m Grid	309354	4432867	260.13	320.53
100 m Grid	309454	4432867	259.95	323.65
100 m Grid	309554	4432867	258.34	327.58
100 m Grid	309654	4432867	259.09	327.95
100 m Grid	309754	4432867	261.54	327.95
100 m Grid	309854	4432867	263.73	327.67
100 m Grid	309954	4432867	267.41	327.55
100 m Grid	310054	4432867	291.22	320.54
100 m Grid	310154	4432867	286.23	327.55
100 m Grid	309254	4432767	260.38	260.38
100 m Grid	309354	4432767	260.05	260.05
100 m Grid	309454	4432767	259.50	259.50
100 m Grid	309554	4432767	258.85	323.65
100 m Grid	309654	4432767	258.92	323.65
100 m Grid	309754	4432767	259.85	323.65
100 m Grid	309854	4432767	261.06	323.85
100 m Grid	309954	4432767	262.41	333.87
100 m Grid	309454	4432667	259.46	259.46
100 m Grid	309554	4432667	259.03	259.03
100 m Grid	309654	4432667	259.18	320.34
100 m Grid	309754	4432667	258.56	320.85
200 m Grid	308904	4435017	313.50	342.78
200 m Grid	308304	4434817	268.64	342.72
200 m Grid	308504	4434817	279.04	342.78
200 m Grid	308704	4434817	298.54	342.78
200 m Grid	308904	4434817	328.19	335.98
200 m Grid	309104	4434817	332.16	342.78
200 m Grid	309304	4434817	291.97	345.88
200 m Grid	309504	4434817	316.33	325.44
200 m Grid	309704	4434817	287.03	333.94
200 m Grid	309904	4434817	284.57	327.47
200 m Grid	310104	4434817	273.82	332.16
200 m Grid	308104	4434617	261.72	273.61
200 m Grid	308304	4434617	265.83	335.98
200 m Grid	308504	4434617	271.06	342.78
200 m Grid	308704	4434617	301.80	333.28
200 m Grid	308904	4434617	300.71	342.78
200 m Grid	309104	4434617	319.75	336.68
200 m Grid	309304	4434617	305.71	342.78
200 m Grid	309504	4434617	294.36	328.03
200 m Grid	309704	4434617	285.34	328.03
200 m Grid	309904	4434617	277.64	324.78
200 m Grid	310104	4434617	301.24	308.92
200 m Grid	310304	4434617	308.40	321.15
200 m Grid	307904	4434417	258.81	258.81
200 m Grid	308104	4434417	259.08	259.08

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 11. Receptor Inputs to AERMOD

Description	X	Y	Elevation	Hill
200 m Grid	308304	4434417	261.70	330.82
200 m Grid	308504	4434417	266.01	342.78
200 m Grid	309904	4434417	270.84	324.45
200 m Grid	310104	4434417	285.19	320.58
200 m Grid	310304	4434417	294.27	321.51
200 m Grid	310504	4434417	293.74	333.48
200 m Grid	307904	4434217	258.71	258.71
200 m Grid	308104	4434217	259.15	259.15
200 m Grid	308304	4434217	258.82	328.46
200 m Grid	310304	4434217	287.56	334.14
200 m Grid	310504	4434217	311.34	327.96
200 m Grid	310704	4434217	291.79	336.75
200 m Grid	307904	4434017	258.29	258.29
200 m Grid	308104	4434017	258.63	258.63
200 m Grid	308304	4434017	258.62	258.62
200 m Grid	310504	4434017	299.03	336.75
200 m Grid	310704	4434017	330.72	330.72
200 m Grid	310904	4434017	320.67	333.97
200 m Grid	307904	4433817	257.65	257.65
200 m Grid	308104	4433817	258.01	258.01
200 m Grid	308304	4433817	258.43	258.43
200 m Grid	310504	4433817	292.92	340.03
200 m Grid	310704	4433817	317.92	336.85
200 m Grid	310904	4433817	327.52	336.79
200 m Grid	307904	4433617	258.12	258.12
200 m Grid	308104	4433617	258.93	258.93
200 m Grid	308304	4433617	258.30	258.30
200 m Grid	310504	4433617	303.33	340.03
200 m Grid	310704	4433617	327.82	340.03
200 m Grid	310904	4433617	325.45	339.70
200 m Grid	308104	4433417	258.16	258.16
200 m Grid	308304	4433417	258.24	258.24
200 m Grid	310504	4433417	324.49	337.14
200 m Grid	310704	4433417	334.32	338.70
200 m Grid	310904	4433417	325.51	337.66
200 m Grid	308104	4433217	257.44	257.44
200 m Grid	308304	4433217	258.21	258.21
200 m Grid	308504	4433217	258.84	258.84
200 m Grid	310504	4433217	289.49	340.03
200 m Grid	310704	4433217	336.30	336.30
200 m Grid	310904	4433217	303.10	340.03
200 m Grid	308304	4433017	258.45	258.45
200 m Grid	308504	4433017	258.52	258.52
200 m Grid	308704	4433017	259.15	259.15
200 m Grid	308904	4433017	259.19	259.19
200 m Grid	310304	4433017	293.30	336.97
200 m Grid	310504	4433017	323.68	327.55
200 m Grid	310704	4433017	326.49	331.46
200 m Grid	308504	4432817	258.46	258.46
200 m Grid	308704	4432817	258.03	258.03
200 m Grid	308904	4432817	259.51	259.51
200 m Grid	309104	4432817	260.43	260.43

Exide Canon Hollow Facility
Air Quality Dispersion Modeling Protocol
Table 11. Receptor Inputs to AERMOD

Description	X	Y	Elevation	Hill
200 m Grid	310304	4432817	287.50	333.59
200 m Grid	310504	4432817	284.20	336.97
200 m Grid	310704	4432817	326.79	328.00
200 m Grid	308704	4432617	258.21	258.21
200 m Grid	308904	4432617	259.35	259.35
200 m Grid	309104	4432617	260.23	260.23
200 m Grid	309304	4432617	260.07	260.07
200 m Grid	309504	4432617	259.22	259.22
200 m Grid	309704	4432617	260.85	320.54
200 m Grid	309904	4432617	258.58	333.87
200 m Grid	310104	4432617	271.61	333.87
200 m Grid	310304	4432617	306.57	320.85
200 m Grid	310504	4432617	322.17	332.62
200 m Grid	308904	4432417	259.34	259.34
200 m Grid	309104	4432417	260.88	260.88
200 m Grid	309304	4432417	259.81	259.81
200 m Grid	309504	4432417	258.87	258.87
200 m Grid	309704	4432417	258.42	315.40
200 m Grid	309904	4432417	258.84	333.87
200 m Grid	310104	4432417	265.33	333.87
200 m Grid	310304	4432417	293.08	333.87
200 m Grid	309304	4432217	259.55	259.55
200 m Grid	309504	4432217	258.87	258.87
200 m Grid	309704	4432217	258.02	258.02
200 m Grid	309904	4432217	257.93	333.87
Lead Monitor	309221	4433181	264.14	323.65

Figures

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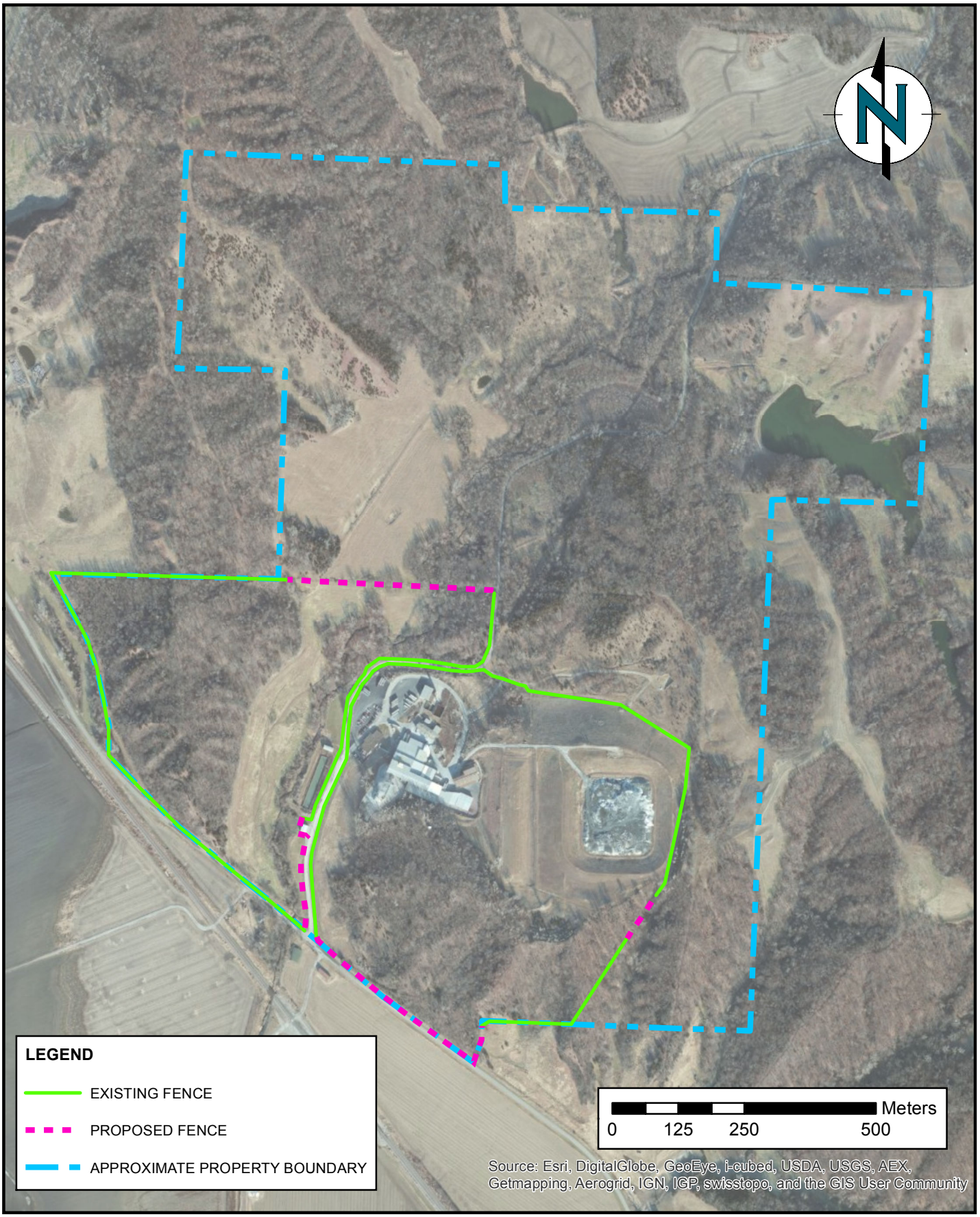

P:\Exide Technologies\Canon Hollow, MO\GIS\arcview\MXD\Figure 1. Site Location. 5.1.14.mxdt

ENVIRON

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SITE LOCATION MAP

EXIDE TECHNOLOGIES FOREST CITY, MO

Figure 1

07-21624C

P:\Exide Technologies\Canon Hollow, MO\GIS\arcview\MXD\Figure 2 POINT SOURCES.mxdt

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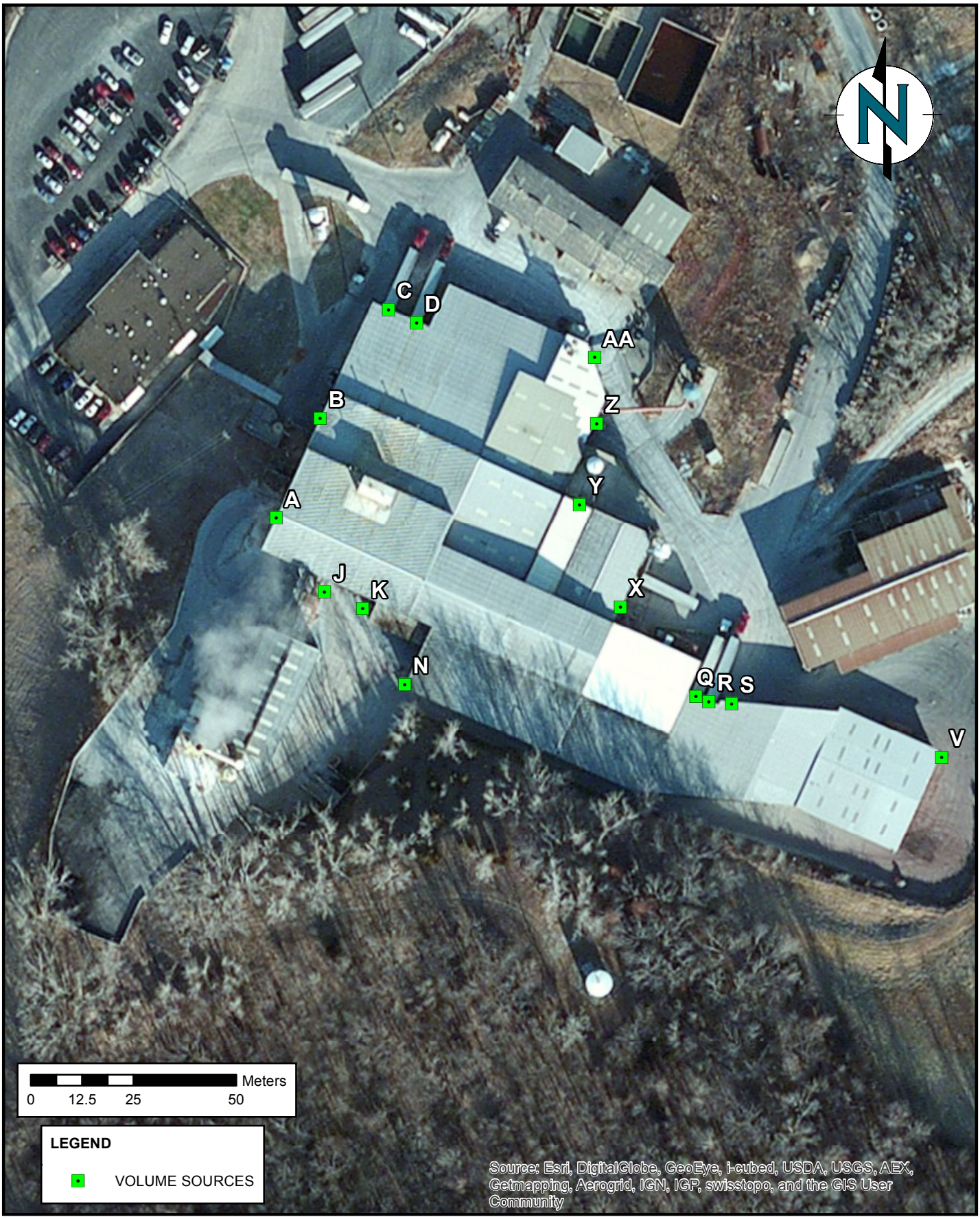
POINT SOURCES FOR USE IN AERMOD

EXIDE TECHNOLOGIES FOREST CITY, MO

Figure 2

07-21624A



P:\Exide Technologies\Canon Hollow, MO\GIS\arcview\MXD\Figure 3 FUGITIVE SOURCES.mxdt

ENVIRON

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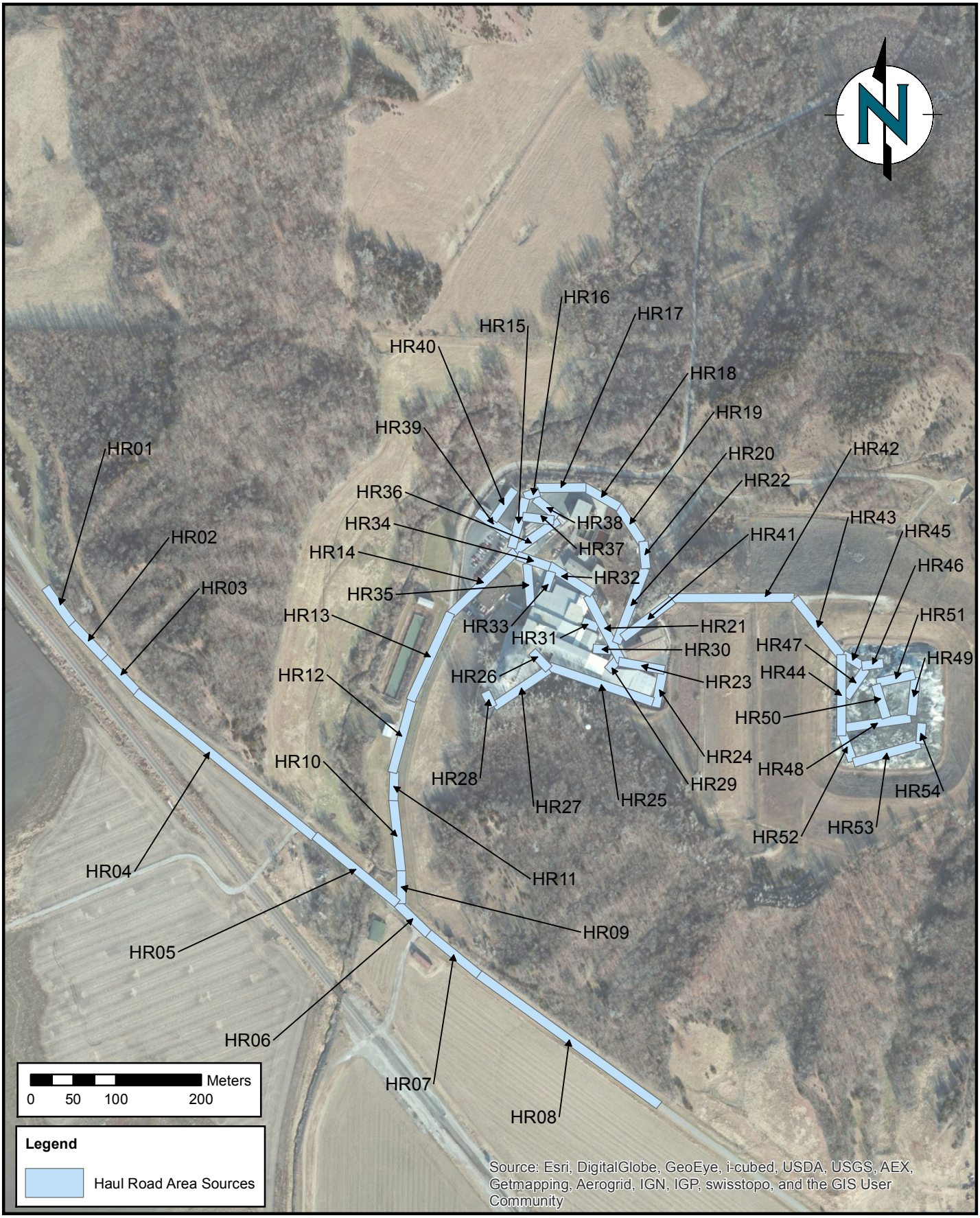
PROCESS FUGITIVE VOLUME SOURCES

EXIDE TECHNOLOGIES FOREST CITY, MO

Figure 3

07-21624A



P:\Exide Technologies\Canon Hollow, MO\GIS\arcview\MXD\Figure 4 Haul Road Area Sources.5.2.14.mxdt

ENVIRON

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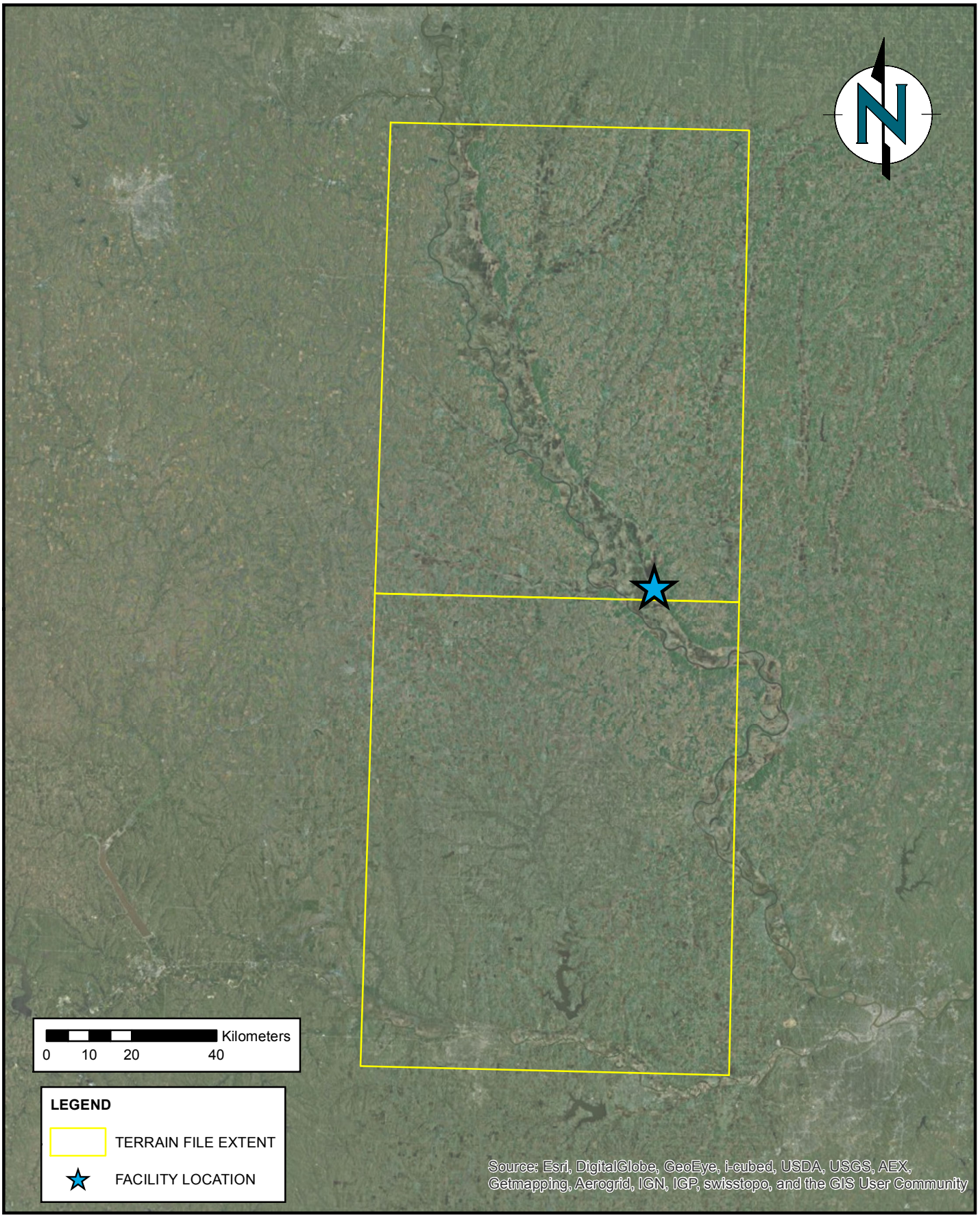
Haul Road Area Sources

EXIDE TECHNOLOGIES FOREST CITY, MO

Figure 4

07-21624C



P:\Exide Technologies\Canon Hollow, MO\GIS\arcview\MXD\Figure 5.TERRAIN FILE EXTENT.5.1.14.mxdt

ENVIRON

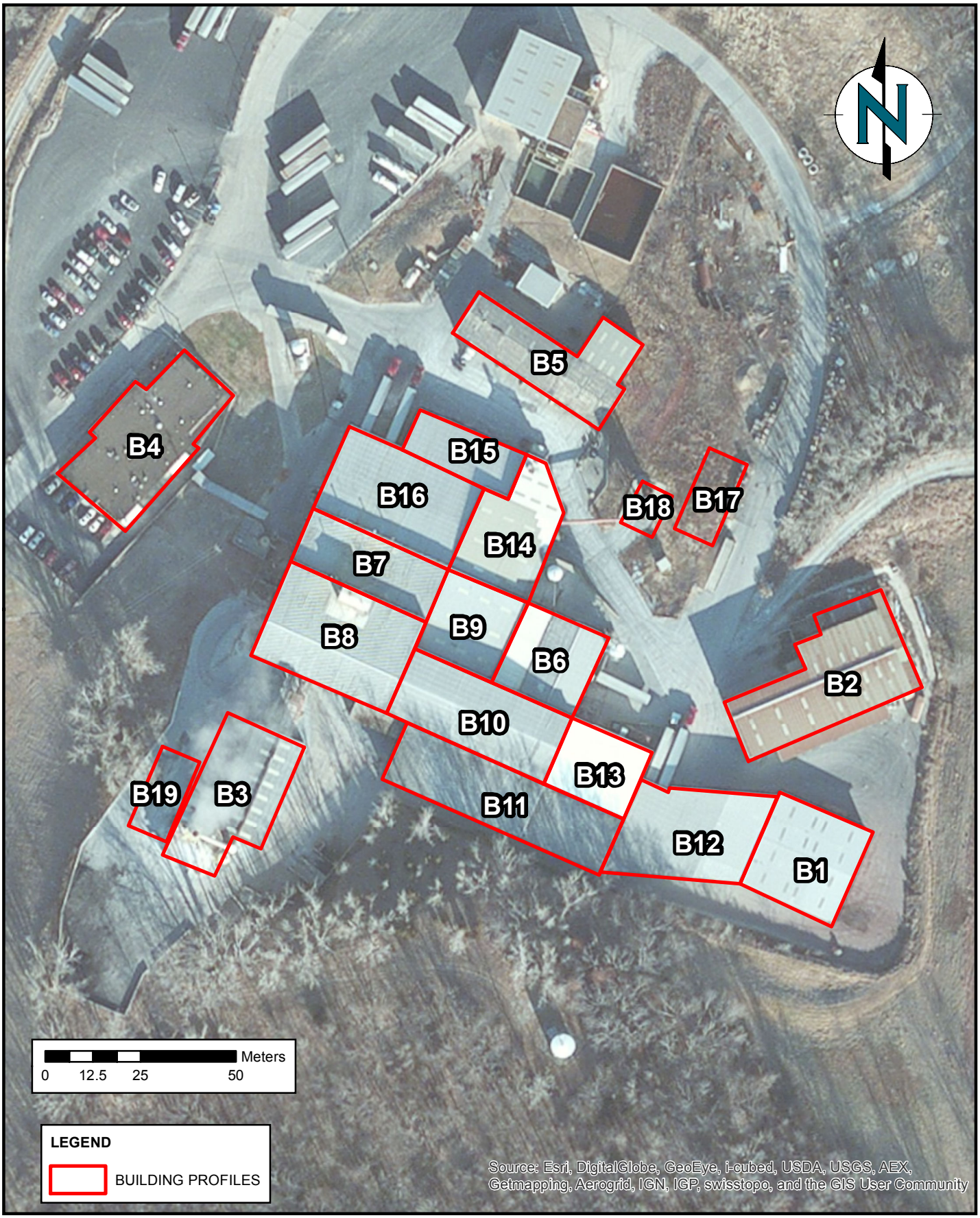
DRAFTED BY: hthompson | DATE: 5/2/2014

DOMAIN OF TERRAIN FILES FOR AERMAP

EXIDE TECHNOLOGIES FOREST CITY, MO

Figure 5

07-21624C



P:\Exide Technologies\Canon Hollow, MO\GIS\arcview\MXD\Figure 6. BUILDING PROFILES.5.1.14.mxdt

ENVIRON

DRAFTED BY: hthompson | DATE: 5/2/2014

BUILDING PROFILES

EXIDE TECHNOLOGIES FOREST CITY, MO

Figure 6

07-21624C

ENVIRON

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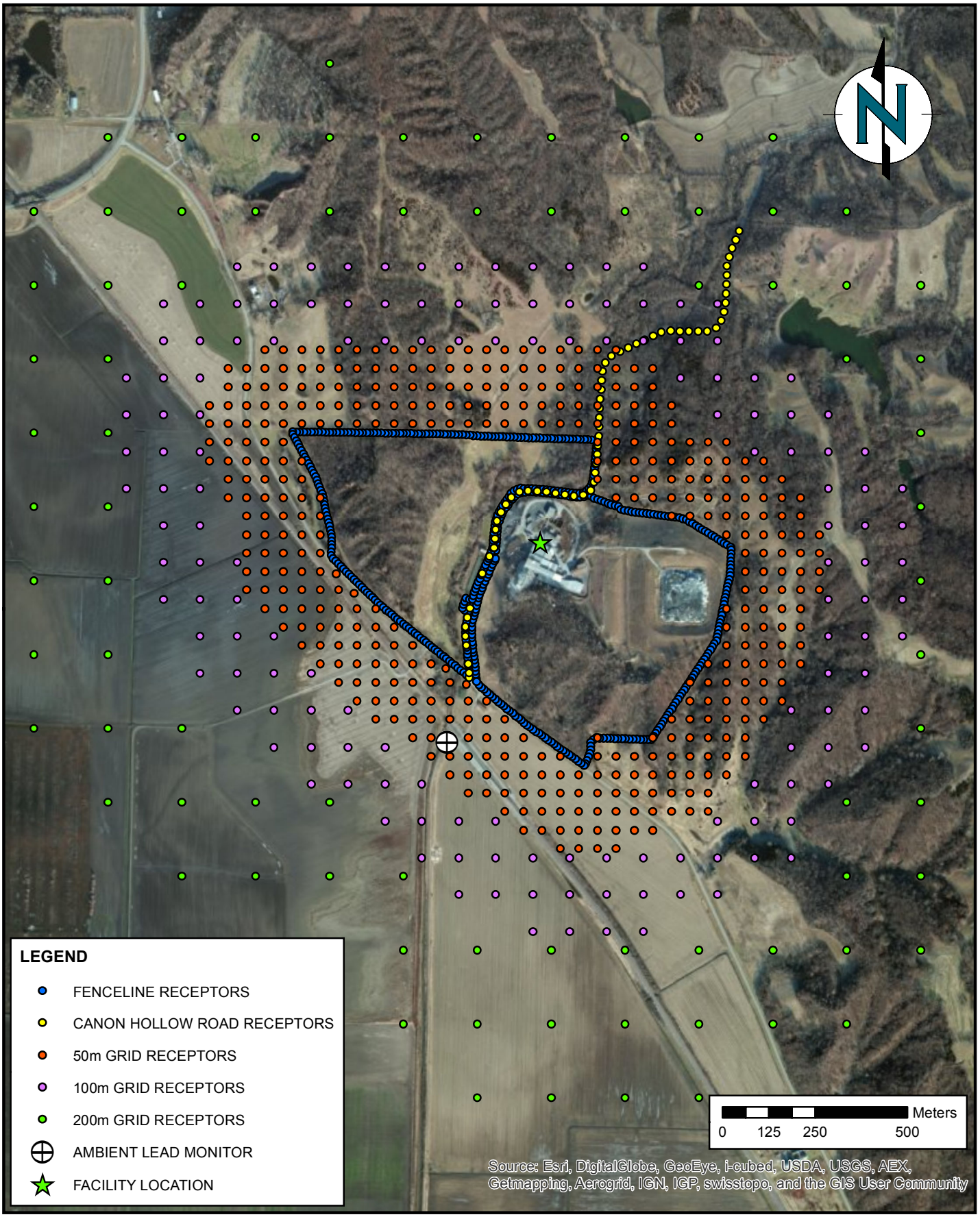
DISTANCES TO LOCAL AIRPORTS

EXIDE TECHNOLOGIES FOREST CITY, MO

Figure 7

07-21624C

P:\Exide Technologies\Canon Hollow, MO\GIS\arcview\MXD\Figure 7. AIRPORT LOCATIONS.5.1.14.mxdt



P:\Exide Technologies\Canon Hollow, MO\GIS\arcview\MXD\Figure 8 RECEPTORS_5.1.14.mxdt

ENVIRON

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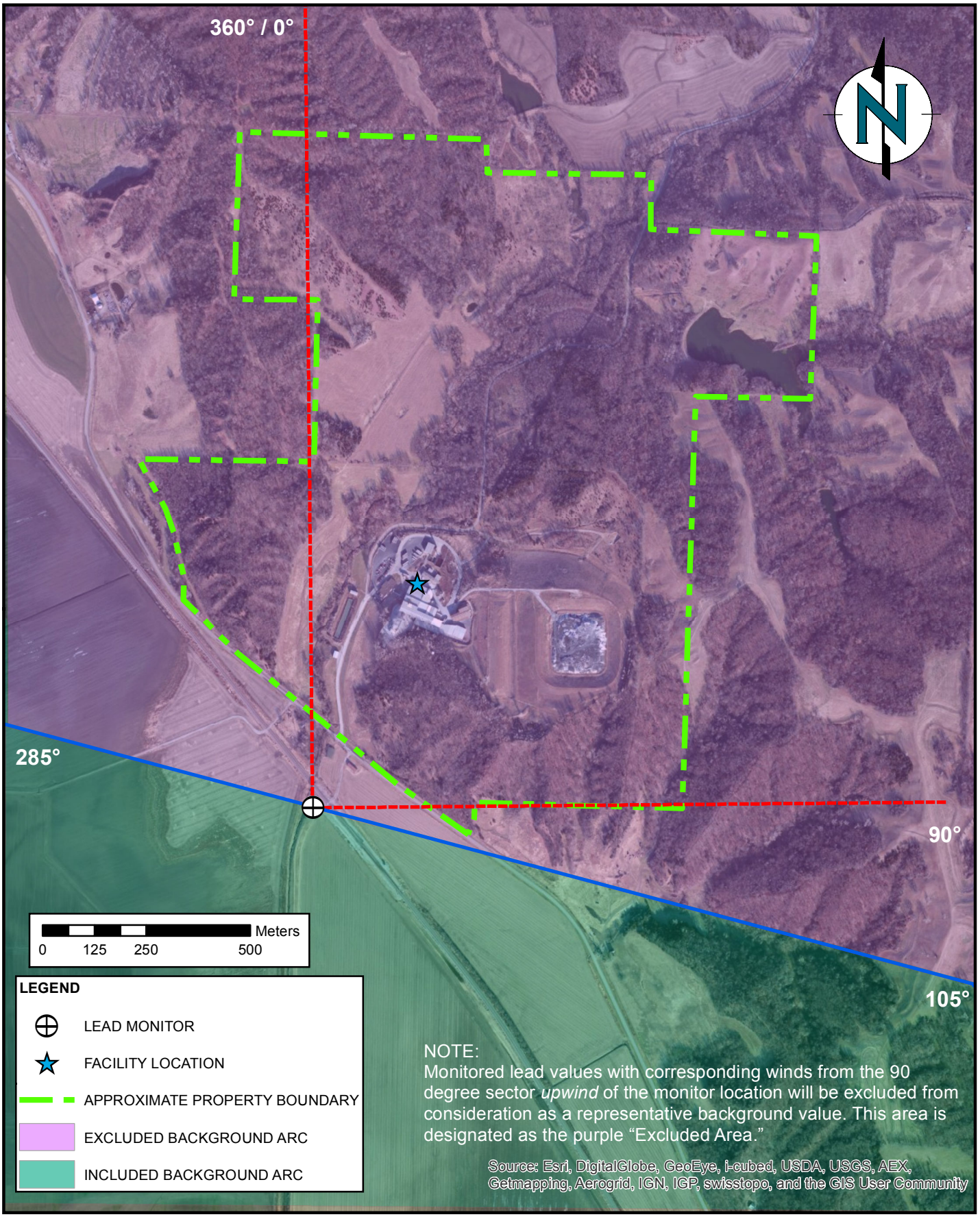
RECEPTORS FOR USE IN AERMOD

EXIDE TECHNOLOGIES FOREST CITY, MO

Figure 8

07-21624A



P:\Exide Technologies\Canon Hollow, MO\GIS\arcview\MXD\Figure 9. Background Exclusion Area.5.1.14.mxdt

ENVIRON

DRAFTED BY: hthompson | DATE: 5/2/2014

BACKGROUND EXCLUSION AREA

EXIDE TECHNOLOGIES FOREST CITY, MO

Figure 9

07-21624C

Appendix A

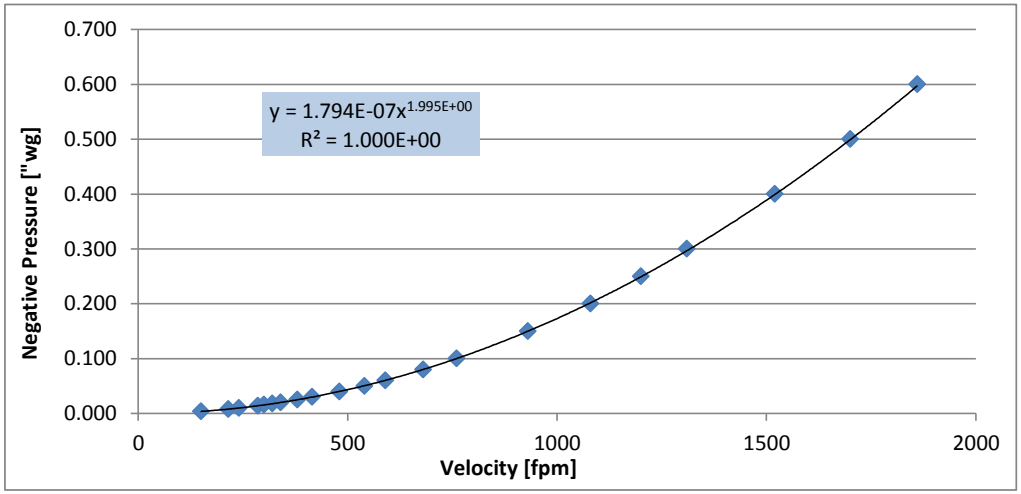
Facility Negative Pressure Calculation

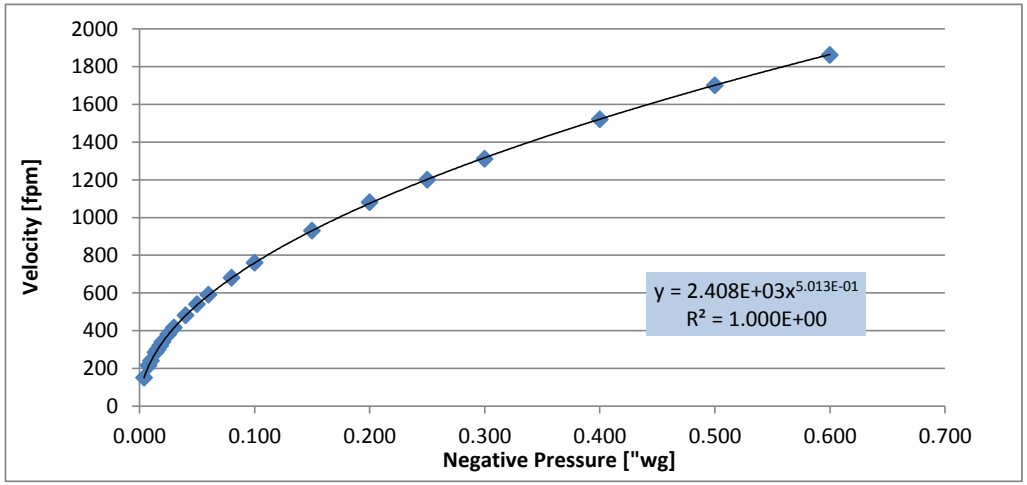
Negative Pressures and Corresponding Velocities Through Crack Openings (Calculated with air at room tepmperature, standard atmospheric pressure, C_e = 0.6)

Negative Pressure ("wg)	Velocity (fpm)
0.004	150
0.008	215
0.010	240
0.014	285
0.016	300
0.018	320
0.020	340
0.025	380
0.030	415
0.040	480
0.050	540
0.060	590
0.080	680
0.100	760
0.150	930
0.200	1080
0.250	1200
0.300	1310
0.400	1520
0.500	1700
0.600	1860

Source: American Conference of Governmental Industrial Hygenists. 2001. Industrial Ventilation: A Manual of Recommended Practice. 24th Edition. Table 7-2.

Note: § 63.544(c)(1) of 40 CFR 63 Subpart X requires continuous ventilation of the total enclosure to ensure negative pressure values of at least 0.007 inches of water. Negative pressure or velocity values can be extrapolated from the the table above using the equations displayed in the graphs to the right.





LEV Hood Flow Rate Calculations

Measurement Point	Area of Opening (ft^2)[a]	Velocity (fpm)[b]	Flow Rate (cfm)
Kettle 1	9	545	4905
Kettle 2	9	530	4770
Kettle 3	9	525	4725
Kettle 4	9	555	4995
Dross Pot 1	1.88	375	705
Dross Pot 2	1.88	380	714
Dross Pot 3	1.88	395	743
Dross Pot 4	1.88	370	696
Furance - Slag Tap	1.06	470	498
Furnace - Metal Well	3.61	510	1841
Metal Well Trough	3.61	674	2433
Furnace - Charge Hood	11.88	1142	13567
Total	**63.68**	**6471**	**40592**

Footnotes:

a. Areas from "Method and Procedure for Determining Velocity of Ventilation Hoods" SOP for the Exide Canon Hollow facility.

b. Velocities from quarterly testing conducted on April 24, 2013.

Exterior Door Schedule

Main Equipment Doors

Door	Proposed Size	Width	Height	Area	Width	Height	Area
	ft	ft	ft	ft^2	m	m	m^2
A	14' x 14'	14.00	14.00	196.00	4.27	4.27	18.21
B	16' x 15'-4"	16.00	15.33	245.33	4.88	4.67	22.79
C	14' x 13.5'	14.00	13.50	189.00	4.27	4.11	17.56
D	14' x 13.5'	14.00	13.50	189.00	4.27	4.11	17.56
J	4' x 2'	4.00	2.00	8.00	1.22	0.61	0.74
K	4' x 2'	4.00	2.00	8.00	1.22	0.61	0.74
N	14' x 16'	14.00	16.00	224.00	4.27	4.88	20.81
Q	9' x 10'	9.00	10.00	90.00	2.74	3.05	8.36
R	9' x 10'	9.00	10.00	90.00	2.74	3.05	8.36
S	16.5' x 16	16.50	16.00	264.00	5.03	4.88	24.53
W	14' x 16'	14.00	16.00	224.00	4.27	4.88	20.81
X	12' x 14'	12.00	14.00	168.00	3.66	4.27	15.61
Y	19' x 14'	19.00	14.00	266.00	5.79	4.27	24.71
Z	19' x 14'	19.00	14.00	266.00	5.79	4.27	24.71
AA	16' x 14'	16.00	14.00	224.00	4.88	4.27	20.81
			Sum	**2651.33**			

Conversions
0.3048 meters/foot

Exterior Doors	Area (ft^2)
Main Equipment Doors	2651
Total	**2651**

Bahouse/Fan	Rated Flow (acfm)	Capacity	Flow (cfm)
South Baghouse (BH-1)	315,000	75%	236,250
North Baghouse (BH-2)	315,000	75%	236,250
Demister	32,000	100%	32,000
LEV	40,592	100%	40,592
Total			**545,092**

Velocity (fpm)	206
Negative pressure ("wg)	0.007

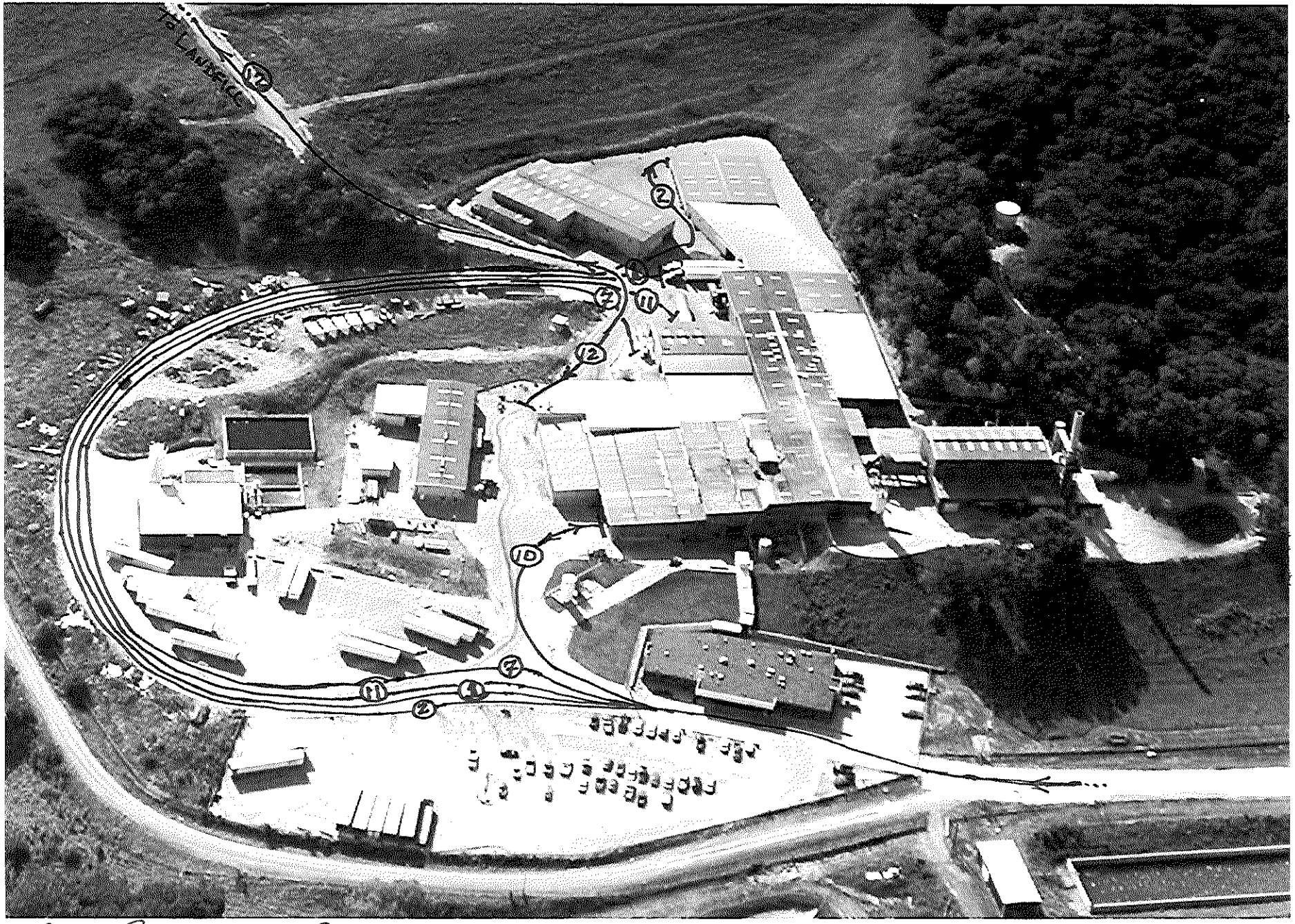
Appendix B

Haul Road Traffic Patterns

Group	Route Description	Total Trips Per Month	Unrestricted Trips Per Month
A	Cores/Scrap	368	0
	Industrials		
B	Furnace Coke	87	4
	Lime (bulk)		
	Furnace Fluxes		
C	Trash	61	3
	Acid (bulk)		
	Plastic Chips		
D	Cement (bulk)	22	1
	Oxygen (liquid)		
E	Lead Products	260	13
F	Slag Mix to Landfill	217	11
G	Service	26	1
Total		**1040**	**34**

*Note: Restricted trips only use the haul roads 12 hours per day (7AM-7PM). Unrestricted trips use the haul roads 24 hours per day.

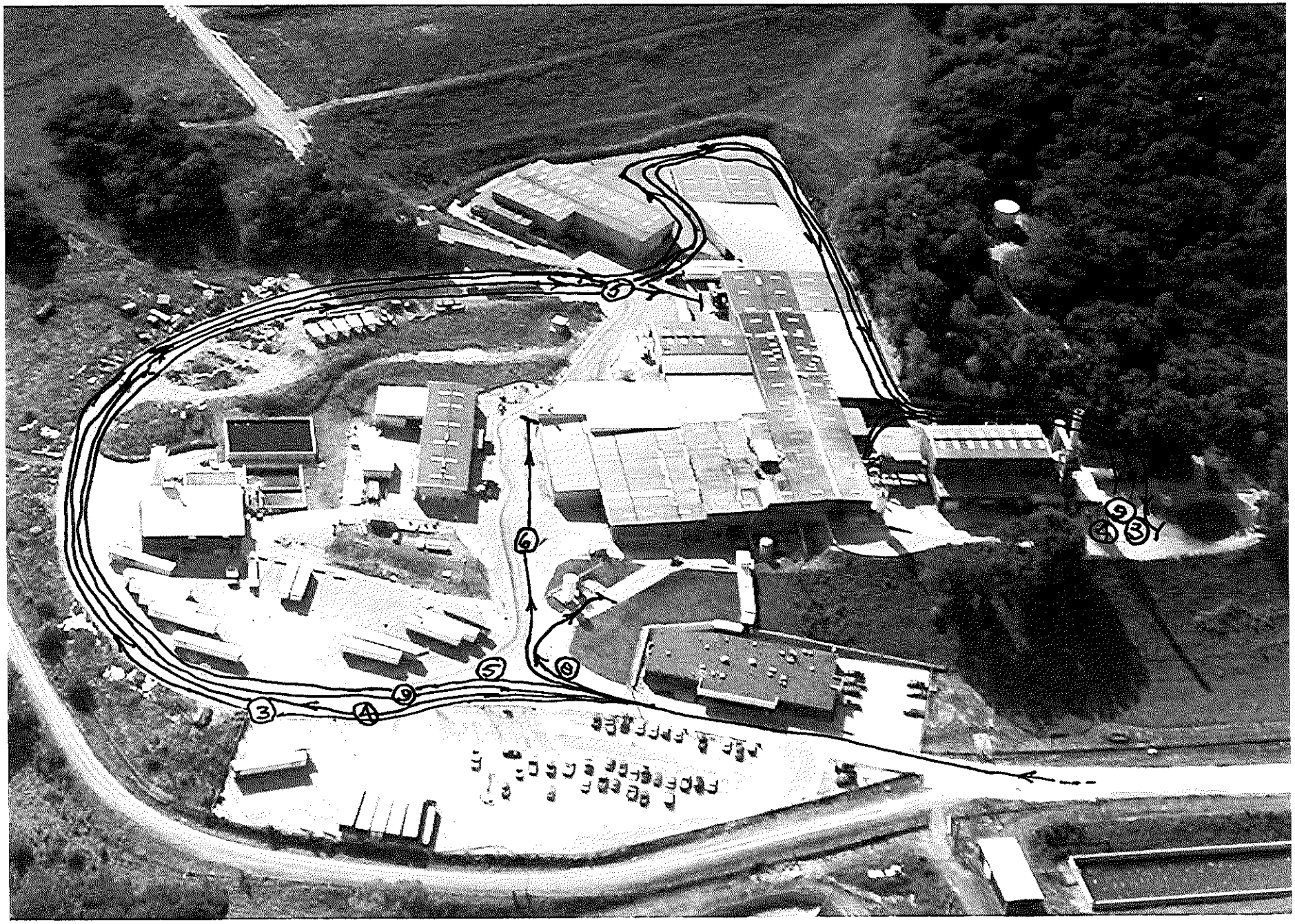
CANON HOLLOW TRAFFIC FLOW



FEED, PRODUCT, BY-PRODUCTS:

1 - CORES, SCRAP
2 - INDUSTRIALS
7 - ACID
10 - LEAD PRODUCTS
11 - PLASTIC CHIPS
12 - SLAG MIX

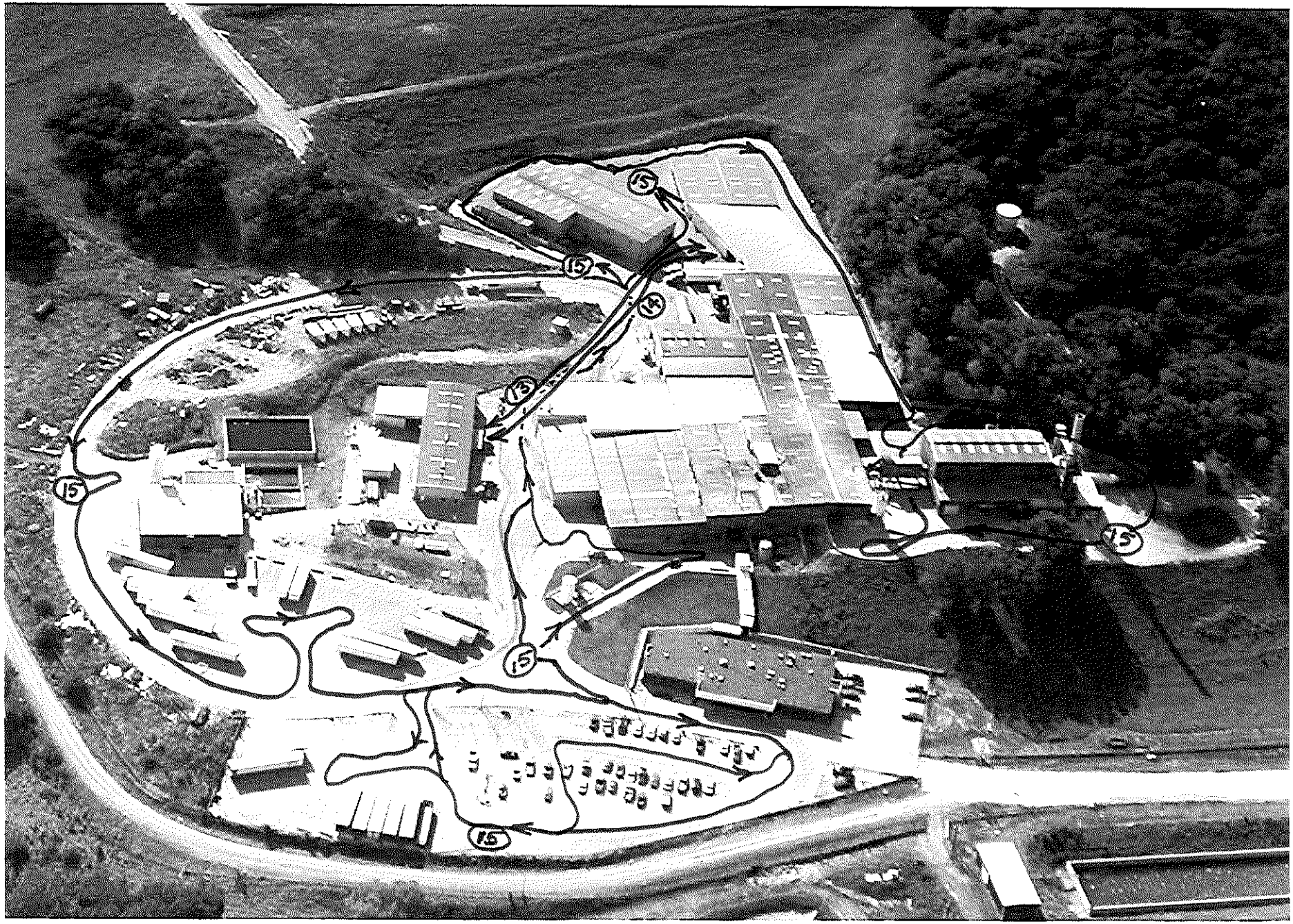
CAMON HOLLOW TRAFFIC FLOW



SUPPLIES & OUTSIDE SERVICE:

3-COKE	5-TRASH	8-OXYGEN
4-LIME	6-CEMENT	9-FLUXES

CANON HOLLOW TRAFFIC FLOW



CLEANING & SERVICE:
13 - LOADER SERVICE
14 - FORKLIFT SERVICE
15 - ROAD SWEEPER

Appendix C

Example Haul Road Emission Calculation

Paved Roads Predictive Emission Factor Equation for Daily Basis[a] for HR01

$$E_{ext} = [k(sL)^{0.91} \times W^{1.02}](1 - \frac{P}{4N})$$

Variable	Units	Value	Description
k	g/VKT^2	3.23	particle size multiplier for PM-30 (TSP) and kilometers
sL^3	g/m^2	0.23	road surface silt loading
W	tons	24.30	average weight of the vehicles traveling the road segment (weighted by VKT per vehicle type)
P^d	days	103.6	number of "wet" days with at least 0.254 mm (0.01 in) of precipitation during the averaging period
N	days	365	number of days in the averaging period (e.g., 365 for annual, 91 for seasonal, 30 for monthly)
E_{ext}	g/VKT^2	20.40	annual average particulate matter (PM-30) emission factor

Emission Calculation for HR01

$$Pb\ Emissions\ \left(\frac{g}{sm^2}\right) = E_{ext}\left(\frac{g}{VKT}\right) \times \left(\frac{VKT}{hr}\right) \times \left(\frac{1\ hr}{60\ min}\right) \times \left(\frac{1\ min}{60\ s}\right) \times \frac{1}{Area\ (m^2)} \times \%Pb$$

E_{ext} (g/VKT)	20.40
VKT/hr^5	8.99E-02
min./hr	60
seconds/min.	60
Area (m^2)	575.91
%Pb	4.70%
Pb Emissions (g/sm^2)	**4.16E-08**

Notes:

1. Equation 2 from AP42, Fifth Edition, Volume I, Chapter 13, Section 13.2.1: Paved Roads (http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0201.pdf)
2. VKT = Vehicle kilometers traveled
3. The value used for paved roads at the facility was obtained from testing at a similar Exide facility in Vernon, California.
4. Based on weather data collected from the Brenner Field Airport, in Falls City, Nebraska, from 1981 to 2010, for the National Oceanic and Atmospheric Administration (NOAA) National Climatic Data Center.
Source: http://www1.ncdc.noaa.gov/pub/data/normals/1981-2010/station-inventories/prcp-inventory.txt
5. The total number of trips through this road segment for the year was divided by 8760 hrs/year for each activity, or truck route, that drives through the road segment to obtain the number of trips per hour. The trips per hour for each activity were then multiplied by the length of the road segment and added together to get a total VKT/hr for the road segment.