



**East End and County Industrial
MOBILE SOURCE HEALTH RISK ASSESSMENT
CITY OF CHINO**

PREPARED BY:

Haseeb Qureshi
hqureshi@urbanxroads.com
(949) 336-5987

JANUARY 2, 2020

12828-02 HRA Report

TABLE OF CONTENTS

TABLE OF CONTENTS.....	I
APPENDICES	I
LIST OF EXHIBITS	II
LIST OF TABLES	II
LIST OF ABBREVIATED TERMS.....	III
EXECUTIVE SUMMARY	1
1 INTRODUCTION.....	3
1.1 Site Location.....	4
1.2 Project Description.....	4
2 BACKGROUND.....	8
2.1 Background on Recommended Methodology.....	8
2.2 Emissions Estimation	8
2.3 Exposure Quantification	13
2.4 Carcinogenic Chemical Risk.....	16
2.5 Non-carcinogenic Exposures.....	17
2.6 Potential Project-Related DPM Source Cancer and Non-Cancer Risks.....	18
3 REFERENCES.....	21
4 CERTIFICATION.....	23

APPENDICES

APPENDIX 2.1: AERMOD MODEL INPUT/OUTPUT

APPENDIX 2.2: RISK CALCULATIONS

LIST OF EXHIBITS

EXHIBIT 1-A: LOCATION MAP	5
EXHIBIT 1-B: SITE PLAN	6
EXHIBIT 2-A: MODELED EMISSION SOURCES	11
EXHIBIT 2-B: WIND ROSE (SRA 33)	14
EXHIBIT 2-C: MODELED RECEPTORS	19

LIST OF TABLES

TABLE ES-1: SUMMARY OF CANCER AND NON-CANCER RISKS	2
TABLE 2-1: 2021 WEIGHTED AVERAGE DPM EMISSIONS FACTORS	10
TABLE 2-2: DPM EMISSIONS FROM PROJECT TRUCKS (2021 ANALYSIS YEAR)	12
TABLE 2-3: AERMOD MODEL PARAMETERS.....	13
TABLE 2-4: EXPOSURE ASSUMPTIONS FOR INDIVIDUAL CANCER RISK (30 YEAR RESIDENTIAL).....	15
TABLE 2-5: EXPOSURE ASSUMPTIONS FOR INDIVIDUAL CANCER RISK (25 YEAR WORKER).....	15

LIST OF ABBREVIATED TERMS

(1)	Reference
μg	Microgram
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
APS	Auxiliary Power System
AQMD	Air Quality Management District
ARB	Air Resources Board
CEQA	California Environmental Quality Act
CPF	Cancer Potency Factor
DPM	Diesel Particulate Matter
EMFAC	Emission Factor Model
EPA	Environmental Protection Agency
HHD	Heavy Heavy-Duty
HI	Hazard Index
HRA	Health Risk Assessment
LHD	Light Heavy-Duty
MATES	Multiple Air Toxics Exposure Study
MEIR	Maximally Exposed Individual Receptor
MEISC	Maximally Exposed Individual School Child
MEIW	Maximally Exposed Individual Worker
MHD	Medium Heavy-Duty
NAD	North American Datum
OEHHA	Office of Environmental Health Hazard Assessment
PCE	Passenger Car Equivalent
PM10	Particulate Matter 10 microns in diameter or less
Project	East End and County Industrial
REL	Reference Exposure Level
RM	Recommended Measures
SCAQMD	South Coast Air Quality Management District
SRA	Source Receptor Area
TAC	Toxic Air Contaminant
TIA	Traffic Impact Analysis
URF	Unit Risk Factor
UTM	Universal Transverse Mercator
VMT	Vehicle Miles Traveled

This page intentionally left blank

EXECUTIVE SUMMARY

This report evaluates the potential mobile source health risk impacts to sensitive receptors (residents) and adjacent workers associated with the development of the proposed Project, more specifically, health risk impacts as a result of exposure to diesel particulate matter (DPM) as a result of heavy-duty diesel trucks accessing the site. This section summarizes the significance criteria and Project mobile source health risks.

The results of the health risk assessment of lifetime cancer risk from Project-generated DPM emissions are provided in Table ES-1 below for the Project.

Residential Exposure Scenario:

The residential land use with the greatest potential exposure to Project DPM source emissions is located approximately 71 feet northwest of the Project site, east of East End Avenue. At the maximally exposed individual receptor (MEIR), the maximum incremental cancer risk attributable to Project DPM source emissions is estimated at 1.15 in one million, which is less than the South Coast Air Quality Management District's (SCAQMD's) significance threshold of 10 in one million. At this same location, non-cancer risks were estimated to be 0.0004, which would not exceed the applicable significance threshold of 1.0. Because all other modeled residential receptors are located at a greater distance than the scenario analyze herein, and DPM dissipates with distance from the source, all other residential receptors in the vicinity of the Project would be exposed to less emissions and therefore less risk than the MEIR identified herein. As such, the Project will not cause a significant human health or cancer risk to residents in the project vicinity.

Worker Exposure Scenario:

The worker receptor land use with the greatest potential exposure to Project DPM source emissions is located approximately 13 feet west of the Project site at the Sunwest Tropical Nursery. At the maximally exposed individual worker (MEIW), the maximum incremental cancer risk impact at this location is 0.28 in one million which is less than the threshold of 10 in one million. Maximum non-cancer risks at this same location were estimated to be 0.0009, which would not exceed the applicable threshold of 1.0. As such, the Project will not cause a significant human health or cancer risk to adjacent workers. All other modeled worker locations in the vicinity of the Project would be exposed to less emissions and therefore less risk than the MEIW identified herein. Because all other modeled worker receptors are located at a greater distance than the scenario analyze herein, and DPM dissipates with distance from the source, all other worker receptors in the vicinity of the Project would be exposed to less emissions and therefore less risk than the MEIW identified herein. As such, the Project will not cause a significant human health or cancer risk to workers in the project vicinity.

School Child Exposure Scenario:

There are no schools located within a $\frac{1}{4}$ mile of the Project site. As such, there would be no significant impacts that would occur to any schools in the vicinity of the Project. Proximity to sources of toxics is critical to determining the impact. In traffic-related studies, the additional

non-cancer health risk attributable to proximity was seen within 1,000 feet and was strongest within 300 feet. California freeway studies show about a 70-percent drop-off in particulate pollution levels at 500 feet. Based on CARB and SCAQMD emissions and modeling analyses, an 80-percent drop-off in pollutant concentrations is expected at approximately 1,000 feet from a distribution center (1). As such, the Project will not cause a significant human health or cancer risk to school children in the project vicinity.

TABLE ES-1: SUMMARY OF CANCER AND NON-CANCER RISKS

Time Period	Location	Maximum Lifetime Cancer Risk (Risk per Million)	Significance Threshold (Risk per Million)	Exceeds Significance Threshold
30 Year Exposure	Maximum Exposed Sensitive Receptor	1.15	10	NO
25 Year Exposure	Maximum Exposed Worker Receptor	0.28	10	NO
Time Period	Location	Maximum Hazard Index	Significance Threshold	Exceeds Significance Threshold
Annual Average	Maximum Exposed Sensitive Receptor	0.0004	1.0	NO
Annual Average	Maximum Exposed Worker Receptor	0.0009	1.0	NO

1 INTRODUCTION

The purpose of this Health Risk Assessment (HRA) is to evaluate Project-related impacts to sensitive receptors (residential, schools) and adjacent workers as a result of heavy-duty diesel trucks accessing the site.

The South Coast Air Quality Management District (SCAQMD) reviewed the conceptual site plan for the proposed project and provided input to the City on the scope of the air quality analysis. SCAQMD identifies that if a proposed Project is expected to generate/attract heavy-duty diesel trucks, which emit diesel particulate matter (DPM), preparation of a mobile source HRA is recommended. This document serves to meet the SCAQMD's request for preparation of a HRA. The mobile source HRA has been prepared in accordance with the document Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis (2) and is comprised of all relevant and appropriate procedures presented by the U.S. EPA, California Environmental Protection Agency and SCAQMD. Cancer risk is expressed in terms of expected incremental incidence per million population. The SCAQMD has established an incidence rate of ten (10) persons per million as the maximum acceptable incremental cancer risk due to DPM exposure. This threshold serves to determine whether or not a given project has a potentially significant development-specific and cumulative impact.

The AQMD has published a report on how to address cumulative impacts from air pollution: *White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution* (3). In this report the AQMD clearly states (Page D-3):

"...the AQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR. The only case where the significance thresholds for project specific and cumulative impacts differ is the Hazard Index (HI) significance threshold for toxic air contaminant (TAC) emissions. The project specific (project increment) significance threshold is HI > 1.0 while the cumulative (facility-wide) is HI > 3.0. It should be noted that the HI is only one of three TAC emission significance thresholds considered (when applicable) in a CEQA analysis. The other two are the maximum individual cancer risk (MICR) and the cancer burden, both of which use the same significance thresholds (MICR of 10 in 1 million and cancer burden of 0.5) for project specific and cumulative impacts.

Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant."

The SCAQMD has also established non-carcinogenic risk parameters for use in HRAs. Non-carcinogenic risks are quantified by calculating a "hazard index," expressed as the ratio between the ambient pollutant concentration and its toxicity or Reference Exposure Level (REL). An REL is a concentration at or below which health effects are not likely to occur. A hazard index less than one (1.0) means that adverse health effects are not expected. Within this analysis, non-carcinogenic exposures of less than 1.0 are considered less-than-significant.

1.1 SITE LOCATION

The proposed East End and County Industrial site is located on the northwest corner of East End Avenue and County Road, in the City of Chino, as shown on Exhibit 1-A. The Project site is currently occupied by existing structures on the southernly portion of the site. All existing structures and asphalt/concrete within the Project site will be demolished.

Existing land uses near the site include residential homes located east and south of the Project site, industrial facilities located to the north and south, and the Sunwest Tropical Nursey located adjacent to the Project's western border. State Route 60 (SR-60) is located approximately 105 feet south of the Project site.

1.2 PROJECT DESCRIPTION

The development of the proposed Project is to consist of 212,251 square feet of High-Cube Fulfillment Center Warehouse use (within Building 1) and 55,534 square feet of Industrial Park use (within Buildings 2-4), as shown on Exhibit 1-B. For the purposes of this analysis, the Project is proposed to be developed in a single phase with an anticipated Opening Year of 2021.

At the time this air quality analysis was prepared, the future tenants of the proposed Project were unknown. This air quality analysis is intended to describe impacts associated with the expected typical operational activities at the Project site.

Per the *East End and County Industrial Traffic Impact Analysis* (TIA) prepared by Urban Crossroads, Inc. the Project is expected to generate a total of approximately 642 two-way vehicular trips per day (321 inbound and 321 outbound) which includes 106 two-way truck trips per day (53 inbound and 53 outbound) (4). This HRA evaluates the potential impacts resulting from diesel exhaust from the 196 two-way truck trips generated by the Project.

EXHIBIT 1-A: LOCATION MAP

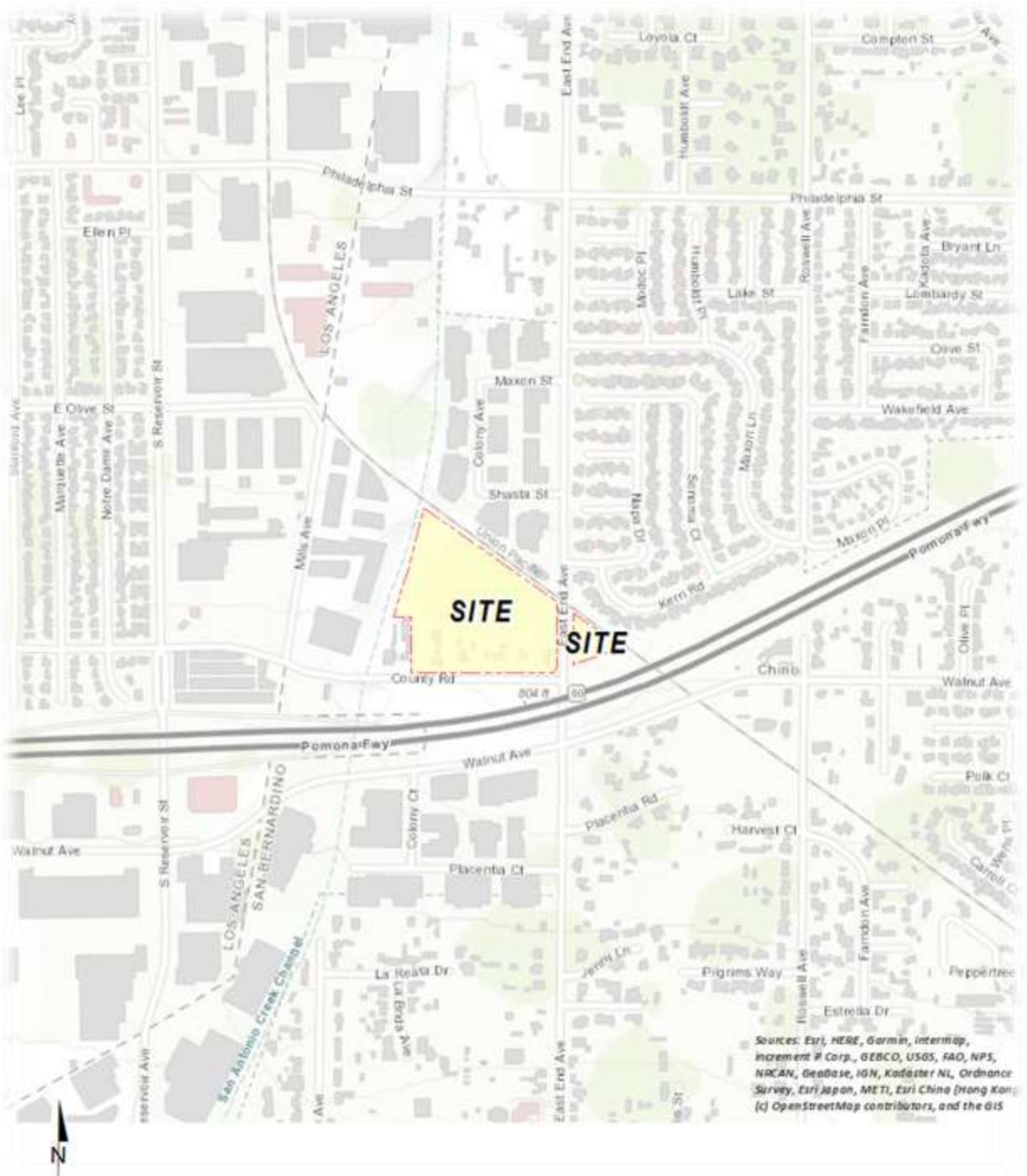


EXHIBIT 1-B: SITE PLAN



This page intentionally left blank

2 BACKGROUND

2.1 BACKGROUND ON RECOMMENDED METHODOLOGY

As noted above, this HRA is based on SCAQMD guidelines to produce conservative estimates of risk posed by exposure to DPM. The conservative nature of this analysis is due primarily to the following factors:

- The ARB-adopted diesel exhaust Unit Risk Factor (URF) of 300 in one million per $\mu\text{g}/\text{m}^3$ is based upon the upper 95 percentile of estimated risk for each of the epidemiological studies utilized to develop the URF. Using the 95th percentile URF represents a very conservative (health-protective) risk posed by DPM.
- The emissions derived assume that every truck accessing the project site will idle for 15 minutes under the unmitigated scenario, this is an overestimation of actual idling times and thus conservative.¹ It should be noted that ARB's anti-idling requirements impose a 5-minute maximum idling time and therefore the analysis conservatively overestimates DPM emissions from idling by a factor of 3.

2.2 EMISSIONS ESTIMATION

2.2.1 ON-SITE AND OFF-SITE TRUCK ACTIVITY

Vehicle DPM emissions were estimated using emission factors for particulate matter less than 10 μm in diameter (PM_{10}) generated with the 2017 version of the Emission FACTor model (EMFAC) developed by the ARB. EMFAC 2017 is a mathematical model that was developed to calculate emission rates from motor vehicles that operate on highways, freeways, and local roads in California and is commonly used by the ARB to project changes in future emissions from on-road mobile sources (5). The most recent version of this model, EMFAC 2017, incorporates regional motor vehicle data, information and estimates regarding the distribution of vehicle miles traveled (VMT) by speed, and number of starts per day.

Several distinct emission processes are included in EMFAC 2017. Emission factors calculated using EMFAC 2017 are expressed in units of grams per vehicle miles traveled (g/VMT) or grams per idle-hour (g/idle-hr), depending on the emission process. The emission processes and corresponding emission factor units associated with diesel particulate exhaust for this Project are presented below.

For this Project, annual average PM_{10} emission factors were generated by running EMFAC 2017 in EMFAC Mode for vehicles in the San Bernardino County jurisdiction. The EMFAC Mode generates emission factors in terms of grams of pollutant emitted per vehicle activity and can calculate a matrix of emission factors at specific values of temperature, relative humidity, and

¹ Although the Project is required to comply with ARB's idling limit of 5 minutes, staff at SCAQMD recommends that the on-site idling emissions should be estimated for 15 minutes of truck idling (personal communication, in person, with Jillian Wong, December 22, 2016), which would take into account on-site idling which occurs while the trucks are waiting to pull up to the truck bays, idling at the bays, idling at check-in and check-out, etc.

vehicle speed. The model was run for speeds traveled in the vicinity of the Project. The vehicle travel speeds for each segment modeled are summarized below.

- Idling – on-site loading/unloading and truck gate
- 5 miles per hour – on-site vehicle movement including driving and maneuvering
- 25 miles per hour – off-site vehicle movement including driving and maneuvering.

Calculated emission factors are shown at Table 2-1. As a conservative measure, a 2021 EMFAC 2017 run was conducted and a static 2021 emissions factor data set was used for the entire duration of analysis herein (e.g., 30 years). Use of 2021 emission factors would overstate potential impacts since this approach assumes that emission factors remain “static” and do not change over time due to fleet turnover or cleaner technology with lower emissions that would be incorporated after 2021. Additionally, based on EMFAC 2017, Light-Heavy-Duty Trucks comprise of 47.08% diesel, Medium-Heavy-Duty Trucks comprise of 82.28% diesel, and Heavy-Heavy-Duty Trucks comprise of 96.13% diesel trucks and have been accounted for accordingly in the emissions factor generation.

The vehicle DPM exhaust emissions were calculated for running exhaust emissions. The running exhaust emissions were calculated by applying the running exhaust PM₁₀ emission factor (g/VMT) from EMFAC over the total distance traveled. The following equation was used to estimate off-site emissions for each of the different vehicle classes comprising the mobile sources (5):

$$\text{Emissions}_{\text{speedA}} \text{ (g/s)} = \text{EF}_{\text{RunExhaust}} \text{ (g/VMT)} * \text{Distance (VMT/trip)} * \text{Number of Trips (trips/day)} / \text{seconds per day}$$

Where:

$\text{Emissions}_{\text{speedA}}$ (g/s): Vehicle emissions at a given speed A;

$\text{EF}_{\text{RunExhaust}}$ (g/VMT): EMFAC running exhaust PM₁₀ emission factor at speed A;

Distance (VMT/trip): Total distance traveled per trip.

Similar to off-site traffic, on-site vehicle running emissions were calculated by applying the running exhaust PM₁₀ emission factor (g/VMT) from EMFAC and the total vehicle trip number over the length of the driving path using the same formula presented above for on-site emissions. In addition, on-site vehicle idling exhaust emissions were calculated by applying the idle exhaust PM₁₀ emission factor (g/idle-hr) from EMFAC and the total truck trip over the total idle time (15 minutes). The following equation was used to estimate the on-site vehicle idling emissions for each of the different vehicle classes (5):

$$\text{Emissions}_{\text{idle}} \text{ (g/s)} = \text{EF}_{\text{idle}} \text{ (g/hr)} * \text{Number of Trips (trips/day)} * \text{Idling Time (min/trip)} * \\ 60 \text{ minutes per hour} / \text{seconds per day}$$

Where:

$\text{Emissions}_{\text{idle}}$ (g/s): Vehicle emissions during idling;

EF_{idle} (g/s): EMFAC idle exhaust PM₁₀ emission factor.

TABLE 2-1: 2021 WEIGHTED AVERAGE DPM EMISSIONS FACTORS

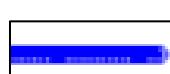
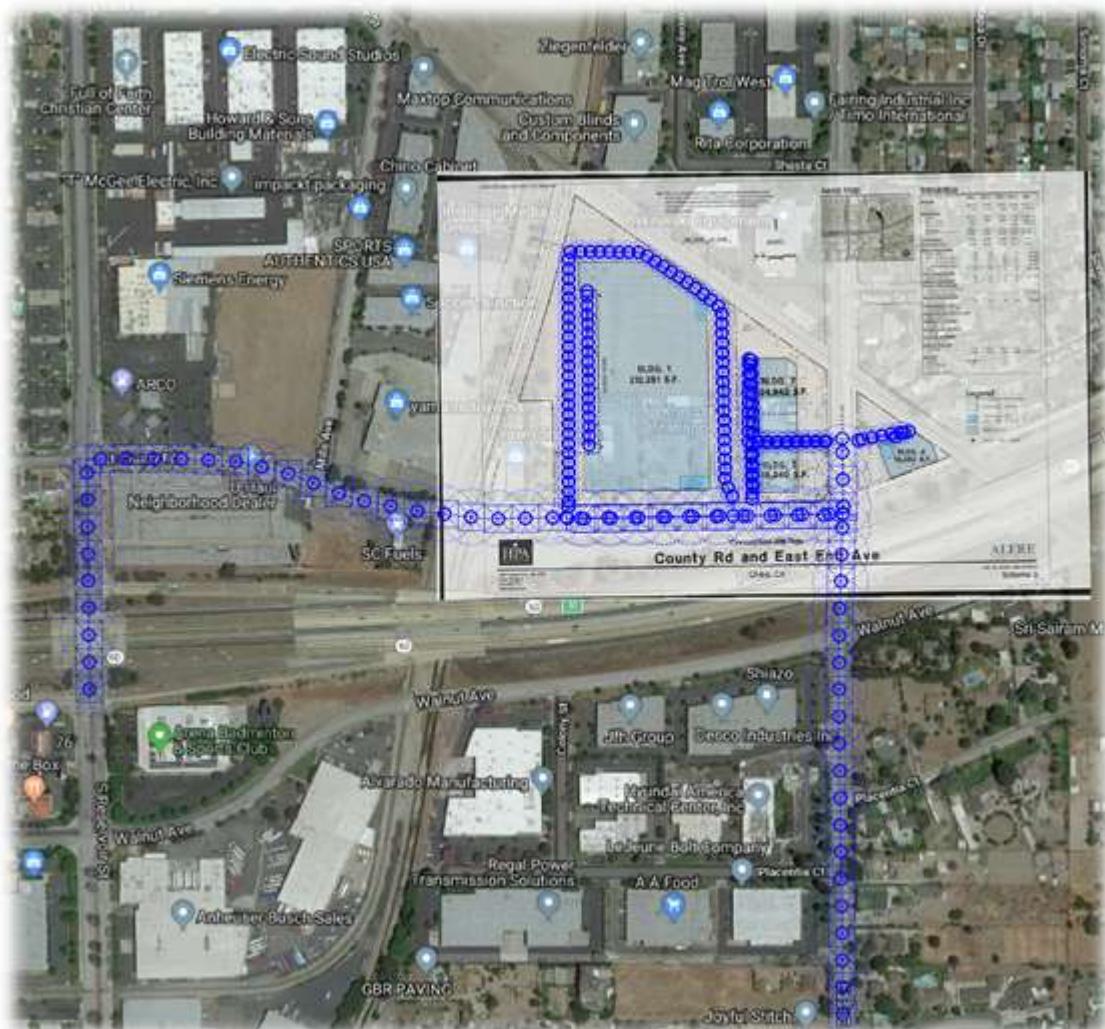
Speed	Weighted Average
0 (idling)	0.09144 (g/idle-hr)
5	0.09067 (g/s)
25	0.03806 (g/s)

Each roadway was modeled as a line source (made up of multiple adjacent volume sources). Due to the large number of volume sources modeled for this analysis, the corresponding coordinates of each volume source have not been included in this report but are included in Appendix "2.1". The DPM emission rate for each volume source was calculated by multiplying the emission factor (based on the average travel speed along the roadway) by the number of trips and the distance traveled along each roadway segment and dividing the result by the number of volume sources along that roadway, as illustrated on Table 2-2. The modeled emission sources are illustrated on Exhibit 2-A. The modeled truck travel routes included in the HRA are based on the truck trip distributions (inbound and outbound) available from the Project's Traffic Impact Analysis (TIA) (4). The modeled truck route is consistent with the trip distribution patterns identified in the Project's traffic study, is supported by substantial evidence, and was modeled to determine the potential impacts to sensitive receptors along the primary truck routes. The modeling domain is limited to the Project's primary truck route and includes off-site sources in the study area for more than 1 mile. This modeling domain is more conservative than using only a ¼ mile modeling domain which is supported by substantial evidence since several studies have shown that the greatest potential risks occur within a ¼ mile of the primary source of emissions (1) (in the case of the Project this is the on-site idling and on-site travel).

On-site truck idling was estimated to occur as trucks enter and travel through the facility. Although the Project is required to comply with CARB's idling limit of 5 minutes, staff at SCAQMD recommends that the on-site idling emissions should be estimated for 15 minutes of truck idling (6), which would take into account on-site idling which occurs while the trucks are waiting to pull up to the truck bays, idling at the bays, idling at check-in and check-out, etc. As such, this analysis estimated truck idling at 15 minutes, consistent with SCAQMD's recommendation.

Per the *East End and County Industrial Traffic Impact Analysis* (TIA) prepared by Urban Crossroads, Inc. the Project is expected to generate a total of approximately 642 two-way vehicular trips per day (321 inbound and 321 outbound) which includes 106 two-way truck trips per day (53 inbound and 53 outbound) (4). This HRA evaluates the potential impacts resulting from diesel exhaust from the 196 two-way truck trips generated by the Project.

EXHIBIT 2-A: MODELED EMISSION SOURCES



=Modeled Truck Source

TABLE 2-2: DPM EMISSIONS FROM PROJECT TRUCKS (2021 ANALYSIS YEAR)

Truck Emission Rates						
Source	Trucks Per Day	VMT ^a (miles/day)	Truck Emission Rate ^b (grams/mile)	Truck Emission Rate ^b (grams/idle-hour)	Daily Truck Emissions ^c (grams/day)	Modeled Emission Rates (g/second)
On-Site Idling Building 1	40			0.0914	0.91	1.058E-05
On-Site Idling Building 2	4			0.0914	0.08	9.261E-07
On-Site Idling Building 3	6			0.0914	0.14	1.588E-06
On-Site Idling Building 4	4			0.0914	0.08	9.261E-07
On-Site Travel Building 1	80	27.51	0.0907		2.49	2.887E-05
On-Site Travel Building 2	12	1.07	0.0907		0.10	1.121E-06
On-Site Travel Building 3	7	0.51	0.0907		0.05	5.350E-07
On-Site Travel Building 4	7	0.18	0.0907		0.02	1.908E-07
Off-Site Travel 26% on East End Ave.	28	1.14	0.0381		0.04	5.032E-07
Off-Site Travel 16% on County Rd.	17	1.02	0.0381		0.04	4.508E-07
Off-Site Travel 40% on County Rd.	42	3.86	0.0381		0.15	1.701E-06
Off-Site Travel 10% on County Rd.	11	1.61	0.0381		0.06	7.100E-07
Off-Site Travel 20% on East End Ave.	21	6.08	0.0381		0.23	2.678E-06
Off-Site Travel 80% on County Rd. to SR-60	85	34.20	0.0381		1.30	1.506E-05

^a Vehicle miles traveled are for modeled truck route only.
^b Emission rates determined using EMFAC 2017. Idle emission rates are expressed in grams per idle hour rather than grams per mile.
^c This column includes the total truck travel and truck idle emissions. For idle emissions this column includes emissions based on the assumption that each truck idles for 15 minutes.

2.3 EXPOSURE QUANTIFICATION

The analysis herein has been conducted in accordance with the guidelines in the Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis (2). SCAQMD recommends using the Environmental Protection Agency's (U.S. EPA's) AERMOD model. For purposes of this analysis, the Lakes AERMOD View (Version 9.8.3) was used to calculate annual average particulate concentrations associated with site operations. Lakes AERMOD View was utilized to incorporate the U.S. EPA's latest AERMOD Version 19191 (7).

The model offers additional flexibility by allowing the user to assign an initial release height and vertical dispersion parameters for mobile sources representative of a roadway. For this HRA, the roadways were modeled as adjacent volume sources. Roadways were modeled using the U.S. EPA's haul route methodology for modeling of on-site and off-site truck movement. More specifically, the Haul Road Volume Source Calculator in Lakes AERMOD View has been utilized to determine the release height parameters. Based on the U.S. EPA methodology, the Project's modeled sources would result in a release height of 3.49 meters, and an initial lateral dimension of 4.0 meters, and an initial vertical dimension of 3.25 meters.

SCAQMD required model parameters are presented in Table 2-3 (8). The model requires additional input parameters including emission data and local meteorology. Meteorological data from the SCAQMD's Chino Airport monitoring station (SRA 33) was used to represent local weather conditions and prevailing winds (9). A wind rose exhibit of the Perris monitoring station is provided at Exhibit 2-B.

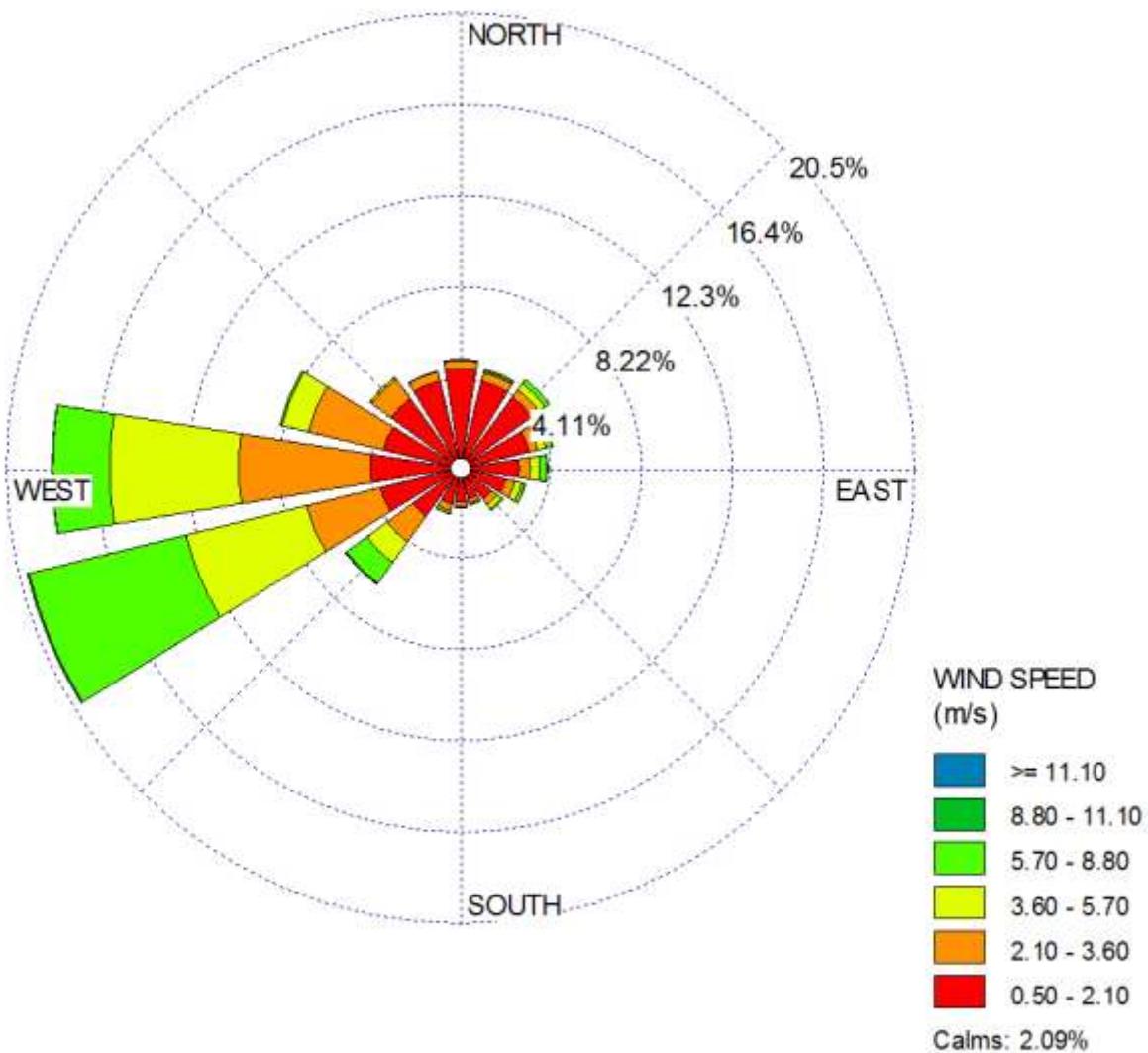
TABLE 2-3: AERMOD MODEL PARAMETERS

Dispersion Coefficient	Urban
Population	2,035,210
Terrain	Elevated (Regulatory Default)
Averaging Time	1 year (5-year Meteorological Data Set)
Receptor Height	0 meters (Regulatory Default)

Universal Transverse Mercator (UTM) coordinates for World Geodetic System (WGS) 84 were used to locate the project boundaries, each volume source location, and receptor locations in the project vicinity. The AERMOD dispersion model summary output files for the proposed facility are presented in Appendix "2.1".

Receptors may be placed at applicable structure locations for residential, worker, and school properties and not necessarily the boundaries of these uses. It should be noted that the primary purpose of receptor placement is focused on long-term exposure. For example, the HRA evaluates the potential health risks to residential and worker receptors over a period of 30 or 25 years of exposure, respectively. As such, even though it is unlikely to occur in practical terms (because the amount of time spent indoors), this study assumes that a resident, worker, or school child would be exposed over a long-period of time for 12 or 24-hours per day at the structure where they reside, work, or occupy.

EXHIBIT 2-B: WIND ROSE (SRA 33)



Consistent with SCAQMD modeling guidance, all receptors were set to the elevation so that only ground-level concentrations are analyzed (9). United States Geological Survey (USGS) Digital Elevation Model (DEM) terrain data based on a 1-minute topographic quadrangle map series using AERMAP was utilized in the HRA modeling to set elevations.

Furthermore, worker receptors immediately adjacent to the Project site have been evaluated in the HRA. Any impacts to workers located further away from the Project site than the modeled worker receptors would have a lesser impact than what has already been disclosed in the HRA at the MEIW.

Discrete variants for daily breathing rates, exposure frequency, and exposure duration were obtained from relevant distribution profiles presented in the 2015 OEHHA Guidelines. Tables 2-4 and 2-6 summarize the Exposure Parameters for Residents and Offsite Worker exposure scenarios based on 2015 OEHHA Guidelines. Appendix 2.2 includes the detailed risk calculation.

TABLE 2-4: EXPOSURE ASSUMPTIONS FOR INDIVIDUAL CANCER RISK (30 YEAR RESIDENTIAL)

Age	Daily Breathing Rate (L/kg-day)	Age Specific Factor	Exposure Duration (years)	Fraction of Time at Home	Exposure Frequency (days/year)	Exposure Time (hours/day)
-0.25 to 0	361	10	0.25	0.85	350	24
0 to 2	1090	10	2	0.85	350	24
2 to 16	572	3	14	0.72	350	24
16 to 30	261	1	14	0.73	350	24

TABLE 2-5: EXPOSURE ASSUMPTIONS FOR INDIVIDUAL CANCER RISK (25 YEAR WORKER)

Age	Daily Breathing Rate (L/kg-day)	Age Specific Factor	Exposure Duration (years)	Exposure Frequency (days/year)	Exposure Time (hours/day)
16 to 41	230	1	25	250	12

2.4 CARCINOGENIC CHEMICAL RISK

Based on the South Coast AQMD Air Quality Significance Thresholds (10) (April 2019), emissions of toxic air contaminants (TACs) are considered significant if a HRA shows an increased risk of greater than 10 in one million. Based on guidance from the SCAQMD in the document Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis (2), for purposes of this analysis, 10 in one million is used as the cancer risk threshold for the proposed Project.

Excess cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens over a specified exposure duration. The estimated risk is expressed as a unitless probability. The cancer risk attributed to a chemical is calculated by multiplying the chemical intake or dose at the human exchange boundaries (e.g., lungs) by the chemical-specific cancer potency factor (CPF). A risk level of 10 in one million implies a likelihood that up to 10 people, out of one million equally exposed people would contract cancer if exposed continuously (24 hours per day) to the levels of toxic air contaminants over a specified duration of time. As an example, the risk of dying from accidental drowning is 1,000 in a million which is 100 times more than the SCAQMD's threshold of 10 in one million, the nearest comparison to 10 in one million is the 7 in one million lifetime chance that an individual would be struck by lightning.

Guidance from CARB and the California Environmental Protection Agency, Office of Environmental Health Hazard Assessment (OEHHA) recommends a refinement to the standard point estimate approach when alternate human body weights and breathing rates are utilized to assess risk for susceptible subpopulations such as children. For the inhalation pathway, the procedure requires the incorporation of several discrete variates to effectively quantify dose. Once determined, contaminant dose is multiplied by the cancer potency factor (CPF) in units of inverse dose expressed in milligrams per kilogram per day (mg/kg/day)-1 to derive the cancer risk estimate. Therefore, to assess exposures, the following dose algorithm was utilized.

$$\text{DOSEair} = (\text{Cair} \times [\text{BR/BW}] \times \text{A} \times \text{EF}) \times (1 \times 10^{-6})$$

Where:

DOSEair	=	chronic daily intake (mg/kg/day)
Cair	=	concentration of contaminant in air (ug/m ³)
[BR/BW]	=	daily breathing rate normalized to body weight (L/kg
BW-day)		
A	=	inhalation absorption factor
EF	=	exposure frequency (days/365 days)
BW	=	body weight (kg)
1 x 10 -6	=	conversion factors (ug to mg, L to m ³)

$$\text{RISKair} = \text{DOSEair} \times \text{CPF} \times \text{ED/AT}$$

Where:

DOSEair	=	chronic daily intake (mg/kg/day)
CPF	=	cancer potency factor
ED	=	number of years within particular age group
AT	=	averaging time

2.5 NON-CARCINOGENIC EXPOSURES

An evaluation of the potential noncarcinogenic effects of chronic exposures was also conducted. Adverse health effects are evaluated by comparing a compound's annual concentration with its toxicity factor or Reference Exposure Level (REL). The REL for diesel particulates was obtained from OEHHA for this analysis. The chronic reference exposure level (REL) for DPM was established by OEHHA as 5 $\mu\text{g}/\text{m}^3$ (OEHHA Toxicity Criteria Database, <http://www.oehha.org/risk/chemicaldb/index.asp>).

The non-cancer hazard index was calculated (consistent with SCAQMD methodology) as follows:

The relationship for the non-cancer health effects of DPM is given by the following equation:

$$\text{HI}_{\text{DPM}} = \text{C}_{\text{DPM}} / \text{REL}_{\text{DPM}}$$

Where:

HI_{DPM}	=	Hazard Index; an expression of the potential for non-cancer health effects.
C_{DPM}	=	Annual average DPM concentration ($\mu\text{g}/\text{m}^3$).
REL_{DPM}	=	Reference exposure level (REL) for DPM; the DPM concentration at which no adverse health effects are anticipated.

For purposes of this analysis the hazard index for the respiratory endpoint totaled less than one for all receptors in the project vicinity, and thus is less than significant.

2.6 POTENTIAL PROJECT-RELATED DPM SOURCE CANCER AND NON-CANCER RISKS²

Residential Exposure Scenario:

The residential land use with the greatest potential exposure to Project DPM source emissions is located approximately 71 feet northwest of the Project site, east of East End Avenue. At the MEIR, the maximum incremental cancer risk attributable to Project DPM source emissions is estimated at 1.15 in one million, which is less than the SCAQMD's significance threshold of 10 in one million. At this same location, non-cancer risks were estimated to be 0.0004, which would not exceed the applicable significance threshold of 1.0. Because all other modeled residential receptors are located at a greater distance than the scenario analyze herein, and DPM dissipates with distance from the source, all other residential receptors in the vicinity of the Project would be exposed to less emissions and therefore less risk than the MEIR identified herein. As such, the Project will not cause a significant human health or cancer risk to residents in the project vicinity. The nearest modeled receptors for operational activity are illustrated on Exhibit 2-C.

Worker Exposure Scenario:

The worker receptor land use with the greatest potential exposure to Project DPM source emissions is located approximately 13 feet west of the Project site at the Sunwest Tropical Nursery. At the MEIW, the maximum incremental cancer risk impact at this location is 0.28 in one million which is less than the threshold of 10 in one million. Maximum non-cancer risks at this same location were estimated to be 0.0009, which would not exceed the applicable threshold of 1.0. As such, the Project will not cause a significant human health or cancer risk to adjacent workers. All other modeled worker locations in the vicinity of the Project would be exposed to less emissions and therefore less risk than the MEIW identified herein. Because all other modeled worker receptors are located at a greater distance than the scenario analyze herein, and DPM dissipates with distance from the source, all other worker receptors in the vicinity of the Project would be exposed to less emissions and therefore less risk than the MEIW identified herein. As such, the Project will not cause a significant human health or cancer risk to workers in the project vicinity. The nearest modeled receptors for operational activity are illustrated on Exhibit 2-C.

School Child Exposure Scenario:

There are no schools located within a ¼ mile of the Project site. As such, there would be no significant impacts that would occur to any schools in the vicinity of the Project. Proximity to sources of toxics is critical to determining the impact. In traffic-related studies, the additional non-cancer health risk attributable to proximity was seen within 1,000 feet and was strongest within 300 feet. California freeway studies show about a 70-percent drop-off in particulate pollution levels at 500 feet. Based on CARB and SCAQMD emissions and modeling analyses, an 80-percent drop-off in pollutant concentrations is expected at approximately 1,000 feet from a distribution center (1). As such, the Project will not cause a significant human health or cancer risk to school children in the project vicinity.

² SCAQMD guidance does not require assessment of the potential health risk to on-site workers. Excerpts from the document OEHHA Air Toxics Hot Spots Program Risk Assessment Guidelines—The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (OEHHA 2003), also indicate that it is not necessary to examine the health effects to on-site workers unless required by RCRA (Resource Conservation and Recovery Act) / CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act) or the worker resides on-site.

EXHIBIT 2-C: MODELED RECEPTORS



Color	Group Name
Yellow	Resident
Purple	School
Orange	Worker

This page intentionally left blank

3 REFERENCES

1. **Air Resources Board.** *Air Quality and Land Use Handbook: A Community Health Perspective.* 2005.
2. **South Coast Air Quality Management District.** Mobile Source Toxics Analysis. [Online] 2003.
http://www.aqmd.gov/ceqa/handbook/mobile_toxic/mobile_toxic.html.
3. **Goss, Tracy A and Kroeger, Amy.** White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution. [Online] South Coast Air Quality Management District, 2003. [Cited: June 6, 2019.] <http://www.aqmd.gov/docs/default-source/Agendas/Environmental-Justice/cumulative-impacts-working-group/cumulative-impacts-white-paper.pdf?sfvrsn=2>.
4. **Urban Crossroads, Inc.** *East End and County Industrial Traffic Impact Analysis.* 2019.
5. **California Air Resources Board.** EMFAC 2017. [Online] <https://www.arb.ca.gov/emfac/2017/>.
6. **Wong, Jillian.** *Planning, Rule Development & Area Sources.* December 22, 2016.
7. **Environmental Protection Agency.** User's Guide for the AMS/EPA Regulatory Model (AERMOD). [Online] 2019. https://www3.epa.gov/ttn/scram/models/aermod/aermod_userguide.pdf.
8. —. User's Guide for the AMS/EPA Regulatory Model (AERMOD). [Online] April 2018.
https://www3.epa.gov/ttn/scram/models/aermod/aermod_userguide.pdf.
9. **South Coast Air Quality Management District.** South Coast AQMD Modeling Guidance for AERMOD. [Online] [Cited: September 18, 2019.] <http://www.aqmd.gov/home/air-quality/meteorological-data/modeling-guidance>.
10. —. South Coast AQMD Air Quality Significance Thresholds. [Online] April 2019. [Cited: June 6, 2019.] <http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2>.

This page intentionally left blank

4 CERTIFICATION

The contents of this health risk assessment represent an accurate depiction of the impacts to sensitive receptors associated with the proposed East End and County Industrial Project. The information contained in this health risk assessment report is based on the best available data at the time of preparation. If you have any questions, please contact me directly at (949) 336-5987.

Haseeb Qureshi
Associate Principal
URBAN CROSSROADS, INC.
260 E. Baker, Suite 200
Costa Mesa, CA 92626
(949) 336-5987
hqureshi@urbanxroads.com

EDUCATION

Master of Science in Environmental Studies
California State University, Fullerton • May, 2010

Bachelor of Arts in Environmental Analysis and Design
University of California, Irvine • June, 2006

PROFESSIONAL AFFILIATIONS

AEP – Association of Environmental Planners
AWMA – Air and Waste Management Association
ASTM – American Society for Testing and Materials

PROFESSIONAL CERTIFICATIONS

Environmental Site Assessment – American Society for Testing and Materials • June, 2013
Planned Communities and Urban Infill – Urban Land Institute • June, 2011
Indoor Air Quality and Industrial Hygiene – EMSL Analytical • April, 2008
Principles of Ambient Air Monitoring – California Air Resources Board • August, 2007
AB2588 Regulatory Standards – Trinity Consultants • November, 2006
Air Dispersion Modeling – Lakes Environmental • June, 2006

This page intentionally left blank

APPENDIX 2.1:
AERMOD MODEL INPUT/OUTPUT

This page intentionally left blank

12828 HRA

```
**  
*****  
**  
** AERMOD Input Produced by:  
** AERMOD View Ver. 9.8.3  
** Lakes Environmental Software Inc.  
** Date: 1/4/2020  
** File: C:\Lakes\AERMOD View\12828 HRA\12828 HRA.ADI  
**  
*****  
**  
**  
*****  
** AERMOD Control Pathway  
*****  
**  
**  
CO STARTING  
TITLEONE C:\Lakes\AERMOD View\12828 HRA\12828 HRA.isc  
MODELOPT DFAULT CONC  
AVERTIME 1 ANNUAL  
URBANOPT 2035210  
POLLUTID DPM  
RUNORNOT RUN  
ERRORFIL "12828 HRA.err"  
CO FINISHED  
**  
*****  
** AERMOD Source Pathway  
*****  
**  
**  
SO STARTING  
** Source Location **  
** Source ID - Type - X Coord. - Y Coord. **  
** -----  
** Line Source Represented by Adjacent Volume Sources  
** LINE VOLUME Source ID = SLINE1  
** DESCRSRC On-Site Idling Building 1  
** PREFIX  
** Length of Side = 8.26  
** Configuration = Adjacent  
** Emission Rate = 0.00001058  
** Vertical Dimension = 6.99  
** SZINIT = 3.25  
** Nodes = 2  
** 432909.761, 3765482.761, 237.16, 3.49, 3.84  
** 432911.673, 3765338.390, 238.90, 3.49, 3.84
```

12828 HRA

** -----
LOCATION L0000201 VOLUME 432909.816 3765478.632 238.12
LOCATION L0000202 VOLUME 432909.925 3765470.374 237.86
LOCATION L0000203 VOLUME 432910.035 3765462.115 237.60
LOCATION L0000204 VOLUME 432910.144 3765453.857 237.34
LOCATION L0000205 VOLUME 432910.253 3765445.599 237.08
LOCATION L0000206 VOLUME 432910.363 3765437.340 237.12
LOCATION L0000207 VOLUME 432910.472 3765429.082 237.30
LOCATION L0000208 VOLUME 432910.582 3765420.824 237.47
LOCATION L0000209 VOLUME 432910.691 3765412.566 237.65
LOCATION L0000210 VOLUME 432910.800 3765404.307 237.82
LOCATION L0000211 VOLUME 432910.910 3765396.049 238.00
LOCATION L0000212 VOLUME 432911.019 3765387.791 238.17
LOCATION L0000213 VOLUME 432911.128 3765379.533 238.35
LOCATION L0000214 VOLUME 432911.238 3765371.274 238.53
LOCATION L0000215 VOLUME 432911.347 3765363.016 238.70
LOCATION L0000216 VOLUME 432911.457 3765354.758 238.88
LOCATION L0000217 VOLUME 432911.566 3765346.499 238.83
** End of LINE VOLUME Source ID = SLINE1
** -----
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE2
** DESCRSRC On-Site Idling Building 2
** PREFIX
** Length of Side = 8.59
** Configuration = Adjacent
** Emission Rate = 9.261E-07
** Vertical Dimension = 6.99
** SZINIT = 3.25
** Nodes = 2
** 433055.099, 3765421.764, 237.68, 3.49, 4.00
** 433056.826, 3765356.482, 237.88, 3.49, 4.00
** -----
LOCATION L0000218 VOLUME 433055.212 3765417.471 237.87
LOCATION L0000219 VOLUME 433055.439 3765408.884 237.89
LOCATION L0000220 VOLUME 433055.667 3765400.297 237.91
LOCATION L0000221 VOLUME 433055.894 3765391.710 237.93
LOCATION L0000222 VOLUME 433056.121 3765383.123 237.94
LOCATION L0000223 VOLUME 433056.348 3765374.536 237.96
LOCATION L0000224 VOLUME 433056.575 3765365.949 237.97
LOCATION L0000225 VOLUME 433056.802 3765357.362 237.99
** End of LINE VOLUME Source ID = SLINE2
** -----
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE3
** DESCRSRC On-Site Idling Building 3
** PREFIX
** Length of Side = 8.59

12828 HRA

```
** Configuration = Adjacent
** Emission Rate = 1.588E-06
** Vertical Dimension = 6.99
** SZINIT = 3.25
** Nodes = 2
** 433055.444, 3765339.902, 237.82, 3.49, 4.00
** 433056.826, 3765303.980, 235.97, 3.49, 4.00
** -----
LOCATION L0000226      VOLUME   433055.609 3765335.610 237.56
LOCATION L0000227      VOLUME   433055.939 3765327.027 237.30
LOCATION L0000228      VOLUME   433056.269 3765318.443 237.03
LOCATION L0000229      VOLUME   433056.600 3765309.859 236.77
** End of LINE VOLUME Source ID = SLINE3
** -----
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE4
** DESCRSRC On-Site Idling Building 4
** PREFIX
** Length of Side = 8.59
** Configuration = Adjacent
** Emission Rate = 9.261E-07
** Vertical Dimension = 6.99
** SZINIT = 3.25
** Nodes = 2
** 433194.989, 3765358.900, 237.90, 3.49, 4.00
** 433176.683, 3765350.955, 237.89, 3.49, 4.00
** -----
LOCATION L0000230      VOLUME   433191.049 3765357.190 238.04
LOCATION L0000231      VOLUME   433183.169 3765353.770 238.03
** End of LINE VOLUME Source ID = SLINE4
** -----
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE5
** DESCRSRC On-Site Travel Building 1
** PREFIX
** Length of Side = 8.59
** Configuration = Adjacent
** Emission Rate = 0.00002887
** Vertical Dimension = 6.99
** SZINIT = 3.25
** Nodes = 9
** 432893.166, 3765292.050, 235.84, 3.49, 4.00
** 432893.512, 3765518.012, 239.59, 3.49, 4.00
** 432957.776, 3765517.667, 239.45, 3.49, 4.00
** 433003.384, 3765487.608, 237.57, 3.49, 4.00
** 433028.951, 3765467.914, 237.56, 3.49, 4.00
** 433032.406, 3765319.345, 236.02, 3.49, 4.00
** 433032.061, 3765314.163, 235.99, 3.49, 4.00
```

12828 HRA

** 433037.589, 3765304.143, 235.92, 3.49, 4.00

** 433040.353, 3765293.432, 235.84, 3.49, 4.00

** -----

LOCATION L0000232	VOLUME	432893.173	3765296.345	237.12
LOCATION L0000233	VOLUME	432893.186	3765304.935	237.37
LOCATION L0000234	VOLUME	432893.199	3765313.525	237.62
LOCATION L0000235	VOLUME	432893.212	3765322.115	237.88
LOCATION L0000236	VOLUME	432893.226	3765330.705	238.13
LOCATION L0000237	VOLUME	432893.239	3765339.295	238.38
LOCATION L0000238	VOLUME	432893.252	3765347.885	238.64
LOCATION L0000239	VOLUME	432893.265	3765356.475	238.62
LOCATION L0000240	VOLUME	432893.278	3765365.065	238.46
LOCATION L0000241	VOLUME	432893.291	3765373.655	238.30
LOCATION L0000242	VOLUME	432893.304	3765382.245	238.14
LOCATION L0000243	VOLUME	432893.318	3765390.835	237.98
LOCATION L0000244	VOLUME	432893.331	3765399.425	237.82
LOCATION L0000245	VOLUME	432893.344	3765408.015	237.66
LOCATION L0000246	VOLUME	432893.357	3765416.605	237.50
LOCATION L0000247	VOLUME	432893.370	3765425.195	237.34
LOCATION L0000248	VOLUME	432893.383	3765433.785	237.18
LOCATION L0000249	VOLUME	432893.396	3765442.375	237.02
LOCATION L0000250	VOLUME	432893.409	3765450.965	237.22
LOCATION L0000251	VOLUME	432893.423	3765459.555	237.48
LOCATION L0000252	VOLUME	432893.436	3765468.145	237.73
LOCATION L0000253	VOLUME	432893.449	3765476.735	237.98
LOCATION L0000254	VOLUME	432893.462	3765485.325	238.23
LOCATION L0000255	VOLUME	432893.475	3765493.915	238.49
LOCATION L0000256	VOLUME	432893.488	3765502.505	238.74
LOCATION L0000257	VOLUME	432893.501	3765511.095	238.99
LOCATION L0000258	VOLUME	432895.184	3765518.003	239.21
LOCATION L0000259	VOLUME	432903.774	3765517.957	239.30
LOCATION L0000260	VOLUME	432912.364	3765517.911	239.39
LOCATION L0000261	VOLUME	432920.954	3765517.865	239.43
LOCATION L0000262	VOLUME	432929.544	3765517.819	239.43
LOCATION L0000263	VOLUME	432938.134	3765517.772	239.43
LOCATION L0000264	VOLUME	432946.724	3765517.726	239.43
LOCATION L0000265	VOLUME	432955.314	3765517.680	239.43
LOCATION L0000266	VOLUME	432962.892	3765514.295	239.32
LOCATION L0000267	VOLUME	432970.065	3765509.568	239.17
LOCATION L0000268	VOLUME	432977.237	3765504.841	239.02
LOCATION L0000269	VOLUME	432984.409	3765500.113	238.86
LOCATION L0000270	VOLUME	432991.582	3765495.386	238.71
LOCATION L0000271	VOLUME	432998.754	3765490.659	238.60
LOCATION L0000272	VOLUME	433005.796	3765485.749	238.50
LOCATION L0000273	VOLUME	433012.601	3765480.508	238.39
LOCATION L0000274	VOLUME	433019.406	3765475.266	238.29
LOCATION L0000275	VOLUME	433026.212	3765470.024	238.21
LOCATION L0000276	VOLUME	433029.070	3765462.783	238.04

12828 HRA					
LOCATION L0000277	VOLUME	433029.270	3765454.195	237.81	
LOCATION L0000278	VOLUME	433029.470	3765445.608	237.58	
LOCATION L0000279	VOLUME	433029.670	3765437.020	237.52	
LOCATION L0000280	VOLUME	433029.869	3765428.432	237.57	
LOCATION L0000281	VOLUME	433030.069	3765419.845	237.62	
LOCATION L0000282	VOLUME	433030.269	3765411.257	237.67	
LOCATION L0000283	VOLUME	433030.468	3765402.669	237.72	
LOCATION L0000284	VOLUME	433030.668	3765394.082	237.77	
LOCATION L0000285	VOLUME	433030.868	3765385.494	237.81	
LOCATION L0000286	VOLUME	433031.068	3765376.906	237.86	
LOCATION L0000287	VOLUME	433031.267	3765368.319	237.90	
LOCATION L0000288	VOLUME	433031.467	3765359.731	237.95	
LOCATION L0000289	VOLUME	433031.667	3765351.143	237.99	
LOCATION L0000290	VOLUME	433031.866	3765342.556	237.80	
LOCATION L0000291	VOLUME	433032.066	3765333.968	237.56	
LOCATION L0000292	VOLUME	433032.266	3765325.380	237.33	
LOCATION L0000293	VOLUME	433032.236	3765316.797	237.09	
LOCATION L0000294	VOLUME	433034.935	3765308.954	236.86	
LOCATION L0000295	VOLUME	433038.362	3765301.145	236.62	
** End of LINE VOLUME Source ID = SLINE5					
** -----					
** Line Source Represented by Adjacent Volume Sources					
** LINE VOLUME Source ID = SLINE6					
** DESCRCRC On-Site Travel Building 2					
** PREFIX					
** Length of Side = 8.59					
** Configuration = Adjacent					
** Emission Rate = 1.121E-06					
** Vertical Dimension = 6.99					
** SZINIT = 3.25					
** Nodes = 3					
** 433053.349, 3765422.563, 237.66, 3.49, 4.00					
** 433052.627, 3765348.793, 237.89, 3.49, 4.00					
** 433122.068, 3765349.334, 237.85, 3.49, 4.00					
** -----					
LOCATION L0000296	VOLUME	433053.307	3765418.268	237.85	
LOCATION L0000297	VOLUME	433053.223	3765409.678	237.87	
LOCATION L0000298	VOLUME	433053.139	3765401.089	237.89	
LOCATION L0000299	VOLUME	433053.055	3765392.499	237.91	
LOCATION L0000300	VOLUME	433052.971	3765383.910	237.93	
LOCATION L0000301	VOLUME	433052.887	3765375.320	237.94	
LOCATION L0000302	VOLUME	433052.803	3765366.730	237.96	
LOCATION L0000303	VOLUME	433052.719	3765358.141	237.98	
LOCATION L0000304	VOLUME	433052.635	3765349.551	237.99	
LOCATION L0000305	VOLUME	433060.459	3765348.854	237.97	
LOCATION L0000306	VOLUME	433069.048	3765348.921	237.97	
LOCATION L0000307	VOLUME	433077.638	3765348.988	237.98	
LOCATION L0000308	VOLUME	433086.228	3765349.055	237.98	

12828 HRA

LOCATION L0000309	VOLUME	433094.817	3765349.122	237.99
LOCATION L0000310	VOLUME	433103.407	3765349.188	237.99
LOCATION L0000311	VOLUME	433111.997	3765349.255	238.00
LOCATION L0000312	VOLUME	433120.587	3765349.322	238.00

** End of LINE VOLUME Source ID = SLINE6

** Line Source Represented by Adjacent Volume Sources

** LINE VOLUME Source ID = SLINE7

** DESCRSRC On-Site Travel Building 3

** PREFIX

** Length of Side = 8.59

** Configuration = Adjacent

** Emission Rate = 5.35E-07

** Vertical Dimension = 6.99

** SZINIT = 3.25

** Nodes = 3

** 433056.235, 3765299.192, 235.95, 3.49, 4.00

** 433056.054, 3765349.514, 237.87, 3.49, 4.00

** 433122.970, 3765349.695, 237.86, 3.49, 4.00

LOCATION L0000313	VOLUME	433056.219	3765303.487	236.57
LOCATION L0000314	VOLUME	433056.188	3765312.077	236.84
LOCATION L0000315	VOLUME	433056.158	3765320.667	237.10
LOCATION L0000316	VOLUME	433056.127	3765329.257	237.37
LOCATION L0000317	VOLUME	433056.096	3765337.847	237.63
LOCATION L0000318	VOLUME	433056.065	3765346.437	237.90
LOCATION L0000319	VOLUME	433061.567	3765349.529	237.99
LOCATION L0000320	VOLUME	433070.157	3765349.552	238.00
LOCATION L0000321	VOLUME	433078.747	3765349.575	238.00
LOCATION L0000322	VOLUME	433087.336	3765349.599	238.00
LOCATION L0000323	VOLUME	433095.926	3765349.622	238.00
LOCATION L0000324	VOLUME	433104.516	3765349.645	238.00
LOCATION L0000325	VOLUME	433113.106	3765349.668	238.00
LOCATION L0000326	VOLUME	433121.696	3765349.691	238.00

** End of LINE VOLUME Source ID = SLINE7

** Line Source Represented by Adjacent Volume Sources

** LINE VOLUME Source ID = SLINE8

** DESCRSRC On-Site Travel Building 4

** PREFIX

** Length of Side = 8.59

** Configuration = Adjacent

** Emission Rate = 1.908E-07

** Vertical Dimension = 6.99

** SZINIT = 3.25

** Nodes = 3

** 433150.205, 3765350.596, 237.99, 3.49, 4.00

** 433164.635, 3765353.843, 237.89, 3.49, 4.00

12828 HRA

** 433191.329, 3765358.172, 237.89, 3.49, 4.00

** -----

LOCATION L0000327	VOLUME	433154.396	3765351.539	238.02
LOCATION L0000328	VOLUME	433162.776	3765353.425	238.04
LOCATION L0000329	VOLUME	433171.234	3765354.913	238.04
LOCATION L0000330	VOLUME	433179.713	3765356.288	238.04
LOCATION L0000331	VOLUME	433188.192	3765357.663	238.04

** End of LINE VOLUME Source ID = SLINE8

** -----

** Line Source Represented by Adjacent Volume Sources

** LINE VOLUME Source ID = SLINE9

** DESCRSRC Off-Site Travel 26% on East End Ave.

** PREFIX

** Length of Side = 24.00

** Configuration = Adjacent

** Emission Rate = 5.032E-07

** Vertical Dimension = 6.99

** SZINIT = 3.25

** Nodes = 2

** 433136.059, 3765351.924, 237.97, 3.49, 11.16

** 433137.096, 3765285.215, 235.16, 3.49, 11.16

** -----

LOCATION L0000332	VOLUME	433136.245	3765339.925	237.70
LOCATION L0000333	VOLUME	433136.618	3765315.928	236.92
LOCATION L0000334	VOLUME	433136.991	3765291.931	236.14

** End of LINE VOLUME Source ID = SLINE9

** -----

** Line Source Represented by Adjacent Volume Sources

** LINE VOLUME Source ID = SLINE10

** DESCRSRC Off-Site Travel 16% on County Rd.

** PREFIX

** Length of Side = 24.00

** Configuration = Adjacent

** Emission Rate = 4.508E-07

** Vertical Dimension = 6.99

** SZINIT = 3.25

** Nodes = 2

** 433136.405, 3765285.560, 235.16, 3.49, 11.16

** 433039.279, 3765283.487, 235.74, 3.49, 11.16

** -----

LOCATION L0000335	VOLUME	433124.407	3765285.304	235.92
LOCATION L0000336	VOLUME	433100.413	3765284.792	235.90
LOCATION L0000337	VOLUME	433076.418	3765284.280	235.88
LOCATION L0000338	VOLUME	433052.424	3765283.767	236.00

** End of LINE VOLUME Source ID = SLINE10

** -----

** Line Source Represented by Adjacent Volume Sources

** LINE VOLUME Source ID = SLINE11

12828 HRA

** DESCRIPTOR Off-Site Travel 40% on County Rd.
** PREFIX
** Length of Side = 24.00
** Configuration = Adjacent
** Emission Rate = 1.701E-06
** Vertical Dimension = 6.99
** SZINIT = 3.25
** Nodes = 2
** 433039.279, 3765283.832, 235.74, 3.49, 11.16
** 432892.727, 3765280.721, 235.87, 3.49, 11.16
** -----

LOCATION L0000339	VOLUME	433027.282	3765283.577	236.22
LOCATION L0000340	VOLUME	433003.287	3765283.068	236.43
LOCATION L0000341	VOLUME	432979.293	3765282.559	236.57
LOCATION L0000342	VOLUME	432955.298	3765282.050	236.64
LOCATION L0000343	VOLUME	432931.304	3765281.540	236.70
LOCATION L0000344	VOLUME	432907.309	3765281.031	236.71

** End of LINE VOLUME Source ID = SLINE11
** -----

** Line Source Represented by Adjacent Volume Sources

** LINE VOLUME Source ID = SLINE12
** DESCRIPTOR Off-Site Travel 10% on County Rd.
** PREFIX

** Length of Side = 24.00
** Configuration = Adjacent
** Emission Rate = 7.1E-07
** Vertical Dimension = 6.99
** SZINIT = 3.25
** Nodes = 2
** 432892.381, 3765281.413, 235.87, 3.49, 11.16
** 433137.096, 3765284.523, 235.16, 3.49, 11.16
** -----

LOCATION L0000345	VOLUME	432904.381	3765281.565	236.72
LOCATION L0000346	VOLUME	432928.379	3765281.870	236.72
LOCATION L0000347	VOLUME	432952.377	3765282.175	236.65
LOCATION L0000348	VOLUME	432976.375	3765282.480	236.58
LOCATION L0000349	VOLUME	433000.373	3765282.785	236.45
LOCATION L0000350	VOLUME	433024.371	3765283.090	236.23
LOCATION L0000351	VOLUME	433048.369	3765283.396	236.02
LOCATION L0000352	VOLUME	433072.367	3765283.701	235.86
LOCATION L0000353	VOLUME	433096.365	3765284.006	235.87
LOCATION L0000354	VOLUME	433120.363	3765284.311	235.89

** End of LINE VOLUME Source ID = SLINE12
** -----

** Line Source Represented by Adjacent Volume Sources

** LINE VOLUME Source ID = SLINE13
** DESCRIPTOR Off-Site Travel 20% on East End Av.
** PREFIX

12828 HRA

** Length of Side = 24.00
** Configuration = Adjacent
** Emission Rate = 2.678E-06
** Vertical Dimension = 6.99
** SZINIT = 3.25
** Nodes = 6
** 433136.450, 3765285.322, 235.16, 3.49, 11.16
** 433133.423, 3765180.887, 236.00, 3.49, 11.16
** 433133.206, 3765103.046, 230.49, 3.49, 11.16
** 433135.801, 3764919.040, 224.75, 3.49, 11.16
** 433135.801, 3764875.363, 232.93, 3.49, 11.16
** 433137.315, 3764823.902, 232.39, 3.49, 11.16
** -----
LOCATION L0000355 VOLUME 433136.102 3765273.328 235.54
LOCATION L0000356 VOLUME 433135.407 3765249.338 235.13
LOCATION L0000357 VOLUME 433134.711 3765225.348 235.55
LOCATION L0000358 VOLUME 433134.016 3765201.358 235.99
LOCATION L0000359 VOLUME 433133.413 3765177.366 236.44
LOCATION L0000360 VOLUME 433133.346 3765153.366 235.97
LOCATION L0000361 VOLUME 433133.279 3765129.367 234.46
LOCATION L0000362 VOLUME 433133.213 3765105.367 232.96
LOCATION L0000363 VOLUME 433133.512 3765081.369 231.46
LOCATION L0000364 VOLUME 433133.850 3765057.371 230.58
LOCATION L0000365 VOLUME 433134.189 3765033.374 230.10
LOCATION L0000366 VOLUME 433134.527 3765009.376 229.61
LOCATION L0000367 VOLUME 433134.866 3764985.378 229.12
LOCATION L0000368 VOLUME 433135.204 3764961.381 228.05
LOCATION L0000369 VOLUME 433135.542 3764937.383 226.79
LOCATION L0000370 VOLUME 433135.801 3764913.385 225.53
LOCATION L0000371 VOLUME 433135.801 3764889.385 224.27
LOCATION L0000372 VOLUME 433136.094 3764865.389 226.08
LOCATION L0000373 VOLUME 433136.800 3764841.400 228.17
** End of LINE VOLUME Source ID = SLINE13
** -----
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE14
** DESCRSRC Off-Site Travel 80% on County Rd. to SR-60
** PREFIX
** Length of Side = 24.00
** Configuration = Adjacent
** Emission Rate = 0.00001506
** Vertical Dimension = 6.99
** SZINIT = 3.25
** Nodes = 11
** 432890.945, 3765282.472, 235.86, 3.49, 11.16
** 432819.843, 3765280.752, 235.87, 3.49, 11.16
** 432757.917, 3765288.206, 235.83, 3.49, 11.16
** 432707.458, 3765297.380, 235.58, 3.49, 11.16

12828 HRA

** 432659.866, 3765315.155, 235.31, 3.49, 11.16
 ** 432642.664, 3765321.463, 235.18, 3.49, 11.16
 ** 432600.233, 3765331.784, 236.85, 3.49, 11.16
 ** 432562.962, 3765333.504, 236.42, 3.49, 11.16
 ** 432514.797, 3765334.651, 235.13, 3.49, 11.16
 ** 432466.058, 3765334.077, 235.00, 3.49, 11.16
 ** 432468.345, 3765116.882, 231.95, 3.49, 11.16
 ** -----
 LOCATION L0000374 VOLUME 432878.948 3765282.181 236.65
 LOCATION L0000375 VOLUME 432854.955 3765281.601 236.55
 LOCATION L0000376 VOLUME 432830.962 3765281.021 236.48
 LOCATION L0000377 VOLUME 432807.058 3765282.291 236.50
 LOCATION L0000378 VOLUME 432783.230 3765285.159 236.56
 LOCATION L0000379 VOLUME 432759.402 3765288.027 236.62
 LOCATION L0000380 VOLUME 432735.775 3765292.231 236.71
 LOCATION L0000381 VOLUME 432712.163 3765296.525 236.79
 LOCATION L0000382 VOLUME 432689.454 3765304.104 236.95
 LOCATION L0000383 VOLUME 432666.971 3765312.501 236.92
 LOCATION L0000384 VOLUME 432644.454 3765320.806 236.81
 LOCATION L0000385 VOLUME 432621.197 3765326.684 236.63
 LOCATION L0000386 VOLUME 432597.811 3765331.896 236.30
 LOCATION L0000387 VOLUME 432573.836 3765333.002 235.63
 LOCATION L0000388 VOLUME 432549.851 3765333.816 234.95
 LOCATION L0000389 VOLUME 432525.858 3765334.387 234.40
 LOCATION L0000390 VOLUME 432501.862 3765334.499 234.58
 LOCATION L0000391 VOLUME 432477.864 3765334.216 234.75
 LOCATION L0000392 VOLUME 432466.186 3765321.885 234.21
 LOCATION L0000393 VOLUME 432466.439 3765297.886 233.00
 LOCATION L0000394 VOLUME 432466.692 3765273.887 231.81
 LOCATION L0000395 VOLUME 432466.945 3765249.889 231.02
 LOCATION L0000396 VOLUME 432467.197 3765225.890 230.66
 LOCATION L0000397 VOLUME 432467.450 3765201.891 230.29
 LOCATION L0000398 VOLUME 432467.703 3765177.893 229.92
 LOCATION L0000399 VOLUME 432467.956 3765153.894 230.22
 LOCATION L0000400 VOLUME 432468.208 3765129.895 230.91
 ** End of LINE VOLUME Source ID = SLINE14
 ** Source Parameters **
 ** LINE VOLUME Source ID = SLINE1
 SRCPARAM L0000201 0.0000006224 3.49 3.84 3.25
 SRCPARAM L0000202 0.0000006224 3.49 3.84 3.25
 SRCPARAM L0000203 0.0000006224 3.49 3.84 3.25
 SRCPARAM L0000204 0.0000006224 3.49 3.84 3.25
 SRCPARAM L0000205 0.0000006224 3.49 3.84 3.25
 SRCPARAM L0000206 0.0000006224 3.49 3.84 3.25
 SRCPARAM L0000207 0.0000006224 3.49 3.84 3.25
 SRCPARAM L0000208 0.0000006224 3.49 3.84 3.25
 SRCPARAM L0000209 0.0000006224 3.49 3.84 3.25
 SRCPARAM L0000210 0.0000006224 3.49 3.84 3.25

		12828	HRA	
SRCPARAM	L0000211	0.0000006224	3.49	3.84
SRCPARAM	L0000212	0.0000006224	3.49	3.84
SRCPARAM	L0000213	0.0000006224	3.49	3.84
SRCPARAM	L0000214	0.0000006224	3.49	3.84
SRCPARAM	L0000215	0.0000006224	3.49	3.84
SRCPARAM	L0000216	0.0000006224	3.49	3.84
SRCPARAM	L0000217	0.0000006224	3.49	3.84
**				
**	LINE VOLUME	Source ID = SLINE2		
SRCPARAM	L0000218	0.0000001158	3.49	4.00
SRCPARAM	L0000219	0.0000001158	3.49	4.00
SRCPARAM	L0000220	0.0000001158	3.49	4.00
SRCPARAM	L0000221	0.0000001158	3.49	4.00
SRCPARAM	L0000222	0.0000001158	3.49	4.00
SRCPARAM	L0000223	0.0000001158	3.49	4.00
SRCPARAM	L0000224	0.0000001158	3.49	4.00
SRCPARAM	L0000225	0.0000001158	3.49	4.00
**				
**	LINE VOLUME	Source ID = SLINE3		
SRCPARAM	L0000226	0.000000397	3.49	4.00
SRCPARAM	L0000227	0.000000397	3.49	4.00
SRCPARAM	L0000228	0.000000397	3.49	4.00
SRCPARAM	L0000229	0.000000397	3.49	4.00
**				
**	LINE VOLUME	Source ID = SLINE4		
SRCPARAM	L0000230	0.0000004631	3.49	4.00
SRCPARAM	L0000231	0.0000004631	3.49	4.00
**				
**	LINE VOLUME	Source ID = SLINE5		
SRCPARAM	L0000232	0.0000004511	3.49	4.00
SRCPARAM	L0000233	0.0000004511	3.49	4.00
SRCPARAM	L0000234	0.0000004511	3.49	4.00
SRCPARAM	L0000235	0.0000004511	3.49	4.00
SRCPARAM	L0000236	0.0000004511	3.49	4.00
SRCPARAM	L0000237	0.0000004511	3.49	4.00
SRCPARAM	L0000238	0.0000004511	3.49	4.00
SRCPARAM	L0000239	0.0000004511	3.49	4.00
SRCPARAM	L0000240	0.0000004511	3.49	4.00
SRCPARAM	L0000241	0.0000004511	3.49	4.00
SRCPARAM	L0000242	0.0000004511	3.49	4.00
SRCPARAM	L0000243	0.0000004511	3.49	4.00
SRCPARAM	L0000244	0.0000004511	3.49	4.00
SRCPARAM	L0000245	0.0000004511	3.49	4.00
SRCPARAM	L0000246	0.0000004511	3.49	4.00
SRCPARAM	L0000247	0.0000004511	3.49	4.00
SRCPARAM	L0000248	0.0000004511	3.49	4.00
SRCPARAM	L0000249	0.0000004511	3.49	4.00
SRCPARAM	L0000250	0.0000004511	3.49	4.00

		12828	HRA	
SRCPARAM	L0000251	0.0000004511	3.49	4.00
SRCPARAM	L0000252	0.0000004511	3.49	4.00
SRCPARAM	L0000253	0.0000004511	3.49	4.00
SRCPARAM	L0000254	0.0000004511	3.49	4.00
SRCPARAM	L0000255	0.0000004511	3.49	4.00
SRCPARAM	L0000256	0.0000004511	3.49	4.00
SRCPARAM	L0000257	0.0000004511	3.49	4.00
SRCPARAM	L0000258	0.0000004511	3.49	4.00
SRCPARAM	L0000259	0.0000004511	3.49	4.00
SRCPARAM	L0000260	0.0000004511	3.49	4.00
SRCPARAM	L0000261	0.0000004511	3.49	4.00
SRCPARAM	L0000262	0.0000004511	3.49	4.00
SRCPARAM	L0000263	0.0000004511	3.49	4.00
SRCPARAM	L0000264	0.0000004511	3.49	4.00
SRCPARAM	L0000265	0.0000004511	3.49	4.00
SRCPARAM	L0000266	0.0000004511	3.49	4.00
SRCPARAM	L0000267	0.0000004511	3.49	4.00
SRCPARAM	L0000268	0.0000004511	3.49	4.00
SRCPARAM	L0000269	0.0000004511	3.49	4.00
SRCPARAM	L0000270	0.0000004511	3.49	4.00
SRCPARAM	L0000271	0.0000004511	3.49	4.00
SRCPARAM	L0000272	0.0000004511	3.49	4.00
SRCPARAM	L0000273	0.0000004511	3.49	4.00
SRCPARAM	L0000274	0.0000004511	3.49	4.00
SRCPARAM	L0000275	0.0000004511	3.49	4.00
SRCPARAM	L0000276	0.0000004511	3.49	4.00
SRCPARAM	L0000277	0.0000004511	3.49	4.00
SRCPARAM	L0000278	0.0000004511	3.49	4.00
SRCPARAM	L0000279	0.0000004511	3.49	4.00
SRCPARAM	L0000280	0.0000004511	3.49	4.00
SRCPARAM	L0000281	0.0000004511	3.49	4.00
SRCPARAM	L0000282	0.0000004511	3.49	4.00
SRCPARAM	L0000283	0.0000004511	3.49	4.00
SRCPARAM	L0000284	0.0000004511	3.49	4.00
SRCPARAM	L0000285	0.0000004511	3.49	4.00
SRCPARAM	L0000286	0.0000004511	3.49	4.00
SRCPARAM	L0000287	0.0000004511	3.49	4.00
SRCPARAM	L0000288	0.0000004511	3.49	4.00
SRCPARAM	L0000289	0.0000004511	3.49	4.00
SRCPARAM	L0000290	0.0000004511	3.49	4.00
SRCPARAM	L0000291	0.0000004511	3.49	4.00
SRCPARAM	L0000292	0.0000004511	3.49	4.00
SRCPARAM	L0000293	0.0000004511	3.49	4.00
SRCPARAM	L0000294	0.0000004511	3.49	4.00
SRCPARAM	L0000295	0.0000004511	3.49	4.00

** -----

** LINE VOLUME Source ID = SLINE6
 SRCPARAM L0000296 0.00000006594 3.49 4.00 3.25

		12828 HRA			
SRCPARAM	L0000297	0.00000006594	3.49	4.00	3.25
SRCPARAM	L0000298	0.00000006594	3.49	4.00	3.25
SRCPARAM	L0000299	0.00000006594	3.49	4.00	3.25
SRCPARAM	L0000300	0.00000006594	3.49	4.00	3.25
SRCPARAM	L0000301	0.00000006594	3.49	4.00	3.25
SRCPARAM	L0000302	0.00000006594	3.49	4.00	3.25
SRCPARAM	L0000303	0.00000006594	3.49	4.00	3.25
SRCPARAM	L0000304	0.00000006594	3.49	4.00	3.25
SRCPARAM	L0000305	0.00000006594	3.49	4.00	3.25
SRCPARAM	L0000306	0.00000006594	3.49	4.00	3.25
SRCPARAM	L0000307	0.00000006594	3.49	4.00	3.25
SRCPARAM	L0000308	0.00000006594	3.49	4.00	3.25
SRCPARAM	L0000309	0.00000006594	3.49	4.00	3.25
SRCPARAM	L0000310	0.00000006594	3.49	4.00	3.25
SRCPARAM	L0000311	0.00000006594	3.49	4.00	3.25
SRCPARAM	L0000312	0.00000006594	3.49	4.00	3.25
**	-----				
**	LINE VOLUME	Source ID = SLINE7			
SRCPARAM	L0000313	0.00000003821	3.49	4.00	3.25
SRCPARAM	L0000314	0.00000003821	3.49	4.00	3.25
SRCPARAM	L0000315	0.00000003821	3.49	4.00	3.25
SRCPARAM	L0000316	0.00000003821	3.49	4.00	3.25
SRCPARAM	L0000317	0.00000003821	3.49	4.00	3.25
SRCPARAM	L0000318	0.00000003821	3.49	4.00	3.25
SRCPARAM	L0000319	0.00000003821	3.49	4.00	3.25
SRCPARAM	L0000320	0.00000003821	3.49	4.00	3.25
SRCPARAM	L0000321	0.00000003821	3.49	4.00	3.25
SRCPARAM	L0000322	0.00000003821	3.49	4.00	3.25
SRCPARAM	L0000323	0.00000003821	3.49	4.00	3.25
SRCPARAM	L0000324	0.00000003821	3.49	4.00	3.25
SRCPARAM	L0000325	0.00000003821	3.49	4.00	3.25
SRCPARAM	L0000326	0.00000003821	3.49	4.00	3.25
**	-----				
**	LINE VOLUME	Source ID = SLINE8			
SRCPARAM	L0000327	0.00000003816	3.49	4.00	3.25
SRCPARAM	L0000328	0.00000003816	3.49	4.00	3.25
SRCPARAM	L0000329	0.00000003816	3.49	4.00	3.25
SRCPARAM	L0000330	0.00000003816	3.49	4.00	3.25
SRCPARAM	L0000331	0.00000003816	3.49	4.00	3.25
**	-----				
**	LINE VOLUME	Source ID = SLINE9			
SRCPARAM	L0000332	0.0000001677	3.49	11.16	3.25
SRCPARAM	L0000333	0.0000001677	3.49	11.16	3.25
SRCPARAM	L0000334	0.0000001677	3.49	11.16	3.25
**	-----				
**	LINE VOLUME	Source ID = SLINE10			
SRCPARAM	L0000335	0.0000001127	3.49	11.16	3.25
SRCPARAM	L0000336	0.0000001127	3.49	11.16	3.25

		12828 HRA		
SRCPARAM L0000337	0.0000001127	3.49	11.16	3.25
SRCPARAM L0000338	0.0000001127	3.49	11.16	3.25
** -----				
** LINE VOLUME Source ID = SLINE11				
SRCPARAM L0000339	0.0000002835	3.49	11.16	3.25
SRCPARAM L0000340	0.0000002835	3.49	11.16	3.25
SRCPARAM L0000341	0.0000002835	3.49	11.16	3.25
SRCPARAM L0000342	0.0000002835	3.49	11.16	3.25
SRCPARAM L0000343	0.0000002835	3.49	11.16	3.25
SRCPARAM L0000344	0.0000002835	3.49	11.16	3.25
** -----				
** LINE VOLUME Source ID = SLINE12				
SRCPARAM L0000345	0.000000071	3.49	11.16	3.25
SRCPARAM L0000346	0.000000071	3.49	11.16	3.25
SRCPARAM L0000347	0.000000071	3.49	11.16	3.25
SRCPARAM L0000348	0.000000071	3.49	11.16	3.25
SRCPARAM L0000349	0.000000071	3.49	11.16	3.25
SRCPARAM L0000350	0.000000071	3.49	11.16	3.25
SRCPARAM L0000351	0.000000071	3.49	11.16	3.25
SRCPARAM L0000352	0.000000071	3.49	11.16	3.25
SRCPARAM L0000353	0.000000071	3.49	11.16	3.25
SRCPARAM L0000354	0.000000071	3.49	11.16	3.25
** -----				
** LINE VOLUME Source ID = SLINE13				
SRCPARAM L0000355	0.0000001409	3.49	11.16	3.25
SRCPARAM L0000356	0.0000001409	3.49	11.16	3.25
SRCPARAM L0000357	0.0000001409	3.49	11.16	3.25
SRCPARAM L0000358	0.0000001409	3.49	11.16	3.25
SRCPARAM L0000359	0.0000001409	3.49	11.16	3.25
SRCPARAM L0000360	0.0000001409	3.49	11.16	3.25
SRCPARAM L0000361	0.0000001409	3.49	11.16	3.25
SRCPARAM L0000362	0.0000001409	3.49	11.16	3.25
SRCPARAM L0000363	0.0000001409	3.49	11.16	3.25
SRCPARAM L0000364	0.0000001409	3.49	11.16	3.25
SRCPARAM L0000365	0.0000001409	3.49	11.16	3.25
SRCPARAM L0000366	0.0000001409	3.49	11.16	3.25
SRCPARAM L0000367	0.0000001409	3.49	11.16	3.25
SRCPARAM L0000368	0.0000001409	3.49	11.16	3.25
SRCPARAM L0000369	0.0000001409	3.49	11.16	3.25
SRCPARAM L0000370	0.0000001409	3.49	11.16	3.25
SRCPARAM L0000371	0.0000001409	3.49	11.16	3.25
SRCPARAM L0000372	0.0000001409	3.49	11.16	3.25
SRCPARAM L0000373	0.0000001409	3.49	11.16	3.25
** -----				
** LINE VOLUME Source ID = SLINE14				
SRCPARAM L0000374	0.0000005578	3.49	11.16	3.25
SRCPARAM L0000375	0.0000005578	3.49	11.16	3.25
SRCPARAM L0000376	0.0000005578	3.49	11.16	3.25

		12828 HRA			
SRCPARAM	L0000377	0.0000005578	3.49	11.16	3.25
SRCPARAM	L0000378	0.0000005578	3.49	11.16	3.25
SRCPARAM	L0000379	0.0000005578	3.49	11.16	3.25
SRCPARAM	L0000380	0.0000005578	3.49	11.16	3.25
SRCPARAM	L0000381	0.0000005578	3.49	11.16	3.25
SRCPARAM	L0000382	0.0000005578	3.49	11.16	3.25
SRCPARAM	L0000383	0.0000005578	3.49	11.16	3.25
SRCPARAM	L0000384	0.0000005578	3.49	11.16	3.25
SRCPARAM	L0000385	0.0000005578	3.49	11.16	3.25
SRCPARAM	L0000386	0.0000005578	3.49	11.16	3.25
SRCPARAM	L0000387	0.0000005578	3.49	11.16	3.25
SRCPARAM	L0000388	0.0000005578	3.49	11.16	3.25
SRCPARAM	L0000389	0.0000005578	3.49	11.16	3.25
SRCPARAM	L0000390	0.0000005578	3.49	11.16	3.25
SRCPARAM	L0000391	0.0000005578	3.49	11.16	3.25
SRCPARAM	L0000392	0.0000005578	3.49	11.16	3.25
SRCPARAM	L0000393	0.0000005578	3.49	11.16	3.25
SRCPARAM	L0000394	0.0000005578	3.49	11.16	3.25
SRCPARAM	L0000395	0.0000005578	3.49	11.16	3.25
SRCPARAM	L0000396	0.0000005578	3.49	11.16	3.25
SRCPARAM	L0000397	0.0000005578	3.49	11.16	3.25
SRCPARAM	L0000398	0.0000005578	3.49	11.16	3.25
SRCPARAM	L0000399	0.0000005578	3.49	11.16	3.25
SRCPARAM	L0000400	0.0000005578	3.49	11.16	3.25

** -----

URBANSRC ALL
SRCGROUP ALL

SO FINISHED

**

** AERMOD Receptor Pathway

**

**

RE STARTING

INCLUDED "12828 HRA.rou"

RE FINISHED

**

** AERMOD Meteorology Pathway

**

**

ME STARTING

SURFFILE KCNO_V9_ADJU\KCNO_v9.SFC

PROFILE KCNO_V9_ADJU\KCNO_v9.PFL

SURFDATA 3179 2012

UAIRDATA 3190 2012

12828 HRA
PROFBASE 198.0 METERS
ME FINISHED
**

** AERMOD Output Pathway

**
**
OU STARTING
RECTABLE ALLAVE 1ST
RECTABLE 1 1ST
** Auto-Generated Plotfiles
PLOTFILE 1 ALL 1ST "12828 HRA.AD\01H1GALL.PLT" 31
PLOTFILE ANNUAL ALL "12828 HRA.AD\AN00GALL.PLT" 32
SUMMFILE "12828 HRA.sum"
OU FINISHED

*** Message Summary For AERMOD Model Setup ***

----- Summary of Total Messages -----

A Total of 0 Fatal Error Message(s)
A Total of 2 Warning Message(s)
A Total of 0 Informational Message(s)

***** FATAL ERROR MESSAGES *****
*** NONE ***

***** WARNING MESSAGES *****
ME W186 722 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
0.50
ME W187 722 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

*** SETUP Finishes Successfully ***

▲ *** AERMOD - VERSION 19191 *** *** C:\Lakes\AERMOD View\12828 HRA\12828
HRA.isc *** 01/04/20
*** AERMET - VERSION 16216 *** ***
*** 16:01:35

PAGE 1
*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

12828 HRA

*** MODEL SETUP OPTIONS SUMMARY

-- DEPOSITION LOGIC --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION. DRYDPLT = F
**Model Uses NO WET DEPLETION. WETDPLT = F

**Model Uses URBAN Dispersion Algorithm for the SBL for 200 Source(s),
for Total of 1 Urban Area(s):
Urban Population = 2035210.0 ; Urban Roughness Length = 1.000 m

**Model Uses Regulatory DEFAULT Options:
1. Stack-tip Downwash.
2. Model Accounts for ELEVated Terrain Effects.
3. Use Calms Processing Routine.
4. Use Missing Data Processing Routine.
5. No Exponential Decay.
6. Urban Roughness Length of 1.0 Meter Assumed.

**Other Options Specified:
ADJ_U* - Use ADJ_U* option for SBL in AERMET
CCVR_Sub - Meteorological data includes CCVR substitutions
TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of: DPM

**Model Calculates 1 Short Term Average(s) of: 1-HR
and Calculates ANNUAL Averages

**This Run Includes: 200 Source(s); 1 Source Group(s); and 26 Receptor(s)

with: 0 POINT(s), including
0 POINTCAP(s) and 0 POINTHOR(s)
and: 200 VOLUME source(s)
and: 0 AREA type source(s)
and: 0 LINE source(s)
and: 0 RLINE/RЛИNEXT source(s)
and: 0 OPENPIT source(s)

12828 HRA
and: 0 BUOYANT LINE source(s) with 0 line(s)

**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 16216

**Output Options Selected:

Model Outputs Tables of ANNUAL Averages by Receptor
Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE
Keyword)
Model Outputs External File(s) of High Values for Plotting (PLOTFILE
Keyword)
Model Outputs Separate Summary File of High Ranked Values (SUMMFILE
Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
Hours
m for Missing
and Missing Hours b for Both Calm

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 198.00 ; Decay
Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ;
Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 3.6 MB of RAM.

**Input Runstream File: aermod.inp

**Output Print File: aermod.out

**Detailed Error/Message File: 12828 HRA.err

**File for Summary of Results: 12828 HRA.sum

▲ *** AERMOD - VERSION 19191 *** *** C:\Lakes\AERMOD View\12828 HRA\12828
HRA.isc *** 01/04/20
*** AERMET - VERSION 16216 *** ***
*** 16:01:35

PAGE 2
*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

12828 HRA

*** VOLUME SOURCE DATA ***

INIT.	URBAN	NUMBER	EMISSION RATE		BASE	RELEASE	INIT.	
SOURCE	SOURCE	EMISSION RATE	PART. (GRAMS/SEC)	X	Y	ELEV.	HEIGHT	
SZ	SZ	SCALAR VARY	CATS.	(METERS)	(METERS)	(METERS)	(METERS)	
	ID		BY					
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	
L0000201 3.25	YES	0	0.62240E-06	432909.8	3765478.6	238.1	3.49	3.84
L0000202 3.25	YES	0	0.62240E-06	432909.9	3765470.4	237.9	3.49	3.84
L0000203 3.25	YES	0	0.62240E-06	432910.0	3765462.1	237.6	3.49	3.84
L0000204 3.25	YES	0	0.62240E-06	432910.1	3765453.9	237.3	3.49	3.84
L0000205 3.25	YES	0	0.62240E-06	432910.3	3765445.6	237.1	3.49	3.84
L0000206 3.25	YES	0	0.62240E-06	432910.4	3765437.3	237.1	3.49	3.84
L0000207 3.25	YES	0	0.62240E-06	432910.5	3765429.1	237.3	3.49	3.84
L0000208 3.25	YES	0	0.62240E-06	432910.6	3765420.8	237.5	3.49	3.84
L0000209 3.25	YES	0	0.62240E-06	432910.7	3765412.6	237.7	3.49	3.84
L0000210 3.25	YES	0	0.62240E-06	432910.8	3765404.3	237.8	3.49	3.84
L0000211 3.25	YES	0	0.62240E-06	432910.9	3765396.0	238.0	3.49	3.84
L0000212 3.25	YES	0	0.62240E-06	432911.0	3765387.8	238.2	3.49	3.84
L0000213 3.25	YES	0	0.62240E-06	432911.1	3765379.5	238.4	3.49	3.84
L0000214 3.25	YES	0	0.62240E-06	432911.2	3765371.3	238.5	3.49	3.84
L0000215 3.25	YES	0	0.62240E-06	432911.3	3765363.0	238.7	3.49	3.84
L0000216 3.25	YES	0	0.62240E-06	432911.5	3765354.8	238.9	3.49	3.84
L0000217 3.25	YES	0	0.62240E-06	432911.6	3765346.5	238.8	3.49	3.84
L0000218 3.25	YES	0	0.11580E-06	433055.2	3765417.5	237.9	3.49	4.00
L0000219		0	0.11580E-06	433055.4	3765408.9	237.9	3.49	4.00

12828 HRA
PAGE 3
*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

INIT.	URBAN	NUMBER EMISSION RATE			BASE	RELEASE	INIT.		
SZ	SOURCE	EMISSION RATE	PART.	(GRAMS/SEC)	X	Y	ELEV.	HEIGHT	SY
		SCALAR	VARY						
ID	CATS.				(METERS)	(METERS)	(METERS)	(METERS)	(METERS)
(METERS)	BY								
L0000241		0	0.45110E-06	432893.3	3765373.7	238.3	3.49	4.00	
3.25	YES								
L0000242		0	0.45110E-06	432893.3	3765382.2	238.1	3.49	4.00	
3.25	YES								
L0000243		0	0.45110E-06	432893.3	3765390.8	238.0	3.49	4.00	
3.25	YES								
L0000244		0	0.45110E-06	432893.3	3765399.4	237.8	3.49	4.00	
3.25	YES								
L0000245		0	0.45110E-06	432893.3	3765408.0	237.7	3.49	4.00	
3.25	YES								
L0000246		0	0.45110E-06	432893.4	3765416.6	237.5	3.49	4.00	
3.25	YES								
L0000247		0	0.45110E-06	432893.4	3765425.2	237.3	3.49	4.00	
3.25	YES								
L0000248		0	0.45110E-06	432893.4	3765433.8	237.2	3.49	4.00	
3.25	YES								
L0000249		0	0.45110E-06	432893.4	3765442.4	237.0	3.49	4.00	
3.25	YES								
L0000250		0	0.45110E-06	432893.4	3765451.0	237.2	3.49	4.00	
3.25	YES								
L0000251		0	0.45110E-06	432893.4	3765459.6	237.5	3.49	4.00	
3.25	YES								
L0000252		0	0.45110E-06	432893.4	3765468.1	237.7	3.49	4.00	
3.25	YES								
L0000253		0	0.45110E-06	432893.4	3765476.7	238.0	3.49	4.00	
3.25	YES								
L0000254		0	0.45110E-06	432893.5	3765485.3	238.2	3.49	4.00	
3.25	YES								
L0000255		0	0.45110E-06	432893.5	3765493.9	238.5	3.49	4.00	
3.25	YES								
L0000256		0	0.45110E-06	432893.5	3765502.5	238.7	3.49	4.00	
3.25	YES								
L0000257		0	0.45110E-06	432893.5	3765511.1	239.0	3.49	4.00	

12828 HRA

3.25	YES							
L0000258		0	0.45110E-06	432895.2	3765518.0	239.2	3.49	4.00
3.25	YES							
L0000259		0	0.45110E-06	432903.8	3765518.0	239.3	3.49	4.00
3.25	YES							
L0000260		0	0.45110E-06	432912.4	3765517.9	239.4	3.49	4.00
3.25	YES							
L0000261		0	0.45110E-06	432921.0	3765517.9	239.4	3.49	4.00
3.25	YES							
L0000262		0	0.45110E-06	432929.5	3765517.8	239.4	3.49	4.00
3.25	YES							
L0000263		0	0.45110E-06	432938.1	3765517.8	239.4	3.49	4.00
3.25	YES							
L0000264		0	0.45110E-06	432946.7	3765517.7	239.4	3.49	4.00
3.25	YES							
L0000265		0	0.45110E-06	432955.3	3765517.7	239.4	3.49	4.00
3.25	YES							
L0000266		0	0.45110E-06	432962.9	3765514.3	239.3	3.49	4.00
3.25	YES							
L0000267		0	0.45110E-06	432970.1	3765509.6	239.2	3.49	4.00
3.25	YES							
L0000268		0	0.45110E-06	432977.2	3765504.8	239.0	3.49	4.00
3.25	YES							
L0000269		0	0.45110E-06	432984.4	3765500.1	238.9	3.49	4.00
3.25	YES							
L0000270		0	0.45110E-06	432991.6	3765495.4	238.7	3.49	4.00
3.25	YES							
L0000271		0	0.45110E-06	432998.8	3765490.7	238.6	3.49	4.00
3.25	YES							
L0000272		0	0.45110E-06	433005.8	3765485.7	238.5	3.49	4.00
3.25	YES							
L0000273		0	0.45110E-06	433012.6	3765480.5	238.4	3.49	4.00
3.25	YES							
L0000274		0	0.45110E-06	433019.4	3765475.3	238.3	3.49	4.00
3.25	YES							
L0000275		0	0.45110E-06	433026.2	3765470.0	238.2	3.49	4.00
3.25	YES							
L0000276		0	0.45110E-06	433029.1	3765462.8	238.0	3.49	4.00
3.25	YES							
L0000277		0	0.45110E-06	433029.3	3765454.2	237.8	3.49	4.00
3.25	YES							
L0000278		0	0.45110E-06	433029.5	3765445.6	237.6	3.49	4.00
3.25	YES							
L0000279		0	0.45110E-06	433029.7	3765437.0	237.5	3.49	4.00
3.25	YES							
L0000280		0	0.45110E-06	433029.9	3765428.4	237.6	3.49	4.00
3.25	YES							

▲ *** AERMOD - VERSION 19191 *** *** C:\Lakes\AERMOD View\12828 HRA\12828

12828 HRA
HRA.isc *** 01/04/20
*** AERMET - VERSION 16216 *** ***
*** 16:01:35

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

INIT.	URBAN	NUMBER	EMISSION RATE		BASE	RELEASE	INIT.	
SOURCE	SOURCE	EMISSION RATE	PART. (GRAMS/SEC)	X	Y	ELEV.	HEIGHT	
SZ	ID	SCALAR VARY	CATS.	(METERS)	(METERS)	(METERS)	(METERS)	
			BY					
L0000281 3.25	YES	0	0.45110E-06	433030.1	3765419.8	237.6	3.49	4.00
L0000282 3.25	YES	0	0.45110E-06	433030.3	3765411.3	237.7	3.49	4.00
L0000283 3.25	YES	0	0.45110E-06	433030.5	3765402.7	237.7	3.49	4.00
L0000284 3.25	YES	0	0.45110E-06	433030.7	3765394.1	237.8	3.49	4.00
L0000285 3.25	YES	0	0.45110E-06	433030.9	3765385.5	237.8	3.49	4.00
L0000286 3.25	YES	0	0.45110E-06	433031.1	3765376.9	237.9	3.49	4.00
L0000287 3.25	YES	0	0.45110E-06	433031.3	3765368.3	237.9	3.49	4.00
L0000288 3.25	YES	0	0.45110E-06	433031.5	3765359.7	238.0	3.49	4.00
L0000289 3.25	YES	0	0.45110E-06	433031.7	3765351.1	238.0	3.49	4.00
L0000290 3.25	YES	0	0.45110E-06	433031.9	3765342.6	237.8	3.49	4.00
L0000291 3.25	YES	0	0.45110E-06	433032.1	3765334.0	237.6	3.49	4.00
L0000292 3.25	YES	0	0.45110E-06	433032.3	3765325.4	237.3	3.49	4.00
L0000293 3.25	YES	0	0.45110E-06	433032.2	3765316.8	237.1	3.49	4.00
L0000294 3.25	YES	0	0.45110E-06	433034.9	3765309.0	236.9	3.49	4.00
L0000295		0	0.45110E-06	433038.4	3765301.1	236.6	3.49	4.00

12828 HRA

3.25	YES							
L0000296		0	0.65940E-07	433053.3	3765418.3	237.9	3.49	4.00
3.25	YES							
L0000297		0	0.65940E-07	433053.2	3765409.7	237.9	3.49	4.00
3.25	YES							
L0000298		0	0.65940E-07	433053.1	3765401.1	237.9	3.49	4.00
3.25	YES							
L0000299		0	0.65940E-07	433053.1	3765392.5	237.9	3.49	4.00
3.25	YES							
L0000300		0	0.65940E-07	433053.0	3765383.9	237.9	3.49	4.00
3.25	YES							
L0000301		0	0.65940E-07	433052.9	3765375.3	237.9	3.49	4.00
3.25	YES							
L0000302		0	0.65940E-07	433052.8	3765366.7	238.0	3.49	4.00
3.25	YES							
L0000303		0	0.65940E-07	433052.7	3765358.1	238.0	3.49	4.00
3.25	YES							
L0000304		0	0.65940E-07	433052.6	3765349.6	238.0	3.49	4.00
3.25	YES							
L0000305		0	0.65940E-07	433060.5	3765348.9	238.0	3.49	4.00
3.25	YES							
L0000306		0	0.65940E-07	433069.0	3765348.9	238.0	3.49	4.00
3.25	YES							
L0000307		0	0.65940E-07	433077.6	3765349.0	238.0	3.49	4.00
3.25	YES							
L0000308		0	0.65940E-07	433086.2	3765349.1	238.0	3.49	4.00
3.25	YES							
L0000309		0	0.65940E-07	433094.8	3765349.1	238.0	3.49	4.00
3.25	YES							
L0000310		0	0.65940E-07	433103.4	3765349.2	238.0	3.49	4.00
3.25	YES							
L0000311		0	0.65940E-07	433112.0	3765349.3	238.0	3.49	4.00
3.25	YES							
L0000312		0	0.65940E-07	433120.6	3765349.3	238.0	3.49	4.00
3.25	YES							
L0000313		0	0.38210E-07	433056.2	3765303.5	236.6	3.49	4.00
3.25	YES							
L0000314		0	0.38210E-07	433056.2	3765312.1	236.8	3.49	4.00
3.25	YES							
L0000315		0	0.38210E-07	433056.2	3765320.7	237.1	3.49	4.00
3.25	YES							
L0000316		0	0.38210E-07	433056.1	3765329.3	237.4	3.49	4.00
3.25	YES							
L0000317		0	0.38210E-07	433056.1	3765337.8	237.6	3.49	4.00
3.25	YES							
L0000318		0	0.38210E-07	433056.1	3765346.4	237.9	3.49	4.00
3.25	YES							
L0000319		0	0.38210E-07	433061.6	3765349.5	238.0	3.49	4.00

12828 HRA

3.25 YES
L0000320 0 0.38210E-07 433070.2 3765349.6 238.0 3.49 4.00
3.25 YES
↑ *** AERMOD - VERSION 19191 *** *** C:\Lakes\AERMOD View\12828 HRA\12828
HRA.isc *** 01/04/20
*** AERMET - VERSION 16216 *** ***
*** 16:01:35

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U* PAGE 5

*** VOLUME SOURCE DATA ***

INIT.	URBAN	NUMBER EMISSION RATE	BASE	RELEASE	INIT.
SOURCE		EMISSION RATE			
SZ	SOURCE	PART. (GRAMS/SEC)	X	Y	ELEV.
		SCALAR VARY			HEIGHT
ID		CATS.	(METERS)	(METERS)	(METERS)
(METERS)		BY			(METERS)
-	-	-	-	-	-
-	-	-	-	-	-

L0000321	0	0.38210E-07	433078.7	3765349.6	238.0	3.49	4.00
3.25 YES							
L0000322	0	0.38210E-07	433087.3	3765349.6	238.0	3.49	4.00
3.25 YES							
L0000323	0	0.38210E-07	433095.9	3765349.6	238.0	3.49	4.00
3.25 YES							
L0000324	0	0.38210E-07	433104.5	3765349.6	238.0	3.49	4.00
3.25 YES							
L0000325	0	0.38210E-07	433113.1	3765349.7	238.0	3.49	4.00
3.25 YES							
L0000326	0	0.38210E-07	433121.7	3765349.7	238.0	3.49	4.00
3.25 YES							
L0000327	0	0.38160E-07	433154.4	3765351.5	238.0	3.49	4.00
3.25 YES							
L0000328	0	0.38160E-07	433162.8	3765353.4	238.0	3.49	4.00
3.25 YES							
L0000329	0	0.38160E-07	433171.2	3765354.9	238.0	3.49	4.00
3.25 YES							
L0000330	0	0.38160E-07	433179.7	3765356.3	238.0	3.49	4.00
3.25 YES							
L0000331	0	0.38160E-07	433188.2	3765357.7	238.0	3.49	4.00
3.25 YES							
L0000332	0	0.16770E-06	433136.2	3765339.9	237.7	3.49	11.16
3.25 YES							
L0000333	0	0.16770E-06	433136.6	3765315.9	236.9	3.49	11.16

12828 HRA

3.25	YES							
L0000334		0	0.16770E-06	433137.0	3765291.9	236.1	3.49	11.16
3.25	YES							
L0000335		0	0.11270E-06	433124.4	3765285.3	235.9	3.49	11.16
3.25	YES							
L0000336		0	0.11270E-06	433100.4	3765284.8	235.9	3.49	11.16
3.25	YES							
L0000337		0	0.11270E-06	433076.4	3765284.3	235.9	3.49	11.16
3.25	YES							
L0000338		0	0.11270E-06	433052.4	3765283.8	236.0	3.49	11.16
3.25	YES							
L0000339		0	0.28350E-06	433027.3	3765283.6	236.2	3.49	11.16
3.25	YES							
L0000340		0	0.28350E-06	433003.3	3765283.1	236.4	3.49	11.16
3.25	YES							
L0000341		0	0.28350E-06	432979.3	3765282.6	236.6	3.49	11.16
3.25	YES							
L0000342		0	0.28350E-06	432955.3	3765282.0	236.6	3.49	11.16
3.25	YES							
L0000343		0	0.28350E-06	432931.3	3765281.5	236.7	3.49	11.16
3.25	YES							
L0000344		0	0.28350E-06	432907.3	3765281.0	236.7	3.49	11.16
3.25	YES							
L0000345		0	0.71000E-07	432904.4	3765281.6	236.7	3.49	11.16
3.25	YES							
L0000346		0	0.71000E-07	432928.4	3765281.9	236.7	3.49	11.16
3.25	YES							
L0000347		0	0.71000E-07	432952.4	3765282.2	236.7	3.49	11.16
3.25	YES							
L0000348		0	0.71000E-07	432976.4	3765282.5	236.6	3.49	11.16
3.25	YES							
L0000349		0	0.71000E-07	433000.4	3765282.8	236.5	3.49	11.16
3.25	YES							
L0000350		0	0.71000E-07	433024.4	3765283.1	236.2	3.49	11.16
3.25	YES							
L0000351		0	0.71000E-07	433048.4	3765283.4	236.0	3.49	11.16
3.25	YES							
L0000352		0	0.71000E-07	433072.4	3765283.7	235.9	3.49	11.16
3.25	YES							
L0000353		0	0.71000E-07	433096.4	3765284.0	235.9	3.49	11.16
3.25	YES							
L0000354		0	0.71000E-07	433120.4	3765284.3	235.9	3.49	11.16
3.25	YES							
L0000355		0	0.14090E-06	433136.1	3765273.3	235.5	3.49	11.16
3.25	YES							
L0000356		0	0.14090E-06	433135.4	3765249.3	235.1	3.49	11.16
3.25	YES							
L0000357		0	0.14090E-06	433134.7	3765225.3	235.6	3.49	11.16

12828 HRA

3.25	YES							
L0000358		0	0.14090E-06	433134.0	3765201.4	236.0	3.49	11.16
3.25	YES							
L0000359		0	0.14090E-06	433133.4	3765177.4	236.4	3.49	11.16
3.25	YES							
L0000360		0	0.14090E-06	433133.3	3765153.4	236.0	3.49	11.16
3.25	YES							
↑ *** AERMOD - VERSION 19191 ***			*** C:\Lakes\AERMOD View\12828 HRA\12828					
HRA.isc			*** 01/04/20					
*** AERMET - VERSION 16216 ***			***					
			16:01:35					
PAGE 6								
*** MODELOPTs: RegDEFAULT CONC ELEV URBAN ADJ_U*								

*** VOLUME SOURCE DATA ***

INIT.	URBAN	NUMBER EMISSION RATE				BASE	RELEASE	INIT.
SOURCE		EMISSION RATE				ELEV.	HEIGHT	SY
SZ	SOURCE	PART. (GRAMS/SEC)	X	Y				
	ID	SCALAR VARY	(METERS)	(METERS)	(METERS)	(METERS)	(METERS)	
	(METERS)	CATS.						
		BY						
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
L0000361		0	0.14090E-06	433133.3	3765129.4	234.5	3.49	11.16
3.25	YES							
L0000362		0	0.14090E-06	433133.2	3765105.4	233.0	3.49	11.16
3.25	YES							
L0000363		0	0.14090E-06	433133.5	3765081.4	231.5	3.49	11.16
3.25	YES							
L0000364		0	0.14090E-06	433133.8	3765057.4	230.6	3.49	11.16
3.25	YES							
L0000365		0	0.14090E-06	433134.2	3765033.4	230.1	3.49	11.16
3.25	YES							
L0000366		0	0.14090E-06	433134.5	3765009.4	229.6	3.49	11.16
3.25	YES							
L0000367		0	0.14090E-06	433134.9	3764985.4	229.1	3.49	11.16
3.25	YES							
L0000368		0	0.14090E-06	433135.2	3764961.4	228.1	3.49	11.16
3.25	YES							
L0000369		0	0.14090E-06	433135.5	3764937.4	226.8	3.49	11.16
3.25	YES							
L0000370		0	0.14090E-06	433135.8	3764913.4	225.5	3.49	11.16
3.25	YES							
L0000371		0	0.14090E-06	433135.8	3764889.4	224.3	3.49	11.16

12828 HRA

3.25	YES							
L0000372		0	0.14090E-06	433136.1	3764865.4	226.1	3.49	11.16
3.25	YES							
L0000373		0	0.14090E-06	433136.8	3764841.4	228.2	3.49	11.16
3.25	YES							
L0000374		0	0.55780E-06	432878.9	3765282.2	236.7	3.49	11.16
3.25	YES							
L0000375		0	0.55780E-06	432855.0	3765281.6	236.6	3.49	11.16
3.25	YES							
L0000376		0	0.55780E-06	432831.0	3765281.0	236.5	3.49	11.16
3.25	YES							
L0000377		0	0.55780E-06	432807.1	3765282.3	236.5	3.49	11.16
3.25	YES							
L0000378		0	0.55780E-06	432783.2	3765285.2	236.6	3.49	11.16
3.25	YES							
L0000379		0	0.55780E-06	432759.4	3765288.0	236.6	3.49	11.16
3.25	YES							
L0000380		0	0.55780E-06	432735.8	3765292.2	236.7	3.49	11.16
3.25	YES							
L0000381		0	0.55780E-06	432712.2	3765296.5	236.8	3.49	11.16
3.25	YES							
L0000382		0	0.55780E-06	432689.5	3765304.1	237.0	3.49	11.16
3.25	YES							
L0000383		0	0.55780E-06	432667.0	3765312.5	236.9	3.49	11.16
3.25	YES							
L0000384		0	0.55780E-06	432644.5	3765320.8	236.8	3.49	11.16
3.25	YES							
L0000385		0	0.55780E-06	432621.2	3765326.7	236.6	3.49	11.16
3.25	YES							
L0000386		0	0.55780E-06	432597.8	3765331.9	236.3	3.49	11.16
3.25	YES							
L0000387		0	0.55780E-06	432573.8	3765333.0	235.6	3.49	11.16
3.25	YES							
L0000388		0	0.55780E-06	432549.9	3765333.8	235.0	3.49	11.16
3.25	YES							
L0000389		0	0.55780E-06	432525.9	3765334.4	234.4	3.49	11.16
3.25	YES							
L0000390		0	0.55780E-06	432501.9	3765334.5	234.6	3.49	11.16
3.25	YES							
L0000391		0	0.55780E-06	432477.9	3765334.2	234.8	3.49	11.16
3.25	YES							
L0000392		0	0.55780E-06	432466.2	3765321.9	234.2	3.49	11.16
3.25	YES							
L0000393		0	0.55780E-06	432466.4	3765297.9	233.0	3.49	11.16
3.25	YES							
L0000394		0	0.55780E-06	432466.7	3765273.9	231.8	3.49	11.16
3.25	YES							
L0000395		0	0.55780E-06	432466.9	3765249.9	231.0	3.49	11.16

12828 HRA							
3.25	YES						
L0000396		0	0.55780E-06	432467.2	3765225.9	230.7	3.49
3.25	YES						
L0000397		0	0.55780E-06	432467.5	3765201.9	230.3	3.49
3.25	YES						
L0000398		0	0.55780E-06	432467.7	3765177.9	229.9	3.49
3.25	YES						
L0000399		0	0.55780E-06	432468.0	3765153.9	230.2	3.49
3.25	YES						
L0000400		0	0.55780E-06	432468.2	3765129.9	230.9	3.49
3.25	YES						

3.25 YES
↑ *** AERMOD - VERSION 19191 *** *** C:\Lakes\AERMOD View\12828 HRA\12828
HRA.isc *** 01/04/20
*** AERMET - VERSION 16216 *** ***
*** 16:01:35

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ U*

*** SOURCE TDs DEFTNTNG SOURCE GROUPS

* * *

SRCGROUP	ID	SOURCE	IDS
ALL	L0000201	, L0000202	, L0000203
L0000206	, L0000207	, L0000208	, ,
L0000214	L0000209	, L0000210	, L0000211
	, L0000215	, L0000216	, ,
L0000222	L0000217	, L0000218	, L0000219
	, L0000223	, L0000224	, ,
L0000230	L0000225	, L0000226	, L0000227
	, L0000231	, L0000232	, ,
L0000238	L0000233	, L0000234	, L0000235
	, L0000239	, L0000240	, ,
L0000246	L0000241	, L0000242	, L0000243
	, L0000247	, L0000248	, ,
L0000254	L0000249	, L0000250	, L0000251
	, L0000255	, L0000256	, ,

							12828 HRA
L0000262	, L0000257 L0000263	, L0000258 L0000264	, L0000259 ,	, L0000260	, L0000261	, ,	
L0000270	, L0000265 L0000271	, L0000266 L0000272	, L0000267 ,	, L0000268	, L0000269	, ,	
L0000278	, L0000273 L0000279	, L0000274 L0000280	, L0000275 ,	, L0000276	, L0000277	, ,	
L0000286	, L0000281 L0000287	, L0000282 L0000288	, L0000283 ,	, L0000284	, L0000285	, ,	
L0000294	, L0000289 L0000295	, L0000290 L0000296	, L0000291 ,	, L0000292	, L0000293	, ,	
L0000302	, L0000297 L0000303	, L0000298 L0000304	, L0000299 ,	, L0000300	, L0000301	, ,	
L0000310	, L0000305 L0000311	, L0000306 L0000312	, L0000307 ,	, L0000308	, L0000309	, ,	
L0000318	, L0000313 L0000319	, L0000314 L0000320	, L0000315 ,	, L0000316	, L0000317	, ,	
L0000326	, L0000321 L0000327	, L0000322 L0000328	, L0000323 ,	, L0000324	, L0000325	, ,	
L0000334	, L0000329 L0000335	, L0000330 L0000336	, L0000331 ,	, L0000332	, L0000333	, ,	
L0000342	, L0000337 L0000343	, L0000338 L0000344	, L0000339 ,	, L0000340	, L0000341	, ,	
L0000350	, L0000345 L0000351	, L0000346 L0000352	, L0000347 ,	, L0000348	, L0000349	, ,	
L0000358	, L0000353 L0000359	, L0000354 L0000360	, L0000355 ,	, L0000356	, L0000357	, ,	
▲ *** AERMOD - VERSION HRA.isc		19191 ***	***	C:\Lakes\AERMOD View\12828 HRA\12828 01/04/20			
*** AERMET - VERSION		16216 ***	***				
				16:01:35			

PAGE 8
 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS

12828 HRA

SRCGROUP ID	SOURCE IDs
L0000366	L0000361 , L0000362 , L0000363 , L0000364 , L0000365 , L0000367 , L0000368 , L0000369 , L0000370 , L0000371 , L0000372 , L0000373 , L0000374 , L0000375 , L0000376 , L0000377 , L0000378 , L0000379 , L0000380 , L0000381 , L0000382 , L0000383 , L0000384 , L0000385 , L0000386 , L0000387 , L0000388 , L0000389 , L0000390 , L0000391 , L0000392 , L0000393 , L0000394 , L0000395 , L0000396 , L0000397 , L0000398 , L0000399 , L0000400 ,

↑ *** AERMOD - VERSION 19191 *** *** C:\Lakes\AERMOD View\12828 HRA\12828
HRA.isc *** 01/04/20
*** AERMET - VERSION 16216 *** ***
*** 16:01:35

PAGE 9

*** MODELOPTs: RegDEFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINED AS URBAN SOURCES

URBAN ID	URBAN POP	SOURCE IDs
L0000205	2035210. L0000206	L0000201 , L0000202 , L0000203 , L0000204 , L0000207 , ,
L0000208	,	
L0000214	L0000209 L0000215	, L0000210 , L0000211 , L0000212 , L0000213 , , L0000216 , ,
L0000222	L0000217 L0000223	, L0000218 , L0000219 , L0000220 , L0000221 , , L0000224 , ,
L0000230	L0000225 L0000231	, L0000226 , L0000227 , L0000228 , L0000229 , , L0000232 , ,

12828 HRA

L0000238	L0000233 , L0000239	, L0000234 , L0000240	, L0000235 ,	, L0000236	, L0000237	,
L0000246	L0000241 , L0000247	, L0000242 , L0000248	, L0000243 ,	, L0000244	, L0000245	,
L0000254	L0000249 , L0000255	, L0000250 , L0000256	, L0000251 ,	, L0000252	, L0000253	,
L0000262	L0000257 , L0000263	, L0000258 , L0000264	, L0000259 ,	, L0000260	, L0000261	,
L0000270	L0000265 , L0000271	, L0000266 , L0000272	, L0000267 ,	, L0000268	, L0000269	,
L0000278	L0000273 , L0000279	, L0000274 , L0000280	, L0000275 ,	, L0000276	, L0000277	,
L0000286	L0000281 , L0000287	, L0000282 , L0000288	, L0000283 ,	, L0000284	, L0000285	,
L0000294	L0000289 , L0000295	, L0000290 , L0000296	, L0000291 ,	, L0000292	, L0000293	,
L0000302	L0000297 , L0000303	, L0000298 , L0000304	, L0000299 ,	, L0000300	, L0000301	,
L0000310	L0000305 , L0000311	, L0000306 , L0000312	, L0000307 ,	, L0000308	, L0000309	,
L0000318	L0000313 , L0000319	, L0000314 , L0000320	, L0000315 ,	, L0000316	, L0000317	,
L0000326	L0000321 , L0000327	, L0000322 , L0000328	, L0000323 ,	, L0000324	, L0000325	,
L0000334	L0000329 , L0000335	, L0000330 , L0000336	, L0000331 ,	, L0000332	, L0000333	,
L0000342	L0000337 , L0000343	, L0000338 , L0000344	, L0000339 ,	, L0000340	, L0000341	,
L0000350	L0000345 , L0000351	, L0000346 , L0000352	, L0000347 ,	, L0000348	, L0000349	,
L0000358	L0000353 , L0000359	, L0000354 , L0000360	, L0000355 ,	, L0000356	, L0000357	,

12828 HRA
 ↑ *** AERMOD - VERSION 19191 *** *** C:\Lakes\AERMOD View\12828 HRA\12828
 HRA.isc *** 01/04/20
 *** AERMET - VERSION 16216 *** ***
 *** 16:01:35

PAGE 10
 *** MODELOPTs: RegDEFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINED AS URBAN SOURCES

URBAN ID	URBAN POP	SOURCE IDs
-----	-----	-----
L0000366	L0000361 , L0000367 , L0000368	, L0000362 , L0000368 , L0000363 , L0000364 , L0000365 ,
L0000374	L0000369 , L0000375 , L0000376	, L0000370 , L0000371 , L0000372 , L0000373 ,
L0000382	L0000377 , L0000383 , L0000384	, L0000378 , L0000379 , L0000380 , L0000381 ,
L0000390	L0000385 , L0000391 , L0000392	, L0000386 , L0000387 , L0000388 , L0000389 ,
L0000398	L0000393 , L0000399 , L0000400	, L0000394 , L0000395 , L0000396 , L0000397 ,
HRA.isc	19191 *** ***	C:\Lakes\AERMOD View\12828 HRA\12828 01/04/20
*** AERMET - VERSION 16216 *** ***	16:01:35	

PAGE 11
 *** MODELOPTs: RegDEFAULT CONC ELEV URBAN ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
 (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
 (METERS)

(432873.7, 3765319.5, 237.6, 2581.0, 0.0); (433159.8,
 3765410.9, 238.5, 2581.0, 0.0);
 (433177.0, 3765399.0, 238.3, 2581.0, 0.0); (433198.6,
 3765384.2, 238.1, 2581.0, 0.0);
 (433219.4, 3765371.0, 238.0, 2581.0, 0.0); (433239.3,
 3765356.7, 238.0, 2581.0, 0.0);

12828 HRA
 (433266.0, 3765360.1, 238.0, 2581.0, 0.0); (433280.2,
 3765201.0, 234.0, 2581.0, 0.0); (433209.1, 3765167.2, 231.9, 2581.0, 0.0); (433212.2,
 3765116.0, 229.9, 2581.0, 0.0); (433167.3, 3765071.8, 230.1, 2581.0, 0.0); (433174.2,
 3765010.9, 229.0, 2571.0, 0.0); (433165.6, 3764940.8, 226.9, 2569.0, 0.0); (433087.5,
 3765122.4, 235.3, 2581.0, 0.0); (432957.6, 3765111.8, 231.6, 2569.0, 0.0); (432854.9,
 3765083.6, 229.2, 2569.0, 0.0); (433064.3, 3765022.6, 229.4, 2569.0, 0.0); (433093.3,
 3764929.5, 227.0, 2569.0, 0.0); (432788.9, 3765365.0, 238.0, 2581.0, 0.0); (432819.9,
 3765448.3, 237.3, 2581.0, 0.0); (432836.4, 3765501.6, 238.3, 2581.0, 0.0); (432830.6,
 3765541.4, 238.9, 2581.0, 0.0); (432835.4, 3765583.1, 238.0, 2581.0, 0.0); (433023.5,
 3765523.0, 239.7, 2581.0, 0.0); (433076.8, 3765502.6, 239.3, 2581.0, 0.0); (432939.1,
 3765591.8, 237.7, 2581.0, 0.0);
 ↑ *** AERMOD - VERSION 19191 *** *** C:\Lakes\AERMOD View\12828 HRA\12828
 HRA.isc *** 01/04/20
 *** AERMET - VERSION 16216 *** ***
 *** 16:01:35

PAGE 12

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** METEOROLOGICAL DAYS SELECTED FOR
PROCESSING ***
(1=YES; 0=NO)

1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

12828 HRA

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON
WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED
CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23,
10.80,
↑ *** AERMOD - VERSION 19191 *** *** C:\Lakes\AERMOD View\12828 HRA\12828
HRA.isc *** 01/04/20
*** AERMET - VERSION 16216 *** ***
*** 16:01:35

PAGE 13

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL
DATA ***

Surface file: KCNO_V9_ADJU\KCNO_v9.SFC
Met Version: 16216

Profile file: KCNO_V9_ADJU\KCNO_v9.PFL

Surface format: FREE

Profile format: FREE

Surface station no.: 3179
Name: UNKNOWN

Upper air station no.: 3190
Name: UNKNOWN

Year: 2012

Year: 2012

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O	LEN	Z0	BOWEN
ALBEDO	REF	WS	WD	HT	REF	TA		HT						

12	01	01	1	01	-2.3	0.067	-9.000	-9.000	-999.	41.	11.2	0.09	0.74
1.00	0.73	313.			7.9	279.2		2.0					
12	01	01	1	02	-2.7	0.070	-9.000	-9.000	-999.	44.	11.3	0.09	0.74
1.00	0.80	342.			7.9	280.9		2.0					
12	01	01	1	03	-5.6	0.098	-9.000	-9.000	-999.	73.	14.7	0.09	0.74
1.00	1.20	9.			7.9	281.4		2.0					
12	01	01	1	04	-3.5	0.078	-9.000	-9.000	-999.	52.	11.9	0.09	0.74
1.00	0.94	21.			7.9	282.0		2.0					

12828 HRA

12	01	01	1	05	-8.4	0.119	-9.000	-9.000	-999.	99.	18.1	0.09	0.74
1.00			1.45	353.	7.9	279.9	2.0						
12	01	01	1	06	-7.6	0.113	-9.000	-9.000	-999.	91.	17.0	0.09	0.74
1.00			1.38	325.	7.9	277.5	2.0						
12	01	01	1	07	-8.0	0.117	-9.000	-9.000	-999.	96.	17.7	0.09	0.74
1.00			1.42	313.	7.9	281.4	2.0						
12	01	01	1	08	-5.2	0.101	-9.000	-9.000	-999.	77.	17.5	0.09	0.74
0.53			1.23	19.	7.9	280.9	2.0						
12	01	01	1	09	23.2	0.117	0.267	0.012	29.	97.	-6.2	0.09	0.74
0.31			0.96	318.	7.9	287.5	2.0						
12	01	01	1	10	65.2	0.101	0.531	0.014	82.	77.	-1.4	0.09	0.74
0.24			0.63	244.	7.9	291.4	2.0						
12	01	01	1	11	95.5	0.162	0.778	0.008	176.	156.	-4.0	0.09	0.74
0.21			1.23	91.	7.9	296.4	2.0						
12	01	01	1	12	110.8	0.197	1.018	0.005	338.	209.	-6.1	0.09	0.74
0.20			1.60	90.	7.9	299.9	2.0						
12	01	01	1	13	110.5	0.229	1.184	0.005	534.	262.	-9.6	0.09	0.74
0.20			1.98	92.	7.9	302.0	2.0						
12	01	01	1	14	94.6	0.185	1.215	0.005	674.	191.	-5.9	0.09	0.74
0.21			1.50	73.	7.9	303.1	2.0						
12	01	01	1	15	68.6	0.187	1.184	0.005	858.	194.	-8.4	0.09	0.74
0.25			1.59	64.	7.9	303.1	2.0						
12	01	01	1	16	24.9	0.255	0.862	0.005	911.	308.	-58.8	0.09	0.74
0.34			2.61	92.	7.9	300.4	2.0						
12	01	01	1	17	-13.7	0.168	-9.000	-9.000	-999.	168.	31.1	0.09	0.74
0.62			1.98	107.	7.9	295.4	2.0						
12	01	01	1	18	-26.7	0.279	-9.000	-9.000	-999.	354.	85.6	0.09	0.74
1.00			3.22	134.	7.9	291.4	2.0						
12	01	01	1	19	-8.0	0.118	-9.000	-9.000	-999.	120.	18.2	0.09	0.74
1.00			1.43	37.	7.9	290.4	2.0						
12	01	01	1	20	-7.7	0.115	-9.000	-9.000	-999.	94.	17.6	0.09	0.74
1.00			1.40	49.	7.9	287.0	2.0						
12	01	01	1	21	-9.7	0.130	-9.000	-9.000	-999.	113.	20.2	0.09	0.74
1.00			1.57	26.	7.9	288.8	2.0						
12	01	01	1	22	-4.8	0.090	-9.000	-9.000	-999.	65.	13.6	0.09	0.74
1.00			1.11	56.	7.9	284.9	2.0						
12	01	01	1	23	-11.5	0.141	-9.000	-9.000	-999.	127.	21.9	0.09	0.74
1.00			1.69	36.	7.9	282.0	2.0						
12	01	01	1	24	-16.9	0.172	-9.000	-9.000	-999.	171.	32.4	0.09	0.74
1.00			2.03	33.	7.9	279.9	2.0						

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
12	01	01	01	7.9	1	313.	0.73	279.3	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

▲ *** AERMOD - VERSION 19191 *** *** C:\Lakes\AERMOD View\12828 HRA\12828

12828 HRA
HRA.isc *** 01/04/20
*** AERMET - VERSION 16216 *** ***
*** 16:01:35

*** MODELOPTs: RegDEFAULT CONC ELEV URBAN ADJ_U*

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5
 YEARS FOR SOURCE GROUP: ALL ***
 INCLUDING SOURCE(S): L0000201, L0000202
 , L0000203, L0000204, L0000205, ,
 L0000206, L0000207, L0000208, , L0000209, L0000210
 , L0000211, L0000212, L0000213, ,
 L0000214, L0000215, L0000216, , L0000217, L0000218
 , L0000219, L0000220, L0000221, ,
 L0000222, L0000223, L0000224, , L0000225, L0000226
 , L0000227, L0000228, . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS

** CONC OF DPM IN MICROGRAMS/M**3

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)
Y-COORD (M)	CONC		
432873.72	3765319.46	0.00471	433159.76
3765410.90	0.00203		
433177.04	3765399.01	0.00195	433198.58
3765384.20	0.00195		
433219.44	3765370.96	0.00192	433239.33
3765356.71	0.00151		
433266.03	3765360.08	0.00119	433280.24
3765201.00	0.00060		
433209.06	3765167.16	0.00068	433212.20
3765115.99	0.00056		
433167.31	3765071.77	0.00067	433174.20
3765010.90	0.00056		
433165.60	3764940.81	0.00055	433087.53
3765122.42	0.00075		
432957.64	3765111.76	0.00066	432854.90
3765083.65	0.00054		
433064.27	3765022.59	0.00048	433093.35
3764929.53	0.00042		
432788.90	3765364.97	0.00184	432819.92
3765448.34	0.00206		

			12828 HRA	
432836.40	3765501.65	0.00201		432830.58
3765541.40	0.00138			
432835.43	3765583.08	0.00100		433023.48
3765522.98	0.00331			
433076.80	3765502.62	0.00257		432939.15
3765591.80	0.00132			
*** AERMOD - VERSION 19191 ***	*** C:\Lakes\AERMOD View\12828 HRA\12828			
HRA.isc		*** 01/04/20		
*** AERMET - VERSION 16216 ***	***			
	***	16:01:35		

PAGE 15

*** MODELOPTs: RegDEFAULT CONC ELEV URBAN ADJ_U*

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S):				L0000201	, L0000202
, L0000203	, L0000204	, L0000205	,		
		, L0000206	, L0000207	, L0000208	, L0000209
, L0000211	, L0000212	, L0000213	,		, L0000210
		, L0000214	, L0000215	, L0000216	, L0000217
, L0000219	, L0000220	, L0000221	,		, L0000218
		, L0000222	, L0000223	, L0000224	, L0000225
, L0000227	, L0000228	, . . .	,		, L0000226

*** DISCRETE CARTESIAN RECEPTOR POINTS

** CONC OF DPM IN MICROGRAMS/M***

**

X-COORD (M)	Y-COORD (M)	CONC (YYMMDDHH)	X-COORD (M)
Y-COORD (M)	CONC (YYMMDDHH)		
- - - - -	- - - - -	- - - - -	- - - - -
432873.72	3765319.46	0.01814 (16020317)	433159.76
3765410.90	0.00577 (13041207)		433198.58
433177.04	3765399.01	0.00544 (14051806)	
3765384.20	0.00524 (14051806)		433239.33
433219.44	3765370.96	0.00710 (13041207)	
3765356.71	0.00551 (16012617)		433280.24
433266.03	3765360.08	0.00468 (15091022)	
3765201.00	0.00336 (15091122)		433212.20
433209.06	3765167.16	0.00364 (15081621)	
3765115.99	0.00308 (13012317)		433174.20
433167.31	3765071.77	0.00322 (12012517)	
3765010.90	0.00280 (12012517)		433087.53
433165.60	3764940.81	0.00247 (14110518)	

12828 HRA					
3765122.42	0.00374	(14110517)			
432957.64	3765111.76	0.00341	(16061922)		432854.90
3765083.65	0.00303	(16092606)			
433064.27	3765022.59	0.00260	(12020717)		433093.35
3764929.53	0.00211	(12020717)			
432788.90	3765364.97	0.00644	(16061924)		432819.92
3765448.34	0.00798	(15020708)			
432836.40	3765501.65	0.00859	(14033107)		432830.58
3765541.40	0.00760	(15060905)			
432835.43	3765583.08	0.00676	(16102019)		433023.48
3765522.98	0.01406	(13041207)			
433076.80	3765502.62	0.01069	(13041207)		432939.15
3765591.80	0.00754	(16070506)			
▲ *** AERMOD - VERSION 19191 *** *** C:\Lakes\AERMOD View\12828 HRA\12828					
HRA.isc *** 01/04/20					
*** AERMET - VERSION 16216 *** ***					
*** 16:01:35					

PAGE 16
 *** MODELOPTs: RegDEFAULT CONC ELEV URBAN ADJ_U*
 *** THE SUMMARY OF MAXIMUM ANNUAL RESULTS
 AVERAGED OVER 5 YEARS ***

** CONC OF DPM IN MICROGRAMS/M**3

NETWORK					
GROUP ID ZELEV, ZHILL, ZFLAG)	OF TYPE	AVERAGE CONC GRID-ID	RECEPTOR (XR, YR,		
ALL	1ST HIGHEST VALUE IS	0.00471 AT (432873.72,	3765319.46,		
237.63,	2581.00, 0.00) DC	0.00331 AT (433023.48,	3765522.98,		
239.67,	2581.00, 0.00) DC	0.00257 AT (433076.80,	3765502.62,		
239.28,	2581.00, 0.00) DC	0.00206 AT (432819.92,	3765448.34,		
237.32,	2581.00, 0.00) DC	0.00203 AT (433159.76,	3765410.90,		
238.54,	2581.00, 0.00) DC	0.00201 AT (432836.40,	3765501.65,		
238.26,	2581.00, 0.00) DC	0.00195 AT (433198.58,	3765384.20,		
	7TH HIGHEST VALUE IS				

12828 HRA
238.12, 2581.00, 0.00) DC
8TH HIGHEST VALUE IS 0.00195 AT (433177.04, 3765399.01,
238.32, 2581.00, 0.00) DC
9TH HIGHEST VALUE IS 0.00192 AT (433219.44, 3765370.96,
238.01, 2581.00, 0.00) DC
10TH HIGHEST VALUE IS 0.00184 AT (432788.90, 3765364.97,
237.95, 2581.00, 0.00) DC

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

PAGE 17

*** MODELOPTs: RegDEFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF HIGHEST 1-HR

RESULTS ***

** CONC OF DPM IN MICROGRAMS/M**3

* *

DATE

NETWORK

RECEPTOR

GROUP ID AVERAGE CONC (YYMMDDHH)
(XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE GRID-ID

ALL HIGH 1ST HIGH VALUE IS 0.01814 ON 16020317: AT (432873.72,
3765319.46, 237.63, 2581.00, 0.00) PC

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

12828 HRA
PAGE 18
*** MODELOPTs: RegDEFAULT CONC ELEV URBAN ADJ_U*

*** Message Summary : AERMOD Model Execution ***

----- Summary of Total Messages -----

A Total of 0 Fatal Error Message(s)
A Total of 2 Warning Message(s)
A Total of 1279 Informational Message(s)

A Total of 43848 Hours Were Processed

A Total of 917 Calm Hours Identified

A Total of 362 Missing Hours Identified (0.83 Percent)

***** FATAL ERROR MESSAGES *****
*** NONE ***

***** WARNING MESSAGES *****
ME W186 722 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
0.50
ME W187 722 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

*** AERMOD Finishes Successfully ***

**AVERAGE EMISSION FACTOR
SAN BERNARDINO 2021**

Speed	LHD1	MHD	HHD
0	0.372579	0.186444	0.02393
5	0.036019	0.14658	0.09045
25	0.012841	0.05633	0.03931

Speed	Weighted Average Emissions
0	0.09144
5	0.09067
25	0.03806

Emission Rates - 2021 Emission Factors

Truck Emission Rates						
Source	Trucks Per Day	VMT ^a (miles/day)	Truck Emission Rate ^b (grams/mile)	Truck Emission Rate ^b (grams/idle-hour)	Daily Truck Emissions ^c (grams/day)	Modeled Emission Rates (g/second)
On-Site Idling Building 1	40			0.0914	0.91	1.058E-05
On-Site Idling Building 2	4			0.0914	0.08	9.261E-07
On-Site Idling Building 3	6			0.0914	0.14	1.588E-06
On-Site Idling Building 4	4			0.0914	0.08	9.261E-07
On-Site Travel Building 1	80	27.51	0.0907		2.49	2.887E-05
On-Site Travel Building 2	12	1.07	0.0907		0.10	1.121E-06
On-Site Travel Building 3	7	0.51	0.0907		0.05	5.350E-07
On-Site Travel Building 4	7	0.18	0.0907		0.02	1.908E-07
Off-Site Travel 26% on East End Ave.	28	1.14	0.0381		0.04	5.032E-07
Off-Site Travel 16% on County Rd.	17	1.02	0.0381		0.04	4.508E-07
Off-Site Travel 40% on County Rd.	42	3.86	0.0381		0.15	1.701E-06
Off-Site Travel 10% on County Rd.	11	1.61	0.0381		0.06	7.100E-07
Off-Site Travel 20% on East End Ave.	21	6.08	0.0381		0.23	2.678E-06
Off-Site Travel 80% on County Rd. to SR-60	85	34.20	0.0381		1.30	1.506E-05

^a Vehicle miles traveled are for modeled truck route only.

^b Emission rates determined using EMFAC 2017. Idle emission rates are expressed in grams per idle hour rather than grams per mile.

^c This column includes the total truck travel and truck idle emissions. For idle emissions this column includes emissions based on the assumption that each truck idles for 15 minutes.

Idling / TRU Unmitigated

Emission Factor:

TRU EF 0.12 g/bhp-hr

TRU HP 23 HP

TRU Load Factor 0.46

TRU EF @23 HP and 0.53 LF 1.2696 g/idle-hr

Emission Factor:

TRU EF 0.01 g/bhp-hr

TRU HP 34 HP

TRU Load Factor 0.53

TRU EF @34 HP and 0.53 LF 0.1802 g/idle-hr

Emission Factor:

Weighted Avg TRU EF (60% 25+ HP, 40% <25 HP) 0.61596 g/idle-hr

calendar__season_m	sub_area	vehicle_class	fuel	temperature	relative_h	process	speed_time
2021 Annual	San Berna\ HHDT	Dsl	60	70	RUNEX		5
2021 Annual	San Berna\ HHDT	Dsl	60	70	RUNEX		25
2021 Annual	San Berna\ LHDT1	Dsl	60	70	RUNEX		5
2021 Annual	San Berna\ LHDT1	Dsl	60	70	RUNEX		25
2021 Annual	San Berna\ MHDT	Dsl	60	70	RUNEX		5
2021 Annual	San Berna\ MHDT	Dsl	60	70	RUNEX		25
2021 Annual	San Berna\ HHDT	Dsl				IDLEX	
2021 Annual	San Berna\ LHDT1	Dsl				IDLEX	
2021 Annual	San Berna\ MHDT	Dsl				IDLEX	

pollutant	emission_rate
PM10	0.094089
PM10	0.040889
PM10	0.076505
PM10	0.027274
PM10	0.166041
PM10	0.063809
PM10	0.024894
PM10	0.791365
PM10	0.211198

EMFAC2017 (v1.0.2) Emissions Inventory

Region Type: County

Region: SAN BERNARDINO

Calendar Year: 2021

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Y	Vehicle Ca	Model	Yea	Speed	Fuel	Population
SAN BERN	2021	HHDT	Aggregate	Aggregate	GAS	8.724396	
SAN BERN	2021	HHDT	Aggregate	Aggregate	DSL	28527.49	
SAN BERN	2021	HHDT	Aggregate	Aggregate	NG	1139.073	
SAN BERN	2021	LHDT1	Aggregate	Aggregate	GAS	25859.14	
SAN BERN	2021	LHDT1	Aggregate	Aggregate	DSL	23005.97	
SAN BERN	2021	MHDT	Aggregate	Aggregate	GAS	2360.01	
SAN BERN	2021	MHDT	Aggregate	Aggregate	DSL	17775.32	

HHDT% GAS/NG	0.038679
HHDT% DSL	0.961321
LHDT1% GAS	0.529194
LHDT1% DSL	0.470806
MHDT% GAS	0.117207
MHDT% DSL	0.882793

APPENDIX 2.2:

RISK CALCULATIONS

Table 1
Quantification of Carcinogenic Risks and Noncarcinogenic Hazards
-0.25 to 0 Age Bin Exposure Scenario

Source (a)	Mass GLC		Weight Fraction (d)	Contaminant (e)	Carcinogenic Risk				Noncarcinogenic Hazards/ Toxicological Endpoints**									
	(ug/m ³) (b)	(mg/m ³) (c)			URF (ug/m ³) ⁻¹ (f)	CPF (mg/kg/day) ⁻¹ (g)	DOSE (mg/kg-day) ⁻¹ (h)	RISK (i)	REL (ug/m ³) (j)	RfD (mg/kg/day) (k)	RESP (l)	CNS/PNS (m)	CV/BL (n)	IMMUN (o)	KIDN (p)	GI/LV (q)	REPRO (r)	EYES (s)
	0.00203	2.03E-06			3.0E-04	1.1E+00	7.0E-07	2.2E-08	5.0E+00	1.4E-03	4.1E-04							
TOTAL								2.2E-08			4.1E-04	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	

** Key to Toxicological Endpoints

RESP	Respiratory System
CNS/PNS	Central/Peripheral Nervous System
CV/BL	Cardiovascular/Blood System
IMMUN	Immune System
KIDN	Kidney
GI/LV	Gastrointestinal System/Liver
REPRO	Reproductive System (e.g. teratogenic and developmental effects)
EYES	Eye irritation and/or other effects

Note: Exposure factors used to calculate contaminant intake

exposure frequency (days/year)	350
exposure duration (years)	0.25
inhalation rate (L/kg-day))	361
inhalation absorption factor	1
averaging time (years)	70
fraction of time at home	0.85
age sensitivity factor (age third trimester)	10

Table 2
Quantification of Carcinogenic Risks and Noncarcinogenic Hazards
0-2 Age Bin Exposure Scenario

Source (a)	Mass GLC		Weight Fraction (d)	Contaminant (e)	Carcinogenic Risk				Noncarcinogenic Hazards/ Toxicological Endpoints**								
					URF (ug/m ³) (f)	CPF (mg/kg/day) ⁻¹ (g)	DOSE (mg/kg-day) ⁻¹ (h)	RISK (i)	REL (ug/m ³) (j)	RfD (mg/kg/day) (k)	RESP (l)	CNS/PNS (m)	CV/BL (n)	IMMUN (o)	KIDN (p)	GI/LV (q)	REPRO (r)
	(ug/m ³) (b)	(mg/m ³) (c)															
0.00203	2.03E-06	1.00E+00	Diesel Particulate		3.0E-04	1.1E+00	2.1E-06	5.4E-07	5.0E+00	1.4E-03	4.1E-04						
TOTAL																	
								5.4E-07			4.1E-04	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

** Key to Toxicological Endpoints

RESP	Respiratory System
CNS/PNS	Central/Peripheral Nervous System
CV/BL	Cardiovascular/Blood System
IMMUN	Immune System
KIDN	Kidney
GI/LV	Gastrointestinal System/Liver
REPRO	Reproductive System (e.g. teratogenic and developmental effects)
EYES	Eye irritation and/or other effects

Note: Exposure factors used to calculate contaminant intake

exposure frequency (days/year)	350
exposure duration (years)	2
inhalation rate (L/kg-day))	1090
inhalation absorption factor	1
averaging time (years)	70
fraction of time at home	0.85
age sensitivity factor (0 to 2 years old)	10

Table 3
Quantification of Carcinogenic Risks and Noncarcinogenic Hazards
2-16 Age Bin Exposure Scenario

Source (a)	Mass GLC		Weight Fraction (d)	Contaminant (e)	Carcinogenic Risk				Noncarcinogenic Hazards/ Toxicological Endpoints**									
	(ug/m ³) (b)	(mg/m ³) (c)			URF (ug/m ³) ⁻¹ (f)	CPF (mg/kg/day) ⁻¹ (g)	DOSE (mg/kg-day) ⁻¹ (h)	RISK (i)	REL (ug/m ³) (j)	RfD (mg/kg/day) (k)	RESP (l)	CNS/PNS (m)	CV/BL (n)	IMMUN (o)	KIDN (p)	GI/LV (q)	REPRO (r)	EYES (s)
	0.00203	2.03E-06			3.0E-04	1.1E+00	1.1E-06	5.1E-07	5.0E+00	1.4E-03	4.1E-04							
TOTAL																		
								5.1E-07			4.1E-04	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	

** Key to Toxicological Endpoints

RESP	Respiratory System
CNS/PNS	Central/Peripheral Nervous System
CV/BL	Cardiovascular/Blood System
IMMUN	Immune System
KIDN	Kidney
GI/LV	Gastrointestinal System/Liver
REPRO	Reproductive System (e.g. teratogenic and developmental effects)
EYES	Eye irritation and/or other effects

Note: Exposure factors used to calculate contaminant intake

exposure frequency (days/year)	350
exposure duration (years)	14
inhalation rate (L/kg-day))	572
inhalation absorption factor	1
averaging time (years)	70
fraction of time at home	0.72
age sensitivity factor (ages 2 to 16 years	3

Table 4
Quantification of Carcinogenic Risks and Noncarcinogenic Hazards
16-30 Age Bin Exposure Scenario

Source	Mass GLC		Weight Fraction (a)	Contaminant (e)	Carcinogenic Risk				Noncarcinogenic Hazards/ Toxicological Endpoints**								
					URF (ug/m ³) (b)	CPF (ug/m ³) ⁻¹ (c)	DOSE (mg/kg/day) ¹ (f)	RISK (g)	REL (ug/m ³) (j)	RfD (mg/kg/day) (k)	RESP (l)	CNS/PNS (m)	CV/BL (n)	IMMUN (o)	KIDN (p)	GI/LV (q)	REPRO (r)
	0.00203	2.03E-06			3.0E-04	1.1E+00	5.1E-07	7.8E-08	5.0E+00	1.4E-03	4.1E-04						
TOTAL								7.8E-08		4.1E-04	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

** Key to Toxicological Endpoints

RESP	Respiratory System
CNS/PNS	Central/Peripheral Nervous System
CV/BL	Cardiovascular/Blood System
IMMUN	Immune System
KIDN	Kidney
GI/LV	Gastrointestinal System/Liver
REPRO	Reproductive System (e.g. teratogenic and developmental effects)
EYES	Eye irritation and/or other effects

Note: Exposure factors used to calculate contaminant intake

exposure frequency (days/year)	350
exposure duration (years)	14
inhalation rate (L/kg-day)	261
inhalation absorption factor	1
averaging time (years)	70
fraction of time at home	0.73
age sensitivity factor (ages 16 to 30 years old)	1

Total Risk for All Age Bins (per million) **1.15**

Table 5
Quantification of Carcinogenic Risks and Noncarcinogenic Risks
25-Year Worker Exposure Scenario

	Source	Mass GLC		Weight Fraction	Contaminant	Carcinogenic Risk				Noncarcinogenic Hazards/ Toxicological Endpoints**								
		(a) (ug/m ³)	(b) (mg/m ³)			(d)	(e)	(c)	(i)	REL (ug/m ³) ¹	RfD (j)	RESP (k)	CNS/PNS (l)	CV/BL (m)	IMMUN (n)	KIDN (o)	GI/LV (p)	REPRO (q)
1	Diesel Particulates	4.71E-03	4.71E-06	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	7.4E-07	2.8E-07	5.0E+00	1.4E-03	9.4E-04	9.4E-04	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
	TOTAL								2.8E-07 0.28									

** Key to Toxicological Endpoints

Note: Exposure factors used to calculate contaminant intake

RESP	Respiratory System	exposure frequency (days/year)	250
CNS/PNS	Central/Peripheral Nervous System	exposure duration (years)	25
CV/BL	Cardiovascular/Blood System	inhalation rate (L/kg-day)	230
IMMUN	Immune System	inhalation absorption factor	1
KIDN	Kidney	averaging time (years)	70
GI/LV	Gastrointestinal System/Liver		
REPRO	Reproductive System (e.g. teratogenic and developmental effects)		
EYES	Eye irritation and/or other effects		