



Harvill and Rider Warehouse (PPT190039)

MOBILE SOURCE HEALTH RISK ASSESSMENT COUNTY OF RIVERSIDE

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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	Harvill and Rider Warehouse (PPT190039)
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

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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) emitted from 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.

Individual Exposure Scenario:

The residential land use with the greatest potential exposure to Project DPM source emissions is Location R2, which represents an existing residential home located at 23615 Rider Street, roughly 633 feet southwest of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, R2 is placed at the residential building façade. At the maximally exposed individual receptor (MEIR), the maximum incremental cancer risk attributable to Project DPM source emissions is estimated at 0.72 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 0.00025, 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 adjacent residences.

Worker Exposure Scenario:

The worker receptor land use with the greatest potential exposure to Project DPM source emissions is Location R5, which represents the JM Eagle manufacturing facility located 106 feet south of the Project site. Receptor R5 is placed at the parking log/yard area at JM Eagle manufacturing where a worker could remain for at least one hour. At the maximally exposed individual worker (MEIW), the maximum incremental cancer risk impact at this location is 0.42 in one million which is less than the SCAQMD's threshold of 10 in one million. Maximum non-cancer risks at this same location were estimated to be 0.001, which would not exceed the applicable significance threshold of 1.0. 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 adjacent workers.

School Child Exposure Scenario:

The school site land use with the greatest potential exposure to Project DPM source emissions is Location R1, which represents the exterior façade of the Val Verde School District administration

building located at 975 Morgan Street roughly 1,045 feet northeast of the Project site. At the maximally exposed individual school child (MEISC), the maximum incremental cancer risk impact attributable to the Project at this location is calculated to be an estimated 0.01 in one million which is less than the significance threshold of 10 in one million. At this same location, non-cancer risks attributable to the Project were calculated to be 0.00002, which would not exceed the applicable significance threshold of 1.0. Any other schools near the Project site would be exposed to less emissions and consequently less impacts than what is disclosed for the MEISC. As such, the Project will not cause a significant human health or cancer risk to nearby school children.

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 Individual Receptor	0.72	10	NO
25 Year Exposure	Maximum Exposed Worker Receptor	0.42	10	NO
9 Year Exposure	Maximum Exposed School Child Receptor	0.01	10	NO
Time Period	Location	Maximum Hazard Index	Significance Threshold	Exceeds Significance Threshold
Annual Average	Maximum Exposed Sensitive Receptor	0.00025	1.0	NO
Annual Average	Maximum Exposed Worker Receptor	0.001	1.0	NO
Annual Average	Maximum Exposed School Child Receptor	0.00002	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 SCAQMD recommends the preparation of a mobile source HRA if a proposed project is expected to generate trips from heavy-duty diesel trucks, which emit DPM. 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 (1) and is comprised of all relevant and appropriate procedures presented by the United States Environmental Protection Agency (U.S. EPA), California EPA 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 from a project such as the proposed Project. This threshold serves to determine whether or not a given project has a potentially significant development-specific and cumulatively considerable 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* (2). In this report the AQMD 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 of than one (1.0) means that adverse health effects are not expected. In this HRA, non-carcinogenic exposures of less than 1.0 are considered less-than-significant.

1.1 SITE LOCATION

The proposed Harvill and Rider Warehouse (PPT190039) site is located on the northeast corner of Harvill Avenue and Rider Street, in the County of Riverside, as shown on Exhibit 1-A. Existing industrial uses in the Project study area are located south of the Project site and vacant land surrounds the Project to the north and west. The Interstate 215 (I-215) Freeway is located approximately 96 feet east of the Project site. The Project site is located approximately 3.5 miles southwest of the southerly end of Runway 14-32 of the March Air Reserve Base/Inland Port Airport (MARB/IPA) and 4.9 miles north of the Perris Valley Airport.

The Project site is located within an unincorporated portion of the County. As per the County's General Plan, the unincorporated portions of the County are divided into 19 area plans. These area plans provide more detailed land use and policy direction regarding local issues such as land use, circulation, open space, and other topical areas (3). As per the General Plan, the Project is located within the Mead Valley Area Plan and is designated as Light Industrial.

1.2 PROJECT DESCRIPTION

The Project is proposed to consist of up to approximately 284,746 square feet (sf) of high-cube transload/short-term storage warehouse (without cold storage) use (85% of the total square footage) and 50,246 sf of general light industrial use (15% of the total square footage) for a total of 334,995 sf within a single building, as shown on Exhibit 1-B. The Project is anticipated to be constructed and occupied by 2021.

At the time this HRA was prepared, the future tenants of the proposed Project are unknown. Because the operating hours of prospective building tenants is not known at this time, this HRA is intended to describe potential toxic emission impacts associated with the expected typical 24-hour, seven day per week operational activities at the Project site.

Per the *Harvill and Rider Warehouse (PPT190039) Traffic Impact Analysis (TIA)* prepared by Urban Crossroads, Inc., the Project is expected to generate a total of approximately 650 two-way vehicular trips per day (325 inbound and 325 outbound) which includes 184 two-way truck trips per day (92 inbound and 92 outbound) (4). This health risk assessment study evaluates the potential impacts resulting from diesel exhaust from the 184 two-way truck trips generated by the Project.

EXHIBIT 1-A: LOCATION MAP

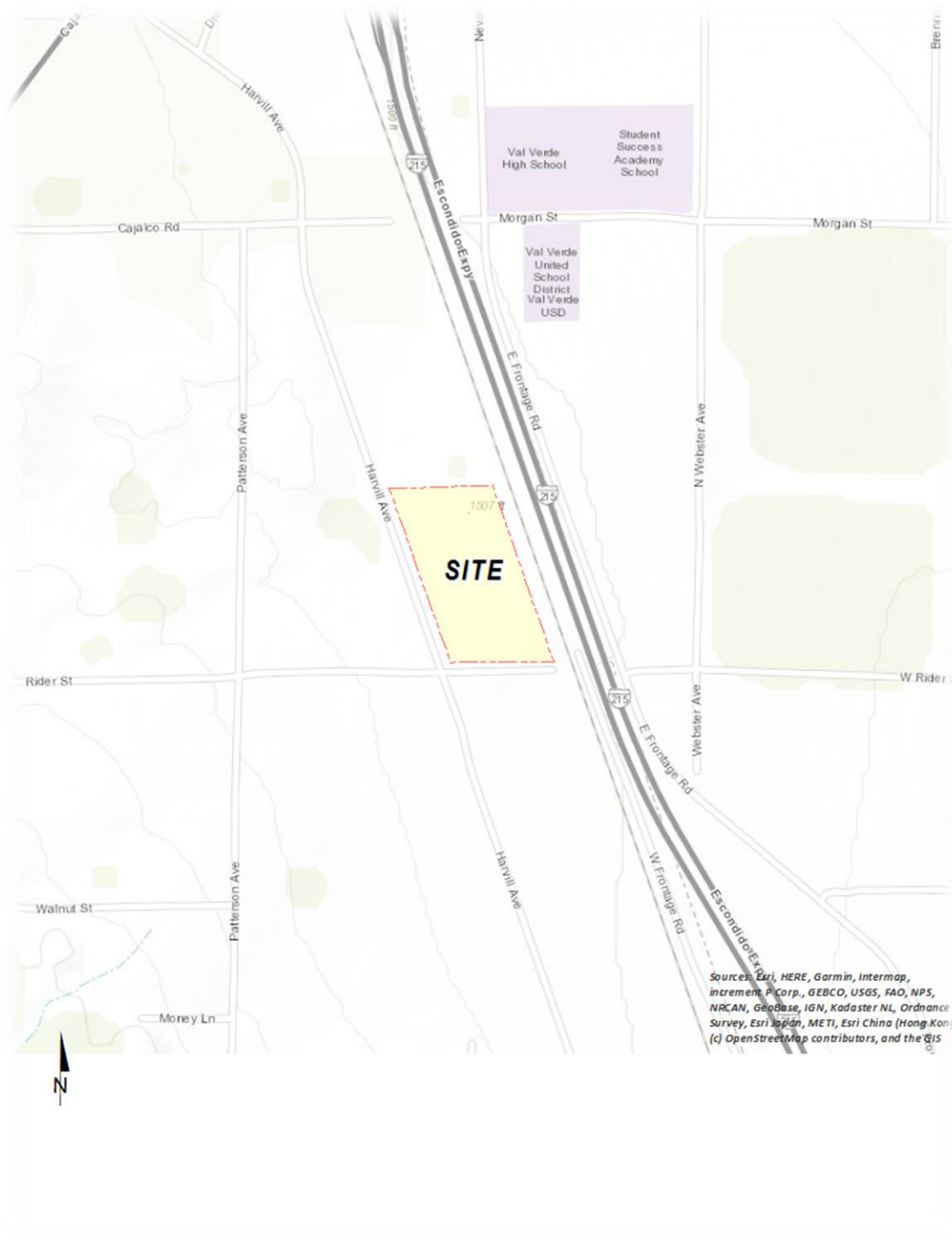
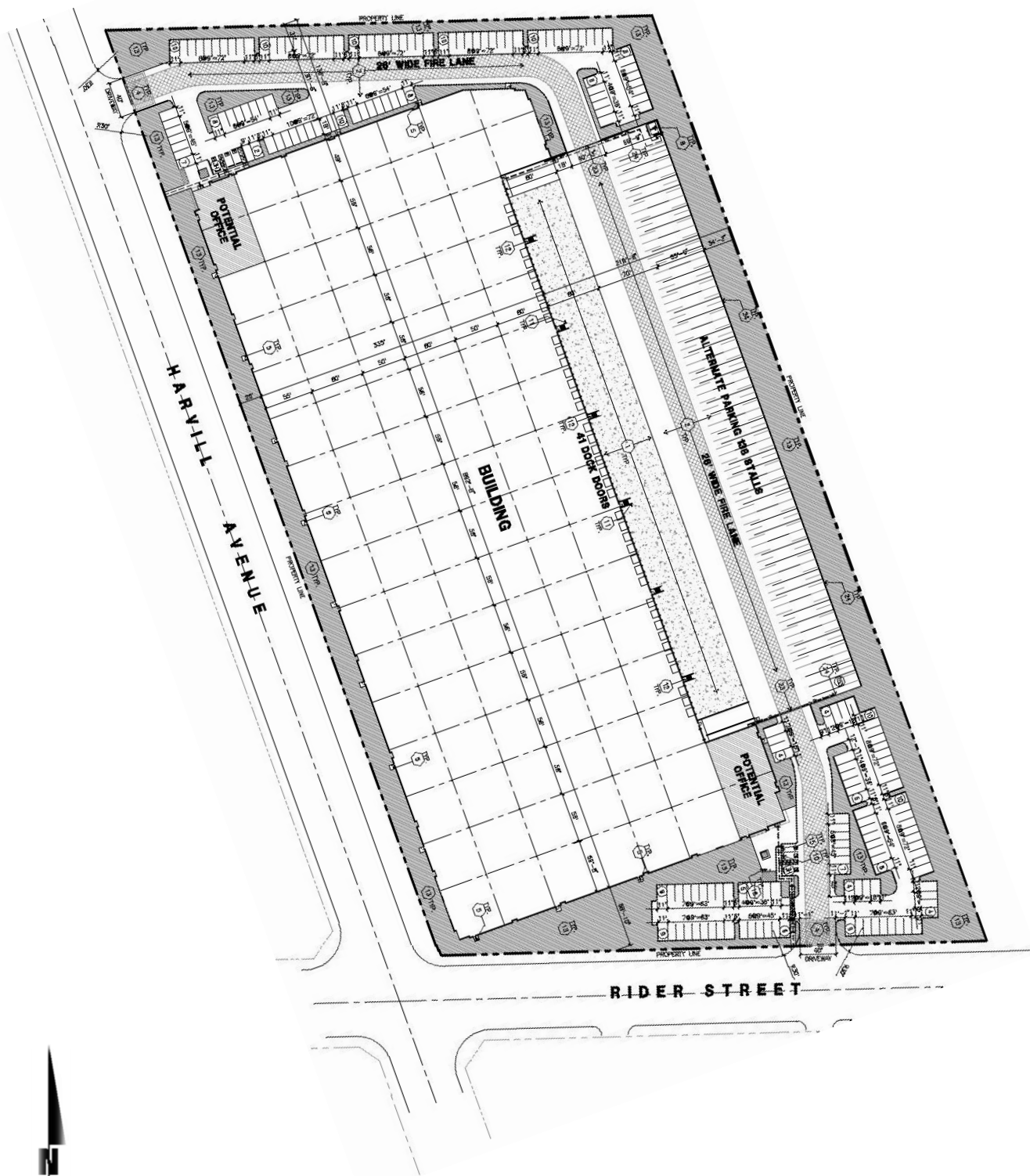


EXHIBIT 1-B: SITE PLAN



2 BACKGROUND

2.1 BACKGROUND ON RECOMMENDED METHODOLOGY

This HRA is based on SCAQMD guidelines to produce conservative estimates of human health 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 because it represents breathing rates that are high for the human body (95% higher than the average population).
- The emissions derived assume that every truck accessing the Project site will idle for 15 minutes, and this is an overestimation of actual idling times and thus conservative.¹ The California Air Resources Board (CARB'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 calculated using emission factors for particulate matter less than $10\mu\text{m}$ in diameter (PM_{10}) generated with the 2017 version of the Emission FACTor model (EMFAC) developed by the CARB. EMFAC 2017 is a mathematical model that CARB 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 SCAQMD 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 vehicle speed. The

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.

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 2020 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 into vehicles after 2021. Additionally, based on EMFAC 2017, Light-Heavy-Duty Trucks are comprised of 48.91% diesel, Medium-Heavy-Duty Trucks are comprised of 88.92% diesel, and Heavy-Heavy-Duty Trucks are comprised of 98.95% diesel. Trucks fueled by diesel are accounted for by these percentages 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 (6):

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

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 assumed idle time (15 minutes). The following equation was used to estimate the on-site vehicle idling emissions for each of the different vehicle classes (6):

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

Where:

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

EF_{idle} (g/s): EMFAC idle exhaust PM_{10} emission factor.

TABLE 2-1: 2021 WEIGHTED AVERAGE DPM EMISSIONS FACTORS

Speed	Weighted Average
0 (idling)	0.13993 (g/idle-hr)
5	0.09533 (g/s)
25	0.03875 (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 TIA, 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 approximately 1 mile. This modeling domain is more inclusive and conservative than using only a ¼ mile modeling domain which is the distance supported by several reputable studies which conclude that the greatest potential risks occur within a ¼ mile of the primary source of emissions (7) (in the case of the Project, the primary source of emissions is the on-site idling, travel, and on-site equipment).

On-site truck idling was estimated to occur as trucks enter and travel through the Project site. Although the Project’s diesel-fueled truck and equipment operators will be required by State law to comply with CARB’s idling limit of 5 minutes, staff at SCAQMD recommends that the on-site idling emissions be calculated assuming 15 minutes of truck idling (8), which would take into account on-site idling which occurs while trucks wait to pull up to the truck bays, idling at the bays, idling at check-in and check-out, etc. As such, this analysis calculates truck idling at 15 minutes, consistent with SCAQMD’s recommendation.

Per the *Harvill and Rider Warehouse (PPT190039) Traffic Impact Analysis* (TIA) prepared by Urban Crossroads, Inc., the Project is expected to generate a total of approximately 650 two-way vehicular trips per day (325 inbound and 325 outbound) which includes 184 two-way truck trips per day (92 inbound and 92 outbound) (4). This health risk assessment study evaluates the potential impacts resulting from diesel exhaust from the 184 two-way truck trips generated by the Project.

EXHIBIT 2-A: MODELED EMISSION SOURCES



LEGEND:

— On-Site Truck Idling/Travel & Off-Site Truck Travel

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	92			0.1399	3.22	3.725E-05
On-Site Travel	184	52.14	0.0953		4.97	5.752E-05
Off-Site Travel 75% on Harvill Av.	138	96.92	0.0388		3.76	4.347E-05
Off-Site Travel 25% on Harvill Av.	46	8.85	0.0388		0.34	3.968E-06
Off-Site Travel 50% on Rider St.	92	8.19	0.0388		0.32	3.674E-06
Off-Site Travel 25% on Harvill Av.	46	23.81	0.0388		0.92	1.068E-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 (1). 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 (9).

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 US 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.

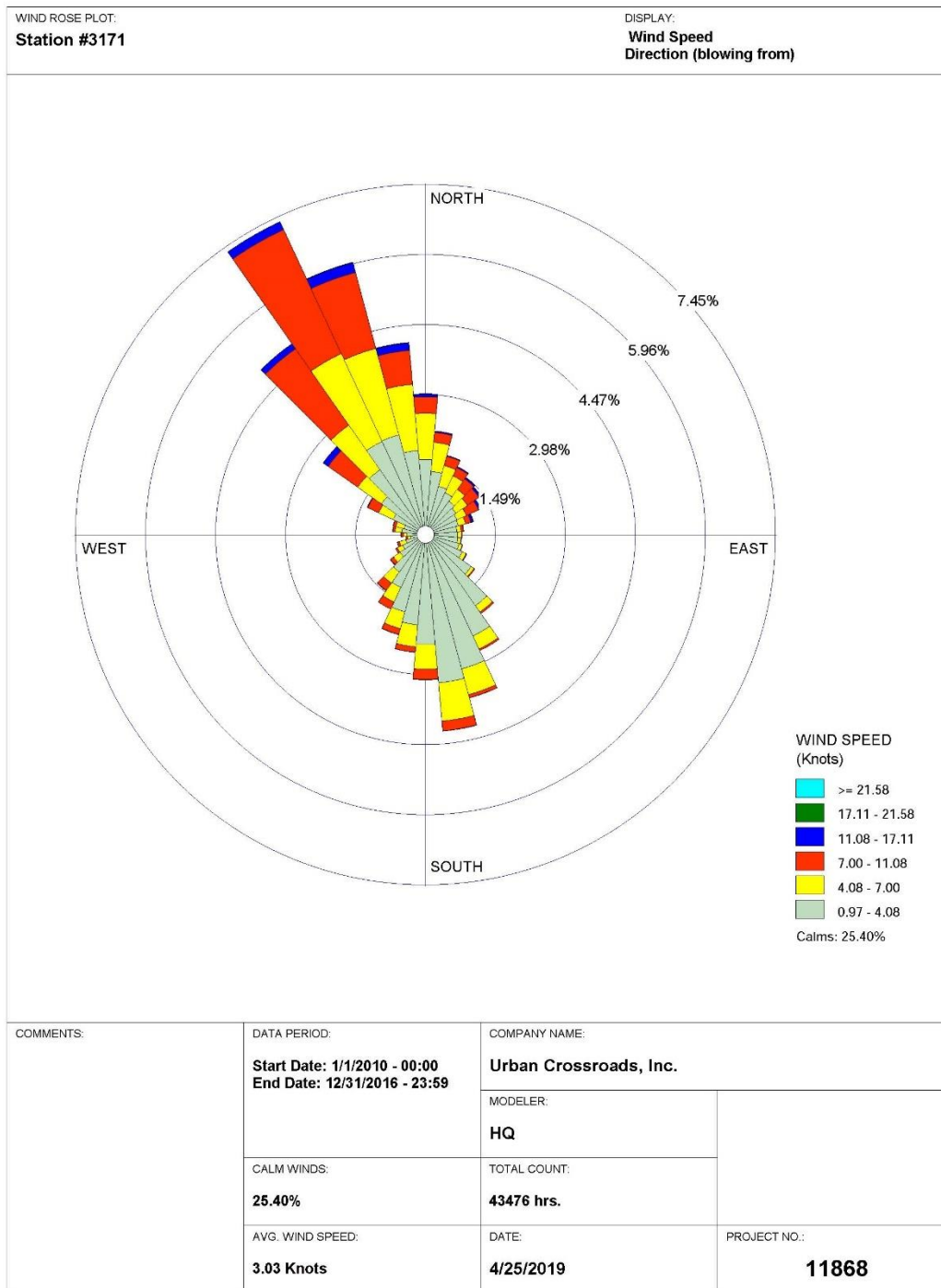
SCAQMD-recommended model parameters are presented in Table 2-3 (10). The model requires additional input parameters including emission data and local meteorology. Meteorological data from the SCAQMD's Perris monitoring station (SRA 24) was used to represent local weather conditions and prevailing winds (11). A wind rose exhibit of the Perris monitoring station is provided at Exhibit 2-B.

TABLE 2-3: AERMOD MODEL PARAMETERS

Dispersion Coefficient (Urban/Rural)	Urban (Population 2,189,641)
Terrain (Flat/Elevated)	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 site boundaries, each volume source location, and receptor locations in the Project site's vicinity. The AERMOD dispersion model summary output files for the proposed Project are presented in Appendix "2.1". Modeled sensitive receptors were placed at residential and non-residential locations.

EXHIBIT 2-B: WIND ROSE (SRA 24)



WRPLOT View - Lakes Environmental Software

Receptors may be placed at applicable structure locations for residential and worker property and not necessarily the boundaries of the properties containing these uses because the human receptors (residents and workers) spend a majority of their time at the residence or in the workplace's building, and not on the property line. 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 residents and workers over a period of 30 or 25 years of exposure, respectively. As such, even though 30 or 25 years of outdoor exposure is unlikely to occur in practical terms (because of the amount of time spent indoors), this study assumes that a resident would be exposed over 30 years for 24-hours per day at the exterior of the structure where they reside and that a worker would be exposed over 25 years for 12-hours per day at the exterior of the property where they work, positioned on the property line closest to the Project site.

Any impacts to residents, workers, or schools located further away from the Project site than the modeled residential, worker, and school receptors would have a lesser impact than what has already been disclosed in the HRA at the MEIR, MEIW, and MEISC.

Consistent with SCAQMD modeling guidance, receptors were set to the base elevation as calculated by AERMAP. Flagpole heights were not included (12).

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 through 2-6 summarize the Exposure Parameters for Residents, Offsite Worker, and School 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

TABLE 2-6: EXPOSURE ASSUMPTIONS FOR INDIVIDUAL CANCER RISK (9 YEAR SCHOOL CHILD)

Age	Daily Breathing Rate (L/kg-day)	Age Specific Factor	Exposure Duration (years)	Exposure Frequency (days/year) ^a	Exposure Time (hours/day)
9 year duration	572	3	9	180	12
^a To represent the unique characteristics of the school-based population, the assessment employed the U.S. Environmental Protection Agency's guidance to develop viable dose estimates based on reasonable maximum exposures (RME). RME's are defined as the "highest exposure that is reasonably expected to occur" for a given receptor population. As a result, lifetime risk values for the student population were adjusted to account for an exposure duration of 180 days per year for nine (9) years. The 9 year exposure duration is also consistent with OEHHA Recommendations and consistent with the exposure duration utilized in school-based risk assessments for various schools within the Los Angeles County Unified School District (LAUSD) that have been accepted by the SCAQMD.					

2.4 CARCINOGENIC CHEMICAL RISK

The SCAQMD CEQA Air Quality Handbook (1993) states that 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 (1), 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.

$$DOSE_{air} = (C_{air} \times [BR/BW] \times A \times EF) \times (1 \times 10^{-6})$$

Where:

DOSE _{air}	=	chronic daily intake (mg/kg/day)
C _{air}	=	concentration of contaminant in air (ug/m ³)
[BR/BW] BW-day)	=	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)
RISK _{air} = DOSE _{air} x CPF x ED/AT		

Where:

DOSE _{air}	=	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 µg/m³ (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:

$$HI_{DPM} = C_{DPM}/REL_{DPM}$$

Where:

HI _{DPM}	=	Hazard Index; an expression of the potential for non-cancer health effects.
C _{DPM}	=	Annual average DPM concentration (µg/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 TOXIC AIR POLLUTANTS FROM PROJECT CONSTRUCTION ACTIVITIES

During short-term construction activity, the Project will also result in some DPM which is a listed carcinogen and toxic air contaminant (TAC) in the State of California. The 2015 Office of Environmental Health Hazard Assessment (OEHHA) revised risk assessment guidelines suggest that construction projects as short as 2-6 months may warrant evaluation. Notwithstanding, based on Urban Crossroads' professional opinion and experience in preparing health risk assessments for development projects, given the size of the Project and the relatively small amount of construction equipment and relative short duration of construction activity, any DPM generated from construction activity would be negligible and not result in any significant health risks and no further evaluation is required.

Furthermore, the SCAQMD has acknowledged that they are currently evaluating the applicability of age sensitivity factors and have not established CEQA guidance. More specifically in their response to comments received on SCAQMD Rules 1401 in June 2015 (see Board Meeting June 5, 2015), the SCAQMD explicitly states that (Page A-7 and A-8) (13):

"The Proposed Amended Rules are separate from the CEQA significance thresholds. The SCAQMD staff is currently evaluating how to implement the Revised OEHHA Guidelines under CEQA. The SCAQMD staff will evaluate a variety of options on how to evaluate health risks under the Revised OEHHA Guidelines under CEQA. The SCAQMD staff will conduct public workshops to gather input before bringing recommendations to the Governing Board. In the interim, staff will continue to use the previous guidelines for CEQA determinations."

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

Individual Exposure Scenario:

The residential land use with the greatest potential exposure to Project DPM source emissions is Location R2, which represents an existing residential home located at 23615 Rider Street, roughly 633 feet southwest of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, R2 is placed at the residential building façade. At the MEIR, the maximum incremental cancer risk attributable to Project DPM source emissions is estimated at 0.72 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 0.00025, which would not exceed the applicable significance threshold of 1.0. Because all other modeled residential receptors are located at a

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.

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 adjacent residences. The nearest modeled receptors 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 Location R5, which represents the JM Eagle manufacturing facility located 106 feet south of the Project site. Receptor R5 is placed at the parking lot/yard area at JM Eagle manufacturing where a worker could remain for at least one hour. At the MEIW, the maximum incremental cancer risk impact at this location is 0.42 in one million which is less than the SCAQMD's threshold of 10 in one million. Maximum non-cancer risks at this same location were estimated to be 0.001, which would not exceed the applicable significance threshold of 1.0. 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 adjacent workers. The nearest modeled receptors are illustrated on Exhibit 2-C.





School Child Exposure Scenario:

The school site land use with the greatest potential exposure to Project DPM source emissions is Location R1, which represents the exterior façade of the Val Verde School District administration building located at 975 Morgan Street roughly 1,045 feet northeast of the Project site. At the MEISC, the maximum incremental cancer risk impact attributable to the Project at this location is calculated to be an estimated 0.01 in one million which is less than the significance threshold of 10 in one million. At this same location, non-cancer risks attributable to the Project were calculated to be 0.00002, which would not exceed the applicable significance threshold of 1.0. Any other schools near the Project site would be exposed to less emissions and consequently less impacts than what is disclosed for the MEISC. As such, the Project will not cause a significant human health or cancer risk to nearby school children. The nearest modeled receptors are illustrated on Exhibit 2-C.

EXHIBIT 2-C: MODELED RECEPTORS



LEGEND:

-  Non Residential Receptor
-  Sensitive Receptor
-  Distance from receptor to Project site boundary (in feet)
-  On-Site Truck Idling/Travel & Off-Site Truck Travel

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3 REFERENCES

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2. **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>.
3. **County of Riverside.** *General Plan: Land Use Element*. 2017.
4. **Urban Crossroads, Inc.** *Harvill and Rider Warehouse (PPT190039) Traffic Impact Analysis*. 2020.
5. **California Air Resources Board.** EMFAC 2017. [Online] 2020. <https://arb.ca.gov/emfac/emissions-inventory>.
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8. **Wong, Jillian.** *Planning, Rule Development & Area Sources*. December 22, 2016.
9. **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.
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https://www3.epa.gov/ttn/scram/models/aermod/aermod_userguide.pdf.
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<https://www.aqmd.gov/home/air-quality/air-quality-data-studies/meteorological-data/data-for-aermod>.
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4 CERTIFICATION

The contents of this health risk assessment represent an accurate depiction of the impacts to sensitive receptors associated with the proposed Harvill and Rider Warehouse (PPT190039) 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.

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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

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APPENDIX 2.1:

AERMOD MODEL INPUT/OUTPUT

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** AERMOD Input Produced by:

** AERMOD View Ver. 9.8.3

** Lakes Environmental Software Inc.

** Date: 3/6/2020

** File: C:\Lakes\AERMOD View\12844 HRA\12844 HRA.ADI

**

**

**

** AERMOD Control Pathway

**

**

CO STARTING

TITLEONE C:\Lakes\AERMOD View\12844 HRA\12844 HRA.isc

MODELOPT DFAULT CONC

AVERTIME ANNUAL

URBANOPT 2189641

POLLUTID DPM

RUNORNOT RUN

ERRORFIL "12844 HRA.err"

CO FINISHED

**

** AERMOD Source Pathway

**

**

SO STARTING

** Source Location **

** Source ID - Type - X Coord. - Y Coord. **

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** PREFIX

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** SZINIT = 3.25

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LOCATION L0000362      VOLUME  477037.285 3743615.091 459.00
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LOCATION	L0000516	VOLUME	476685.597	3744359.690	458.91
LOCATION	L0000517	VOLUME	476680.520	3744366.443	458.98
LOCATION	L0000518	VOLUME	476674.446	3744372.517	459.18
LOCATION	L0000519	VOLUME	476668.372	3744378.591	459.35
LOCATION	L0000520	VOLUME	476662.298	3744384.665	459.42
LOCATION	L0000521	VOLUME	476656.224	3744390.739	459.41
LOCATION	L0000522	VOLUME	476650.150	3744396.813	459.31
LOCATION	L0000523	VOLUME	476644.076	3744402.887	459.28
LOCATION	L0000524	VOLUME	476638.002	3744408.961	459.39
LOCATION	L0000525	VOLUME	476631.928	3744415.036	459.60
LOCATION	L0000526	VOLUME	476625.854	3744421.110	459.80
LOCATION	L0000527	VOLUME	476619.435	3744426.768	460.00
LOCATION	L0000528	VOLUME	476612.340	3744431.610	460.00
LOCATION	L0000529	VOLUME	476605.244	3744436.451	460.00
LOCATION	L0000530	VOLUME	476598.149	3744441.293	460.00
LOCATION	L0000531	VOLUME	476591.053	3744446.135	460.00
LOCATION	L0000532	VOLUME	476583.958	3744450.976	460.20
LOCATION	L0000533	VOLUME	476576.862	3744455.818	460.43
LOCATION	L0000534	VOLUME	476569.766	3744460.660	460.67
LOCATION	L0000535	VOLUME	476562.671	3744465.501	460.91
LOCATION	L0000536	VOLUME	476555.575	3744470.343	461.00
LOCATION	L0000537	VOLUME	476548.480	3744475.185	461.00
LOCATION	L0000538	VOLUME	476541.384	3744480.026	461.00
LOCATION	L0000539	VOLUME	476534.289	3744484.868	461.00
LOCATION	L0000540	VOLUME	476527.193	3744489.710	461.09
LOCATION	L0000541	VOLUME	476520.098	3744494.551	461.32
LOCATION	L0000542	VOLUME	476513.002	3744499.393	461.50
LOCATION	L0000543	VOLUME	476505.907	3744504.235	461.58
LOCATION	L0000544	VOLUME	476498.811	3744509.076	461.59
LOCATION	L0000545	VOLUME	476491.716	3744513.918	461.57
LOCATION	L0000546	VOLUME	476484.620	3744518.759	461.63
LOCATION	L0000547	VOLUME	476477.525	3744523.601	461.77
LOCATION	L0000548	VOLUME	476470.429	3744528.443	461.98
LOCATION	L0000549	VOLUME	476463.334	3744533.284	462.00
LOCATION	L0000550	VOLUME	476456.238	3744538.126	462.00
LOCATION	L0000551	VOLUME	476449.143	3744542.968	462.00

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LOCATION L0000552	VOLUME	476442.047	3744547.809	462.00
LOCATION L0000553	VOLUME	476434.951	3744552.651	462.02
LOCATION L0000554	VOLUME	476427.856	3744557.493	462.00
LOCATION L0000555	VOLUME	476420.760	3744562.334	462.00
LOCATION L0000556	VOLUME	476413.665	3744567.176	462.00
LOCATION L0000557	VOLUME	476406.569	3744572.018	462.11
LOCATION L0000558	VOLUME	476399.474	3744576.859	462.35
LOCATION L0000559	VOLUME	476392.378	3744581.701	462.58
LOCATION L0000560	VOLUME	476385.283	3744586.543	462.82
LOCATION L0000561	VOLUME	476378.187	3744591.384	463.00
LOCATION L0000562	VOLUME	476371.092	3744596.226	463.00
LOCATION L0000563	VOLUME	476363.996	3744601.068	463.00
LOCATION L0000564	VOLUME	476356.901	3744605.909	463.00

** End of LINE VOLUME Source ID = SLINE3

** -----

** Line Source Represented by Adjacent Volume Sources

** LINE VOLUME Source ID = SLINE4

** DESCRSRC Off-Site Travel 25% on Harvill Av.

** PREFIX

** Length of Side = 8.59

** Configuration = Adjacent

** Emission Rate = 3.968E-06

** Vertical Dimension = 6.99

** SZINIT = 3.25

** Nodes = 2

** 476873.044, 3743668.828, 459.00, 3.49, 4.00

** 476977.677, 3743377.530, 460.27, 3.49, 4.00

** -----

LOCATION L0000565	VOLUME	476874.496	3743664.786	458.86
LOCATION L0000566	VOLUME	476877.400	3743656.702	458.99
LOCATION L0000567	VOLUME	476880.304	3743648.618	459.00
LOCATION L0000568	VOLUME	476883.208	3743640.533	459.00
LOCATION L0000569	VOLUME	476886.111	3743632.449	459.00
LOCATION L0000570	VOLUME	476889.015	3743624.365	459.06
LOCATION L0000571	VOLUME	476891.919	3743616.280	459.31
LOCATION L0000572	VOLUME	476894.823	3743608.196	459.50
LOCATION L0000573	VOLUME	476897.727	3743600.112	459.64
LOCATION L0000574	VOLUME	476900.631	3743592.027	459.69
LOCATION L0000575	VOLUME	476903.534	3743583.943	459.73
LOCATION L0000576	VOLUME	476906.438	3743575.859	459.82
LOCATION L0000577	VOLUME	476909.342	3743567.775	459.97
LOCATION L0000578	VOLUME	476912.246	3743559.690	460.00
LOCATION L0000579	VOLUME	476915.150	3743551.606	460.00
LOCATION L0000580	VOLUME	476918.054	3743543.522	460.00
LOCATION L0000581	VOLUME	476920.957	3743535.437	460.00
LOCATION L0000582	VOLUME	476923.861	3743527.353	460.00
LOCATION L0000583	VOLUME	476926.765	3743519.269	460.00
LOCATION L0000584	VOLUME	476929.669	3743511.185	460.00

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LOCATION L0000585	VOLUME	476932.573	3743503.100	460.00
LOCATION L0000586	VOLUME	476935.477	3743495.016	460.00
LOCATION L0000587	VOLUME	476938.380	3743486.932	460.00
LOCATION L0000588	VOLUME	476941.284	3743478.847	460.00
LOCATION L0000589	VOLUME	476944.188	3743470.763	460.03
LOCATION L0000590	VOLUME	476947.092	3743462.679	460.04
LOCATION L0000591	VOLUME	476949.996	3743454.594	460.00
LOCATION L0000592	VOLUME	476952.900	3743446.510	460.00
LOCATION L0000593	VOLUME	476955.804	3743438.426	460.21
LOCATION L0000594	VOLUME	476958.707	3743430.342	460.37
LOCATION L0000595	VOLUME	476961.611	3743422.257	460.48
LOCATION L0000596	VOLUME	476964.515	3743414.173	460.51
LOCATION L0000597	VOLUME	476967.419	3743406.089	460.41
LOCATION L0000598	VOLUME	476970.323	3743398.004	460.32
LOCATION L0000599	VOLUME	476973.227	3743389.920	460.22
LOCATION L0000600	VOLUME	476976.130	3743381.836	460.25

** End of LINE VOLUME Source ID = SLINE4

**

** Line Source Represented by Adjacent Volume Sources

** LINE VOLUME Source ID = SLINE5

** DESCRSRC Off-Site Travel 50% on Rider St.

** PREFIX

** Length of Side = 8.59

** Configuration = Adjacent

** Emission Rate = 3.674E-06

** Vertical Dimension = 6.99

** SZINIT = 3.25

** Nodes = 2

** 477121.652, 3743381.715, 458.15, 3.49, 4.00

** 476978.514, 3743375.856, 460.35, 3.49, 4.00

**

LOCATION L0000601	VOLUME	477117.361	3743381.540	458.42
LOCATION L0000602	VOLUME	477108.778	3743381.188	458.70
LOCATION L0000603	VOLUME	477100.195	3743380.837	458.99
LOCATION L0000604	VOLUME	477091.612	3743380.486	459.00
LOCATION L0000605	VOLUME	477083.029	3743380.134	459.00
LOCATION L0000606	VOLUME	477074.447	3743379.783	459.00
LOCATION L0000607	VOLUME	477065.864	3743379.432	459.13
LOCATION L0000608	VOLUME	477057.281	3743379.080	459.42
LOCATION L0000609	VOLUME	477048.698	3743378.729	459.71
LOCATION L0000610	VOLUME	477040.115	3743378.378	459.99
LOCATION L0000611	VOLUME	477031.533	3743378.026	460.00
LOCATION L0000612	VOLUME	477022.950	3743377.675	460.00
LOCATION L0000613	VOLUME	477014.367	3743377.324	460.00
LOCATION L0000614	VOLUME	477005.784	3743376.972	460.04
LOCATION L0000615	VOLUME	476997.201	3743376.621	460.13
LOCATION L0000616	VOLUME	476988.618	3743376.269	460.23
LOCATION L0000617	VOLUME	476980.036	3743375.918	460.34

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** End of LINE VOLUME Source ID = SLINE5

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** Line Source Represented by Adjacent Volume Sources

** LINE VOLUME Source ID = SLINE6

** DESCRSRC Off-Site Travel 25% on Harvill Av.

** PREFIX

** Length of Side = 8.59

** Configuration = Adjacent

** Emission Rate = 0.00001068

** Vertical Dimension = 6.99

** SZINIT = 3.25

** Nodes = 8

** 476981.862, 3743369.996, 460.64, 3.49, 4.00

** 477006.974, 3743300.520, 460.02, 3.49, 4.00

** 477027.064, 3743225.184, 460.59, 3.49, 4.00

** 477050.502, 3743149.849, 460.05, 3.49, 4.00

** 477116.630, 3742969.043, 459.47, 3.49, 4.00

** 477205.358, 3742718.761, 458.66, 3.49, 4.00

** 477229.633, 3742651.796, 458.89, 3.49, 4.00

** 477241.352, 3742579.808, 458.19, 3.49, 4.00

** -----

LOCATION L0000618	VOLUME	476983.322	3743365.957	460.60
LOCATION L0000619	VOLUME	476986.242	3743357.879	460.74
LOCATION L0000620	VOLUME	476989.162	3743349.800	460.69
LOCATION L0000621	VOLUME	476992.082	3743341.722	460.59
LOCATION L0000622	VOLUME	476995.002	3743333.643	460.50
LOCATION L0000623	VOLUME	476997.922	3743325.565	460.40
LOCATION L0000624	VOLUME	477000.842	3743317.486	460.30
LOCATION L0000625	VOLUME	477003.762	3743309.408	460.20
LOCATION L0000626	VOLUME	477006.682	3743301.329	460.11
LOCATION L0000627	VOLUME	477008.966	3743293.051	460.03
LOCATION L0000628	VOLUME	477011.179	3743284.751	460.00
LOCATION L0000629	VOLUME	477013.393	3743276.452	460.00
LOCATION L0000630	VOLUME	477015.606	3743268.152	460.00
LOCATION L0000631	VOLUME	477017.819	3743259.852	460.15
LOCATION L0000632	VOLUME	477020.033	3743251.552	460.32
LOCATION L0000633	VOLUME	477022.246	3743243.252	460.45
LOCATION L0000634	VOLUME	477024.459	3743234.952	460.51
LOCATION L0000635	VOLUME	477026.673	3743226.652	460.44
LOCATION L0000636	VOLUME	477029.164	3743218.432	460.36
LOCATION L0000637	VOLUME	477031.716	3743210.230	460.27
LOCATION L0000638	VOLUME	477034.268	3743202.028	460.19
LOCATION L0000639	VOLUME	477036.820	3743193.826	460.10
LOCATION L0000640	VOLUME	477039.372	3743185.623	460.02
LOCATION L0000641	VOLUME	477041.923	3743177.421	460.00
LOCATION L0000642	VOLUME	477044.475	3743169.219	460.00
LOCATION L0000643	VOLUME	477047.027	3743161.017	460.00
LOCATION L0000644	VOLUME	477049.579	3743152.815	460.00

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LOCATION	L0000645	VOLUME	477052.385	3743144.698	460.00
LOCATION	L0000646	VOLUME	477055.336	3743136.631	460.00
LOCATION	L0000647	VOLUME	477058.286	3743128.564	460.00
LOCATION	L0000648	VOLUME	477061.237	3743120.496	460.00
LOCATION	L0000649	VOLUME	477064.188	3743112.429	460.02
LOCATION	L0000650	VOLUME	477067.138	3743104.362	460.04
LOCATION	L0000651	VOLUME	477070.089	3743096.294	460.00
LOCATION	L0000652	VOLUME	477073.039	3743088.227	460.00
LOCATION	L0000653	VOLUME	477075.990	3743080.160	460.00
LOCATION	L0000654	VOLUME	477078.940	3743072.092	460.00
LOCATION	L0000655	VOLUME	477081.891	3743064.025	460.00
LOCATION	L0000656	VOLUME	477084.841	3743055.957	460.00
LOCATION	L0000657	VOLUME	477087.792	3743047.890	460.00
LOCATION	L0000658	VOLUME	477090.743	3743039.823	460.00
LOCATION	L0000659	VOLUME	477093.693	3743031.755	460.00
LOCATION	L0000660	VOLUME	477096.644	3743023.688	460.00
LOCATION	L0000661	VOLUME	477099.594	3743015.621	460.00
LOCATION	L0000662	VOLUME	477102.545	3743007.553	459.91
LOCATION	L0000663	VOLUME	477105.495	3742999.486	459.81
LOCATION	L0000664	VOLUME	477108.446	3742991.419	459.71
LOCATION	L0000665	VOLUME	477111.396	3742983.351	459.62
LOCATION	L0000666	VOLUME	477114.347	3742975.284	459.52
LOCATION	L0000667	VOLUME	477117.279	3742967.210	459.42
LOCATION	L0000668	VOLUME	477120.150	3742959.114	459.32
LOCATION	L0000669	VOLUME	477123.020	3742951.017	459.23
LOCATION	L0000670	VOLUME	477125.890	3742942.921	459.13
LOCATION	L0000671	VOLUME	477128.760	3742934.825	459.08
LOCATION	L0000672	VOLUME	477131.631	3742926.729	459.30
LOCATION	L0000673	VOLUME	477134.501	3742918.632	459.49
LOCATION	L0000674	VOLUME	477137.371	3742910.536	459.64
LOCATION	L0000675	VOLUME	477140.241	3742902.440	459.65
LOCATION	L0000676	VOLUME	477143.112	3742894.343	459.56
LOCATION	L0000677	VOLUME	477145.982	3742886.247	459.46
LOCATION	L0000678	VOLUME	477148.852	3742878.151	459.37
LOCATION	L0000679	VOLUME	477151.722	3742870.055	459.27
LOCATION	L0000680	VOLUME	477154.593	3742861.958	459.18
LOCATION	L0000681	VOLUME	477157.463	3742853.862	459.08
LOCATION	L0000682	VOLUME	477160.333	3742845.766	458.98
LOCATION	L0000683	VOLUME	477163.203	3742837.669	458.92
LOCATION	L0000684	VOLUME	477166.074	3742829.573	458.91
LOCATION	L0000685	VOLUME	477168.944	3742821.477	458.95
LOCATION	L0000686	VOLUME	477171.814	3742813.381	459.06
LOCATION	L0000687	VOLUME	477174.684	3742805.284	459.18
LOCATION	L0000688	VOLUME	477177.555	3742797.188	459.26
LOCATION	L0000689	VOLUME	477180.425	3742789.092	459.28
LOCATION	L0000690	VOLUME	477183.295	3742780.995	459.22
LOCATION	L0000691	VOLUME	477186.166	3742772.899	459.12
LOCATION	L0000692	VOLUME	477189.036	3742764.803	459.03

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LOCATION	L0000693	VOLUME	477191.906	3742756.707	458.93
LOCATION	L0000694	VOLUME	477194.776	3742748.610	458.84
LOCATION	L0000695	VOLUME	477197.647	3742740.514	458.74
LOCATION	L0000696	VOLUME	477200.517	3742732.418	458.65
LOCATION	L0000697	VOLUME	477203.387	3742724.322	458.58
LOCATION	L0000698	VOLUME	477206.275	3742716.232	458.63
LOCATION	L0000699	VOLUME	477209.203	3742708.156	458.74
LOCATION	L0000700	VOLUME	477212.130	3742700.080	458.90
LOCATION	L0000701	VOLUME	477215.058	3742692.004	459.02
LOCATION	L0000702	VOLUME	477217.985	3742683.929	459.03
LOCATION	L0000703	VOLUME	477220.913	3742675.853	458.97
LOCATION	L0000704	VOLUME	477223.840	3742667.777	458.87
LOCATION	L0000705	VOLUME	477226.767	3742659.701	458.77
LOCATION	L0000706	VOLUME	477229.662	3742651.617	458.67
LOCATION	L0000707	VOLUME	477231.043	3742643.139	458.63
LOCATION	L0000708	VOLUME	477232.423	3742634.660	458.58
LOCATION	L0000709	VOLUME	477233.803	3742626.182	458.54
LOCATION	L0000710	VOLUME	477235.183	3742617.703	458.49
LOCATION	L0000711	VOLUME	477236.563	3742609.225	458.44
LOCATION	L0000712	VOLUME	477237.944	3742600.747	458.40
LOCATION	L0000713	VOLUME	477239.324	3742592.268	458.35
LOCATION	L0000714	VOLUME	477240.704	3742583.790	458.31

** End of LINE VOLUME Source ID = SLINE6

** Source Parameters **

** LINE VOLUME Source ID = SLINE1

SRCPARAM	L0000358	0.000001693	3.49	4.00	3.25
SRCPARAM	L0000359	0.000001693	3.49	4.00	3.25
SRCPARAM	L0000360	0.000001693	3.49	4.00	3.25
SRCPARAM	L0000361	0.000001693	3.49	4.00	3.25
SRCPARAM	L0000362	0.000001693	3.49	4.00	3.25
SRCPARAM	L0000363	0.000001693	3.49	4.00	3.25
SRCPARAM	L0000364	0.000001693	3.49	4.00	3.25
SRCPARAM	L0000365	0.000001693	3.49	4.00	3.25
SRCPARAM	L0000366	0.000001693	3.49	4.00	3.25
SRCPARAM	L0000367	0.000001693	3.49	4.00	3.25
SRCPARAM	L0000368	0.000001693	3.49	4.00	3.25
SRCPARAM	L0000369	0.000001693	3.49	4.00	3.25
SRCPARAM	L0000370	0.000001693	3.49	4.00	3.25
SRCPARAM	L0000371	0.000001693	3.49	4.00	3.25
SRCPARAM	L0000372	0.000001693	3.49	4.00	3.25
SRCPARAM	L0000373	0.000001693	3.49	4.00	3.25
SRCPARAM	L0000374	0.000001693	3.49	4.00	3.25
SRCPARAM	L0000375	0.000001693	3.49	4.00	3.25
SRCPARAM	L0000376	0.000001693	3.49	4.00	3.25
SRCPARAM	L0000377	0.000001693	3.49	4.00	3.25
SRCPARAM	L0000378	0.000001693	3.49	4.00	3.25
SRCPARAM	L0000379	0.000001693	3.49	4.00	3.25

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** LINE VOLUME Source ID = SLINE2

SRCPARAM	L0000380	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000381	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000382	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000383	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000384	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000385	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000386	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000387	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000388	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000389	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000390	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000391	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000392	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000393	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000394	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000395	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000396	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000397	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000398	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000399	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000400	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000401	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000402	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000403	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000404	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000405	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000406	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000407	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000408	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000409	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000410	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000411	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000412	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000413	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000414	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000415	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000416	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000417	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000418	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000419	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000420	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000421	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000422	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000423	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000424	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000425	0.000001085	3.49	4.00	3.25
SRCPARAM	L0000426	0.000001085	3.49	4.00	3.25

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SRCPARAM L0000427	0.000001085	3.49	4.00	3.25
SRCPARAM L0000428	0.000001085	3.49	4.00	3.25
SRCPARAM L0000429	0.000001085	3.49	4.00	3.25
SRCPARAM L0000430	0.000001085	3.49	4.00	3.25
SRCPARAM L0000431	0.000001085	3.49	4.00	3.25
SRCPARAM L0000432	0.000001085	3.49	4.00	3.25

**

** LINE VOLUME Source ID = SLINE3

SRCPARAM L0000433	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000434	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000435	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000436	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000437	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000438	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000439	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000440	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000441	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000442	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000443	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000444	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000445	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000446	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000447	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000448	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000449	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000450	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000451	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000452	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000453	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000454	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000455	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000456	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000457	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000458	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000459	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000460	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000461	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000462	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000463	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000464	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000465	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000466	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000467	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000468	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000469	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000470	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000471	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000472	0.0000003293	3.49	4.00	3.25

[illegible]

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SRCPARAM L0000521	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000522	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000523	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000524	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000525	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000526	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000527	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000528	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000529	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000530	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000531	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000532	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000533	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000534	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000535	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000536	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000537	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000538	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000539	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000540	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000541	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000542	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000543	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000544	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000545	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000546	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000547	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000548	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000549	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000550	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000551	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000552	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000553	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000554	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000555	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000556	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000557	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000558	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000559	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000560	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000561	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000562	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000563	0.0000003293	3.49	4.00	3.25
SRCPARAM L0000564	0.0000003293	3.49	4.00	3.25

**

** LINE VOLUME Source ID = SLINE4

SRCPARAM L0000565	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000566	0.0000001102	3.49	4.00	3.25

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SRCPARAM L0000567	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000568	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000569	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000570	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000571	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000572	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000573	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000574	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000575	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000576	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000577	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000578	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000579	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000580	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000581	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000582	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000583	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000584	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000585	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000586	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000587	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000588	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000589	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000590	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000591	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000592	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000593	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000594	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000595	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000596	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000597	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000598	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000599	0.0000001102	3.49	4.00	3.25
SRCPARAM L0000600	0.0000001102	3.49	4.00	3.25

**

** LINE VOLUME Source ID = SLINE5

SRCPARAM L0000601	0.0000002161	3.49	4.00	3.25
SRCPARAM L0000602	0.0000002161	3.49	4.00	3.25
SRCPARAM L0000603	0.0000002161	3.49	4.00	3.25
SRCPARAM L0000604	0.0000002161	3.49	4.00	3.25
SRCPARAM L0000605	0.0000002161	3.49	4.00	3.25
SRCPARAM L0000606	0.0000002161	3.49	4.00	3.25
SRCPARAM L0000607	0.0000002161	3.49	4.00	3.25
SRCPARAM L0000608	0.0000002161	3.49	4.00	3.25
SRCPARAM L0000609	0.0000002161	3.49	4.00	3.25
SRCPARAM L0000610	0.0000002161	3.49	4.00	3.25
SRCPARAM L0000611	0.0000002161	3.49	4.00	3.25
SRCPARAM L0000612	0.0000002161	3.49	4.00	3.25

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SRCPARAM	L0000613	0.0000002161	3.49	4.00	3.25
SRCPARAM	L0000614	0.0000002161	3.49	4.00	3.25
SRCPARAM	L0000615	0.0000002161	3.49	4.00	3.25
SRCPARAM	L0000616	0.0000002161	3.49	4.00	3.25
SRCPARAM	L0000617	0.0000002161	3.49	4.00	3.25

**

** LINE VOLUME Source ID = SLINE6

SRCPARAM	L0000618	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000619	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000620	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000621	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000622	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000623	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000624	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000625	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000626	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000627	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000628	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000629	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000630	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000631	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000632	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000633	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000634	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000635	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000636	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000637	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000638	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000639	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000640	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000641	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000642	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000643	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000644	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000645	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000646	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000647	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000648	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000649	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000650	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000651	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000652	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000653	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000654	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000655	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000656	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000657	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000658	0.0000001101	3.49	4.00	3.25

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[illegible]

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SRCPARAM	L0000707	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000708	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000709	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000710	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000711	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000712	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000713	0.0000001101	3.49	4.00	3.25
SRCPARAM	L0000714	0.0000001101	3.49	4.00	3.25

** -----

URBANSRC ALL
SRCGROUP ALL
SO FINISHED
**

** AERMOD Receptor Pathway

**

**

RE STARTING
INCLUDED "12844 HRA.rou"
RE FINISHED
**

** AERMOD Meteorology Pathway

**

**

ME STARTING
SURFFILE PerrisADJU\PERI_V9_ADJU\PERI_v9.SFC
PROFFILE PerrisADJU\PERI_V9_ADJU\PERI_v9.PFL
SURFDATA 3171 2010
UAIRDATA 3190 2010
SITEDATA 99999 2010
PROFBASE 442.0 METERS
ME FINISHED
**

** AERMOD Output Pathway

**

**

OU STARTING
** Auto-Generated Plotfiles
PLOTFILE ANNUAL ALL "12844 HRA.AD\AN00GALL.PLT" 31
SUMMFILE "12844 HRA.sum"
OU FINISHED

12844 HRA

*** 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 899 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
 0.50
ME W187 899 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

*** SETUP Finishes Successfully ***

▲ *** AERMOD - VERSION 19191 *** *** C:\Lakes\AERMOD View\12844 HRA\12844
HRA.isc *** 03/23/20
*** AERMET - VERSION 16216 *** ***
 *** 17:53:27

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

 *** MODEL SETUP OPTIONS SUMMARY

- - - - -
- - - - -

**Model Is Setup For Calculation of Average CONCentration Values.

-- 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 357 Source(s),
for Total of 1 Urban Area(s):
Urban Population = 2189641.0 ; Urban Roughness Length = 1.000 m

12844 HRA

****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 ANNUAL Averages Only**

****This Run Includes: 357 Source(s); 1 Source Group(s); and 6 Receptor(s)**

with: 0 POINT(s), including
0 POINTCAP(s) and 0 POINTHOR(s)
and: 357 VOLUME source(s)
and: 0 AREA type source(s)
and: 0 LINE source(s)
and: 0 RLINE/RLINEXT source(s)
and: 0 OPENPIT source(s)
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 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
m for Missing
Hours
b for Both Calm
and Missing Hours

12844 HRA

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 442.00 ; 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 = 3.7 MB of RAM.

**Input Runstream File: aermod.inp

**Output Print File: aermod.out

**Detailed Error/Message File: 12844 HRA.err

**File for Summary of Results: 12844 HRA.sum

▲ *** AERMOD - VERSION 19191 *** C:\Lakes\AERMOD View\12844 HRA\12844
HRA.isc *** 03/23/20
*** AERMET - VERSION 16216 ***
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*** MODELOPTs: RegDEFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

INIT.	URBAN	NUMBER	EMISSION	RATE		BASE	RELEASE	INIT.
INIT.	SOURCE	EMISSION	RATE			ELEV.	HEIGHT	SY
SZ	SOURCE	SCALAR	VARY	X	Y	ELEV.	HEIGHT	(METERS)
ID		CATS.	BY	(METERS)	(METERS)	(METERS)	(METERS)	(METERS)
(METERS)								
L0000358		0	0.16930E-05	477025.3	3743647.3	458.3	3.49	4.00
3.25	YES							
L0000359		0	0.16930E-05	477028.3	3743639.2	458.6	3.49	4.00
3.25	YES							
L0000360		0	0.16930E-05	477031.3	3743631.2	458.8	3.49	4.00
3.25	YES							
L0000361		0	0.16930E-05	477034.3	3743623.1	459.0	3.49	4.00
3.25	YES							
L0000362		0	0.16930E-05	477037.3	3743615.1	459.0	3.49	4.00
3.25	YES							

				12844 HRA			
L0000363	0	0.16930E-05	477040.3	3743607.0	459.0	3.49	4.00
3.25 YES							
L0000364	0	0.16930E-05	477043.3	3743599.0	459.0	3.49	4.00
3.25 YES							
L0000365	0	0.16930E-05	477046.3	3743591.0	459.0	3.49	4.00
3.25 YES							
L0000366	0	0.16930E-05	477049.3	3743582.9	459.0	3.49	4.00
3.25 YES							
L0000367	0	0.16930E-05	477052.3	3743574.9	459.0	3.49	4.00
3.25 YES							
L0000368	0	0.16930E-05	477055.3	3743566.8	459.0	3.49	4.00
3.25 YES							
L0000369	0	0.16930E-05	477058.3	3743558.8	459.0	3.49	4.00
3.25 YES							
L0000370	0	0.16930E-05	477061.3	3743550.7	459.0	3.49	4.00
3.25 YES							
L0000371	0	0.16930E-05	477064.4	3743542.7	459.0	3.49	4.00
3.25 YES							
L0000372	0	0.16930E-05	477067.4	3743534.6	459.0	3.49	4.00
3.25 YES							
L0000373	0	0.16930E-05	477070.4	3743526.6	459.0	3.49	4.00
3.25 YES							
L0000374	0	0.16930E-05	477073.4	3743518.5	459.0	3.49	4.00
3.25 YES							
L0000375	0	0.16930E-05	477076.4	3743510.5	459.0	3.49	4.00
3.25 YES							
L0000376	0	0.16930E-05	477079.4	3743502.4	459.0	3.49	4.00
3.25 YES							
L0000377	0	0.16930E-05	477082.4	3743494.4	459.0	3.49	4.00
3.25 YES							
L0000378	0	0.16930E-05	477085.4	3743486.3	459.0	3.49	4.00
3.25 YES							
L0000379	0	0.16930E-05	477088.4	3743478.3	459.0	3.49	4.00
3.25 YES							
L0000380	0	0.10850E-05	476890.1	3743685.4	458.0	3.49	4.00
3.25 YES							
L0000381	0	0.10850E-05	476898.4	3743687.7	458.0	3.49	4.00
3.25 YES							
L0000382	0	0.10850E-05	476906.7	3743690.0	458.0	3.49	4.00
3.25 YES							
L0000383	0	0.10850E-05	476915.2	3743691.0	458.0	3.49	4.00
3.25 YES							
L0000384	0	0.10850E-05	476923.7	3743691.2	458.0	3.49	4.00
3.25 YES							
L0000385	0	0.10850E-05	476932.3	3743691.4	458.0	3.49	4.00
3.25 YES							
L0000386	0	0.10850E-05	476940.9	3743691.6	458.0	3.49	4.00
3.25 YES							

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L0000387	0	0.10850E-05	476949.5	3743691.7	458.0	3.49	4.00
3.25 YES							
L0000388	0	0.10850E-05	476958.1	3743691.9	458.0	3.49	4.00
3.25 YES							
L0000389	0	0.10850E-05	476966.7	3743692.1	458.0	3.49	4.00
3.25 YES							
L0000390	0	0.10850E-05	476975.3	3743692.2	458.0	3.49	4.00
3.25 YES							
L0000391	0	0.10850E-05	476983.9	3743692.4	458.0	3.49	4.00
3.25 YES							
L0000392	0	0.10850E-05	476992.4	3743692.6	458.0	3.49	4.00
3.25 YES							
L0000393	0	0.10850E-05	477001.0	3743692.8	458.0	3.49	4.00
3.25 YES							
L0000394	0	0.10850E-05	477009.6	3743692.9	458.0	3.49	4.00
3.25 YES							
L0000395	0	0.10850E-05	477018.2	3743693.1	458.0	3.49	4.00
3.25 YES							
L0000396	0	0.10850E-05	477026.4	3743691.3	458.0	3.49	4.00
3.25 YES							
L0000397	0	0.10850E-05	477032.3	3743685.4	458.0	3.49	4.00
3.25 YES							

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 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

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

L0000398	0	0.10850E-05	477037.2	3743678.4	458.0	3.49	4.00
3.25 YES							
L0000399	0	0.10850E-05	477040.1	3743670.3	458.0	3.49	4.00
3.25 YES							
L0000400	0	0.10850E-05	477042.9	3743662.2	458.0	3.49	4.00
3.25 YES							

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L0000401	0	0.10850E-05	477045.8	3743654.1	458.1	3.49	4.00
3.25 YES							
L0000402	0	0.10850E-05	477048.6	3743646.0	458.3	3.49	4.00
3.25 YES							
L0000403	0	0.10850E-05	477051.4	3743637.9	458.6	3.49	4.00
3.25 YES							
L0000404	0	0.10850E-05	477054.3	3743629.8	458.9	3.49	4.00
3.25 YES							
L0000405	0	0.10850E-05	477057.1	3743621.7	459.0	3.49	4.00
3.25 YES							
L0000406	0	0.10850E-05	477060.0	3743613.6	459.0	3.49	4.00
3.25 YES							
L0000407	0	0.10850E-05	477062.8	3743605.5	459.0	3.49	4.00
3.25 YES							
L0000408	0	0.10850E-05	477065.7	3743597.4	459.0	3.49	4.00
3.25 YES							
L0000409	0	0.10850E-05	477068.5	3743589.2	459.0	3.49	4.00
3.25 YES							
L0000410	0	0.10850E-05	477071.4	3743581.1	459.0	3.49	4.00
3.25 YES							
L0000411	0	0.10850E-05	477074.2	3743573.0	459.0	3.49	4.00
3.25 YES							
L0000412	0	0.10850E-05	477077.1	3743564.9	459.0	3.49	4.00
3.25 YES							
L0000413	0	0.10850E-05	477079.9	3743556.8	459.0	3.49	4.00
3.25 YES							
L0000414	0	0.10850E-05	477082.8	3743548.7	459.0	3.49	4.00
3.25 YES							
L0000415	0	0.10850E-05	477085.6	3743540.6	459.0	3.49	4.00
3.25 YES							
L0000416	0	0.10850E-05	477088.5	3743532.5	459.0	3.49	4.00
3.25 YES							
L0000417	0	0.10850E-05	477091.3	3743524.4	459.0	3.49	4.00
3.25 YES							
L0000418	0	0.10850E-05	477094.2	3743516.3	459.0	3.49	4.00
3.25 YES							
L0000419	0	0.10850E-05	477097.0	3743508.2	459.0	3.49	4.00
3.25 YES							
L0000420	0	0.10850E-05	477099.9	3743500.1	459.0	3.49	4.00
3.25 YES							
L0000421	0	0.10850E-05	477102.7	3743492.0	459.0	3.49	4.00
3.25 YES							
L0000422	0	0.10850E-05	477105.6	3743483.9	459.0	3.49	4.00
3.25 YES							
L0000423	0	0.10850E-05	477108.4	3743475.8	459.0	3.49	4.00
3.25 YES							
L0000424	0	0.10850E-05	477111.4	3743467.7	458.9	3.49	4.00
3.25 YES							

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L0000425	0	0.10850E-05	477114.4	3743459.7	458.7	3.49	4.00
3.25 YES							
L0000426	0	0.10850E-05	477116.6	3743451.5	458.5	3.49	4.00
3.25 YES							
L0000427	0	0.10850E-05	477116.6	3743442.9	458.4	3.49	4.00
3.25 YES							
L0000428	0	0.10850E-05	477116.6	3743434.3	458.4	3.49	4.00
3.25 YES							
L0000429	0	0.10850E-05	477116.8	3743425.7	458.4	3.49	4.00
3.25 YES							
L0000430	0	0.10850E-05	477116.9	3743417.1	458.4	3.49	4.00
3.25 YES							
L0000431	0	0.10850E-05	477117.0	3743408.5	458.4	3.49	4.00
3.25 YES							
L0000432	0	0.10850E-05	477117.1	3743399.9	458.4	3.49	4.00
3.25 YES							
L0000433	0	0.32930E-06	476871.9	3743677.9	458.7	3.49	4.00
3.25 YES							
L0000434	0	0.32930E-06	476869.2	3743686.0	458.7	3.49	4.00
3.25 YES							
L0000435	0	0.32930E-06	476866.4	3743694.2	458.6	3.49	4.00
3.25 YES							
L0000436	0	0.32930E-06	476863.7	3743702.3	458.4	3.49	4.00
3.25 YES							
L0000437	0	0.32930E-06	476860.9	3743710.4	458.2	3.49	4.00
3.25 YES							

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 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

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

L0000438	0	0.32930E-06	476858.2	3743718.6	458.1	3.49	4.00
3.25 YES							

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L0000439	0	0.32930E-06	476855.4	3743726.7	458.1	3.49	4.00
3.25 YES							
L0000440	0	0.32930E-06	476852.7	3743734.8	458.1	3.49	4.00
3.25 YES							
L0000441	0	0.32930E-06	476849.9	3743743.0	458.0	3.49	4.00
3.25 YES							
L0000442	0	0.32930E-06	476847.1	3743751.1	457.9	3.49	4.00
3.25 YES							
L0000443	0	0.32930E-06	476844.4	3743759.3	457.8	3.49	4.00
3.25 YES							
L0000444	0	0.32930E-06	476841.6	3743767.4	457.7	3.49	4.00
3.25 YES							
L0000445	0	0.32930E-06	476838.9	3743775.5	457.7	3.49	4.00
3.25 YES							
L0000446	0	0.32930E-06	476836.0	3743783.6	457.6	3.49	4.00
3.25 YES							
L0000447	0	0.32930E-06	476833.1	3743791.7	457.4	3.49	4.00
3.25 YES							
L0000448	0	0.32930E-06	476830.3	3743799.8	457.2	3.49	4.00
3.25 YES							
L0000449	0	0.32930E-06	476827.4	3743807.9	457.1	3.49	4.00
3.25 YES							
L0000450	0	0.32930E-06	476824.6	3743816.0	457.4	3.49	4.00
3.25 YES							
L0000451	0	0.32930E-06	476821.7	3743824.1	457.7	3.49	4.00
3.25 YES							
L0000452	0	0.32930E-06	476818.8	3743832.2	457.9	3.49	4.00
3.25 YES							
L0000453	0	0.32930E-06	476816.0	3743840.3	458.1	3.49	4.00
3.25 YES							
L0000454	0	0.32930E-06	476813.1	3743848.4	458.2	3.49	4.00
3.25 YES							
L0000455	0	0.32930E-06	476810.2	3743856.5	458.4	3.49	4.00
3.25 YES							
L0000456	0	0.32930E-06	476807.4	3743864.6	458.7	3.49	4.00
3.25 YES							
L0000457	0	0.32930E-06	476804.5	3743872.7	458.9	3.49	4.00
3.25 YES							
L0000458	0	0.32930E-06	476801.6	3743880.8	458.9	3.49	4.00
3.25 YES							
L0000459	0	0.32930E-06	476798.7	3743888.9	459.0	3.49	4.00
3.25 YES							
L0000460	0	0.32930E-06	476795.8	3743896.9	459.0	3.49	4.00
3.25 YES							
L0000461	0	0.32930E-06	476792.8	3743905.0	459.0	3.49	4.00
3.25 YES							
L0000462	0	0.32930E-06	476789.9	3743913.1	459.0	3.49	4.00
3.25 YES							

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L0000463	0	0.32930E-06	476787.0	3743921.2	459.0	3.49	4.00
3.25 YES							
L0000464	0	0.32930E-06	476784.1	3743929.3	459.0	3.49	4.00
3.25 YES							
L0000465	0	0.32930E-06	476781.2	3743937.3	459.0	3.49	4.00
3.25 YES							
L0000466	0	0.32930E-06	476778.2	3743945.4	459.0	3.49	4.00
3.25 YES							
L0000467	0	0.32930E-06	476775.3	3743953.5	459.0	3.49	4.00
3.25 YES							
L0000468	0	0.32930E-06	476772.4	3743961.6	459.0	3.49	4.00
3.25 YES							
L0000469	0	0.32930E-06	476769.5	3743969.7	459.0	3.49	4.00
3.25 YES							
L0000470	0	0.32930E-06	476766.6	3743977.7	459.1	3.49	4.00
3.25 YES							
L0000471	0	0.32930E-06	476763.6	3743985.8	459.2	3.49	4.00
3.25 YES							
L0000472	0	0.32930E-06	476760.7	3743993.9	459.3	3.49	4.00
3.25 YES							
L0000473	0	0.32930E-06	476757.8	3744002.0	459.4	3.49	4.00
3.25 YES							
L0000474	0	0.32930E-06	476754.7	3744010.0	459.5	3.49	4.00
3.25 YES							
L0000475	0	0.32930E-06	476751.5	3744017.9	459.6	3.49	4.00
3.25 YES							
L0000476	0	0.32930E-06	476748.2	3744025.9	459.7	3.49	4.00
3.25 YES							
L0000477	0	0.32930E-06	476744.9	3744033.8	459.8	3.49	4.00
3.25 YES							

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 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

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

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L0000478	0	0.32930E-06	476741.6	3744041.8	459.9	3.49	4.00
3.25 YES							
L0000479	0	0.32930E-06	476738.4	3744049.7	460.0	3.49	4.00
3.25 YES							
L0000480	0	0.32930E-06	476735.1	3744057.6	460.0	3.49	4.00
3.25 YES							
L0000481	0	0.32930E-06	476733.6	3744066.0	460.0	3.49	4.00
3.25 YES							
L0000482	0	0.32930E-06	476732.8	3744074.6	460.0	3.49	4.00
3.25 YES							
L0000483	0	0.32930E-06	476731.9	3744083.1	460.0	3.49	4.00
3.25 YES							
L0000484	0	0.32930E-06	476731.1	3744091.7	460.0	3.49	4.00
3.25 YES							
L0000485	0	0.32930E-06	476730.2	3744100.2	460.0	3.49	4.00
3.25 YES							
L0000486	0	0.32930E-06	476729.4	3744108.8	460.0	3.49	4.00
3.25 YES							
L0000487	0	0.32930E-06	476728.5	3744117.3	460.0	3.49	4.00
3.25 YES							
L0000488	0	0.32930E-06	476727.7	3744125.9	460.0	3.49	4.00
3.25 YES							
L0000489	0	0.32930E-06	476726.8	3744134.4	460.0	3.49	4.00
3.25 YES							
L0000490	0	0.32930E-06	476726.0	3744143.0	459.9	3.49	4.00
3.25 YES							
L0000491	0	0.32930E-06	476725.1	3744151.5	459.7	3.49	4.00
3.25 YES							
L0000492	0	0.32930E-06	476724.2	3744160.1	459.6	3.49	4.00
3.25 YES							
L0000493	0	0.32930E-06	476723.4	3744168.6	459.6	3.49	4.00
3.25 YES							
L0000494	0	0.32930E-06	476722.5	3744177.2	459.6	3.49	4.00
3.25 YES							
L0000495	0	0.32930E-06	476721.7	3744185.7	459.6	3.49	4.00
3.25 YES							
L0000496	0	0.32930E-06	476721.2	3744194.3	459.6	3.49	4.00
3.25 YES							
L0000497	0	0.32930E-06	476720.7	3744202.9	459.5	3.49	4.00
3.25 YES							
L0000498	0	0.32930E-06	476720.2	3744211.4	459.3	3.49	4.00
3.25 YES							
L0000499	0	0.32930E-06	476719.7	3744220.0	459.1	3.49	4.00
3.25 YES							
L0000500	0	0.32930E-06	476719.2	3744228.6	459.0	3.49	4.00
3.25 YES							

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L0000501	0	0.32930E-06	476718.7	3744237.2	458.9	3.49	4.00
3.25 YES							
L0000502	0	0.32930E-06	476718.2	3744245.7	458.8	3.49	4.00
3.25 YES							
L0000503	0	0.32930E-06	476717.7	3744254.3	458.8	3.49	4.00
3.25 YES							
L0000504	0	0.32930E-06	476717.2	3744262.9	458.8	3.49	4.00
3.25 YES							
L0000505	0	0.32930E-06	476716.7	3744271.5	458.8	3.49	4.00
3.25 YES							
L0000506	0	0.32930E-06	476716.2	3744280.0	458.8	3.49	4.00
3.25 YES							
L0000507	0	0.32930E-06	476715.7	3744288.6	458.8	3.49	4.00
3.25 YES							
L0000508	0	0.32930E-06	476713.0	3744296.7	458.9	3.49	4.00
3.25 YES							
L0000509	0	0.32930E-06	476709.6	3744304.5	459.0	3.49	4.00
3.25 YES							
L0000510	0	0.32930E-06	476706.1	3744312.4	459.1	3.49	4.00
3.25 YES							
L0000511	0	0.32930E-06	476702.7	3744320.3	459.2	3.49	4.00
3.25 YES							
L0000512	0	0.32930E-06	476699.3	3744328.2	459.2	3.49	4.00
3.25 YES							
L0000513	0	0.32930E-06	476695.9	3744336.1	459.2	3.49	4.00
3.25 YES							
L0000514	0	0.32930E-06	476692.4	3744343.9	459.0	3.49	4.00
3.25 YES							
L0000515	0	0.32930E-06	476689.0	3744351.8	458.9	3.49	4.00
3.25 YES							
L0000516	0	0.32930E-06	476685.6	3744359.7	458.9	3.49	4.00
3.25 YES							
L0000517	0	0.32930E-06	476680.5	3744366.4	459.0	3.49	4.00
3.25 YES							

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 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

INIT.	URBAN	NUMBER EMISSION RATE	BASE	RELEASE	INIT.
SOURCE	EMISSION RATE				
	PART. (GRAMS/SEC)	X	Y	ELEV.	HEIGHT
					SY

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SZ	SOURCE	SCALAR	VARY	(METERS)	(METERS)	(METERS)	(METERS)	(METERS)
ID		CATS.	BY					
(METERS)								
L0000518		0	0.32930E-06	476674.4	3744372.5	459.2	3.49	4.00
3.25	YES							
L0000519		0	0.32930E-06	476668.4	3744378.6	459.4	3.49	4.00
3.25	YES							
L0000520		0	0.32930E-06	476662.3	3744384.7	459.4	3.49	4.00
3.25	YES							
L0000521		0	0.32930E-06	476656.2	3744390.7	459.4	3.49	4.00
3.25	YES							
L0000522		0	0.32930E-06	476650.1	3744396.8	459.3	3.49	4.00
3.25	YES							
L0000523		0	0.32930E-06	476644.1	3744402.9	459.3	3.49	4.00
3.25	YES							
L0000524		0	0.32930E-06	476638.0	3744409.0	459.4	3.49	4.00
3.25	YES							
L0000525		0	0.32930E-06	476631.9	3744415.0	459.6	3.49	4.00
3.25	YES							
L0000526		0	0.32930E-06	476625.9	3744421.1	459.8	3.49	4.00
3.25	YES							
L0000527		0	0.32930E-06	476619.4	3744426.8	460.0	3.49	4.00
3.25	YES							
L0000528		0	0.32930E-06	476612.3	3744431.6	460.0	3.49	4.00
3.25	YES							
L0000529		0	0.32930E-06	476605.2	3744436.5	460.0	3.49	4.00
3.25	YES							
L0000530		0	0.32930E-06	476598.1	3744441.3	460.0	3.49	4.00
3.25	YES							
L0000531		0	0.32930E-06	476591.1	3744446.1	460.0	3.49	4.00
3.25	YES							
L0000532		0	0.32930E-06	476584.0	3744451.0	460.2	3.49	4.00
3.25	YES							
L0000533		0	0.32930E-06	476576.9	3744455.8	460.4	3.49	4.00
3.25	YES							
L0000534		0	0.32930E-06	476569.8	3744460.7	460.7	3.49	4.00
3.25	YES							
L0000535		0	0.32930E-06	476562.7	3744465.5	460.9	3.49	4.00
3.25	YES							
L0000536		0	0.32930E-06	476555.6	3744470.3	461.0	3.49	4.00
3.25	YES							
L0000537		0	0.32930E-06	476548.5	3744475.2	461.0	3.49	4.00
3.25	YES							
L0000538		0	0.32930E-06	476541.4	3744480.0	461.0	3.49	4.00
3.25	YES							

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L0000539	0	0.32930E-06	476534.3	3744484.9	461.0	3.49	4.00
3.25 YES							
L0000540	0	0.32930E-06	476527.2	3744489.7	461.1	3.49	4.00
3.25 YES							
L0000541	0	0.32930E-06	476520.1	3744494.6	461.3	3.49	4.00
3.25 YES							
L0000542	0	0.32930E-06	476513.0	3744499.4	461.5	3.49	4.00
3.25 YES							
L0000543	0	0.32930E-06	476505.9	3744504.2	461.6	3.49	4.00
3.25 YES							
L0000544	0	0.32930E-06	476498.8	3744509.1	461.6	3.49	4.00
3.25 YES							
L0000545	0	0.32930E-06	476491.7	3744513.9	461.6	3.49	4.00
3.25 YES							
L0000546	0	0.32930E-06	476484.6	3744518.8	461.6	3.49	4.00
3.25 YES							
L0000547	0	0.32930E-06	476477.5	3744523.6	461.8	3.49	4.00
3.25 YES							
L0000548	0	0.32930E-06	476470.4	3744528.4	462.0	3.49	4.00
3.25 YES							
L0000549	0	0.32930E-06	476463.3	3744533.3	462.0	3.49	4.00
3.25 YES							
L0000550	0	0.32930E-06	476456.2	3744538.1	462.0	3.49	4.00
3.25 YES							
L0000551	0	0.32930E-06	476449.1	3744543.0	462.0	3.49	4.00
3.25 YES							
L0000552	0	0.32930E-06	476442.0	3744547.8	462.0	3.49	4.00
3.25 YES							
L0000553	0	0.32930E-06	476435.0	3744552.7	462.0	3.49	4.00
3.25 YES							
L0000554	0	0.32930E-06	476427.9	3744557.5	462.0	3.49	4.00
3.25 YES							
L0000555	0	0.32930E-06	476420.8	3744562.3	462.0	3.49	4.00
3.25 YES							
L0000556	0	0.32930E-06	476413.7	3744567.2	462.0	3.49	4.00
3.25 YES							
L0000557	0	0.32930E-06	476406.6	3744572.0	462.1	3.49	4.00
3.25 YES							

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*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

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INIT.	URBAN	NUMBER	EMISSION	RATE		BASE	RELEASE	INIT.
SOURCE		EMISSION	RATE			ELEV.	HEIGHT	SY
SZ	SOURCE	PART.	(GRAMS/SEC)	X	Y	(METERS)	(METERS)	(METERS)
ID		SCALAR	VARY					
(METERS)		CATS.	BY					
L0000558		0	0.32930E-06	476399.5	3744576.9	462.4	3.49	4.00
3.25	YES							
L0000559		0	0.32930E-06	476392.4	3744581.7	462.6	3.49	4.00
3.25	YES							
L0000560		0	0.32930E-06	476385.3	3744586.5	462.8	3.49	4.00
3.25	YES							
L0000561		0	0.32930E-06	476378.2	3744591.4	463.0	3.49	4.00
3.25	YES							
L0000562		0	0.32930E-06	476371.1	3744596.2	463.0	3.49	4.00
3.25	YES							
L0000563		0	0.32930E-06	476364.0	3744601.1	463.0	3.49	4.00
3.25	YES							
L0000564		0	0.32930E-06	476356.9	3744605.9	463.0	3.49	4.00
3.25	YES							
L0000565		0	0.11020E-06	476874.5	3743664.8	458.9	3.49	4.00
3.25	YES							
L0000566		0	0.11020E-06	476877.4	3743656.7	459.0	3.49	4.00
3.25	YES							
L0000567		0	0.11020E-06	476880.3	3743648.6	459.0	3.49	4.00
3.25	YES							
L0000568		0	0.11020E-06	476883.2	3743640.5	459.0	3.49	4.00
3.25	YES							
L0000569		0	0.11020E-06	476886.1	3743632.4	459.0	3.49	4.00
3.25	YES							
L0000570		0	0.11020E-06	476889.0	3743624.4	459.1	3.49	4.00
3.25	YES							
L0000571		0	0.11020E-06	476891.9	3743616.3	459.3	3.49	4.00
3.25	YES							
L0000572		0	0.11020E-06	476894.8	3743608.2	459.5	3.49	4.00
3.25	YES							
L0000573		0	0.11020E-06	476897.7	3743600.1	459.6	3.49	4.00
3.25	YES							
L0000574		0	0.11020E-06	476900.6	3743592.0	459.7	3.49	4.00
3.25	YES							
L0000575		0	0.11020E-06	476903.5	3743583.9	459.7	3.49	4.00
3.25	YES							
L0000576		0	0.11020E-06	476906.4	3743575.9	459.8	3.49	4.00
3.25	YES							

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L0000577	0	0.11020E-06	476909.3	3743567.8	460.0	3.49	4.00
3.25 YES							
L0000578	0	0.11020E-06	476912.2	3743559.7	460.0	3.49	4.00
3.25 YES							
L0000579	0	0.11020E-06	476915.1	3743551.6	460.0	3.49	4.00
3.25 YES							
L0000580	0	0.11020E-06	476918.1	3743543.5	460.0	3.49	4.00
3.25 YES							
L0000581	0	0.11020E-06	476921.0	3743535.4	460.0	3.49	4.00
3.25 YES							
L0000582	0	0.11020E-06	476923.9	3743527.4	460.0	3.49	4.00
3.25 YES							
L0000583	0	0.11020E-06	476926.8	3743519.3	460.0	3.49	4.00
3.25 YES							
L0000584	0	0.11020E-06	476929.7	3743511.2	460.0	3.49	4.00
3.25 YES							
L0000585	0	0.11020E-06	476932.6	3743503.1	460.0	3.49	4.00
3.25 YES							
L0000586	0	0.11020E-06	476935.5	3743495.0	460.0	3.49	4.00
3.25 YES							
L0000587	0	0.11020E-06	476938.4	3743486.9	460.0	3.49	4.00
3.25 YES							
L0000588	0	0.11020E-06	476941.3	3743478.8	460.0	3.49	4.00
3.25 YES							
L0000589	0	0.11020E-06	476944.2	3743470.8	460.0	3.49	4.00
3.25 YES							
L0000590	0	0.11020E-06	476947.1	3743462.7	460.0	3.49	4.00
3.25 YES							
L0000591	0	0.11020E-06	476950.0	3743454.6	460.0	3.49	4.00
3.25 YES							
L0000592	0	0.11020E-06	476952.9	3743446.5	460.0	3.49	4.00
3.25 YES							
L0000593	0	0.11020E-06	476955.8	3743438.4	460.2	3.49	4.00
3.25 YES							
L0000594	0	0.11020E-06	476958.7	3743430.3	460.4	3.49	4.00
3.25 YES							
L0000595	0	0.11020E-06	476961.6	3743422.3	460.5	3.49	4.00
3.25 YES							
L0000596	0	0.11020E-06	476964.5	3743414.2	460.5	3.49	4.00
3.25 YES							
L0000597	0	0.11020E-06	476967.4	3743406.1	460.4	3.49	4.00
3.25 YES							

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*** MODELOPTs: RegDFAULT 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	(METERS)	(METERS)	(METERS)
ID		SCALAR	VARY					
(METERS)		CATS.	BY	(METERS)	(METERS)	(METERS)	(METERS)	(METERS)
L0000598		0	0.11020E-06	476970.3	3743398.0	460.3	3.49	4.00
3.25	YES							
L0000599		0	0.11020E-06	476973.2	3743389.9	460.2	3.49	4.00
3.25	YES							
L0000600		0	0.11020E-06	476976.1	3743381.8	460.2	3.49	4.00
3.25	YES							
L0000601		0	0.21610E-06	477117.4	3743381.5	458.4	3.49	4.00
3.25	YES							
L0000602		0	0.21610E-06	477108.8	3743381.2	458.7	3.49	4.00
3.25	YES							
L0000603		0	0.21610E-06	477100.2	3743380.8	459.0	3.49	4.00
3.25	YES							
L0000604		0	0.21610E-06	477091.6	3743380.5	459.0	3.49	4.00
3.25	YES							
L0000605		0	0.21610E-06	477083.0	3743380.1	459.0	3.49	4.00
3.25	YES							
L0000606		0	0.21610E-06	477074.4	3743379.8	459.0	3.49	4.00
3.25	YES							
L0000607		0	0.21610E-06	477065.9	3743379.4	459.1	3.49	4.00
3.25	YES							
L0000608		0	0.21610E-06	477057.3	3743379.1	459.4	3.49	4.00
3.25	YES							
L0000609		0	0.21610E-06	477048.7	3743378.7	459.7	3.49	4.00
3.25	YES							
L0000610		0	0.21610E-06	477040.1	3743378.4	460.0	3.49	4.00
3.25	YES							
L0000611		0	0.21610E-06	477031.5	3743378.0	460.0	3.49	4.00
3.25	YES							
L0000612		0	0.21610E-06	477023.0	3743377.7	460.0	3.49	4.00
3.25	YES							
L0000613		0	0.21610E-06	477014.4	3743377.3	460.0	3.49	4.00
3.25	YES							
L0000614		0	0.21610E-06	477005.8	3743377.0	460.0	3.49	4.00
3.25	YES							

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L0000615	0	0.21610E-06	476997.2	3743376.6	460.1	3.49	4.00
3.25 YES							
L0000616	0	0.21610E-06	476988.6	3743376.3	460.2	3.49	4.00
3.25 YES							
L0000617	0	0.21610E-06	476980.0	3743375.9	460.3	3.49	4.00
3.25 YES							
L0000618	0	0.11010E-06	476983.3	3743366.0	460.6	3.49	4.00
3.25 YES							
L0000619	0	0.11010E-06	476986.2	3743357.9	460.7	3.49	4.00
3.25 YES							
L0000620	0	0.11010E-06	476989.2	3743349.8	460.7	3.49	4.00
3.25 YES							
L0000621	0	0.11010E-06	476992.1	3743341.7	460.6	3.49	4.00
3.25 YES							
L0000622	0	0.11010E-06	476995.0	3743333.6	460.5	3.49	4.00
3.25 YES							
L0000623	0	0.11010E-06	476997.9	3743325.6	460.4	3.49	4.00
3.25 YES							
L0000624	0	0.11010E-06	477000.8	3743317.5	460.3	3.49	4.00
3.25 YES							
L0000625	0	0.11010E-06	477003.8	3743309.4	460.2	3.49	4.00
3.25 YES							
L0000626	0	0.11010E-06	477006.7	3743301.3	460.1	3.49	4.00
3.25 YES							
L0000627	0	0.11010E-06	477009.0	3743293.1	460.0	3.49	4.00
3.25 YES							
L0000628	0	0.11010E-06	477011.2	3743284.8	460.0	3.49	4.00
3.25 YES							
L0000629	0	0.11010E-06	477013.4	3743276.5	460.0	3.49	4.00
3.25 YES							
L0000630	0	0.11010E-06	477015.6	3743268.2	460.0	3.49	4.00
3.25 YES							
L0000631	0	0.11010E-06	477017.8	3743259.9	460.2	3.49	4.00
3.25 YES							
L0000632	0	0.11010E-06	477020.0	3743251.6	460.3	3.49	4.00
3.25 YES							
L0000633	0	0.11010E-06	477022.2	3743243.3	460.4	3.49	4.00
3.25 YES							
L0000634	0	0.11010E-06	477024.5	3743235.0	460.5	3.49	4.00
3.25 YES							
L0000635	0	0.11010E-06	477026.7	3743226.7	460.4	3.49	4.00
3.25 YES							
L0000636	0	0.11010E-06	477029.2	3743218.4	460.4	3.49	4.00
3.25 YES							
L0000637	0	0.11010E-06	477031.7	3743210.2	460.3	3.49	4.00
3.25 YES							

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 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

INIT.	URBAN	NUMBER	EMISSION	RATE		BASE	RELEASE	INIT.
SOURCE		EMISSION	RATE			ELEV.	HEIGHT	SY
SZ	SOURCE	SCALAR	VARY		X	Y		
ID		CATS.			(METERS)	(METERS)	(METERS)	(METERS)
(METERS)		BY						

L0000638		0	0.11010E-06	477034.3	3743202.0	460.2	3.49	4.00
3.25	YES							
L0000639		0	0.11010E-06	477036.8	3743193.8	460.1	3.49	4.00
3.25	YES							
L0000640		0	0.11010E-06	477039.4	3743185.6	460.0	3.49	4.00
3.25	YES							
L0000641		0	0.11010E-06	477041.9	3743177.4	460.0	3.49	4.00
3.25	YES							
L0000642		0	0.11010E-06	477044.5	3743169.2	460.0	3.49	4.00
3.25	YES							
L0000643		0	0.11010E-06	477047.0	3743161.0	460.0	3.49	4.00
3.25	YES							
L0000644		0	0.11010E-06	477049.6	3743152.8	460.0	3.49	4.00
3.25	YES							
L0000645		0	0.11010E-06	477052.4	3743144.7	460.0	3.49	4.00
3.25	YES							
L0000646		0	0.11010E-06	477055.3	3743136.6	460.0	3.49	4.00
3.25	YES							
L0000647		0	0.11010E-06	477058.3	3743128.6	460.0	3.49	4.00
3.25	YES							
L0000648		0	0.11010E-06	477061.2	3743120.5	460.0	3.49	4.00
3.25	YES							
L0000649		0	0.11010E-06	477064.2	3743112.4	460.0	3.49	4.00
3.25	YES							
L0000650		0	0.11010E-06	477067.1	3743104.4	460.0	3.49	4.00
3.25	YES							
L0000651		0	0.11010E-06	477070.1	3743096.3	460.0	3.49	4.00
3.25	YES							
L0000652		0	0.11010E-06	477073.0	3743088.2	460.0	3.49	4.00
3.25	YES							

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L0000653	0	0.11010E-06	477076.0	3743080.2	460.0	3.49	4.00
3.25 YES							
L0000654	0	0.11010E-06	477078.9	3743072.1	460.0	3.49	4.00
3.25 YES							
L0000655	0	0.11010E-06	477081.9	3743064.0	460.0	3.49	4.00
3.25 YES							
L0000656	0	0.11010E-06	477084.8	3743056.0	460.0	3.49	4.00
3.25 YES							
L0000657	0	0.11010E-06	477087.8	3743047.9	460.0	3.49	4.00
3.25 YES							
L0000658	0	0.11010E-06	477090.7	3743039.8	460.0	3.49	4.00
3.25 YES							
L0000659	0	0.11010E-06	477093.7	3743031.8	460.0	3.49	4.00
3.25 YES							
L0000660	0	0.11010E-06	477096.6	3743023.7	460.0	3.49	4.00
3.25 YES							
L0000661	0	0.11010E-06	477099.6	3743015.6	460.0	3.49	4.00
3.25 YES							
L0000662	0	0.11010E-06	477102.5	3743007.6	459.9	3.49	4.00
3.25 YES							
L0000663	0	0.11010E-06	477105.5	3742999.5	459.8	3.49	4.00
3.25 YES							
L0000664	0	0.11010E-06	477108.4	3742991.4	459.7	3.49	4.00
3.25 YES							
L0000665	0	0.11010E-06	477111.4	3742983.4	459.6	3.49	4.00
3.25 YES							
L0000666	0	0.11010E-06	477114.3	3742975.3	459.5	3.49	4.00
3.25 YES							
L0000667	0	0.11010E-06	477117.3	3742967.2	459.4	3.49	4.00
3.25 YES							
L0000668	0	0.11010E-06	477120.1	3742959.1	459.3	3.49	4.00
3.25 YES							
L0000669	0	0.11010E-06	477123.0	3742951.0	459.2	3.49	4.00
3.25 YES							
L0000670	0	0.11010E-06	477125.9	3742942.9	459.1	3.49	4.00
3.25 YES							
L0000671	0	0.11010E-06	477128.8	3742934.8	459.1	3.49	4.00
3.25 YES							
L0000672	0	0.11010E-06	477131.6	3742926.7	459.3	3.49	4.00
3.25 YES							
L0000673	0	0.11010E-06	477134.5	3742918.6	459.5	3.49	4.00
3.25 YES							
L0000674	0	0.11010E-06	477137.4	3742910.5	459.6	3.49	4.00
3.25 YES							
L0000675	0	0.11010E-06	477140.2	3742902.4	459.7	3.49	4.00
3.25 YES							
L0000676	0	0.11010E-06	477143.1	3742894.3	459.6	3.49	4.00
3.25 YES							

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 L0000677 0 0.11010E-06 477146.0 3742886.2 459.5 3.49 4.00
 3.25 YES
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 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

INIT.	URBAN	NUMBER	EMISSION	RATE	BASE	RELEASE	INIT.
INIT.	SOURCE	EMISSION	RATE				
SZ	SOURCE	PART.	(GRAMS/SEC)	X	Y	ELEV.	HEIGHT
ID	SCALAR	VARY		(METERS)	(METERS)	(METERS)	(METERS)
(METERS)	CATS.	BY					(METERS)
L0000678	0	0.11010E-06	477148.9	3742878.2	459.4	3.49	4.00
3.25	YES						
L0000679	0	0.11010E-06	477151.7	3742870.1	459.3	3.49	4.00
3.25	YES						
L0000680	0	0.11010E-06	477154.6	3742862.0	459.2	3.49	4.00
3.25	YES						
L0000681	0	0.11010E-06	477157.5	3742853.9	459.1	3.49	4.00
3.25	YES						
L0000682	0	0.11010E-06	477160.3	3742845.8	459.0	3.49	4.00
3.25	YES						
L0000683	0	0.11010E-06	477163.2	3742837.7	458.9	3.49	4.00
3.25	YES						
L0000684	0	0.11010E-06	477166.1	3742829.6	458.9	3.49	4.00
3.25	YES						
L0000685	0	0.11010E-06	477168.9	3742821.5	458.9	3.49	4.00
3.25	YES						
L0000686	0	0.11010E-06	477171.8	3742813.4	459.1	3.49	4.00
3.25	YES						
L0000687	0	0.11010E-06	477174.7	3742805.3	459.2	3.49	4.00
3.25	YES						
L0000688	0	0.11010E-06	477177.6	3742797.2	459.3	3.49	4.00
3.25	YES						
L0000689	0	0.11010E-06	477180.4	3742789.1	459.3	3.49	4.00
3.25	YES						
L0000690	0	0.11010E-06	477183.3	3742781.0	459.2	3.49	4.00
3.25	YES						

				12844 HRA			
L0000691	0	0.11010E-06	477186.2	3742772.9	459.1	3.49	4.00
3.25 YES							
L0000692	0	0.11010E-06	477189.0	3742764.8	459.0	3.49	4.00
3.25 YES							
L0000693	0	0.11010E-06	477191.9	3742756.7	458.9	3.49	4.00
3.25 YES							
L0000694	0	0.11010E-06	477194.8	3742748.6	458.8	3.49	4.00
3.25 YES							
L0000695	0	0.11010E-06	477197.6	3742740.5	458.7	3.49	4.00
3.25 YES							
L0000696	0	0.11010E-06	477200.5	3742732.4	458.7	3.49	4.00
3.25 YES							
L0000697	0	0.11010E-06	477203.4	3742724.3	458.6	3.49	4.00
3.25 YES							
L0000698	0	0.11010E-06	477206.3	3742716.2	458.6	3.49	4.00
3.25 YES							
L0000699	0	0.11010E-06	477209.2	3742708.2	458.7	3.49	4.00
3.25 YES							
L0000700	0	0.11010E-06	477212.1	3742700.1	458.9	3.49	4.00
3.25 YES							
L0000701	0	0.11010E-06	477215.1	3742692.0	459.0	3.49	4.00
3.25 YES							
L0000702	0	0.11010E-06	477218.0	3742683.9	459.0	3.49	4.00
3.25 YES							
L0000703	0	0.11010E-06	477220.9	3742675.9	459.0	3.49	4.00
3.25 YES							
L0000704	0	0.11010E-06	477223.8	3742667.8	458.9	3.49	4.00
3.25 YES							
L0000705	0	0.11010E-06	477226.8	3742659.7	458.8	3.49	4.00
3.25 YES							
L0000706	0	0.11010E-06	477229.7	3742651.6	458.7	3.49	4.00
3.25 YES							
L0000707	0	0.11010E-06	477231.0	3742643.1	458.6	3.49	4.00
3.25 YES							
L0000708	0	0.11010E-06	477232.4	3742634.7	458.6	3.49	4.00
3.25 YES							
L0000709	0	0.11010E-06	477233.8	3742626.2	458.5	3.49	4.00
3.25 YES							
L0000710	0	0.11010E-06	477235.2	3742617.7	458.5	3.49	4.00
3.25 YES							
L0000711	0	0.11010E-06	477236.6	3742609.2	458.4	3.49	4.00
3.25 YES							
L0000712	0	0.11010E-06	477237.9	3742600.7	458.4	3.49	4.00
3.25 YES							
L0000713	0	0.11010E-06	477239.3	3742592.3	458.4	3.49	4.00
3.25 YES							
L0000714	0	0.11010E-06	477240.7	3742583.8	458.3	3.49	4.00
3.25 YES							

12844 HRA
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 HRA.isc *** 03/23/20
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 *** MODELOPTs: RegDFault CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS

SRCGROUP ID	SOURCE IDs
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ALL	L0000358 , L0000359 , L0000360 , L0000361 , L0000362 ,
L0000363	, L0000364 , L0000365 ,
	L0000366 , 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 , L0000401 , L0000402 ,
L0000403	, L0000404 , L0000405 ,
	L0000406 , L0000407 , L0000408 , L0000409 , L0000410 ,
L0000411	, L0000412 , L0000413 ,
	L0000414 , L0000415 , L0000416 , L0000417 , L0000418 ,
L0000419	, L0000420 , L0000421 ,
	L0000422 , L0000423 , L0000424 , L0000425 , L0000426 ,
L0000427	, L0000428 , L0000429 ,
	L0000430 , L0000431 , L0000432 , L0000433 , L0000434 ,
L0000435	, L0000436 , L0000437 ,
	L0000438 , L0000439 , L0000440 , L0000441 , L0000442 ,
L0000443	, L0000444 , L0000445 ,

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L0000451	L0000446 , L0000452	, L0000447 , L0000453	, L0000448 ,	, L0000449	, L0000450	,
L0000459	L0000454 , L0000460	, L0000455 , L0000461	, L0000456 ,	, L0000457	, L0000458	,
L0000467	L0000462 , L0000468	, L0000463 , L0000469	, L0000464 ,	, L0000465	, L0000466	,
L0000475	L0000470 , L0000476	, L0000471 , L0000477	, L0000472 ,	, L0000473	, L0000474	,
L0000483	L0000478 , L0000484	, L0000479 , L0000485	, L0000480 ,	, L0000481	, L0000482	,
L0000491	L0000486 , L0000492	, L0000487 , L0000493	, L0000488 ,	, L0000489	, L0000490	,
L0000499	L0000494 , L0000500	, L0000495 , L0000501	, L0000496 ,	, L0000497	, L0000498	,
L0000507	L0000502 , L0000508	, L0000503 , L0000509	, L0000504 ,	, L0000505	, L0000506	,
L0000515	L0000510 , L0000516	, L0000511 , L0000517	, L0000512 ,	, L0000513	, L0000514	,
*** AERMOD - VERSION 19191 *** C:\Lakes\AERMOD View\12844 HRA\12844 HRA.isc *** 03/23/20 *** AERMET - VERSION 16216 *** *** 17:53:27						

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*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS

* * *

SRCGROUP ID

SOURCE IDs

L0000523	L0000518 L0000524	, L0000519 L0000525	, L0000520 ,	, L0000521	, L0000522	,
L0000531	L0000526 L0000532	, L0000527 L0000533	, L0000528 ,	, L0000529	, L0000530	,

12844 HRA

L0000539	L0000534 , L0000540	, L0000535 , L0000541	, L0000536 ,	, L0000537	, L0000538	,
L0000547	L0000542 , L0000548	, L0000543 , L0000549	, L0000544 ,	, L0000545	, L0000546	,
L0000555	L0000550 , L0000556	, L0000551 , L0000557	, L0000552 ,	, L0000553	, L0000554	,
L0000563	L0000558 , L0000564	, L0000559 , L0000565	, L0000560 ,	, L0000561	, L0000562	,
L0000571	L0000566 , L0000572	, L0000567 , L0000573	, L0000568 ,	, L0000569	, L0000570	,
L0000579	L0000574 , L0000580	, L0000575 , L0000581	, L0000576 ,	, L0000577	, L0000578	,
L0000587	L0000582 , L0000588	, L0000583 , L0000589	, L0000584 ,	, L0000585	, L0000586	,
L0000595	L0000590 , L0000596	, L0000591 , L0000597	, L0000592 ,	, L0000593	, L0000594	,
L0000603	L0000598 , L0000604	, L0000599 , L0000605	, L0000600 ,	, L0000601	, L0000602	,
L0000611	L0000606 , L0000612	, L0000607 , L0000613	, L0000608 ,	, L0000609	, L0000610	,
L0000619	L0000614 , L0000620	, L0000615 , L0000621	, L0000616 ,	, L0000617	, L0000618	,
L0000627	L0000622 , L0000628	, L0000623 , L0000629	, L0000624 ,	, L0000625	, L0000626	,
L0000635	L0000630 , L0000636	, L0000631 , L0000637	, L0000632 ,	, L0000633	, L0000634	,
L0000643	L0000638 , L0000644	, L0000639 , L0000645	, L0000640 ,	, L0000641	, L0000642	,
L0000651	L0000646 , L0000652	, L0000647 , L0000653	, L0000648 ,	, L0000649	, L0000650	,
L0000659	L0000654 , L0000660	, L0000655 , L0000661	, L0000656 ,	, L0000657	, L0000658	,

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      L0000662      , L0000663      , L0000664      , L0000665      , L0000666      ,
L0000667      , L0000668      , L0000669      ,
      L0000670      , L0000671      , L0000672      , L0000673      , L0000674      ,
L0000675      , L0000676      , L0000677      ,
^ *** AERMOD - VERSION 19191 *** *** C:\Lakes\AERMOD View\12844 HRA\12844
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*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS

SRCGROUP ID	SOURCE IDs
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L0000683	L0000678 , L0000679 , L0000680 , L0000681 , L0000682 , L0000684 , L0000685 ,
L0000691	L0000686 , L0000687 , L0000688 , L0000689 , L0000690 , L0000692 , L0000693 ,
L0000699	L0000694 , L0000695 , L0000696 , L0000697 , L0000698 , L0000700 , L0000701 ,
L0000707	L0000702 , L0000703 , L0000704 , L0000705 , L0000706 , L0000708 , L0000709 ,
L0000710	L0000710 , L0000711 , L0000712 , L0000713 , L0000714 ,
^ *** AERMOD - VERSION 19191 *** *** C:\Lakes\AERMOD View\12844 HRA\12844 HRA.isc *** 03/23/20 *** AERMET - VERSION 16216 *** *** *** 17:53:27	

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*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINED AS URBAN SOURCES

URBAN ID	URBAN POP	SOURCE IDs
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12844 HRA

L0000362	2189641.	L0000358	, L0000359	, L0000360	, L0000361	,
L0000365	, L0000363	, L0000364	,			
L0000371	L0000366	, L0000367	, L0000368	, L0000369	, L0000370	,
	, L0000372	, L0000373	,			
L0000379	L0000374	, L0000375	, L0000376	, L0000377	, L0000378	,
	, L0000380	, L0000381	,			
L0000387	L0000382	, L0000383	, L0000384	, L0000385	, L0000386	,
	, L0000388	, L0000389	,			
L0000395	L0000390	, L0000391	, L0000392	, L0000393	, L0000394	,
	, L0000396	, L0000397	,			
L0000403	L0000398	, L0000399	, L0000400	, L0000401	, L0000402	,
	, L0000404	, L0000405	,			
L0000411	L0000406	, L0000407	, L0000408	, L0000409	, L0000410	,
	, L0000412	, L0000413	,			
L0000419	L0000414	, L0000415	, L0000416	, L0000417	, L0000418	,
	, L0000420	, L0000421	,			
L0000427	L0000422	, L0000423	, L0000424	, L0000425	, L0000426	,
	, L0000428	, L0000429	,			
L0000435	L0000430	, L0000431	, L0000432	, L0000433	, L0000434	,
	, L0000436	, L0000437	,			
L0000443	L0000438	, L0000439	, L0000440	, L0000441	, L0000442	,
	, L0000444	, L0000445	,			
L0000451	L0000446	, L0000447	, L0000448	, L0000449	, L0000450	,
	, L0000452	, L0000453	,			
L0000459	L0000454	, L0000455	, L0000456	, L0000457	, L0000458	,
	, L0000460	, L0000461	,			
L0000467	L0000462	, L0000463	, L0000464	, L0000465	, L0000466	,
	, L0000468	, L0000469	,			
L0000475	L0000470	, L0000471	, L0000472	, L0000473	, L0000474	,
	, L0000476	, L0000477	,			

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L0000483      L0000478      , L0000479      , L0000480      , L0000481      , L0000482      ,
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L0000491      L0000486      , L0000487      , L0000488      , L0000489      , L0000490      ,
              , L0000492      , L0000493      ,
L0000499      L0000494      , L0000495      , L0000496      , L0000497      , L0000498      ,
              , L0000500      , L0000501      ,
L0000507      L0000502      , L0000503      , L0000504      , L0000505      , L0000506      ,
              , L0000508      , L0000509      ,
L0000515      L0000510      , L0000511      , L0000512      , L0000513      , L0000514      ,
              , L0000516      , L0000517      ,
^ *** AERMOD - VERSION 19191 *** *** C:\Lakes\AERMOD View\12844 HRA\12844
HRA.isc ***
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*** MODELOPTs: RegDFault CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINED AS URBAN SOURCES

URBAN ID	URBAN POP	SOURCE IDs
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L0000523	L0000518 , L0000519 , L0000520 , L0000521 , L0000522 , L0000524 , L0000525 ,	
L0000531	L0000526 , L0000527 , L0000528 , L0000529 , L0000530 , L0000532 , L0000533 ,	
L0000539	L0000534 , L0000535 , L0000536 , L0000537 , L0000538 , L0000540 , L0000541 ,	
L0000547	L0000542 , L0000543 , L0000544 , L0000545 , L0000546 , L0000548 , L0000549 ,	
L0000555	L0000550 , L0000551 , L0000552 , L0000553 , L0000554 , L0000556 , L0000557 ,	
L0000563	L0000558 , L0000559 , L0000560 , L0000561 , L0000562 , L0000564 , L0000565 ,	

12844 HRA

L0000571	L0000566 , L0000572	, L0000567 , L0000573	, L0000568 ,	, L0000569	, L0000570	,
L0000579	L0000574 , L0000580	, L0000575 , L0000581	, L0000576 ,	, L0000577	, L0000578	,
L0000587	L0000582 , L0000588	, L0000583 , L0000589	, L0000584 ,	, L0000585	, L0000586	,
L0000595	L0000590 , L0000596	, L0000591 , L0000597	, L0000592 ,	, L0000593	, L0000594	,
L0000603	L0000598 , L0000604	, L0000599 , L0000605	, L0000600 ,	, L0000601	, L0000602	,
L0000611	L0000606 , L0000612	, L0000607 , L0000613	, L0000608 ,	, L0000609	, L0000610	,
L0000619	L0000614 , L0000620	, L0000615 , L0000621	, L0000616 ,	, L0000617	, L0000618	,
L0000627	L0000622 , L0000628	, L0000623 , L0000629	, L0000624 ,	, L0000625	, L0000626	,
L0000635	L0000630 , L0000636	, L0000631 , L0000637	, L0000632 ,	, L0000633	, L0000634	,
L0000643	L0000638 , L0000644	, L0000639 , L0000645	, L0000640 ,	, L0000641	, L0000642	,
L0000651	L0000646 , L0000652	, L0000647 , L0000653	, L0000648 ,	, L0000649	, L0000650	,
L0000659	L0000654 , L0000660	, L0000655 , L0000661	, L0000656 ,	, L0000657	, L0000658	,
L0000667	L0000662 , L0000668	, L0000663 , L0000669	, L0000664 ,	, L0000665	, L0000666	,
L0000675	L0000670 , L0000676	, L0000671 , L0000677	, L0000672 ,	, L0000673	, L0000674	,

▲ *** AERMOD - VERSION 19191 *** C:\Lakes\AERMOD View\12844 HRA\12844
HRA.isc *** 03/23/20

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*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINED AS URBAN SOURCES

URBAN ID	URBAN POP	SOURCE IDs
-----	-----	-----
L0000683	L0000678 , L0000684	, L0000679 , L0000680 , L0000681 , L0000682 ,
		, L0000685 ,
L0000691	L0000686 , L0000692	, L0000687 , L0000688 , L0000689 , L0000690 ,
		, L0000693 ,
L0000699	L0000694 , L0000700	, L0000695 , L0000696 , L0000697 , L0000698 ,
		, L0000701 ,
L0000707	L0000702 , L0000708	, L0000703 , L0000704 , L0000705 , L0000706 ,
		, L0000709 ,
	L0000710 , L0000711	, L0000712 , L0000713 , L0000714 ,
▲ *** AERMOD - VERSION 19191 ***	***	*** C:\Lakes\AERMOD View\12844 HRA\12844
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*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

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

(477132.2, 3744016.8, 456.0, 456.0, 0.0); (477051.3,
3743367.3, 459.6, 459.6, 0.0);
(476801.5, 3743341.1, 463.0, 463.0, 0.0); (476592.1,
3743445.8, 465.0, 465.0, 0.0);
(476544.5, 3743995.4, 463.0, 463.0, 0.0); (477070.3,
3744221.4, 456.0, 456.0, 0.0);
▲ *** AERMOD - VERSION 19191 *** *** C:\Lakes\AERMOD View\12844 HRA\12844
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*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

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*** METEOROLOGICAL DAYS SELECTED FOR

PROCESSING ***

(1=YES; 0=NO)

[illegible]

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,

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*** AERMOD - VERSION 19191 ***
HRA.isc
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*** 03/23/20

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*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL

DATA ***

Surface file: PerrisADJU\PERI V9 ADJU\PERI v9.SFC

Met Version: 16216

Profile file: PerrisADJU\PERI V9 ADJU\PERI v9.PFL

Surface format: FREE

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Profile format: FREE

Surface station no.: 3171
Name: UNKNOWN

Upper air station no.: 3190
Name: UNKNOWN

Year: 2010

Year: 2010

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							
10	01	01	1	01	-7.9	0.125	-9.000	-9.000	-999.	106.	21.2	0.19	0.61	
1.00	1.30	335.			9.1	282.5	5.5							
10	01	01	1	02	-3.9	0.088	-9.000	-9.000	-999.	62.	15.1	0.19	0.61	
1.00	0.90	142.			9.1	280.9	5.5							
10	01	01	1	03	-3.9	0.088	-9.000	-9.000	-999.	62.	15.1	0.19	0.61	
1.00	0.90	324.			9.1	280.4	5.5							
10	01	01	1	04	-1.3	0.064	-9.000	-9.000	-999.	39.	18.3	0.19	0.61	
1.00	0.40	294.			9.1	278.8	5.5							
10	01	01	1	05	-3.9	0.088	-9.000	-9.000	-999.	62.	15.0	0.19	0.61	
1.00	0.90	205.			9.1	278.1	5.5							
10	01	01	1	06	-1.3	0.065	-9.000	-9.000	-999.	39.	18.3	0.19	0.61	
1.00	0.40	3.			9.1	277.0	5.5							
10	01	01	1	07	-8.0	0.125	-9.000	-9.000	-999.	106.	21.0	0.19	0.61	
1.00	1.30	99.			9.1	277.0	5.5							
10	01	01	1	08	-3.3	0.086	-9.000	-9.000	-999.	61.	16.8	0.19	0.61	
0.54	0.90	319.			9.1	278.8	5.5							
10	01	01	1	09	20.1	0.128	0.307	0.010	49.	110.	-9.0	0.19	0.61	
0.33	0.90	239.			9.1	284.2	5.5							
10	01	01	1	10	56.7	0.087	0.560	0.010	107.	62.	-1.0	0.19	0.61	
0.26	0.40	188.			9.1	289.2	5.5							
10	01	01	1	11	81.5	0.323	0.867	0.008	277.	441.	-35.9	0.19	0.61	
0.23	2.70	310.			9.1	290.9	5.5							
10	01	01	1	12	97.1	0.281	1.058	0.008	421.	357.	-19.7	0.19	0.61	
0.22	2.20	357.			9.1	293.1	5.5							
10	01	01	1	13	92.2	0.279	1.117	0.008	523.	354.	-20.4	0.19	0.61	
0.22	2.20	356.			9.1	293.8	5.5							
10	01	01	1	14	77.6	0.275	1.102	0.008	595.	347.	-23.2	0.19	0.61	
0.23	2.20	50.			9.1	294.2	5.5							
10	01	01	1	15	54.9	0.230	1.006	0.008	640.	266.	-19.2	0.19	0.61	
0.27	1.80	53.			9.1	293.8	5.5							
10	01	01	1	16	12.3	0.206	0.613	0.008	648.	225.	-61.5	0.19	0.61	
0.36	1.80	11.			9.1	292.5	5.5							
10	01	01	1	17	-3.6	0.087	-9.000	-9.000	-999.	71.	15.6	0.19	0.61	
0.64	0.90	351.			9.1	290.4	5.5							
10	01	01	1	18	-3.8	0.087	-9.000	-9.000	-999.	62.	15.2	0.19	0.61	

1.00	0.90	186.		9.1	287.5	5.5							
10	01	01	1	19	-3.8	0.087	-9.000	-9.000	-999.	62.	15.2	0.19	0.61
1.00	0.90	275.		9.1	285.9	5.5							
10	01	01	1	20	-1.2	0.064	-9.000	-9.000	-999.	39.	18.1	0.19	0.61
1.00	0.40	181.		9.1	285.4	5.5							
10	01	01	1	21	-7.8	0.125	-9.000	-9.000	-999.	106.	21.3	0.19	0.61
1.00	1.30	318.		9.1	284.9	5.5							
10	01	01	1	22	-3.8	0.088	-9.000	-9.000	-999.	62.	15.1	0.19	0.61
1.00	0.90	196.		9.1	283.1	5.5							
10	01	01	1	23	-3.8	0.088	-9.000	-9.000	-999.	62.	15.1	0.19	0.61
1.00	0.90	330.		9.1	281.4	5.5							
10	01	01	1	24	-7.9	0.125	-9.000	-9.000	-999.	106.	21.2	0.19	0.61
1.00	1.30	332.		9.1	280.9	5.5							

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
10	01	01	01	5.5	0	-999.	-99.00	282.6	99.0	-99.00	-99.00
10	01	01	01	9.1	1	335.	1.30	-999.0	99.0	-99.00	-99.00

```

^ *** AERMOD - VERSION 19191 *** *** C:\Lakes\AERMOD View\12844 HRA\12844
HRA.isc *** 03/23/20
*** AERMET - VERSION 16216 *** ***
*** 17:53:27

```

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE ANNUAL AVERAGE CONCENTRATION				VALUES AVERAGED OVER		5
YEARS FOR SOURCE GROUP: ALL				***		
INCLUDING SOURCE(S):				L0000358	, L0000359	
, L0000360	, L0000361	, L0000362	,			
	L0000363	, L0000364	, L0000365	, L0000366	, L0000367	
, L0000368	, L0000369	, L0000370	,			
	L0000371	, L0000372	, L0000373	, L0000374	, L0000375	
, L0000376	, L0000377	, L0000378	,			
	L0000379	, L0000380	, L0000381	, L0000382	, L0000383	
, L0000384	, L0000385	, . . .	,			

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)
Y-COORD (M)	CONC		

12844 HRA

```

- - - - -
- - - - -
      477132.16      3744016.79      0.00093      477051.27
3743367.29      0.00693
      476801.46      3743341.12      0.00127      476592.10
3743445.80      0.00071
      476544.52      3743995.38      0.00084      477070.30
3744221.39      0.00064

```

▲ *** AERMOD - VERSION 19191 *** *** C:\Lakes\AERMOD View\12844 HRA\12844
HRA.isc *** 03/23/20

*** AERMET - VERSION 16216 *** ***

17:53:27

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*** MODELOPTs: RegDFAULT 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 AVERAGE CONC RECEPTOR (XR, YR,
ZELEV, ZHILL, ZFLAG) OF TYPE GRID-ID

```

- - - - -
- - - - -
ALL      1ST HIGHEST VALUE IS      0.00693 AT ( 477051.27, 3743367.29,
459.62,  459.62,  0.00) DC
      2ND HIGHEST VALUE IS      0.00127 AT ( 476801.46, 3743341.12,
462.97,  462.97,  0.00) DC
      3RD HIGHEST VALUE IS      0.00093 AT ( 477132.16, 3744016.79,
456.00,  456.00,  0.00) DC
      4TH HIGHEST VALUE IS      0.00084 AT ( 476544.52, 3743995.38,
463.00,  463.00,  0.00) DC
      5TH HIGHEST VALUE IS      0.00071 AT ( 476592.10, 3743445.80,
465.01,  465.01,  0.00) DC
      6TH HIGHEST VALUE IS      0.00064 AT ( 477070.30, 3744221.39,
456.00,  456.00,  0.00) DC
      7TH HIGHEST VALUE IS      0.00000 AT (      0.00,      0.00,
0.00,    0.00,    0.00)
      8TH HIGHEST VALUE IS      0.00000 AT (      0.00,      0.00,
0.00,    0.00,    0.00)
      9TH HIGHEST VALUE IS      0.00000 AT (      0.00,      0.00,
0.00,    0.00,    0.00)

```

12844 HRA
10TH HIGHEST VALUE IS 0.00000 AT (0.00, 0.00,
0.00, 0.00, 0.00)

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

▲ *** AERMOD - VERSION 19191 *** *** C:\Lakes\AERMOD View\12844 HRA\12844
HRA.isc *** 03/23/20

*** AERMET - VERSION 16216 *** ***
*** 17:53:27

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*** MODELOPTs: RegDFAULT 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 4 Warning Message(s)
A Total of 2028 Informational Message(s)

A Total of 43824 Hours Were Processed

A Total of 978 Calm Hours Identified

A Total of 1050 Missing Hours Identified (2.40 Percent)

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

***** WARNING MESSAGES *****
ME W186 899 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
0.50
ME W187 899 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
MX W450 17521 CHKDAT: Record Out of Sequence in Meteorological File at:
14010101
MX W450 17521 CHKDAT: Record Out of Sequence in Meteorological File at:
2 year gap

*** AERMOD Finishes Successfully ***

12844 HRA

**AVERAGE EMISSION FACTOR
RIVERSIDE 2021**

Speed	LHD1	MHD	HHD
0	0.365913	0.214622	0.02137
5	0.038136	0.180388	0.08735
25	0.013467	0.068984	0.03792

Speed	Weighted Average Emissions
0	0.13993
5	0.09533
25	0.03875

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	92			0.1399	3.22	3.725E-05
On-Site Travel	184	52.14	0.0953		4.97	5.752E-05
Off-Site Travel 75% on Harvill Av.	138	96.92	0.0388		3.76	4.347E-05
Off-Site Travel 25% on Harvill Av.	46	8.85	0.0388		0.34	3.968E-06
Off-Site Travel 50% on Rider St.	92	8.19	0.0388		0.32	3.674E-06
Off-Site Travel 25% on Harvill Av.	46	23.81	0.0388		0.92	1.068E-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.

calendar_	season_m	sub_area	vehicle_class	fuel	temperatu	relative_h	process	speed_tim
2021	Annual	Riverside (	HHDT	Dsl	60	70	RUNEX	5
2021	Annual	Riverside (	HHDT	Dsl	60	70	RUNEX	25
2021	Annual	Riverside (	LHDT1	Dsl	60	70	RUNEX	5
2021	Annual	Riverside (	LHDT1	Dsl	60	70	RUNEX	25
2021	Annual	Riverside (	MHDT	Dsl	60	70	RUNEX	5
2021	Annual	Riverside (	MHDT	Dsl	60	70	RUNEX	25
2021	Annual	Riverside (	HHDT	Dsl			IDLEX	
2021	Annual	Riverside (	LHDT1	Dsl			IDLEX	
2021	Annual	Riverside (	MHDT	Dsl			IDLEX	

pollutant	emission_rate
PM10	0.090872
PM10	0.039446
PM10	0.082192
PM10	0.029025
PM10	0.204727
PM10	0.078292
PM10	0.022237
PM10	0.788627
PM10	0.243579

EMFAC2017 (v1.0.2) Emissions Inventory

Region Type: County

Region: RIVERSIDE

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
RIVERSID	2021	HHDT	Aggregate	Aggregate	GAS	8.256088
RIVERSID	2021	HHDT	Aggregate	Aggregate	DSL	27250.49
RIVERSID	2021	HHDT	Aggregate	Aggregate	NG	278.9619
RIVERSID	2021	LHDT1	Aggregate	Aggregate	GAS	20885.97
RIVERSID	2021	LHDT1	Aggregate	Aggregate	DSL	19999.78
RIVERSID	2021	MHDT	Aggregate	Aggregate	GAS	1963.204
RIVERSID	2021	MHDT	Aggregate	Aggregate	DSL	15756.36

HHDT% GAS/NG	0.01043
HHDT% DSL	0.98957
LHDT1% GAS	0.510837
LHDT1% DSL	0.489163
MHDT% GAS	0.110793
MHDT% DSL	0.889207

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)	(mg/m ³)			URF (ug/m ³) ⁻¹	CPF (mg/kg/day) ⁻¹	DOSE (mg/kg-day)	RISK	REL (ug/m ³)	RfD (mg/kg/day)	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
	(b)	(c)			(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)
	0.00127	1.27E-06	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	4.4E-07	1.4E-08	5.0E+00	1.4E-03	2.5E-04							
TOTAL								1.4E-08			2.5E-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)	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**									
	(ug/m ³)	(mg/m ³)			URF (ug/m ³) ⁻¹	CPF (mg/kg/day) ⁻¹	DOSE (mg/kg-day)	RISK	REL (ug/m ³)	RfD (mg/kg/day)	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
	(b)	(c)			(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)
	0.00127	1.27E-06	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	1.3E-06	3.4E-07	5.0E+00	1.4E-03	2.5E-04							
TOTAL								3.4E-07			2.5E-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)	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)	(mg/m ³)			URF (ug/m ³) ⁻¹	CPF (mg/kg/day) ⁻¹	DOSE (mg/kg-day)	RISK	REL (ug/m ³)	RfD (mg/kg/day)	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
	(b)	(c)			(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)
	0.00127	1.27E-06	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	7.0E-07	3.2E-07	5.0E+00	1.4E-03	2.5E-04							
TOTAL								3.2E-07			2.5E-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))	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 (a)	Mass GLC		Weight Fraction (d)	Contaminant (e)	Carcinogenic Risk				Noncarcinogenic Hazards/ Toxicological Endpoints**									
	(ug/m ³)	(mg/m ³)			URF (ug/m ³) ⁻¹	CPF (mg/kg/day) ⁻¹	DOSE (mg/kg-day)	RISK	REL (ug/m ³)	RfD (mg/kg/day)	RESP (l)	CNS/PNS (m)	CV/BL (n)	IMMUN (o)	KIDN (p)	GI/LV (q)	REPRO (r)	EYES (s)
	(b)	(c)			(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)
	0.00127	1.27E-06	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	3.2E-07	4.9E-08	5.0E+00	1.4E-03	2.5E-04							
TOTAL					4.9E-08				2.5E-04 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00 0.0E+00									

0.05

** 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) 0.72

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**									
		(ug/m ³)	(mg/m ³)			URF	CPF	DOSE	RISK	REL	RfD	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)
1	Diesel Particulates	6.93E-03	6.93E-06	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	1.1E-06	4.1E-07	5.0E+00	1.4E-03	1.4E-03							
TOTAL									4.2E-07 0.42			1.4E-03	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

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		

Table 6
Quantification of Carcinogenic Risks and Noncarcinogenic Risks
9-Year School Child Exposure Scenario

	Source	Mass GLC		Weight Fraction	Contaminant	Carcinogenic Risk				Noncarcinogenic Hazards/ Toxicological Endpoints**									
		(ug/m ³)	(mg/m ³)			URF	CPF	DOSE	RISK	REL	RfD	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
	(a)	(b)	(c)	(d)	(e)	(ug/m ³) ¹	(mg/kg/day) ¹	(mg/kg-day)	(i)	(ug/m ³)	(mg/kg/day)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)
1	Diesel Particulates	9.30E-05	9.30E-08	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	2.6E-08	1.1E-08	5.0E+00	1.4E-03	1.9E-05							
TOTAL									1.1E-08 0.011			1.9E-05	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

Note:

Exposure factors used to calculate contaminant intake

RESP	Respiratory System	exposure frequency (days/year)	180
CNS/PNS	Central/Peripheral Nervous System	exposure duration (years)	9
CV/BL	Cardiovascular/Blood System	inhalation rate (L/kg-day))	572
IMMUN	Immune System	inhalation absorption factor	1
KIDN	Kidney	averaging time (years)	70
GI/LV	Gastrointestinal System/Liver	age sensitivity factor (ages 4-13)	3
REPRO	Reproductive System (e.g. teratogenic and developmental effects)		
EYES	Eye irritation and/or other effects		