MONCHAMP ELDRUM LLP

September 8, 2021

Mayor Acquanetta Warren and Honorable Members of the Fontana City Council
8353 Sierra Avenue
Fontana, CA 92335
Planningdivision@fontana.org

Paul Gonzales, Senior Planner
Community Development Dept.
City of Fontana
8353 Sierra Avenue
Fontana, CA 92335
pgonzales@fontana.org

Re: 15894 Valley Boulevard Project (Master Case No. 21-034; Design Review Project No. 21-003)

Dear Mayor Warren and Honorable Members of the City Council,

We are writing this letter in response to the appeal letter filed by Janet Meza, on behalf of Janet Meza & Family, on July 20, 2021 (Appeal), pertaining to the Planning Commission's July 6, 2021 approval of Master Case No. 21-034 for the construction of an industrial building (Project) at 15894 Valley Boulevard in the City of Fontana (City). For the reasons set forth below, we support the Planning Commission's findings and staff's analysis that the project is exempt from California Environmental Quality Act (CEQA) review under Class 32 as an in-fill development pursuant to Guidelines Section 15332. Therefore, no further environmental analysis is required. We urge the City Council to deny the appeal and uphold the approval of the Project.

As the Appeal notes, "environmental decisions must be 'supported by reasoned explanation based on substantial evidence.'" The Planning Commission did exactly that – determined that the use of the Class 32 categorical exemption for in-fill development was appropriate based on substantial evidence in the Categorical Exemption Report prepared for the Project, dated April 2021, attached hereto as Exhibit A, and its appendices (Technical Studies), including the CEQA Technical Memorandum for the Proposed Project Located at 15894 Valley Boulevard in the City Fontana, San Bernardino County, California, Trip Generation Assessment, Noise Impact Analysis, Vehicle Miles Traveled (VMT) Screening Analysis, and the Air Quality, Greenhouse Gas, and Health Risk Assessment (Air Quality Report). Contrary to Appellant's characterization of a

Categorical Exemption as a "CEQA due process workaround," Categorical Exemptions apply as a matter of law to certain classes of projects that have been determined to not have a significant effect on the environment by California's Natural Resources Secretary. As outlined in Guidelines Section 15332, the Class 32 Categorical Exemption for in-fill development exempts from CEQA review projects that meet the following requirements:

(a) The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations.
(b) The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses.
(c) The project site has no value, as habitat for endangered, rare or threatened species.
(d) Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.
(e) The site can be adequately served by all required utilities and public services.

Each of these elements is analyzed separately in the Categorical Exemption Report and the Project's effects related to traffic, noise, air quality, and water quality are analyzed in the Technical Reports, as required by element (d). Based on the analysis conducted therein and on the conclusions of the Technical Reports, the Categorical Exemption Report determines that the Project meets all criteria for a Class 32 Categorical Exemption. As such, the Planning Commission's finding that the Project is categorically exempt from CEQA review pursuant to the Class 32 Categorical Exemption is supported by substantial evidence.

Appellant asserts that the required GHG emissions reduction of 28.5% pursuant to MM-GHG-1 of the City's General Plan EIR is "at odds" with the California Supreme Court's decision in *Center for Biological Diversity v. Department of Fish and Wildlife* (2015) 62 Cal.4th 204. The validity of MM-GHG-1 is not at issue here because the time to challenge the City's General Plan EIR has long since passed and regardless of the General Plan EIR the Project is categorically exempt from CEQA review.

As explained in the Air Quality Report, the Project used the thresholds suggested by the South Coast Air Quality Management District (SCAQMD). While SCAQMD has not adopted a GHG significance threshold that applies to most land use development projects, is has adopted a threshold for GHG emissions of 10,000 $MTCO_2e$ per year to capture 90 percent of total emissions from all new or modified industrial (stationary source) projects.[1] A 3,000 MT CO_2e per year value was proposed as a screening threshold for land use projects which contribute to GHG emissions through mobile sources. While many agencies apply the 10,000 $MTCO_2e$ standard to warehouse projects based on guidance from SCAQMD indicating that industrial

[1] Available at: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/ghg-significance-thresholds.

standard should apply to warehouse projects, the Project used the more conservative 3,000 $MTCO_2e$ threshold.[2] Even under this more conservative threshold, the Air Quality Report determined that Project-related GHG emissions were below this threshold and "would not have the potential to have a significant direct or indirect impact on GHG and climate change."[3] Nonetheless, the Project will voluntarily implement several of the recommended design features outlined in MM-GHG-1, including:

- Install efficient lighting and lighting control systems;
- Install energy efficient heating and cooling systems, appliances and equipment, and control systems;
- Implement design features to increase the efficiency of the building envelope;
- Install LED lighting for outdoor lighting;
- Limit the hours of operation of outdoor lighting;
- Roof structure is designed to be "solar ready";
- Create water efficient landscaping;
- Install water efficient landscaping systems and devices; and
- Install water efficient fixtures and appliances within the building.

Appellant contends that Project approval should be delayed "until a full health and safety accounting" of the Project can be made public, but as indicated in the Air Quality Report, the Project is below the screening threshold trigging the requirement for a Health Risk Assessment. As noted in the Air Quality Report, California Air Pollution Control Officers Association (CAPCOA) guidelines provide that a Health Risk Assessment is only recommended for land uses that generate more than 100 truck trips per day.[4] This threshold is also used in MM-AQ-24 of the General Plan EIR. The Project is expected to generate 46 two-way truck trips (23 trucks per day), which is well below the threshold set by both CAPCOA and MM-AQ-24.[5] Therefore the siting limitations of MM-AQ-24 do not apply and the project is not required to conduct a Health Risk Assessment and, the Air Quality Report concludes, "[a]s such … will not cause a significant human health or cancer risk to adjacent residences, schools, or businesses."[6] However, in light of this comment letter and community concern for health risks expressed at the Planning Commission hearing, while not required by CEQA or any other regulation, for informational purposes the 9th Street Partners Valley Boulevard Construction and Mobile Source Health Risk Assessment was prepared and is attached hereto as Exhibit B. The report assessed the health risks for the Project as well as related future projects within the Project's zone of influence and

[2] Air Quality Report, p. 4-5.
[3] Air Quality Report, p. 5.
[4] Air Quality Report, p. 5.
[5] *Id.*
[6] *Id.*

determined that the project-level and cumulative-level health risks are below the 10 in one million incremental cancer risk thresholds established by the SCAQMD. As such, there is no evidence that the Project will cause a significant air quality impact.

We also note that, while not required to do so, the Project Applicant hereby voluntarily commits to comply with the 18 Air Quality mitigation measures of the General Plan EIR which are applicable to this type of Project (MM-AQ-1 to MM-AQ-7, MM-AQ-9 to MM-AQ-11, MM-AQ-13 to MM-AQ-19, MM-AQ-22 to MM-AQ-23).

As outlined herein, the Planning Commission did not ignore science or the law and correctly approved the Project and found it categorically exempt from CEQA review pursuant to the Class 32 exemption for in-fill developments based on substantial evidence.

Sincerely,

Amanda Monchamp

Exhibit A

Categorical Exemption Report prepared for the Project, April 2021

Exhibit B

9th Street Partners Valley Boulevard Construction and Mobile Source Health Risk Assessment

9th Street Partners Valley Boulevard

CONSTRUCTION AND MOBILE SOURCE HEALTH RISK ASSESSMENT

CITY OF FONTANA

PREPARED BY:

Haseeb Qureshi
hqureshi@urbanxroads.com

SEPTEMBER 8, 2021

TABLE OF CONTENTS

APPENDICES

LIST OF EXHIBITS

LIST OF TABLES

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
PCE	Passenger Car Equivalent
PM10	Particulate Matter 10 microns in diameter or less
Project	9th Street Partners Valley Boulevard
REL	Reference Exposure Level
RM	Recommended Measures
SCAQMD	South Coast Air Quality Management District
SRA	Source Receptor Area
TAC	Toxic Air Contaminant
TIA	Traffic Impact Analysis
URF	Unit Risk Factor
UTM	Universal Transverse Mercator
VMT	Vehicle Miles Traveled

This page intentionally left blank

EXECUTIVE SUMMARY

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

The results of the health risk assessment from Project-generated DPM emissions are provided in Table ES-1, ES-2, and ES-3 below for the Project.

CONSTRUCTION IMPACTS

The land use with the greatest potential exposure to Project construction DPM source emissions is Location R2 which is located approximately 15 feet north of the Project site at an existing residence. At the maximally exposed individual receptor (MEIR), the maximum incremental cancer risk attributable to Project construction DPM source emissions is estimated at 6.89 in one million, which is less than the threshold of 10 in one million. At this same location, non-cancer risks were estimated to be ≤ 0.01, which would not exceed the applicable threshold of 1.0. As such, the Project will not cause a significant human health or cancer risk to adjacent land uses as a result of Project construction activity. All other receptors during construction activity would experience less risk than what is identified for this location. The nearest modeled receptors are illustrated on Exhibit 2-E.

OPERATIONAL IMPACTS

Residential Exposure Scenario:

The residential land use with the greatest potential exposure to Project operational DPM source emissions is Location R5 which is located approximately 98 feet east of the Project site across Catawba Avenue at an existing residence. This location experiences the greatest potential exposure to Project DPM source emissions due to meteorological conditions and the anticipated truck travel patterns anticipated for the Project, even though there may be other residential receptor locations located in a closer proximity to the Project. At the MEIR, the maximum incremental cancer risk attributable to Project DPM source emissions is estimated at 0.46 in one million, which is less than the threshold of 10 in one million. At this same location, non-cancer risks were estimated to be ≤ 0.01, which would not exceed the applicable threshold of 1.0. As such, the Project will not cause a significant human health or cancer risk to residences in the Project vicinity. All other modeled residential locations in the vicinity of the Project would be exposed to less emissions and therefore less risk than the MEIR identified herein. The nearest modeled receptors are illustrated on Exhibit 2-E.

Worker Exposure Scenario:

The worker receptor land use with the greatest potential exposure to Project operational DPM source emissions is Location R8 which is located immediately adjacent to the west of the Project

site at a commercial land use. At the maximally exposed individual worker (MEIW), the maximum incremental cancer risk impact at this location is 0.14 in one million which is less than the threshold of 10 in one million. Maximum non-cancer risks at this same location were estimated to be ≤ 0.01, which would not exceed the applicable threshold of 1.0. As such, the Project will not cause a significant human health or cancer risk to adjacent workers. All other modeled worker locations in the vicinity of the Project would be exposed to less emissions and therefore less risk than the MEIW identified herein. The nearest modeled receptors are illustrated on Exhibit 2-E.

School Child Exposure Scenario:

The school site land use with the greatest potential exposure to Project operational DPM source emissions is at Location R6 which represents the playground area of the Poplar Elementary School located approximately 350 feet northwest 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 0.05 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 ≤ 0.01, 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-E.

CONSTRUCTION AND OPERATIONAL IMPACTS

The land use with the greatest potential exposure to Project construction and operational DPM source emissions is Location R2 which is located approximately 15 feet north of the Project site at an existing residence. At the maximally exposed individual receptor (MEIR), the maximum incremental cancer risk attributable to Project construction and operational DPM source emissions is estimated at 6.91 in one million, which is less than the threshold of 10 in one million. At this same location, non-cancer risks were estimated to be ≤ 0.01, which would not exceed the applicable threshold of 1.0. As such, the Project will not cause a significant human health or cancer risk to adjacent land uses as a result of Project construction and operational activity. All other receptors during construction activity would experience less risk than what is identified for this location. The nearest modeled receptors are illustrated on Exhibit 2-E.

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

Time Period	Location	Maximum Lifetime Cancer Risk (Risk per Million)	Significance Threshold (Risk per Million)	Exceeds Significance Threshold
2 Year Exposure	Maximum Exposed Sensitive Receptor	6.89	10	NO
Time Period	**Location**	**Maximum Hazard Index**	**Significance Threshold**	**Exceeds Significance Threshold**
Annual Average	Maximum Exposed Sensitive Receptor	≤0.01	1.0	NO

TABLE ES-2: SUMMARY OF OPERATIONAL CANCER AND NON-CANCER RISKS

Time Period	Location	Maximum Lifetime Cancer Risk (Risk per Million)	Significance Threshold (Risk per Million)	Exceeds Significance Threshold
30 Year Exposure	Maximum Exposed Sensitive Receptor	0.46	10	NO
25 Year Exposure	Maximum Exposed Worker Receptor	0.14	10	NO
9 Year Exposure	Maximum Exposed School Child Receptor	0.05	10	NO
Time Period	**Location**	**Maximum Hazard Index**	**Significance Threshold**	**Exceeds Significance Threshold**
Annual Average	Maximum Exposed Sensitive Receptor	≤0.01	1.0	NO
Annual Average	Maximum Exposed Worker Receptor	≤0.01	1.0	NO
Annual Average	Maximum Exposed School Child Receptor	≤0.01	1.0	NO

TABLE ES-3: SUMMARY OF CONSTRUCTION AND OPERTIONAL CANCER AND NON-CANCER RISKS

Time Period	Location	Maximum Lifetime Cancer Risk (Risk per Million)	Significance Threshold (Risk per Million)	Exceeds Significance Threshold
30 Year Exposure	Maximum Exposed Sensitive Receptor	6.91	10	NO
Time Period	**Location**	**Maximum Hazard Index**	**Significance Threshold**	**Exceeds Significance Threshold**
Annual Average	Maximum Exposed Sensitive Receptor	≤0.01	1.0	NO

1 INTRODUCTION

The purpose of this Health Risk Assessment (HRA) is to evaluate Project-related construction and operational related toxic air contaminants (TACs) to sensitive receptors (residential, schools) and adjacent workers as a result of diesel particulate matter (DPM) generated during construction and operational activity.

The 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 U.S. EPA, California Environmental Protection Agency and SCAQMD. Cancer risk is expressed in terms of expected incremental incidence per million population. The SCAQMD has established an incidence rate of ten (10) persons per million as the maximum acceptable incremental cancer risk due to DPM exposure. This threshold serves to determine whether or not a given project has a potentially significant development-specific and cumulative impact.

The 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. Within this analysis, non-carcinogenic exposures of less than 1.0 are considered less-than-significant.

1.1 SITE LOCATION

The proposed project is located at 15894 Valley Boulevard in the City of Fontana. The Project location is shown on Exhibit 1-A. The Project Site is generally located approximately 0.24 miles north of the I-10 Freeway, with some noise sensitive residential homes to the north and east of the Project site.

1.2 PROJECT DESCRIPTION

The Project is proposed to consist of the development of 92,433 square feet of Warehousing use as shown on Exhibit 1-B. To present the potential worst-case conditions, the Project is assumed to be operational 24 hours per day, seven days per week. It is expected that the Project business operations would primarily be conducted within the enclosed buildings, except for traffic movement, parking, as well as loading and unloading of trucks at designated loading bays. At the time this noise analysis was prepared, the future tenants of the proposed Project were unknown.

Per the *9th Street Partners Valley Boulevard Trip Generation Assessment* prepared by Urban Crossroads, Inc., the Project is expected to generate a total of approximately 164 vehicular trips per day (82 vehicle trips inbound and 82 vehicle trips outbound), which includes 46 truck trips per day (23 truck trips inbound and 23 truck trips outbound) (2).

EXHIBIT 1-A: LOCATION MAP

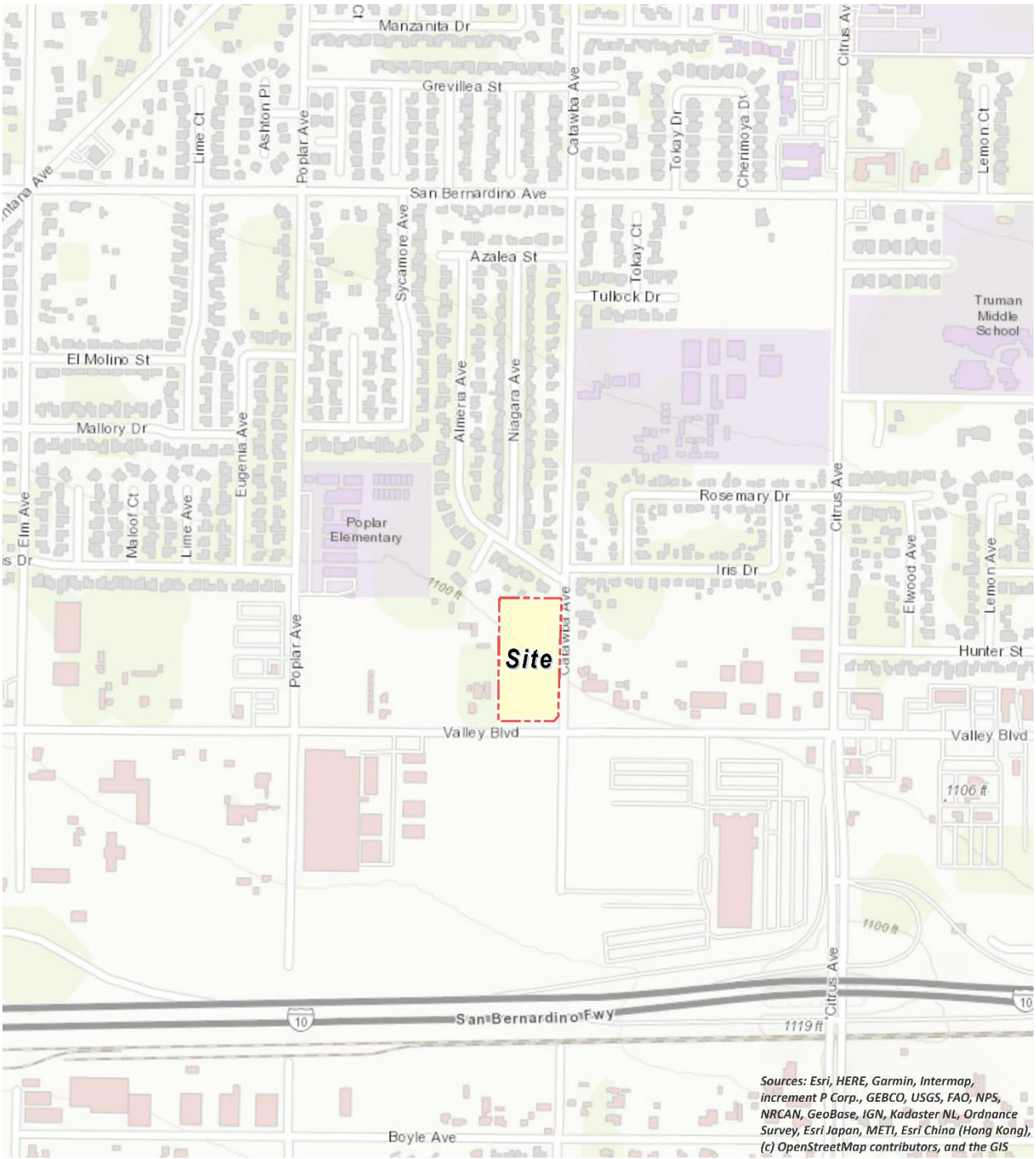
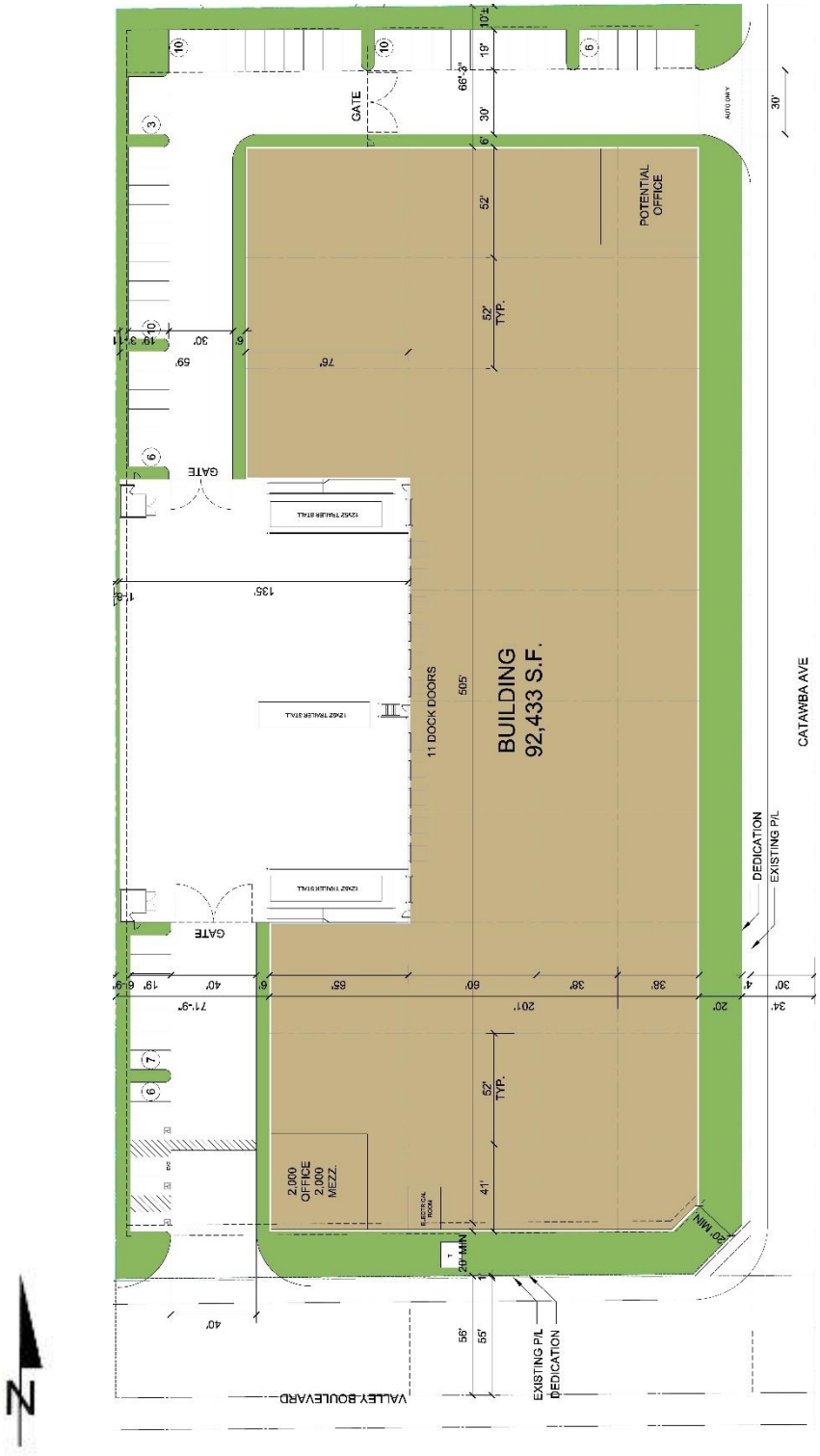


EXHIBIT 1-B: SITE PLAN



This page intentionally left blank

2 BACKGROUND

2.1 BACKGROUND ON RECOMMENDED METHODOLOGY

ARB estimates that the average Californian is exposed to 1.2-1.8 µg/m^3 of DPM annually, this exposure results in an average cancer risk of 360-540 in one million for the average Californian exposed to DPM (3).

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

- The ARB-adopted diesel exhaust Unit Risk Factor (URF) of 300 in one million per µg/m3 is based upon the upper 95 percentile of estimated risk for each of the epidemiological studies utilized to develop the URF. Using the 95th percentile URF represents a very conservative (health-protective) risk posed by DPM.
- The risk estimates assume sensitive receptors will be subject to DPM for 24 hours a day, 350 days a year.
- The emissions derived assume that every truck accessing the project site will idle for 15 minutes under the unmitigated scenario, this is an overestimation of actual idling times and thus conservative.[1] It should be noted that ARB's anti-idling requirements impose a 5-minute maximum idling time and therefore the analysis conservatively overestimates DPM emissions from idling by a factor of 3.

2.2 CONSTRUCTION HEALTH RISK ASSESSMENT

2.2.1 EMISSIONS CALCULATIONS

The emissions calculations for the construction HRA component are based on an assumed mix of construction equipment and hauling activity as presented in the *9th Street Partners Valley Boulevard Air Quality, Greenhouse Gas, and Health Risk Assessment* ("technical study") prepared by Urban Crossroads, Inc. (4)

Construction related DPM emissions are expected to occur primarily as a function of heavy-duty construction equipment that would be operating on-site.

As discussed in the technical study, the Project would result in approximately 279 total working-days for construction activity. The construction duration by phase is shown on Table 2-1. A detailed summary of construction equipment assumptions by phase is provided at Table 2-2. The CalEEMod emissions outputs are presented in Appendix 2.2.

[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.

TABLE 2-1: CONSTRUCTION DURATION

Phase Name	Days
Site Preparation	5
Grading	8
Building Construction	230
Paving	18
Architectural Coating	18

TABLE 2-2: CONSTRUCTION EQUIPMENT ASSUMPTIONS

Activity	Equipment	Amount	Hours Per Day
Site Preparation	Crawler Tractors	4	8
	Rubber Tired Dozers	3	8
Grading	Crawler Tractors	3	8
	Excavator	3	8
	Graders	2	8
	Rubber Tired Dozers	2	8
	Scrapers	3	8
Building Construction	Cranes	2	8
	Crawler Tractors	5	8
	Forklifts	5	8
	Generator Sets	2	8
	Welders	2	8
Paving	Pavers	2	8
	Paving Equipment	2	8
	Rollers	2	8
Architectural Coating	Air Compressors	1	8

The modeled emission sources for construction activity are illustrated on Exhibit 2-A.

EXHIBIT 2-A: MODELED CONSTRUCTION EMISSION SOURCES

2.3 OPERATIONAL HEALTH RISK ASSESSMENT

2.3.1 ON-SITE AND OFF-SITE TRUCK ACTIVITY

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

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

For this Project, annual average PM_{10} emission factors were generated by running EMFAC 2017 in EMFAC Mode for vehicles in the San Bernardino County jurisdiction. The EMFAC Mode generates emission factors in terms of grams of pollutant emitted per vehicle activity and can calculate a matrix of emission factors at specific values of temperature, relative humidity, and vehicle speed. The model was run for speeds traveled in the vicinity of the Project. The vehicle travel speeds for each segment modeled are summarized below.

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

Calculated emission factors are shown at Table 2-3. As a conservative measure, a 2022 EMFAC 2017 run was conducted and a static 2022 emissions factor data set was used for the entire duration of analysis herein (e.g., 30 years). Use of 2022 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 incorporated after 2022. Additionally, based on EMFAC2017, Light-Heavy-Duty Trucks comprise of 45.12% diesel, Medium-Heavy-Duty Trucks comprise of 91.03% diesel, and Heavy-Heavy-Duty Trucks comprise of 92.75% diesel trucks and have been accounted for accordingly in the emissions factor generation.

The vehicle DPM exhaust emissions were calculated for running exhaust emissions. The running exhaust emissions were calculated by applying the running exhaust PM10 emission factor (g/VMT) from EMFAC over the total distance traveled. The following equation was used to estimate off-site emissions for each of the different vehicle classes comprising the mobile sources (6):

$Emissions_{speedA}$ (g/s) = $EF_{RunExhaust}$ (g/VMT) * Distance (VMT/trip) * Number of Trips (trips/day) / seconds per day

Where:

$Emissions_{speedA}$ (g/s): Vehicle emissions at a given speed A;

$EF_{RunExhaust}$ (g/VMT): EMFAC running exhaust PM_{10} 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 PM_{10} 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 PM_{10} emission factor (g/idle-hr) from EMFAC and the total truck trip over the total idle time (15 minutes). The following equation was used to estimate the on-site vehicle idling emissions for each of the different vehicle classes (6):

$Emissions_{idle}$ (g/s) = EF_{idle} (g/hr) * Number of Trips (trips/day) * Idling Time (min/trip) *

60 minutes per hour / seconds per day

Where:

$Emissions_{idle}$ (g/s): Vehicle emissions during idling;

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

TABLE 2-3: 2022 WEIGHTED AVERAGE DPM EMISSIONS FACTORS

Speed	Weighted Average
0 (idling)	0.09641 (g/idle-hr)
5	0.04250 (g/s)
25	0.01853 (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 2.2. 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 2-4. The modeled emission sources are illustrated on Exhibit 2-B. The modeled truck travel routes included in the HRA are based on the ancticipated truck trip distribution for the Project.

EXHIBIT 2-B: MODELED OPERATIONAL EMISSION SOURCES

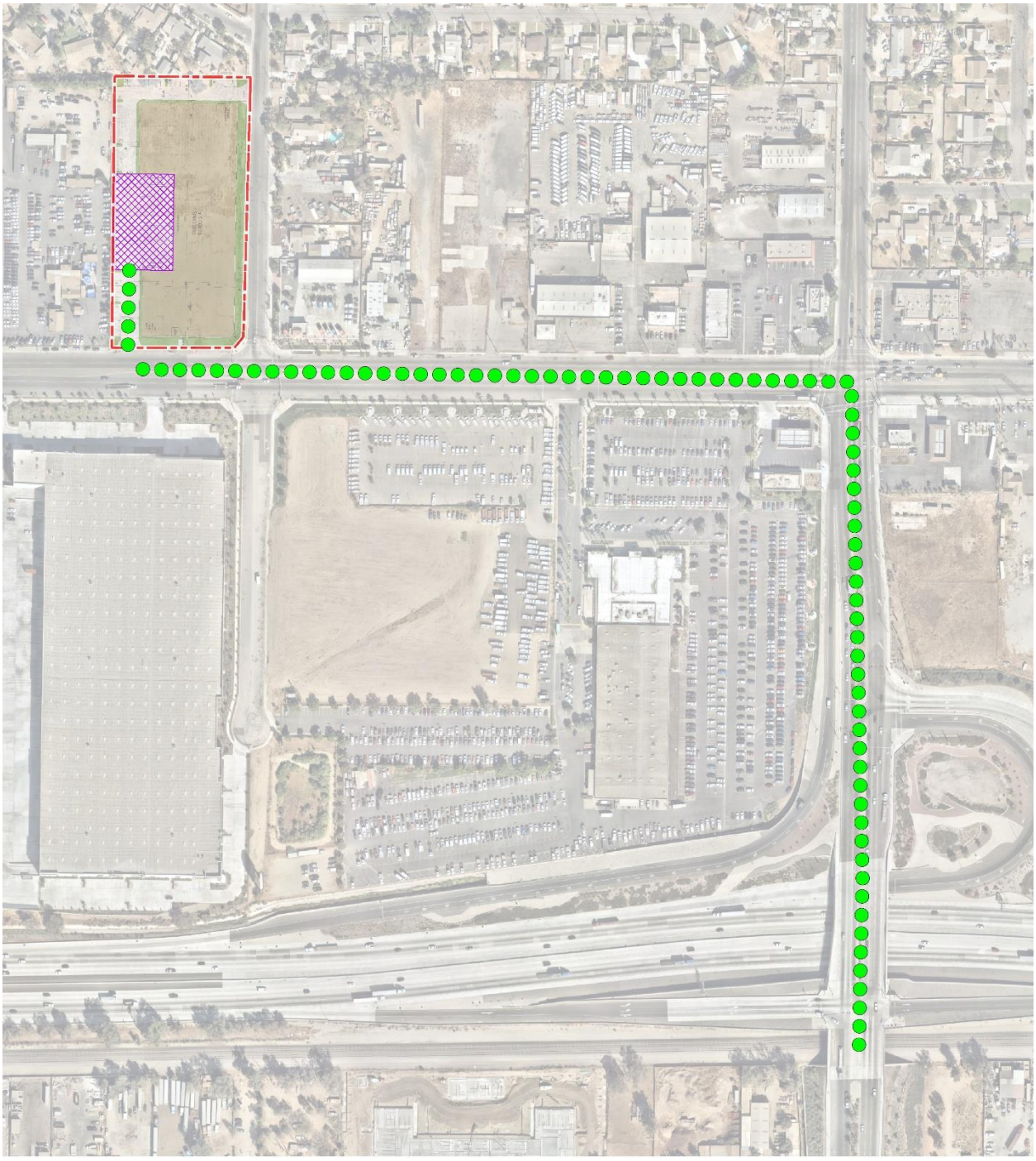


TABLE 2-4: DPM EMISSIONS FROM PROJECT TRUCKS (2022 ANALYSIS YEAR)

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	23			0.0964	0.55	6.416E-06
On-Site Travel	46	3.30	0.0425		0.14	1.625E-06
Off-Site Travel	46	27.13	0.0185		0.50	5.819E-06

[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.

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 regional vicinity for more than ½ mile. This modeling domain is substantially more conservative than using only a ¼ mile modeling domain, which is supported by substantial evidence since several studies have shown that the greatest potential risks occur within a ¼ mile of the primary source of emissions (7) (in the case of the Project this is the on-site idling and on-site travel).

On-site truck idling was estimated to occur as trucks enter and travel through the facility. Although the Project is required to comply with CARB's idling limit of 5 minutes, staff at SCAQMD recommends that the on-site idling emissions should be estimated for 15 minutes of truck idling (8), which would take into account on-site idling which occurs while the trucks are waiting to pull up to the truck bays, idling at the bays, idling at check-in and check-out, etc. As such, this analysis estimated truck idling at 15 minutes, consistent with SCAQMD's recommendation.

Per the *9th Street Partners Valley Boulevard Trip Generation Assessment* prepared by Urban Crossroads, Inc., the Project is expected to generate a total of approximately 164 vehicular trips per day (82 vehicle trips inbound and 82 vehicle trips outbound), which includes 46 truck trips per day (23 truck trips inbound and 23 truck trips outbound) (2).

2.4 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 model was used to calculate annual average particulate concentrations associated with site construction and operations.

To determine contaminant impacts during construction hours, the model's "hour-of-day" (HROD) scalar option was invoked to predict ground-level concentrations for emissions generated during both daytime and nighttime construction activities. For analytical purposes, the nighttime construction activities were determined to generate higher concentrations due to low night-time wind speeds and temperature. As such, the nighttime emissions were used to determine the maximum potential impact from construction activity. Equipment emissions were modeled at the Project site and Excess Fill Dirt Sites utilizing AERMOD's polygon area source algorithm.

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 required model parameters are presented in Table 2-5 (9). The model requires additional input parameters including emission data and local meteorology. Meteorological data from the SCAQMD's Fontana (FONT) monitoring station (SRA 34) was used to represent local weather conditions and prevailing winds (10).

TABLE 2-5: AERMOD MODEL PARAMETERS

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

Universal Transverse Mercator (UTM) coordinates for World Geodetic System (WGS) 84 were used to locate the project boundaries, each volume source location, and receptor locations in the project vicinity. The AERMOD dispersion model summary output files for the proposed facility are presented in Appendix 2.2.

Modeled sensitive receptors were placed at residential and non-residential locations as illustrated on Exhibit 2-C.

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

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

Discrete variants for daily breathing rates, exposure frequency, and exposure duration were obtained from relevant distribution profiles presented in the 2015 OEHHA Guidelines. Tables 2-6 through 2-9 summarize the Exposure Parameters for Construction Activity, Residents, Offsite Worker, and School scenarios based on 2015 OEHHA Guidelines. Appendix 2.3 includes the detailed risk calculation.

EXHIBIT 2-C: NEAREST MODELED RECEPTORS

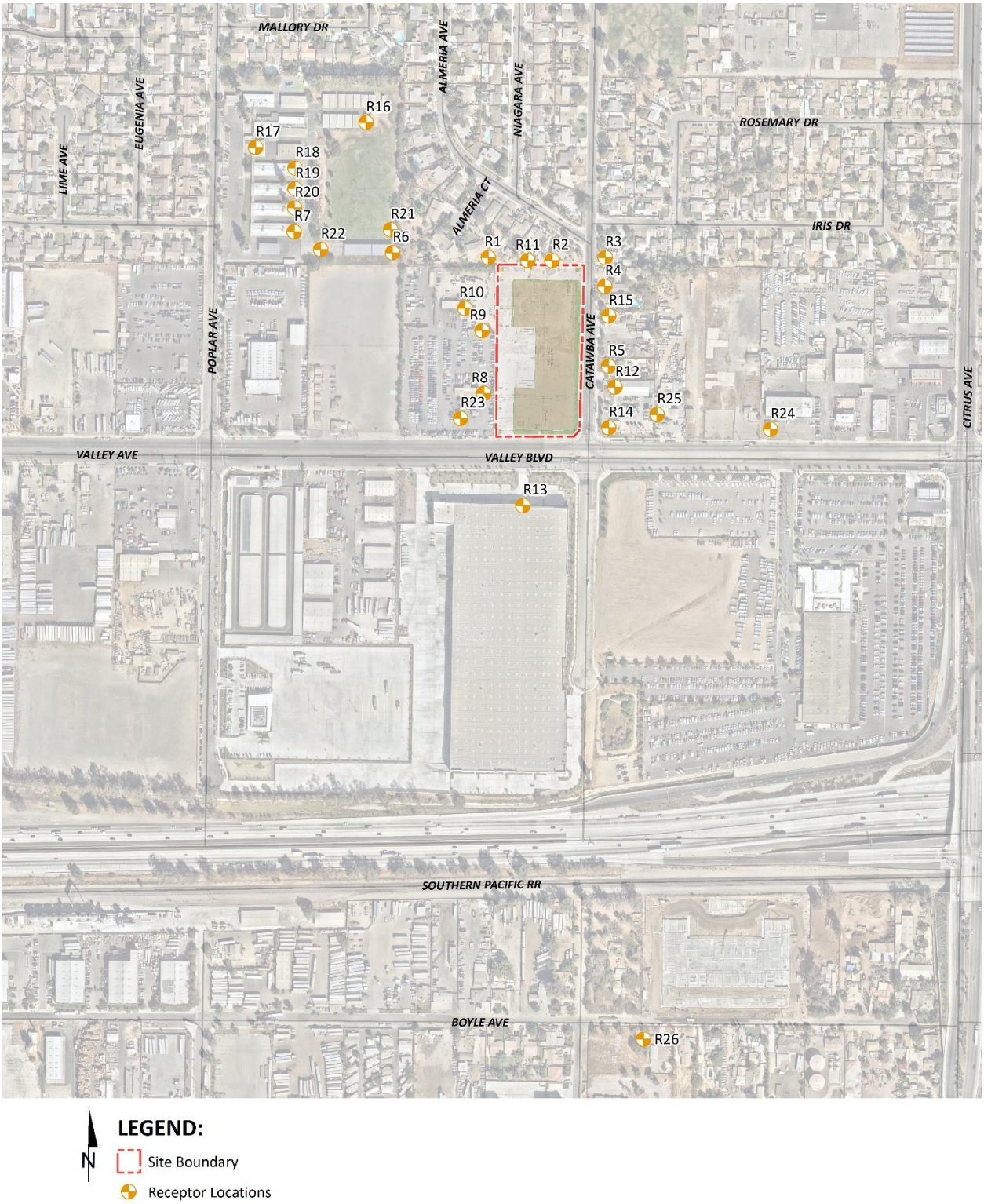


TABLE 2-6: EXPOSURE ASSUMPTIONS FOR INDIVIDUAL CANCER RISK (CONSTRUCTION ACTIVITY)

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 to 2	1,090	10	2	0.85	345	8

TABLE 2-7: 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	1,090	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 2-8: 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 2-9: 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)
4 to 13	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.

2.5 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 and killed by lightning (11).

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.

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

Where:

DOSEair = chronic daily intake (mg/kg/day)

Cair = concentration of contaminant in air (ug/m3)

[BR/BW] = daily breathing rate normalized to body weight (L/kg BW-day)

A = inhalation absorption factor

EF = exposure frequency (days/365 days)

BW = body weight (kg)

1×10^{-6} = conversion factors (ug to mg, L to m3)

$$RISKair = DOSEair \times CPF \times ED/AT$$

Where:

DOSEair = chronic daily intake (mg/kg/day)

CPF = cancer potency factor

ED = number of years within particular age group

AT = averaging time

2.6 NON-CARCINOGENIC EXPOSURES

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

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

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

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

Where:

HI_{DPM} = Hazard Index; an expression of the potential for non-cancer health effects.

C_{DPM} = Annual average DPM concentration ($\mu g/m^3$).

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.

2.7 POTENTIAL PROJECT-RELATED DPM SOURCE CANCER AND NON-CANCER RISKS[2]

CONSTRUCTION IMPACTS

The land use with the greatest potential exposure to Project construction DPM source emissions is Location R2 which is located approximately 15 feet north of the Project site at an existing residence. At the maximally exposed individual receptor (MEIR), the maximum incremental cancer risk attributable to Project construction DPM source emissions is estimated at 6.89 in one million, which is less than the threshold of 10 in one million. At this same location, non-cancer risks were estimated to be ≤ 0.01, which would not exceed the applicable threshold of 1.0. As such, the Project will not cause a significant human health or cancer risk to adjacent land uses as a result of Project construction activity. All other receptors during construction activity would experience less risk than what is identified for this location. The nearest modeled receptors are illustrated on Exhibit 2-C.

OPERATIONAL IMPACTS

Residential Exposure Scenario:

The residential land use with the greatest potential exposure to Project operational DPM source emissions is Location R5 which is located approximately 98 feet east of the Project site across Catawba Avenue at an existing residence. This location experiences the greatest potential exposure to Project DPM source emissions due to meteorological conditions and the anticipated truck travel patterns anticipated for the Project, even though there may be other residential receptor locations located in a closer proximity to the Project. At the MEIR, the maximum incremental cancer risk attributable to Project DPM source emissions is estimated at 0.46 in one million, which is less than the threshold of 10 in one million. At this same location, non-cancer risks were estimated to be ≤ 0.01, which would not exceed the applicable threshold of 1.0. As such, the Project will not cause a significant human health or cancer risk to residences in the Project vicinity. All other modeled residential locations in the vicinity of the Project would be exposed to less emissions and therefore less risk than the MEIR identified herein. 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 operational DPM source emissions is Location R8 which is located immediately adjacent to the west of the Project site at a commercial land use. At the maximally exposed individual worker (MEIW), the maximum incremental cancer risk impact at this location is 0.14 in one million which is less than the threshold of 10 in one million. Maximum non-cancer risks at this same location were estimated to be ≤ 0.01, which would not exceed the applicable threshold of 1.0. As such, the Project will not

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.

cause a significant human health or cancer risk to adjacent workers. All other modeled worker locations in the vicinity of the Project would be exposed to less emissions and therefore less risk than the MEIW identified herein. 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 operational DPM source emissions is at Location R6 which represents the playground area of the Poplar Elementary School located approximately 350 feet northwest 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 0.05 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 ≤ 0.01, 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.

CONSTRUCTION AND OPERATIONAL IMPACTS

The land use with the greatest potential exposure to Project construction and operational DPM source emissions is Location R2 which is located approximately 15 feet north of the Project site at an existing residence. At the maximally exposed individual receptor (MEIR), the maximum incremental cancer risk attributable to Project construction and operational DPM source emissions is estimated at 6.91 in one million, which is less than the threshold of 10 in one million. At this same location, non-cancer risks were estimated to be ≤ 0.01, which would not exceed the applicable threshold of 1.0. As such, the Project will not cause a significant human health or cancer risk to adjacent land uses as a result of Project construction and operational activity. All other receptors during construction activity would experience less risk than what is identified for this location. The nearest modeled receptors are illustrated on Exhibit 2-C.

3 CUMULATIVE TOXIC AIR CONTAMINANTS (TACS)

3.1 BACKGROUND

On July 23, 2021, the Attorney General of California (**AG**) filed a petition for writ of mandate challenging the City of Fontana's approval of a nearby Project. The AG alleges that the City's Mitigated Negative Declaration (**MND**) for the nearby Project is flawed because it lacks a sufficient analysis of cumulative air quality and health risk impacts. Primarily, the AG takes issue with the recommended applicable South Coast Air Quality Management District (SCAQMD) cumulative threshold as well as the fact that the vicinity of the Project is already developed with several existing warehouses and other warehouse uses are potentially proposed in the vicinity of the Project.

The purpose of this section effort is to provide additional background and analysis of the potential cumulative health risk impacts resulting from the existing and proposed warehouse uses in the vicinity of the proposed Project.

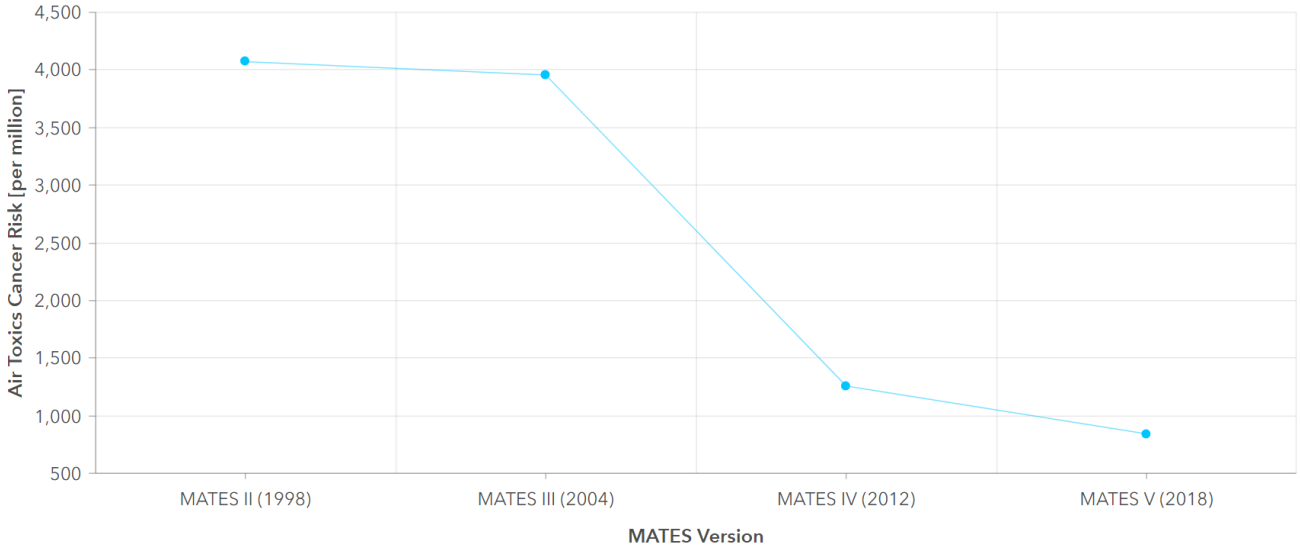
3.2 EXISTING CONDITIONS TOXIC AIR CONTAMINANT (TAC) EMISSIONS

There are no state or federal ambient air quality standards applicable to toxic air contaminant (**TAC**) emissions. Preparing a cumulative assessment for TACs is complicated by the fact that site-specific impacts can be far different from average impacts over a larger geographic area. Impacts from TAC emissions are highest closest to sources of TACs, but the sources are often spread over a large area. For example, emissions from diesel engines, the largest source of risk from TACs, are operated on roads, businesses, and construction sites throughout the air basin. Locations where large numbers of TAC sources are concentrated such as freeways, rail yards, and ports may pose a higher level of risk to sensitive receptors near these facilities. Examination of the risk from TACs at national, state, regional, and local levels is useful for providing context, but site-specific evaluation is ultimately necessary to determine existing conditions for development projects.

3.3 AMBIENT TAC IMPACTS PRESUMED TO BE CUMULATIVELY SIGNIFICANT

The SCAQMD has conducted an in-depth periodic analysis of the toxic air contaminants and their resulting health risks within the air basin. This study, the *Multiple Air Toxics Exposure Study in the South Coast Air Basin,* shows that cancer risk has decreased by approximately 80% between MATES II (1998) and MATES V (2018) at the nearest monitored location to the Project site (Inland Valley San Bernardino) (12), as shown on Exhibit 3-A.

EXHIBIT 3-A: AIR TOXICS CANCER RISK TRENDS INLAND VALLEY SAN BERNARDINO



MATES-V is the most comprehensive dataset documenting the ambient air toxic levels and health risks associated with the South Coast Air Basin emissions. Therefore, MATES-V study represents the baseline health risk for a cumulative analysis. The available scientific data from SCAQMD, who is the expert agency charged with governing air quality and preparing regional risk calculations, shows that although there has been tremendous growth basin-wide, risk levels have declined. The decline in emissions is likely due to existing regulatory requirements that have been implemented over the past 20 years.

The SCAQMD 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* (13). 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."

In many ways, California's Proposition 65, also called the Safe Drinking Water and Toxic Enforcement Act, which became law in 1986 can serve as a benchmark for cumulative risk

assessment (14). Under Proposition 65, the law defines "no significant cancer risk" as a level of exposure that would cause no more than 1 extra case of cancer in 100,000 people or in other words 10 extra cases of cancer in 1,000,000 people over a 70-year lifetime (the same threshold used in the MND and recommended by SCAQMD). It should be noted that diesel exhaust (**DE**) or diesel particulate matter (**DPM**) is listed by the Office of Environmental Health Hazard Assessment (**OEHHA**) as a known carcinogen with respect to Proposition 65.

3.4 JUSTIFICATION OF A GEOGRAPHIC SCOPE IN RISK ASSESSMENT

Proximity to sources of toxics is critical to determining the impact. In traffic-related studies, the additional non-cancer health risk attributable to proximity was seen within 1,000 feet and was strongest within 300 feet. California freeway studies show about a 70-percent drop-off in particulate pollution levels at 500 feet. Based on ARB and SCAQMD emissions and modeling analyses, an 80-percent drop-off in pollutant concentrations is expected at approximately 1,000 feet from a distribution center (7).

The 1,000-foot evaluation distance is supported by research-based findings concerning TAC emission dispersion rates from roadways and large sources showing that emissions diminish substantially between 500 and 1,000 feet from emission sources.

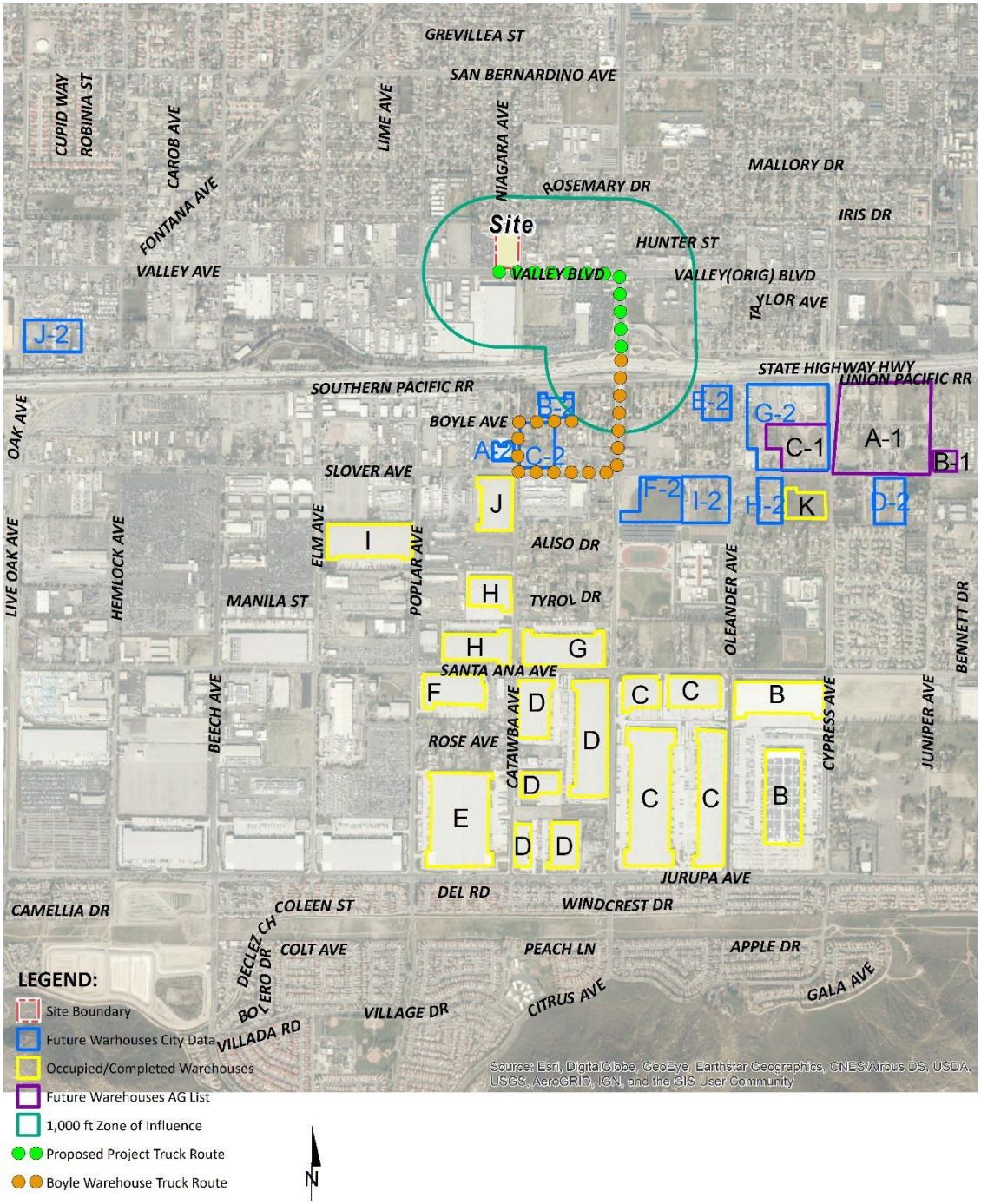
Lastly, the Waters Bill (AB 3205) (H&SC Section, 42301.6 through 42301.9) (15) addresses sources of hazardous air pollutants near schools and although not directly applicable to this project, this bill further evidences the propriety of considering hazardous emissions sources within a defined 1,000-foot radius. That is, pursuant to the Waters Bill, prior to approving an application for a permit to construct or modify a source which emits hazardous air emissions (i.e. DPM), which source is located within 1,000 feet from the outer boundary of a school site, the air pollution control officer shall prepare a public notice in which the proposed project or modification for which the application for a permit is made is fully described.

For assessing the cumulative impacts of a new source of TAC emissions associated with a project in combination with existing sources and probable future sources, a project radius is necessary. Assessment of impacts from existing sources within 1,000 feet (zone of influence) of the new source in combination with risks and hazards from the new source is recommended. Then, once the location of the maximally impacted receptor is identified for the project, cumulative impacts from other sources within the radius of the project (i.e., not the receptor) are assessed at that location. Assessments should sum individual hazards or risks to find the cumulative impact at the location of the maximally impacted receptor from the new source.

3.5 RELATED PROJECTS CONTRIBUTION TO CUMULATIVE TAC IMPACTS

New or proposed potential TAC-generating projects (related projects) in the regional vicinity could contribute to cumulative TAC impacts. The AG, in their writ of mandate, identified eleven existing warehouses that have been built as illustrated on Exhibit 3-B (see letters A through K), The AG identified three additional warehouses that have recently been approved in the regional vicinity (see letters A-1 through C-1). Further, in an effort to ensure that all related projects are included in this assessment, the City of Fontana was contacted to determine if there are any

EXHIBIT 3-B: RELATED PROJECTS WITHIN A 1,000 FT ZONE OF INFLUENCE



additional projects that are proposed in the area. The projects listed were identified based on their propensity to generate TACs that would contribute to, or interact with, TACs generated by the Project. Exhibit 3-B identifies the zone of influence relative to the proposed project. It should be noted that, none of the existing or proposed warehouses identified by the AG fall within the zone of influence. There is one related project that has been approved by the City within the proposed project's zone of influence.

The primary TAC-source emission associated with the cumulative projects would be DPM associated with any truck trips accessing the cumulative projects and traveling on roadways in the zone of influence. Because the potential risk to an individual receptor is primarily a function of the distance of that receptor to a particular source, it is conservative to sum the risk values that would be generated based on the proposed projects and project Boyle Warehouse Project (identified as B-2 on Exhibit 3-B) that is within the proposed project's zone of influence. It is conservative to assume that the maximum impact from each related project overlaps and would occur at the same location in the Project vicinity.

SCAQMD does not require and does not have an established method for cumulative analysis, however, for informational purposes a cumulative analysis of related projects within the zone of influence was conducted by assessing the related projects within a 1,000-foot zone of influence. The information obtained regarding the Boyle Warehouse Project (B-2) was obtained from the report *Air Toxics Health Risk Assessment for the Boyle Warehouse Project* prepared by UltraSystems on November 14, 2019, as part of the CEQA documentation for the Boyle Warehouse project (16) (see Appendix 3.1 of this report for more information). It is conservatively assumed that the proposed Project and Boyle Warehouse project would have overlapping truck routes at the on/off ramps at I-10 and Citrus. It was determined that the most impacted sensitive receptor would be existing residences located on Boyle Street to the east of Citrus Avenue. A cumulative analysis was conducted adding the maximum risk estimates identified by the Boyle Warehouse Project and the proposed Project's maximum risk estimates. The nearest modeled receptors are illustrated on Exhibit 2-C (previously presented).

The land use with the greatest potential exposure to Project and related project cumulative DPM source emissions is Location R26 which is located approximately 2,119 feet south of the proposed Project site. At the MEIR, the maximum incremental cancer risk attributable to cumulative Project and related project DPM source emissions is estimated at 0.69 in one million (0.06 in one million for the proposed Project plus 0.63 in one million from the Boyle Warehouse Project), which is less than the threshold of 10 in one million. At this same location, non-cancer risks were estimated to be ≤ 0.01, which would not exceed the applicable cumulative threshold of 3.0. As such, the Project will not cause a significant human health or cancer risk based on cumulative emissions. All other receptors would experience less risk than what is identified for this location.

3.6 PROJECT MAXIMUM CONTRIBUTION TO CUMULATIVE TAC IMPACTS

TACs would incrementally increase the cumulative cancer risk by a maximum of 0.69 incidents per million population. The applicable SCAQMD significance threshold for Project-level TAC-

source cancer risk impacts is 10 incidents per million population. Similarly, SCAQMD significance thresholds state that Project contributions to cumulative TAC-source cancer risks would be cumulatively considerable if greater than 10 incidents per million population would occur. Here, for informational purposes a cumulative analysis of related projects within the zone of influence was conducted and the 0.69 incidents per million population increment resulting from the Project is therefore not significant nor cumulatively considerable.

3.7 CUMULATIVE IMPACTS

The Project's contribution is less than cumulatively considerable because it is less than the 10 in one million incremental cancer risk thresholds established by the SCAQMD.

As such, the Project's maximum contribution to cumulative TAC Impacts would not be cumulatively considerable and a less than significant finding is supported.

This page intentionally left blank

4 REFERENCES

1. **South Coast Air Quality Managment District.** Mobile Source Toxics Analysis. [Online] 2003. http://www.aqmd.gov/ceqa/handbook/mobile_toxic/mobile_toxic.html.
2. **Urban Crossroads, Inc.** *9th Street Partners Valley Boulevard Trip Generation Assessment.* December 2020.
3. **South Coast Air Quality Management District.** RULE 403. Fugitive Dust. [Online] http://www.aqmd.gov/rules/reg/reg04/r403.pdf.
4. **Urban Crossroads, Inc.** *9th Street Partners Valley Boulevard Air Quality, Greenhouse Gas, and Health Risk Assessment.* 2021.
5. **California Air Resources Board.** EMFAC 2017. [Online] https://www.arb.ca.gov/emfac/2017/.
6. **California Department of Transportation.** EMFAC Software. [Online] http://www.dot.ca.gov/hq/env/air/pages/emfac.htm.
7. **Air Resources Board.** *Air Quality and Land Use Handbook: A Community Health Perspective.* 2005.
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] September 2004. http://www.epa.gov/scram001/7thconf/aermod/aermodugb.pdf.
10. **South Coast Air Quality Management District.** *Air Quality Reporting.* [pdf] Diamond Bar : Sierra Wade Associates, 1999.
11. **National Safety Council.** Injury Fact Chart. [Online] [Cited: September 18, 2019.] https://www.nsc.org/work-safety/tools-resources/injury-facts/chart.
12. **South Coast Air Quality Management District.** Multiple Air Toxics Exposure Study . [Online] 2021. http://www.aqmd.gov/home/air-quality/air-quality-studies/health-studies/mates-v.
13. **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. http://www.aqmd.gov/rules/ciwg/final_white_paper.pdf.
14. **Office of Environmental Health Hazard Assessment.** Proposition 65. [Online] 2021. https://oehha.ca.gov/proposition-65.
15. **CAL HSC Code 42301.6 California Code - Section 42301.6. *Find Law.* [Online] http://codes.lp.findlaw.com/cacode/HSC/1/d26/4/4/1/s42301.6.**
16. **UltraSystems. *Air Toxics Health Risk Assessment for the Boyle Warehouse Project, Fontana, California.* 2019.**

This page intentionally left blank

5 CERTIFICATION

The contents of this health risk assessment represent an accurate depiction of the impacts to sensitive receptors associated with the proposed 9th Street Partners Valley Boulevard 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) 660-1994.

Haseeb Qureshi
Associate Principal
URBAN CROSSROADS, INC.
(949) 660-1994
hqureshi@urbanxroads.com

EDUCATION

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

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

PROFESSIONAL AFFILIATIONS

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

PROFESSIONAL CERTIFICATIONS

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

This page intentionally left blank

APPENDIX 2.1:

CALEEMOD OUTPUTS

This page intentionally left blank

JN:13850 9th St. Partner

San Bernardino-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	92.43	1000sqft	2.12	92,433.00	0
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0
Parking Lot	58.35	1000sqft	1.34	58,346.00	0
Other Non-Asphalt Surfaces	25.43	1000sqft	0.58	25,431.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

JN:13850 9th St. Partner - San Bernardino-South Coast County, Annual

Project Characteristics -

Land Use -

Construction Phase -

Architectural Coating - Rule 1113 Interior Coating

Vehicle Trips - User Defined Industrial = Truck Trips @ 40 miles

Fleet Mix - Fleet Mix for Passenger Cars vs Trucks

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblFleetMix	HHD	0.06	0.00
tblFleetMix	HHD	0.06	0.42
tblFleetMix	LDA	0.55	0.62
tblFleetMix	LDA	0.55	0.00
tblFleetMix	LDT1	0.04	0.04
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.18	0.20
tblFleetMix	LDT2	0.18	0.00
tblFleetMix	LHD1	0.02	0.00
tblFleetMix	LHD1	0.02	0.22
tblFleetMix	LHD2	5.1010e-003	0.00
tblFleetMix	LHD2	5.1010e-003	0.09
tblFleetMix	MCY	5.9030e-003	0.00
tblFleetMix	MCY	5.9030e-003	0.00
tblFleetMix	MDV	0.12	0.13
tblFleetMix	MDV	0.12	0.00
tblFleetMix	MH	9.4400e-004	0.00

tblFleetMix	MH	9.4400e-004	0.00
tblFleetMix	MHD	0.02	0.00
tblFleetMix	MHD	0.02	0.28
tblFleetMix	OBUS	1.3570e-003	0.00
tblFleetMix	OBUS	1.3570e-003	0.00
tblFleetMix	SBUS	8.0800e-004	0.00
tblFleetMix	SBUS	8.0800e-004	0.00
tblFleetMix	UBUS	1.5650e-003	0.00
tblFleetMix	UBUS	1.5650e-003	0.00
tblVehicleTrips	CC_TL	8.40	40.00
tblVehicleTrips	CC_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	ST_TR	1.68	1.27
tblVehicleTrips	ST_TR	0.00	46.00
tblVehicleTrips	SU_TR	1.68	1.27
tblVehicleTrips	SU_TR	0.00	46.00
tblVehicleTrips	WD_TR	1.68	1.27
tblVehicleTrips	WD_TR	0.00	46.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1828	1.6466	1.5150	3.1900e-003	0.1426	0.0781	0.2207	0.0575	0.0732	0.1307	0.0000	282.4324	282.4324	0.0503	0.0000	283.6905
2022	0.3865	0.9235	0.9958	2.0900e-003	0.0477	0.0416	0.0893	0.0129	0.0391	0.0519	0.0000	184.3072	184.3072	0.0324	0.0000	185.1182
Maximum	**0.3865**	**1.6466**	**1.5150**	**3.1900e-003**	**0.1426**	**0.0781**	**0.2207**	**0.0575**	**0.0732**	**0.1307**	**0.0000**	**282.4324**	**282.4324**	**0.0503**	**0.0000**	**283.6905**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1828	1.6466	1.5150	3.1900e-003	0.0991	0.0781	0.1771	0.0342	0.0732	0.1073	0.0000	282.4322	282.4322	0.0503	0.0000	283.6903
2022	0.3865	0.9235	0.9958	2.0900e-003	0.0477	0.0416	0.0893	0.0129	0.0391	0.0519	0.0000	184.3070	184.3070	0.0324	0.0000	185.1181
Maximum	**0.3865**	**1.6466**	**1.5150**	**3.1900e-003**	**0.0991**	**0.0781**	**0.1771**	**0.0342**	**0.0732**	**0.1073**	**0.0000**	**282.4322**	**282.4322**	**0.0503**	**0.0000**	**283.6903**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**22.88**	**0.00**	**14.05**	**33.20**	**0.00**	**12.79**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2021	8-31-2021	0.8194	0.8194
2	9-1-2021	11-30-2021	0.7412	0.7412
3	12-1-2021	2-28-2022	0.6863	0.6863
4	3-1-2022	5-31-2022	0.5862	0.5862
5	6-1-2022	8-31-2022	0.2809	0.2809
		Highest	0.8194	0.8194

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3836	2.0000e-005	2.2700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4000e-003	4.4000e-003	1.0000e-005	0.0000	4.6900e-003
Energy	1.0100e-003	9.2000e-003	7.7300e-003	6.0000e-005		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	86.0244	86.0244	3.3300e-003	8.3000e-004	86.3558
Mobile	0.0909	1.8916	1.0144	0.0100	0.4832	8.9600e-003	0.4922	0.1341	8.5300e-003	0.1426	0.0000	949.2783	949.2783	0.0259	0.0000	949.9265
Waste						0.0000	0.0000		0.0000	0.0000	17.6359	0.0000	17.6359	1.0423	0.0000	43.6921
Water						0.0000	0.0000		0.0000	0.0000	6.7811	88.6776	95.4587	0.7002	0.0172	118.0889
Total	**0.4756**	**1.9009**	**1.0244**	**0.0101**	**0.4832**	**9.6700e-003**	**0.4929**	**0.1341**	**9.2400e-003**	**0.1433**	**24.4170**	**1,123.9847**	**1,148.4017**	**1.7717**	**0.0180**	**1,198.0680**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3836	2.0000e-005	2.2700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4000e-003	4.4000e-003	1.0000e-005	0.0000	4.6900e-003
Energy	1.0100e-003	9.2000e-003	7.7300e-003	6.0000e-005		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	86.0244	86.0244	3.3300e-003	8.3000e-004	86.3558
Mobile	0.0909	1.8916	1.0144	0.0100	0.4832	8.9600e-003	0.4922	0.1341	8.5300e-003	0.1426	0.0000	949.2783	949.2783	0.0259	0.0000	949.9265
Waste						0.0000	0.0000		0.0000	0.0000	17.6359	0.0000	17.6359	1.0423	0.0000	43.6921
Water						0.0000	0.0000		0.0000	0.0000	6.7811	88.6776	95.4587	0.7002	0.0172	118.0889
Total	**0.4756**	**1.9009**	**1.0244**	**0.0101**	**0.4832**	**9.6700e-003**	**0.4929**	**0.1341**	**9.2400e-003**	**0.1433**	**24.4170**	**1,123.9847**	**1,148.4017**	**1.7717**	**0.0180**	**1,198.0680**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2021	6/7/2021	5	5	
2	Grading	Grading	6/8/2021	6/17/2021	5	8	
3	Building Construction	Building Construction	6/18/2021	5/5/2022	5	230	
4	Paving	Paving	5/6/2022	5/31/2022	5	18	
5	Architectural Coating	Architectural Coating	6/1/2022	6/24/2022	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 1.92

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 138,650; Non-Residential Outdoor: 46,217; Striped Parking Area: 5,027 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Grading	Excavators	1	8.00	158	0.38
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	6.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	2	6.00	132	0.36
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	74.00	29.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7200e-003	0.1012	0.0529	1.0000e-004		5.1100e-003	5.1100e-003		4.7000e-003	4.7000e-003	0.0000	8.3589	8.3589	2.7000e-003	0.0000	8.4265
Total	**9.7200e-003**	**0.1012**	**0.0529**	**1.0000e-004**	**0.0452**	**5.1100e-003**	**0.0503**	**0.0248**	**4.7000e-003**	**0.0295**	**0.0000**	**8.3589**	**8.3589**	**2.7000e-003**	**0.0000**	**8.4265**

3.2 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	1.6000e-004	1.6000e-003	0.0000	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4095	0.4095	1.0000e-005	0.0000	0.4097
Total	**2.1000e-004**	**1.6000e-004**	**1.6000e-003**	**0.0000**	**4.9000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4095**	**0.4095**	**1.0000e-005**	**0.0000**	**0.4097**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0176	0.0000	0.0176	9.6800e-003	0.0000	9.6800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7200e-003	0.1012	0.0529	1.0000e-004		5.1100e-003	5.1100e-003		4.7000e-003	4.7000e-003	0.0000	8.3589	8.3589	2.7000e-003	0.0000	8.4265
Total	**9.7200e-003**	**0.1012**	**0.0529**	**1.0000e-004**	**0.0176**	**5.1100e-003**	**0.0227**	**9.6800e-003**	**4.7000e-003**	**0.0144**	**0.0000**	**8.3589**	**8.3589**	**2.7000e-003**	**0.0000**	**8.4265**

3.2 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	1.6000e-004	1.6000e-003	0.0000	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4095	0.4095	1.0000e-005	0.0000	0.4097
Total	**2.1000e-004**	**1.6000e-004**	**1.6000e-003**	**0.0000**	**4.9000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4095**	**0.4095**	**1.0000e-005**	**0.0000**	**0.4097**

3.3 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.1600e-003	0.0990	0.0634	1.2000e-004		4.6400e-003	4.6400e-003		4.2700e-003	4.2700e-003	0.0000	10.4215	10.4215	3.3700e-003	0.0000	10.5057
Total	**9.1600e-003**	**0.0990**	**0.0634**	**1.2000e-004**	**0.0262**	**4.6400e-003**	**0.0309**	**0.0135**	**4.2700e-003**	**0.0177**	**0.0000**	**10.4215**	**10.4215**	**3.3700e-003**	**0.0000**	**10.5057**

3.3 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	2.1000e-004	2.1400e-003	1.0000e-005	6.6000e-004	0.0000	6.6000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5459	0.5459	2.0000e-005	0.0000	0.5463
Total	**2.8000e-004**	**2.1000e-004**	**2.1400e-003**	**1.0000e-005**	**6.6000e-004**	**0.0000**	**6.6000e-004**	**1.7000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.5459**	**0.5459**	**2.0000e-005**	**0.0000**	**0.5463**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0102	0.0000	0.0102	5.2500e-003	0.0000	5.2500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.1600e-003	0.0990	0.0634	1.2000e-004		4.6400e-003	4.6400e-003		4.2700e-003	4.2700e-003	0.0000	10.4215	10.4215	3.3700e-003	0.0000	10.5057
Total	**9.1600e-003**	**0.0990**	**0.0634**	**1.2000e-004**	**0.0102**	**4.6400e-003**	**0.0149**	**5.2500e-003**	**4.2700e-003**	**9.5200e-003**	**0.0000**	**10.4215**	**10.4215**	**3.3700e-003**	**0.0000**	**10.5057**

3.3 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	2.1000e-004	2.1400e-003	1.0000e-005	6.6000e-004	0.0000	6.6000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5459	0.5459	2.0000e-005	0.0000	0.5463
Total	**2.8000e-004**	**2.1000e-004**	**2.1400e-003**	**1.0000e-005**	**6.6000e-004**	**0.0000**	**6.6000e-004**	**1.7000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.5459**	**0.5459**	**2.0000e-005**	**0.0000**	**0.5463**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1340	1.2290	1.1686	1.9000e-003		0.0676	0.0676		0.0635	0.0635	0.0000	163.3043	163.3043	0.0394	0.0000	164.2892
Total	**0.1340**	**1.2290**	**1.1686**	**1.9000e-003**		**0.0676**	**0.0676**		**0.0635**	**0.0635**	**0.0000**	**163.3043**	**163.3043**	**0.0394**	**0.0000**	**164.2892**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.4200e-003	0.1989	0.0405	5.4000e-004	0.0129	3.4000e-004	0.0132	3.7200e-003	3.3000e-004	4.0500e-003	0.0000	51.9228	51.9228	3.5000e-003	0.0000	52.0103
Worker	0.0240	0.0182	0.1859	5.3000e-004	0.0572	3.7000e-004	0.0576	0.0152	3.4000e-004	0.0155	0.0000	47.4695	47.4695	1.3300e-003	0.0000	47.5027
Total	**0.0294**	**0.2171**	**0.2264**	**1.0700e-003**	**0.0701**	**7.1000e-004**	**0.0708**	**0.0189**	**6.7000e-004**	**0.0196**	**0.0000**	**99.3923**	**99.3923**	**4.8300e-003**	**0.0000**	**99.5130**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1340	1.2290	1.1686	1.9000e-003		0.0676	0.0676		0.0635	0.0635	0.0000	163.3041	163.3041	0.0394	0.0000	164.2890
Total	**0.1340**	**1.2290**	**1.1686**	**1.9000e-003**		**0.0676**	**0.0676**		**0.0635**	**0.0635**	**0.0000**	**163.3041**	**163.3041**	**0.0394**	**0.0000**	**164.2890**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.4200e-003	0.1989	0.0405	5.4000e-004	0.0129	3.4000e-004	0.0132	3.7200e-003	3.3000e-004	4.0500e-003	0.0000	51.9228	51.9228	3.5000e-003	0.0000	52.0103
Worker	0.0240	0.0182	0.1859	5.3000e-004	0.0572	3.7000e-004	0.0576	0.0152	3.4000e-004	0.0155	0.0000	47.4695	47.4695	1.3300e-003	0.0000	47.5027
Total	**0.0294**	**0.2171**	**0.2264**	**1.0700e-003**	**0.0701**	**7.1000e-004**	**0.0708**	**0.0189**	**6.7000e-004**	**0.0196**	**0.0000**	**99.3923**	**99.3923**	**4.8300e-003**	**0.0000**	**99.5130**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0759	0.6949	0.7282	1.2000e-003		0.0360	0.0360		0.0339	0.0339	0.0000	103.1177	103.1177	0.0247	0.0000	103.7353
Total	**0.0759**	**0.6949**	**0.7282**	**1.2000e-003**		**0.0360**	**0.0360**		**0.0339**	**0.0339**	**0.0000**	**103.1177**	**103.1177**	**0.0247**	**0.0000**	**103.7353**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.1900e-003	0.1189	0.0237	3.4000e-004	8.1400e-003	1.8000e-004	8.3200e-003	2.3500e-003	1.7000e-004	2.5200e-003	0.0000	32.5070	32.5070	2.1300e-003	0.0000	32.5603
Worker	0.0142	0.0103	0.1076	3.2000e-004	0.0361	2.3000e-004	0.0363	9.5900e-003	2.1000e-004	9.8000e-003	0.0000	28.8834	28.8834	7.5000e-004	0.0000	28.9022
Total	**0.0174**	**0.1292**	**0.1313**	**6.6000e-004**	**0.0443**	**4.1000e-004**	**0.0447**	**0.0119**	**3.8000e-004**	**0.0123**	**0.0000**	**61.3903**	**61.3903**	**2.8800e-003**	**0.0000**	**61.4625**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0759	0.6949	0.7282	1.2000e-003		0.0360	0.0360		0.0339	0.0339	0.0000	103.1176	103.1176	0.0247	0.0000	103.7352
Total	**0.0759**	**0.6949**	**0.7282**	**1.2000e-003**		**0.0360**	**0.0360**		**0.0339**	**0.0339**	**0.0000**	**103.1176**	**103.1176**	**0.0247**	**0.0000**	**103.7352**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.1900e-003	0.1189	0.0237	3.4000e-004	8.1400e-003	1.8000e-004	8.3200e-003	2.3500e-003	1.7000e-004	2.5200e-003	0.0000	32.5070	32.5070	2.1300e-003	0.0000	32.5603
Worker	0.0142	0.0103	0.1076	3.2000e-004	0.0361	2.3000e-004	0.0363	9.5900e-003	2.1000e-004	9.8000e-003	0.0000	28.8834	28.8834	7.5000e-004	0.0000	28.9022
Total	**0.0174**	**0.1292**	**0.1313**	**6.6000e-004**	**0.0443**	**4.1000e-004**	**0.0447**	**0.0119**	**3.8000e-004**	**0.0123**	**0.0000**	**61.3903**	**61.3903**	**2.8800e-003**	**0.0000**	**61.4625**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.7900e-003	0.0857	0.1098	1.7000e-004		4.3900e-003	4.3900e-003		4.0500e-003	4.0500e-003	0.0000	14.7383	14.7383	4.6300e-003	0.0000	14.8540
Paving	1.7600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0106**	**0.0857**	**0.1098**	**1.7000e-004**		**4.3900e-003**	**4.3900e-003**		**4.0500e-003**	**4.0500e-003**	**0.0000**	**14.7383**	**14.7383**	**4.6300e-003**	**0.0000**	**14.8540**

3.5 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.7000e-004	5.6000e-004	5.8800e-003	2.0000e-005	1.9700e-003	1.0000e-005	1.9900e-003	5.2000e-004	1.0000e-005	5.4000e-004	0.0000	1.5788	1.5788	4.0000e-005	0.0000	1.5798
Total	**7.7000e-004**	**5.6000e-004**	**5.8800e-003**	**2.0000e-005**	**1.9700e-003**	**1.0000e-005**	**1.9900e-003**	**5.2000e-004**	**1.0000e-005**	**5.4000e-004**	**0.0000**	**1.5788**	**1.5788**	**4.0000e-005**	**0.0000**	**1.5798**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.7900e-003	0.0857	0.1098	1.7000e-004		4.3900e-003	4.3900e-003		4.0500e-003	4.0500e-003	0.0000	14.7383	14.7383	4.6300e-003	0.0000	14.8540
Paving	1.7600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0106**	**0.0857**	**0.1098**	**1.7000e-004**		**4.3900e-003**	**4.3900e-003**		**4.0500e-003**	**4.0500e-003**	**0.0000**	**14.7383**	**14.7383**	**4.6300e-003**	**0.0000**	**14.8540**

3.5 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.7000e-004	5.6000e-004	5.8800e-003	2.0000e-005	1.9700e-003	1.0000e-005	1.9900e-003	5.2000e-004	1.0000e-005	5.4000e-004	0.0000	1.5788	1.5788	4.0000e-005	0.0000	1.5798
Total	**7.7000e-004**	**5.6000e-004**	**5.8800e-003**	**2.0000e-005**	**1.9700e-003**	**1.0000e-005**	**1.9900e-003**	**5.2000e-004**	**1.0000e-005**	**5.4000e-004**	**0.0000**	**1.5788**	**1.5788**	**4.0000e-005**	**0.0000**	**1.5798**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2794					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8400e-003	0.0127	0.0163	3.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	2.2979	2.2979	1.5000e-004	0.0000	2.3017
Total	**0.2813**	**0.0127**	**0.0163**	**3.0000e-005**		**7.4000e-004**	**7.4000e-004**		**7.4000e-004**	**7.4000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.5000e-004**	**0.0000**	**2.3017**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-004	4.2000e-004	4.4100e-003	1.0000e-005	1.4800e-003	1.0000e-005	1.4900e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.1841	1.1841	3.0000e-005	0.0000	1.1849
Total	**5.8000e-004**	**4.2000e-004**	**4.4100e-003**	**1.0000e-005**	**1.4800e-003**	**1.0000e-005**	**1.4900e-003**	**3.9000e-004**	**1.0000e-005**	**4.0000e-004**	**0.0000**	**1.1841**	**1.1841**	**3.0000e-005**	**0.0000**	**1.1849**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2794					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8400e-003	0.0127	0.0163	3.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	2.2979	2.2979	1.5000e-004	0.0000	2.3017
Total	**0.2813**	**0.0127**	**0.0163**	**3.0000e-005**		**7.4000e-004**	**7.4000e-004**		**7.4000e-004**	**7.4000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.5000e-004**	**0.0000**	**2.3017**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-004	4.2000e-004	4.4100e-003	1.0000e-005	1.4800e-003	1.0000e-005	1.4900e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.1841	1.1841	3.0000e-005	0.0000	1.1849
Total	**5.8000e-004**	**4.2000e-004**	**4.4100e-003**	**1.0000e-005**	**1.4800e-003**	**1.0000e-005**	**1.4900e-003**	**3.9000e-004**	**1.0000e-005**	**4.0000e-004**	**0.0000**	**1.1841**	**1.1841**	**3.0000e-005**	**0.0000**	**1.1849**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0909	1.8916	1.0144	0.0100	0.4832	8.9600e-003	0.4922	0.1341	8.5300e-003	0.1426	0.0000	949.2783	949.2783	0.0259	0.0000	949.9265
Unmitigated	0.0909	1.8916	1.0144	0.0100	0.4832	8.9600e-003	0.4922	0.1341	8.5300e-003	0.1426	0.0000	949.2783	949.2783	0.0259	0.0000	949.9265

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	117.39	117.39	117.39	503,100	503,100
User Defined Industrial	46.00	46.00	46.00	669,760	669,760
Total	163.39	163.39	163.39	1,172,860	1,172,860

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3
User Defined Industrial	16.60	40.00	6.90	0.00	100.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.553113	0.036408	0.180286	0.116335	0.016165	0.005101	0.018218	0.063797	0.001357	0.001565	0.005903	0.000808	0.000944
Parking Lot	0.553113	0.036408	0.180286	0.116335	0.016165	0.005101	0.018218	0.063797	0.001357	0.001565	0.005903	0.000808	0.000944
Unrefrigerated Warehouse-No Rail	0.624181	0.041086	0.203450	0.131283	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
User Defined Industrial	0.000000	0.000000	0.000000	0.000000	0.216372	0.085174	0.276734	0.421720	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	76.0113	76.0113	3.1400e-003	6.5000e-004	76.2832
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	76.0113	76.0113	3.1400e-003	6.5000e-004	76.2832
NaturalGas Mitigated	1.0100e-003	9.2000e-003	7.7300e-003	6.0000e-005		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	10.0131	10.0131	1.9000e-004	1.8000e-004	10.0726
NaturalGas Unmitigated	1.0100e-003	9.2000e-003	7.7300e-003	6.0000e-005		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	10.0131	10.0131	1.9000e-004	1.8000e-004	10.0726

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	187639	1.0100e-003	9.2000e-003	7.7300e-003	6.0000e-005		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	10.0131	10.0131	1.9000e-004	1.8000e-004	10.0726
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.0100e-003**	**9.2000e-003**	**7.7300e-003**	**6.0000e-005**		**7.0000e-004**	**7.0000e-004**		**7.0000e-004**	**7.0000e-004**	**0.0000**	**10.0131**	**10.0131**	**1.9000e-004**	**1.8000e-004**	**10.0726**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	187639	1.0100e-003	9.2000e-003	7.7300e-003	6.0000e-005		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	10.0131	10.0131	1.9000e-004	1.8000e-004	10.0726
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.0100e-003**	**9.2000e-003**	**7.7300e-003**	**6.0000e-005**		**7.0000e-004**	**7.0000e-004**		**7.0000e-004**	**7.0000e-004**	**0.0000**	**10.0131**	**10.0131**	**1.9000e-004**	**1.8000e-004**	**10.0726**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	20421.1	6.5066	2.7000e-004	6.0000e-005	6.5299
Unrefrigerated Warehouse-No Rail	218142	69.5047	2.8700e-003	5.9000e-004	69.7533
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**76.0113**	**3.1400e-003**	**6.5000e-004**	**76.2832**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	20421.1	6.5066	2.7000e-004	6.0000e-005	6.5299
Unrefrigerated Warehouse-No Rail	218142	69.5047	2.8700e-003	5.9000e-004	69.7533
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**76.0113**	**3.1400e-003**	**6.5000e-004**	**76.2832**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3836	2.0000e-005	2.2700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4000e-003	4.4000e-003	1.0000e-005	0.0000	4.6900e-003
Unmitigated	0.3836	2.0000e-005	2.2700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4000e-003	4.4000e-003	1.0000e-005	0.0000	4.6900e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0440					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3394					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.1000e-004	2.0000e-005	2.2700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4000e-003	4.4000e-003	1.0000e-005	0.0000	4.6900e-003
Total	**0.3836**	**2.0000e-005**	**2.2700e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**4.4000e-003**	**4.4000e-003**	**1.0000e-005**	**0.0000**	**4.6900e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0440					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3394					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.1000e-004	2.0000e-005	2.2700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4000e-003	4.4000e-003	1.0000e-005	0.0000	4.6900e-003
Total	**0.3836**	**2.0000e-005**	**2.2700e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**4.4000e-003**	**4.4000e-003**	**1.0000e-005**	**0.0000**	**4.6900e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	95.4587	0.7002	0.0172	118.0889
Unmitigated	95.4587	0.7002	0.0172	118.0889

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	21.3744 / 0	95.4587	0.7002	0.0172	118.0889
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**95.4587**	**0.7002**	**0.0172**	**118.0889**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	21.3744 / 0	95.4587	0.7002	0.0172	118.0889
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**95.4587**	**0.7002**	**0.0172**	**118.0889**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	17.6359	1.0423	0.0000	43.6921
Unmitigated	17.6359	1.0423	0.0000	43.6921

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	86.88	17.6359	1.0423	0.0000	43.6921
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**17.6359**	**1.0423**	**0.0000**	**43.6921**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	86.88	17.6359	1.0423	0.0000	43.6921
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**17.6359**	**1.0423**	**0.0000**	**43.6921**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX 2.2:

AERMOD MODEL INPUT/OUTPUT

```
** Lakes Environmental AERMOD MPI
**
**************************************
**
** AERMOD INPUT PRODUCED BY:
** AERMOD VIEW VER. 10.0.1
** LAKES ENVIRONMENTAL SOFTWARE INC.
** DATE: 9/7/2021
** FILE: C:\LAKES\AERMOD VIEW\13850 CONS\13850 CONS.ADI
**
**************************************
**
**
**************************************
** AERMOD CONTROL PATHWAY
**************************************
**
**
CO STARTING
   TITLEONE C:\LAKES\AERMOD VIEW\13550 HRA\13550 HRA.ISC
   MODELOPT DFAULT CONC
   AVERTIME ANNUAL
   URBANOPT 2035210
   POLLUTID DPM
   RUNORNOT RUN
   ERRORFIL "13850 CONS.ERR"
CO FINISHED
**
**************************************
** AERMOD SOURCE PATHWAY
**************************************
**
**
SO STARTING
** SOURCE LOCATION **
** SOURCE ID - TYPE - X COORD. - Y COORD. **
   LOCATION VOL1         VOLUME     457671.437  3770199.439      334.860
   LOCATION VOL2         VOLUME     457671.111  3770106.770      333.800
** SOURCE PARAMETERS **
   SRCPARAM VOL1         0.0067571403     5.000    21.474     1.400
   SRCPARAM VOL2         0.0067571403     5.000    21.474     1.400
   URBANSRC ALL

** VARIABLE EMISSIONS TYPE: "BY HOUR / SEVEN DAYS (HRDOW7)"
** VARIABLE EMISSION SCENARIO: "CONSTRUCTION"
   EMISFACT VOL1         HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW7 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT VOL1         HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1         HRDOW7 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0
```

```
   EMISFACT VOL1        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1        HRDOW7 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT VOL1        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1        HRDOW7 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT VOL1        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1        HRDOW7 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT VOL1        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL1        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL2        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL2        HRDOW7 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT VOL2        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL2        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL2        HRDOW7 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT VOL2        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL2        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL2        HRDOW7 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT VOL2        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL2        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL2        HRDOW7 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT VOL2        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL2        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL2        HRDOW7 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT VOL2        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL2        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL2        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL2        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL2        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL2        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT VOL2        HRDOW7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
   SRCGROUP ALL
SO FINISHED
**
****************************************
** AERMOD RECEPTOR PATHWAY
****************************************
**
**
RE STARTING
   INCLUDED "13850 CONS.ROU"
RE FINISHED
**
****************************************
```

```
** AERMOD METEOROLOGY PATHWAY
**************************************
**
**
ME STARTING
   SURFFILE FONTANAADJU\FONT_V9_ADJU\FONT_V9.SFC
   PROFFILE FONTANAADJU\FONT_V9_ADJU\FONT_V9.PFL
   SURFDATA 3102 2011
   UAIRDATA 3190 2011
   SITEDATA 99999 2011
   PROFBASE 367.0 METERS
ME FINISHED
**
**************************************
** AERMOD OUTPUT PATHWAY
**************************************
**
**
OU STARTING
** AUTO-GENERATED PLOTFILES
   PLOTFILE   ANNUAL ALL "13850 CONS.AD\AN00GALL.PLT" 31
   SUMMFILE "13850 CONS.SUM"
OU FINISHED


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

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

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


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


    ********   WARNING MESSAGES   ********
 ME W186     111       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187     111       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************

 *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13550 HRA\13550
HRA.ISC                          ***        09/07/21
```

*** MODELOPTs: RegDFAULT 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   2 Source(s),
for Total of   1 Urban Area(s):
Urban Population =   2035210.0 ; Urban Roughness Length = 1.000 m

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

**Other Options Specified:
ADJ_U*   - Use ADJ_U* option for SBL in AERMET
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: 2 Source(s);   1 Source Group(s); and   26 Receptor(s)

with: 0 POINT(s), including
0 POINTCAP(s) and   0 POINTHOR(s)
and: 2 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

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =   367.00 ;  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 =      3.5 MB of RAM.

 **Input Runstream File:          aermod.inp

 **Output Print File:             aermod.out


 **Detailed Error/Message File:   13850 CONS.ERR

 **File for Summary of Results:   13850 CONS.SUM

↟ *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13550 HRA\13550
HRA.ISC                          ***        09/07/21
 *** AERMET - VERSION  16216 ***   ***
                         ***        16:51:30

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


                                                  *** VOLUME SOURCE DATA ***

               NUMBER EMISSION RATE                     BASE    RELEASE    INIT.
```

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

 VOL1             0   0.67571E-02  457671.4 3770199.4   334.9     5.00    21.47
1.40     YES   HRDOW7
 VOL2             0   0.67571E-02  457671.1 3770106.8   333.8     5.00    21.47
1.40     YES   HRDOW7
↑ *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13550 HRA\13550
HRA.ISC                         ***        09/07/21
 *** AERMET - VERSION  16216 ***   ***
                         ***        16:51:30

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


                                          *** SOURCE IDs DEFINING SOURCE GROUPS
***

 SRCGROUP ID                                                SOURCE IDs
 -----------                                                ----------


  ALL        VOL1        , VOL2        ,
↑ *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13550 HRA\13550
HRA.ISC                         ***        09/07/21
 *** AERMET - VERSION  16216 ***   ***
                         ***        16:51:30

                                    PAGE   4
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN  ADJ_U*


                                       *** SOURCE IDs DEFINED AS URBAN SOURCES
***

  URBAN ID   URBAN POP                                    SOURCE IDs
  --------   ---------                                    ----------


             2035210.   VOL1        , VOL2        ,
↑ *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13550 HRA\13550
HRA.ISC                         ***        09/07/21
 *** AERMET - VERSION  16216 ***   ***
                         ***        16:51:30
```

```
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN  ADJ_U*

                    * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY
OF WEEK (HRDOW7) *

 SOURCE ID = VOL1         ; SOURCE TYPE = VOLUME   :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -
                                              DAY OF WEEK = MONDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = TUESDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = WEDNESDY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = THURSDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = FRIDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
```

```
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00

                                                DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
↟ *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13550 HRA\13550
HRA.ISC                          ***        09/07/21
 *** AERMET - VERSION  16216 ***   ***
                         ***        16:51:30

                                    PAGE   6
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN  ADJ_U*

                    * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY
OF WEEK (HRDOW7) *

 SOURCE ID = VOL2          ; SOURCE TYPE = VOLUME    :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -

                                                DAY OF WEEK = MONDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00

                                                DAY OF WEEK = TUESDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00

                                                DAY OF WEEK = WEDNESDY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00

                                                DAY OF WEEK = THURSDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
```

```
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                          DAY OF WEEK = FRIDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                          DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                          DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
 *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13550 HRA\13550
HRA.ISC                          ***        09/07/21
 *** AERMET - VERSION  16216 ***   ***
                         ***        16:51:30

                                   PAGE   7
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN  ADJ_U*

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

     ( 457621.4, 3770252.1,     334.9,     334.9,       0.0);         ( 457689.0,
3770249.4,     335.4,     335.4,       0.0);
     ( 457745.6, 3770252.9,     336.0,     336.0,       0.0);         ( 457745.4,
3770222.3,     335.9,     335.9,       0.0);
     ( 457750.0, 3770137.3,     335.0,     335.0,       0.0);         ( 457519.2,
3770256.5,     334.0,     334.0,       0.0);
     ( 457414.4, 3770278.1,     334.0,     334.0,       0.0);         ( 457617.4,
3770107.4,     333.0,     333.0,       0.0);
     ( 457615.2, 3770174.2,     334.0,     334.0,       0.0);         ( 457596.8,
3770198.0,     334.0,     334.0,       0.0);
     ( 457663.1, 3770249.1,     335.1,     335.1,       0.0);         ( 457757.0,
3770115.1,     335.0,     335.0,       0.0);
```

(457660.0, 3769988.4, 331.7, 331.7, 0.0); (457750.5, 3770071.8, 334.0, 334.0, 0.0);
(457749.7, 3770190.8, 335.5, 335.5, 0.0); (457490.1, 3770394.8, 335.5, 335.5, 0.0);
(457372.8, 3770367.4, 335.4, 335.4, 0.0); (457415.0, 3770345.8, 335.0, 335.0, 0.0);
(457415.0, 3770323.8, 334.9, 334.9, 0.0); (457414.6, 3770303.3, 334.2, 334.2, 0.0);
(457517.1, 3770280.9, 334.5, 334.5, 0.0); (457442.7, 3770259.2, 334.0, 334.0, 0.0);
(457592.7, 3770080.6, 332.6, 332.6, 0.0); (457922.8, 3770071.3, 334.9, 334.9, 0.0);
(457802.0, 3770086.3, 334.8, 334.8, 0.0); (457792.2, 3769422.9, 325.9, 325.9, 0.0);

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

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

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

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)

 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

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

   Surface file: FONTANAADJU\FONT_V9_ADJU\FONT_V9.SFC
                  Met Version: 16216
   Profile file: FONTANAADJU\FONT_V9_ADJU\FONT_V9.PFL

   Surface format: FREE

   Profile format: FREE

   Surface station no.:   3102   Upper air station no.:   3190
                  Name: UNKNOWN   Name: UNKNOWN

                  Year: 2011   Year: 2011

 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
- -
- - - - - - - - - - - - - - - - - - - -
 11 01 01   1 01 -18.5 0.194 -9.000 -9.000 -999. 204.   41.2 0.25   2.82
1.00   1.80   69.   9.1 276.4   5.5
 11 01 01   1 02 -23.8 0.239 -9.000 -9.000 -999. 281.   63.0 0.25   2.82
1.00   2.20   52.   9.1 275.4   5.5
 11 01 01   1 03 -18.5 0.194 -9.000 -9.000 -999. 205.   41.2 0.25   2.82
1.00   1.80   32.   9.1 275.4   5.5
 11 01 01   1 04   -1.4 0.067 -9.000 -9.000 -999.   57.   18.3 0.25   2.82
1.00   0.40   27.   9.1 274.2   5.5
 11 01 01   1 05 -18.6 0.194 -9.000 -9.000 -999. 204.   41.2 0.25   2.82
1.00   1.80   51.   9.1 274.2   5.5
 11 01 01   1 06 -29.7 0.296 -9.000 -9.000 -999. 387.   96.6 0.25   2.82
1.00   2.70   53.   9.1 274.2   5.5
 11 01 01   1 07 -24.0 0.239 -9.000 -9.000 -999. 282.   63.0 0.25   2.82
1.00   2.20   70.   9.1 274.2   5.5
 11 01 01   1 08   -8.4 0.138 -9.000 -9.000 -999. 127.   27.3 0.25   2.82
0.54   1.30   72.   9.1 275.4   5.5
 11 01 01   1 09   44.3 0.280 0.571 0.005 147. 356.   -43.5 0.25   2.82
0.32   2.20   67.   9.1 277.5   5.5

```
 11 01 01   1 10  122.7  0.264  0.952  0.005  247.  326.    -13.2  0.25   2.82
0.25    1.80   83.    9.1  279.9    5.5
 11 01 01   1 11  179.8  0.316  1.733  0.005 1017.  426.    -15.4  0.25   2.82
0.22    2.20   58.    9.1  282.0    5.5
 11 01 01   1 12  206.0  0.320  1.940  0.008 1244.  435.    -14.0  0.25   2.82
0.21    2.20  115.    9.1  283.1    5.5
 11 01 01   1 13  132.6  0.214  1.733  0.009 1377.  243.     -6.5  0.25   2.82
0.21    1.30  147.    9.1  284.2    5.5
 11 01 01   1 14  147.0  0.216  1.818  0.009 1431.  242.     -6.0  0.25   2.82
0.23    1.30  219.    9.1  284.9    5.5
 11 01 01   1 15  104.0  0.208  1.633  0.009 1468.  228.     -7.6  0.25   2.82
0.26    1.30  126.    9.1  285.4    5.5
 11 01 01   1 16   26.4  0.140  1.037  0.009 1477.  127.     -9.1  0.25   2.82
0.35    0.90  151.    9.1  284.9    5.5
 11 01 01   1 17   -9.0  0.137 -9.000 -9.000 -999.  121.     24.9  0.25   2.82
0.63    1.30   69.    9.1  283.1    5.5
 11 01 01   1 18  -33.4  0.342 -9.000 -9.000 -999.  481.    129.0  0.25   2.82
1.00    3.10   81.    9.1  281.4    5.5
 11 01 01   1 19  -33.6  0.342 -9.000 -9.000 -999.  481.    128.9  0.25   2.82
1.00    3.10   51.    9.1  279.9    5.5
 11 01 01   1 20  -23.6  0.239 -9.000 -9.000 -999.  287.     63.1  0.25   2.82
1.00    2.20   77.    9.1  278.8    5.5
 11 01 01   1 21  -18.5  0.194 -9.000 -9.000 -999.  205.     41.2  0.25   2.82
1.00    1.80   53.    9.1  277.5    5.5
 11 01 01   1 22  -23.7  0.239 -9.000 -9.000 -999.  281.     63.0  0.25   2.82
1.00    2.20   58.    9.1  277.5    5.5
 11 01 01   1 23  -18.5  0.194 -9.000 -9.000 -999.  205.     41.2  0.25   2.82
1.00    1.80   64.    9.1  277.5    5.5
 11 01 01   1 24   -4.5  0.094 -9.000 -9.000 -999.   74.     16.3  0.25   2.82
1.00    0.90   52.    9.1  277.0    5.5


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 11 01 01 01    5.5 0 -999.  -99.00   276.5   99.0  -99.00  -99.00
 11 01 01 01    9.1 1   69.    1.80  -999.0   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
↑ *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13550 HRA\13550
HRA.ISC                         ***       09/07/21
 *** AERMET - VERSION  16216 ***   ***
                        ***       16:51:30

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

                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     VOL1        , VOL2
 ,
```

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

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

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
457621.37	3770252.07	0.07209	457689.05	3770249.38	0.21057
457745.61	3770252.92	0.10922	457745.44	3770222.28	0.15333
457749.99	3770137.26	0.14059	457519.19	3770256.50	0.01380
457414.41	3770278.09	0.00473	457617.38	3770107.43	0.15487
457615.20	3770174.19	0.13680	457596.77	3770197.96	0.07838
457663.13	3770249.07	0.17943	457757.01	3770115.08	0.11376
457660.01	3769988.45	0.02766	457750.50	3770071.81	0.07346
457749.68	3770190.82	0.15134	457490.11	3770394.76	0.00434
457372.82	3770367.43	0.00262	457414.95	3770345.79	0.00363
457414.95	3770323.77	0.00398	457414.58	3770303.28	0.00433
457517.06	3770280.88	0.01149	457442.66	3770259.24	0.00633
457592.74	3770080.61	0.06578	457922.83	3770071.30	0.01094
457801.98	3770086.33	0.04020	457792.19	3769422.88	0.00057

*** 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       0.21057 AT (  457689.05,  3770249.38,
335.43,   335.43,    0.00)  DC
          2ND HIGHEST VALUE IS       0.17943 AT (  457663.13,  3770249.07,
335.05,   335.05,    0.00)  DC
          3RD HIGHEST VALUE IS       0.15487 AT (  457617.38,  3770107.43,
333.00,   333.00,    0.00)  DC
          4TH HIGHEST VALUE IS       0.15333 AT (  457745.44,  3770222.28,
335.94,   335.94,    0.00)  DC
          5TH HIGHEST VALUE IS       0.15134 AT (  457749.68,  3770190.82,
335.48,   335.48,    0.00)  DC
          6TH HIGHEST VALUE IS       0.14059 AT (  457749.99,  3770137.26,
335.00,   335.00,    0.00)  DC
          7TH HIGHEST VALUE IS       0.13680 AT (  457615.20,  3770174.19,
334.00,   334.00,    0.00)  DC
          8TH HIGHEST VALUE IS       0.11376 AT (  457757.01,  3770115.08,
334.96,   334.96,    0.00)  DC
          9TH HIGHEST VALUE IS       0.10922 AT (  457745.61,  3770252.92,
336.00,   336.00,    0.00)  DC
         10TH HIGHEST VALUE IS       0.07838 AT (  457596.77,  3770197.96,
334.00,   334.00,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
↑ *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13550 HRA\13550
HRA.ISC                         ***        09/07/21
 *** AERMET - VERSION  16216 ***   ***
                        ***       16:51:30

                                   PAGE  12
 *** 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           7 Warning Message(s)
 A Total of         838 Informational Message(s)
```

```
 A Total of        43848 Hours Were Processed

 A Total of           40 Calm Hours Identified

 A Total of          798 Missing Hours Identified (  1.82 Percent)


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


    ********   WARNING MESSAGES   ********
 ME W186     111       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187     111       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

 MX W438    8800        METQA: Convective Velocity Data Out-of-Range.  KURDAT =
  12010216
 MX W438   11536        METQA: Convective Velocity Data Out-of-Range.  KURDAT =
  12042516
 MX W420   16779        METQA: Wind Speed Out-of-Range.   KURDAT =
  12113003
 MX W450   26305       CHKDAT: Record Out of Sequence in Meteorological File at:
  15010101
 MX W450   26305       CHKDAT: Record Out of Sequence in Meteorological File at:
1 year gap

    ***********************************
    *** AERMOD Finishes Successfully ***
    ***********************************
```

```
**
**************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.0.1
** Lakes Environmental Software Inc.
** Date: 9/7/2021
** File: C:\Lakes\AERMOD View\13850 HRA\13850 HRA.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE C:\Lakes\AERMOD View\13550 HRA\13550 HRA.isc
   MODELOPT DFAULT CONC
   AVERTIME ANNUAL
   URBANOPT 2035210
   POLLUTID DPM
   RUNORNOT RUN
   ERRORFIL "13850 HRA.err"
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
** ----------------------------------------------------------------------
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE1
** DESCRSRC On-Site Idling
** PREFIX
** Length of Side = 8.59
** Configuration = Adjacent
** Emission Rate = 6.416E-06
** Vertical Dimension = 6.99
** SZINIT = 3.25
** Nodes = 2
** 457657.436, 3770175.809, 334.01, 3.49, 4.00
** 457657.436, 3770112.330, 333.90, 3.49, 4.00
** ----------------------------------------------------------------------
   LOCATION L0000922     VOLUME   457657.436 3770171.514 334.00
```

```
   LOCATION L0000923     VOLUME   457657.436 3770162.924 334.00
   LOCATION L0000924     VOLUME   457657.436 3770154.334 334.00
   LOCATION L0000925     VOLUME   457657.436 3770145.744 334.00
   LOCATION L0000926     VOLUME   457657.436 3770137.154 333.98
   LOCATION L0000927     VOLUME   457657.436 3770128.564 333.96
   LOCATION L0000928     VOLUME   457657.436 3770119.974 333.94
** End of LINE VOLUME Source ID = SLINE1
** ----------------------------------------------------------------------
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE2
** DESCRSRC On-Site Travel
** PREFIX
** Length of Side = 8.59
** Configuration = Adjacent
** Emission Rate = 1.625E-06
** Vertical Dimension = 6.99
** SZINIT = 3.25
** Nodes = 2
** 457636.907, 3770175.809, 334.00, 3.49, 4.00
** 457638.528, 3770060.196, 332.91, 3.49, 4.00
** ----------------------------------------------------------------------
   LOCATION L0000929     VOLUME   457636.967 3770171.514 334.00
   LOCATION L0000930     VOLUME   457637.088 3770162.925 334.00
   LOCATION L0000931     VOLUME   457637.208 3770154.336 334.00
   LOCATION L0000932     VOLUME   457637.329 3770145.747 333.99
   LOCATION L0000933     VOLUME   457637.449 3770137.157 333.77
   LOCATION L0000934     VOLUME   457637.569 3770128.568 333.57
   LOCATION L0000935     VOLUME   457637.690 3770119.979 333.36
   LOCATION L0000936     VOLUME   457637.810 3770111.390 333.23
   LOCATION L0000937     VOLUME   457637.931 3770102.801 333.15
   LOCATION L0000938     VOLUME   457638.051 3770094.212 333.07
   LOCATION L0000939     VOLUME   457638.171 3770085.622 333.00
   LOCATION L0000940     VOLUME   457638.292 3770077.033 333.00
   LOCATION L0000941     VOLUME   457638.412 3770068.444 333.00
** End of LINE VOLUME Source ID = SLINE2
** ----------------------------------------------------------------------
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE3
** DESCRSRC Off-Site Travel
** PREFIX
** Length of Side = 8.59
** Configuration = Adjacent
** Emission Rate = 5.819E-06
** Vertical Dimension = 6.99
** SZINIT = 3.25
** Nodes = 9
** 457635.827, 3770047.230, 332.73, 3.49, 4.00
** 458044.081, 3770043.804, 335.00, 3.49, 4.00
** 458131.748, 3770043.195, 335.47, 3.49, 4.00
** 458131.139, 3769949.440, 333.93, 3.49, 4.00
```

```
** 458135.401, 3769910.477, 333.02, 3.49, 4.00
** 458137.227, 3769866.643, 332.76, 3.49, 4.00
** 458135.401, 3769835.595, 332.14, 3.49, 4.00
** 458135.401, 3769825.854, 332.11, 3.49, 4.00
** 458137.836, 3769590.248, 335.00, 3.49, 4.00
** ------------------------------------------------------------------
   LOCATION L0000942     VOLUME   457640.121 3770047.194 332.69
   LOCATION L0000943     VOLUME   457648.711 3770047.122 332.69
   LOCATION L0000944     VOLUME   457657.301 3770047.050 332.69
   LOCATION L0000945     VOLUME   457665.891 3770046.978 332.75
   LOCATION L0000946     VOLUME   457674.480 3770046.906 332.84
   LOCATION L0000947     VOLUME   457683.070 3770046.834 332.93
   LOCATION L0000948     VOLUME   457691.660 3770046.762 333.00
   LOCATION L0000949     VOLUME   457700.249 3770046.690 333.00
   LOCATION L0000950     VOLUME   457708.839 3770046.617 333.00
   LOCATION L0000951     VOLUME   457717.429 3770046.545 333.00
   LOCATION L0000952     VOLUME   457726.018 3770046.473 333.14
   LOCATION L0000953     VOLUME   457734.608 3770046.401 333.33
   LOCATION L0000954     VOLUME   457743.198 3770046.329 333.52
   LOCATION L0000955     VOLUME   457751.788 3770046.257 333.66
   LOCATION L0000956     VOLUME   457760.377 3770046.185 333.66
   LOCATION L0000957     VOLUME   457768.967 3770046.113 333.66
   LOCATION L0000958     VOLUME   457777.557 3770046.041 333.66
   LOCATION L0000959     VOLUME   457786.146 3770045.969 333.73
   LOCATION L0000960     VOLUME   457794.736 3770045.897 333.83
   LOCATION L0000961     VOLUME   457803.326 3770045.825 333.93
   LOCATION L0000962     VOLUME   457811.915 3770045.752 334.00
   LOCATION L0000963     VOLUME   457820.505 3770045.680 334.00
   LOCATION L0000964     VOLUME   457829.095 3770045.608 334.00
   LOCATION L0000965     VOLUME   457837.685 3770045.536 334.00
   LOCATION L0000966     VOLUME   457846.274 3770045.464 334.00
   LOCATION L0000967     VOLUME   457854.864 3770045.392 334.00
   LOCATION L0000968     VOLUME   457863.454 3770045.320 334.00
   LOCATION L0000969     VOLUME   457872.043 3770045.248 334.00
   LOCATION L0000970     VOLUME   457880.633 3770045.176 334.00
   LOCATION L0000971     VOLUME   457889.223 3770045.104 334.00
   LOCATION L0000972     VOLUME   457897.812 3770045.032 334.00
   LOCATION L0000973     VOLUME   457906.402 3770044.960 334.14
   LOCATION L0000974     VOLUME   457914.992 3770044.887 334.32
   LOCATION L0000975     VOLUME   457923.581 3770044.815 334.49
   LOCATION L0000976     VOLUME   457932.171 3770044.743 334.61
   LOCATION L0000977     VOLUME   457940.761 3770044.671 334.61
   LOCATION L0000978     VOLUME   457949.351 3770044.599 334.61
   LOCATION L0000979     VOLUME   457957.940 3770044.527 334.61
   LOCATION L0000980     VOLUME   457966.530 3770044.455 334.60
   LOCATION L0000981     VOLUME   457975.120 3770044.383 334.60
   LOCATION L0000982     VOLUME   457983.709 3770044.311 334.60
   LOCATION L0000983     VOLUME   457992.299 3770044.239 334.60
   LOCATION L0000984     VOLUME   458000.889 3770044.167 334.59
   LOCATION L0000985     VOLUME   458009.478 3770044.095 334.59
```

LOCATION L0000986 VOLUME 458018.068 3770044.022 334.59
LOCATION L0000987 VOLUME 458026.658 3770043.950 334.68
LOCATION L0000988 VOLUME 458035.248 3770043.878 334.80
LOCATION L0000989 VOLUME 458043.837 3770043.806 334.92
LOCATION L0000990 VOLUME 458052.427 3770043.746 335.00
LOCATION L0000991 VOLUME 458061.017 3770043.687 335.00
LOCATION L0000992 VOLUME 458069.607 3770043.627 335.00
LOCATION L0000993 VOLUME 458078.196 3770043.567 335.00
LOCATION L0000994 VOLUME 458086.786 3770043.508 335.00
LOCATION L0000995 VOLUME 458095.376 3770043.448 335.00
LOCATION L0000996 VOLUME 458103.966 3770043.388 335.00
LOCATION L0000997 VOLUME 458112.556 3770043.329 335.06
LOCATION L0000998 VOLUME 458121.145 3770043.269 335.22
LOCATION L0000999 VOLUME 458129.735 3770043.209 335.38
LOCATION L0001000 VOLUME 458131.705 3770036.618 335.25
LOCATION L0001001 VOLUME 458131.650 3770028.029 335.04
LOCATION L0001002 VOLUME 458131.594 3770019.439 335.00
LOCATION L0001003 VOLUME 458131.538 3770010.849 335.00
LOCATION L0001004 VOLUME 458131.482 3770002.259 335.00
LOCATION L0001005 VOLUME 458131.426 3769993.669 334.91
LOCATION L0001006 VOLUME 458131.371 3769985.079 334.62
LOCATION L0001007 VOLUME 458131.315 3769976.490 334.34
LOCATION L0001008 VOLUME 458131.259 3769967.900 334.05
LOCATION L0001009 VOLUME 458131.203 3769959.310 334.00
LOCATION L0001010 VOLUME 458131.148 3769950.720 334.00
LOCATION L0001011 VOLUME 458131.934 3769942.174 334.00
LOCATION L0001012 VOLUME 458132.868 3769933.634 333.91
LOCATION L0001013 VOLUME 458133.802 3769925.095 333.62
LOCATION L0001014 VOLUME 458134.736 3769916.556 333.34
LOCATION L0001015 VOLUME 458135.504 3769908.005 333.06
LOCATION L0001016 VOLUME 458135.861 3769899.422 332.97
LOCATION L0001017 VOLUME 458136.219 3769890.840 332.94
LOCATION L0001018 VOLUME 458136.577 3769882.257 332.92
LOCATION L0001019 VOLUME 458136.934 3769873.674 332.83
LOCATION L0001020 VOLUME 458137.136 3769865.093 332.57
LOCATION L0001021 VOLUME 458136.632 3769856.518 332.31
LOCATION L0001022 VOLUME 458136.127 3769847.943 332.05
LOCATION L0001023 VOLUME 458135.623 3769839.368 331.97
LOCATION L0001024 VOLUME 458135.401 3769830.784 331.93
LOCATION L0001025 VOLUME 458135.439 3769822.194 331.89
LOCATION L0001026 VOLUME 458135.527 3769813.605 331.96
LOCATION L0001027 VOLUME 458135.616 3769805.015 332.25
LOCATION L0001028 VOLUME 458135.705 3769796.426 332.53
LOCATION L0001029 VOLUME 458135.794 3769787.836 332.82
LOCATION L0001030 VOLUME 458135.883 3769779.247 333.32
LOCATION L0001031 VOLUME 458135.971 3769770.657 333.86
LOCATION L0001032 VOLUME 458136.060 3769762.068 334.41
LOCATION L0001033 VOLUME 458136.149 3769753.478 334.79
LOCATION L0001034 VOLUME 458136.238 3769744.889 334.86
LOCATION L0001035 VOLUME 458136.326 3769736.299 334.93

```
   LOCATION L0001036     VOLUME   458136.415 3769727.709 334.99
   LOCATION L0001037     VOLUME   458136.504 3769719.120 335.00
   LOCATION L0001038     VOLUME   458136.593 3769710.530 335.00
   LOCATION L0001039     VOLUME   458136.682 3769701.941 335.00
   LOCATION L0001040     VOLUME   458136.770 3769693.351 334.40
   LOCATION L0001041     VOLUME   458136.859 3769684.762 332.68
   LOCATION L0001042     VOLUME   458136.948 3769676.172 330.97
   LOCATION L0001043     VOLUME   458137.037 3769667.583 329.25
   LOCATION L0001044     VOLUME   458137.125 3769658.993 330.43
   LOCATION L0001045     VOLUME   458137.214 3769650.404 332.10
   LOCATION L0001046     VOLUME   458137.303 3769641.814 333.78
   LOCATION L0001047     VOLUME   458137.392 3769633.225 334.87
   LOCATION L0001048     VOLUME   458137.481 3769624.635 334.91
   LOCATION L0001049     VOLUME   458137.569 3769616.045 334.96
   LOCATION L0001050     VOLUME   458137.658 3769607.456 335.00
   LOCATION L0001051     VOLUME   458137.747 3769598.866 334.97
   LOCATION L0001052     VOLUME   458137.836 3769590.277 334.94
** End of LINE VOLUME Source ID = SLINE3
** Source Parameters **
** LINE VOLUME Source ID = SLINE1
   SRCPARAM L0000922     0.0000009166      3.49      4.00      3.25
   SRCPARAM L0000923     0.0000009166      3.49      4.00      3.25
   SRCPARAM L0000924     0.0000009166      3.49      4.00      3.25
   SRCPARAM L0000925     0.0000009166      3.49      4.00      3.25
   SRCPARAM L0000926     0.0000009166      3.49      4.00      3.25
   SRCPARAM L0000927     0.0000009166      3.49      4.00      3.25
   SRCPARAM L0000928     0.0000009166      3.49      4.00      3.25
** ------------------------------------------------------------------
** LINE VOLUME Source ID = SLINE2
   SRCPARAM L0000929     0.000000125      3.49      4.00      3.25
   SRCPARAM L0000930     0.000000125      3.49      4.00      3.25
   SRCPARAM L0000931     0.000000125      3.49      4.00      3.25
   SRCPARAM L0000932     0.000000125      3.49      4.00      3.25
   SRCPARAM L0000933     0.000000125      3.49      4.00      3.25
   SRCPARAM L0000934     0.000000125      3.49      4.00      3.25
   SRCPARAM L0000935     0.000000125      3.49      4.00      3.25
   SRCPARAM L0000936     0.000000125      3.49      4.00      3.25
   SRCPARAM L0000937     0.000000125      3.49      4.00      3.25
   SRCPARAM L0000938     0.000000125      3.49      4.00      3.25
   SRCPARAM L0000939     0.000000125      3.49      4.00      3.25
   SRCPARAM L0000940     0.000000125      3.49      4.00      3.25
   SRCPARAM L0000941     0.000000125      3.49      4.00      3.25
** ------------------------------------------------------------------
** LINE VOLUME Source ID = SLINE3
   SRCPARAM L0000942     0.00000005242      3.49      4.00      3.25
   SRCPARAM L0000943     0.00000005242      3.49      4.00      3.25
   SRCPARAM L0000944     0.00000005242      3.49      4.00      3.25
   SRCPARAM L0000945     0.00000005242      3.49      4.00      3.25
   SRCPARAM L0000946     0.00000005242      3.49      4.00      3.25
   SRCPARAM L0000947     0.00000005242      3.49      4.00      3.25
```

```
SRCPARAM L0000948     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000949     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000950     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000951     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000952     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000953     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000954     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000955     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000956     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000957     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000958     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000959     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000960     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000961     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000962     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000963     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000964     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000965     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000966     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000967     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000968     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000969     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000970     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000971     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000972     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000973     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000974     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000975     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000976     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000977     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000978     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000979     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000980     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000981     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000982     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000983     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000984     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000985     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000986     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000987     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000988     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000989     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000990     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000991     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000992     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000993     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000994     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000995     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000996     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000997     0.00000005242      3.49      4.00      3.25
```

```
SRCPARAM L0000998     0.00000005242      3.49      4.00      3.25
SRCPARAM L0000999     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001000     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001001     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001002     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001003     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001004     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001005     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001006     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001007     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001008     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001009     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001010     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001011     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001012     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001013     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001014     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001015     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001016     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001017     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001018     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001019     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001020     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001021     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001022     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001023     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001024     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001025     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001026     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001027     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001028     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001029     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001030     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001031     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001032     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001033     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001034     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001035     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001036     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001037     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001038     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001039     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001040     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001041     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001042     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001043     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001044     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001045     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001046     0.00000005242      3.49      4.00      3.25
SRCPARAM L0001047     0.00000005242      3.49      4.00      3.25
```

```
   SRCPARAM L0001048     0.00000005242      3.49      4.00      3.25
   SRCPARAM L0001049     0.00000005242      3.49      4.00      3.25
   SRCPARAM L0001050     0.00000005242      3.49      4.00      3.25
   SRCPARAM L0001051     0.00000005242      3.49      4.00      3.25
   SRCPARAM L0001052     0.00000005242      3.49      4.00      3.25
** ----------------------------------------------------------------
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
   INCLUDED "13850 HRA.rou"
RE FINISHED
**
**************************************
** AERMOD Meteorology Pathway
**************************************
**
**
ME STARTING
   SURFFILE FontanaADJU\FONT_V9_ADJU\FONT_v9.SFC
   PROFFILE FontanaADJU\FONT_V9_ADJU\FONT_v9.PFL
   SURFDATA 3102 2011
   UAIRDATA 3190 2011
   SITEDATA 99999 2011
   PROFBASE 367.0 METERS
ME FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
** Auto-Generated Plotfiles
   PLOTFILE ANNUAL ALL "13850 HRA.AD\AN00GALL.PLT" 31
   SUMMFILE "13850 HRA.sum"
OU FINISHED


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

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

 A Total of            0 Fatal Error Message(s)
```

```
 A Total of            2 Warning Message(s)
 A Total of            0 Informational Message(s)


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


    ********   WARNING MESSAGES   ********
 ME W186     382       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187     382       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


 *********************************
 *** SETUP Finishes Successfully ***
 *********************************

 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD View\13550 HRA\13550
HRA.isc                          ***        09/07/21
 *** AERMET - VERSION  16216 ***   ***
                         ***        16:35:21

                                    PAGE   1
 *** MODELOPTs:    RegDFAULT  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   131 Source(s),
   for Total of    1 Urban Area(s):
   Urban Population =   2035210.0 ;  Urban Roughness Length =  1.000 m

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

```
 **Other Options Specified:
        ADJ_U*   - Use ADJ_U* option for SBL in AERMET
        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:    131 Source(s);       1 Source Group(s); and      26
Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                 and:    131 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 a total of     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

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =   367.00 ;  Decay
Coef. =    0.000     ;  Rot. Angle =     0.0
                  Emission Units = GRAMS/SEC                                ;
Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

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

 **Input Runstream File:          aermod.inp
```

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE VARY BY
L0000922	0	0.91660E-06	457657.4	3770171.5	334.0	3.49	4.00	3.25	YES	
L0000923	0	0.91660E-06	457657.4	3770162.9	334.0	3.49	4.00	3.25	YES	
L0000924	0	0.91660E-06	457657.4	3770154.3	334.0	3.49	4.00	3.25	YES	
L0000925	0	0.91660E-06	457657.4	3770145.7	334.0	3.49	4.00	3.25	YES	
L0000926	0	0.91660E-06	457657.4	3770137.2	334.0	3.49	4.00	3.25	YES	
L0000927	0	0.91660E-06	457657.4	3770128.6	334.0	3.49	4.00	3.25	YES	
L0000928	0	0.91660E-06	457657.4	3770120.0	333.9	3.49	4.00	3.25	YES	
L0000929	0	0.12500E-06	457637.0	3770171.5	334.0	3.49	4.00	3.25	YES	
L0000930	0	0.12500E-06	457637.1	3770162.9	334.0	3.49	4.00	3.25	YES	
L0000931	0	0.12500E-06	457637.2	3770154.3	334.0	3.49	4.00	3.25	YES	
L0000932	0	0.12500E-06	457637.3	3770145.7	334.0	3.49	4.00	3.25	YES	

L0000933	0	0.12500E-06	457637.4	3770137.2	333.8	3.49	4.00	3.25 YES
L0000934	0	0.12500E-06	457637.6	3770128.6	333.6	3.49	4.00	3.25 YES
L0000935	0	0.12500E-06	457637.7	3770120.0	333.4	3.49	4.00	3.25 YES
L0000936	0	0.12500E-06	457637.8	3770111.4	333.2	3.49	4.00	3.25 YES
L0000937	0	0.12500E-06	457637.9	3770102.8	333.2	3.49	4.00	3.25 YES
L0000938	0	0.12500E-06	457638.1	3770094.2	333.1	3.49	4.00	3.25 YES
L0000939	0	0.12500E-06	457638.2	3770085.6	333.0	3.49	4.00	3.25 YES
L0000940	0	0.12500E-06	457638.3	3770077.0	333.0	3.49	4.00	3.25 YES
L0000941	0	0.12500E-06	457638.4	3770068.4	333.0	3.49	4.00	3.25 YES
L0000942	0	0.52420E-07	457640.1	3770047.2	332.7	3.49	4.00	3.25 YES
L0000943	0	0.52420E-07	457648.7	3770047.1	332.7	3.49	4.00	3.25 YES
L0000944	0	0.52420E-07	457657.3	3770047.0	332.7	3.49	4.00	3.25 YES
L0000945	0	0.52420E-07	457665.9	3770047.0	332.8	3.49	4.00	3.25 YES
L0000946	0	0.52420E-07	457674.5	3770046.9	332.8	3.49	4.00	3.25 YES
L0000947	0	0.52420E-07	457683.1	3770046.8	332.9	3.49	4.00	3.25 YES
L0000948	0	0.52420E-07	457691.7	3770046.8	333.0	3.49	4.00	3.25 YES
L0000949	0	0.52420E-07	457700.2	3770046.7	333.0	3.49	4.00	3.25 YES
L0000950	0	0.52420E-07	457708.8	3770046.6	333.0	3.49	4.00	3.25 YES
L0000951	0	0.52420E-07	457717.4	3770046.5	333.0	3.49	4.00	3.25 YES
L0000952	0	0.52420E-07	457726.0	3770046.5	333.1	3.49	4.00	3.25 YES
L0000953	0	0.52420E-07	457734.6	3770046.4	333.3	3.49	4.00	3.25 YES
L0000954	0	0.52420E-07	457743.2	3770046.3	333.5	3.49	4.00	3.25 YES
L0000955	0	0.52420E-07	457751.8	3770046.3	333.7	3.49	4.00	3.25 YES
L0000956	0	0.52420E-07	457760.4	3770046.2	333.7	3.49	4.00	3.25 YES
L0000957	0	0.52420E-07	457769.0	3770046.1	333.7	3.49	4.00	3.25 YES

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE BY	EMISSION RATE SCALAR VARY
L0000958	0	0.52420E-07	457777.6	3770046.0	333.7	3.49	4.00	3.25	YES	
L0000959	0	0.52420E-07	457786.1	3770046.0	333.7	3.49	4.00	3.25	YES	
L0000960	0	0.52420E-07	457794.7	3770045.9	333.8	3.49	4.00	3.25	YES	
L0000961	0	0.52420E-07	457803.3	3770045.8	333.9	3.49	4.00	3.25	YES	
L0000962	0	0.52420E-07	457811.9	3770045.8	334.0	3.49	4.00	3.25	YES	
L0000963	0	0.52420E-07	457820.5	3770045.7	334.0	3.49	4.00	3.25	YES	
L0000964	0	0.52420E-07	457829.1	3770045.6	334.0	3.49	4.00	3.25	YES	
L0000965	0	0.52420E-07	457837.7	3770045.5	334.0	3.49	4.00	3.25	YES	
L0000966	0	0.52420E-07	457846.3	3770045.5	334.0	3.49	4.00	3.25	YES	
L0000967	0	0.52420E-07	457854.9	3770045.4	334.0	3.49	4.00	3.25	YES	
L0000968	0	0.52420E-07	457863.5	3770045.3	334.0	3.49	4.00	3.25	YES	
L0000969	0	0.52420E-07	457872.0	3770045.2	334.0	3.49	4.00	3.25	YES	
L0000970	0	0.52420E-07	457880.6	3770045.2	334.0	3.49	4.00	3.25	YES	
L0000971	0	0.52420E-07	457889.2	3770045.1	334.0	3.49	4.00	3.25	YES	
L0000972	0	0.52420E-07	457897.8	3770045.0	334.0	3.49	4.00	3.25	YES	

L0000973	0	0.52420E-07	457906.4	3770045.0	334.1	3.49	4.00	3.25 YES
L0000974	0	0.52420E-07	457915.0	3770044.9	334.3	3.49	4.00	3.25 YES
L0000975	0	0.52420E-07	457923.6	3770044.8	334.5	3.49	4.00	3.25 YES
L0000976	0	0.52420E-07	457932.2	3770044.7	334.6	3.49	4.00	3.25 YES
L0000977	0	0.52420E-07	457940.8	3770044.7	334.6	3.49	4.00	3.25 YES
L0000978	0	0.52420E-07	457949.4	3770044.6	334.6	3.49	4.00	3.25 YES
L0000979	0	0.52420E-07	457957.9	3770044.5	334.6	3.49	4.00	3.25 YES
L0000980	0	0.52420E-07	457966.5	3770044.5	334.6	3.49	4.00	3.25 YES
L0000981	0	0.52420E-07	457975.1	3770044.4	334.6	3.49	4.00	3.25 YES
L0000982	0	0.52420E-07	457983.7	3770044.3	334.6	3.49	4.00	3.25 YES
L0000983	0	0.52420E-07	457992.3	3770044.2	334.6	3.49	4.00	3.25 YES
L0000984	0	0.52420E-07	458000.9	3770044.2	334.6	3.49	4.00	3.25 YES
L0000985	0	0.52420E-07	458009.5	3770044.1	334.6	3.49	4.00	3.25 YES
L0000986	0	0.52420E-07	458018.1	3770044.0	334.6	3.49	4.00	3.25 YES
L0000987	0	0.52420E-07	458026.7	3770043.9	334.7	3.49	4.00	3.25 YES
L0000988	0	0.52420E-07	458035.2	3770043.9	334.8	3.49	4.00	3.25 YES
L0000989	0	0.52420E-07	458043.8	3770043.8	334.9	3.49	4.00	3.25 YES
L0000990	0	0.52420E-07	458052.4	3770043.7	335.0	3.49	4.00	3.25 YES
L0000991	0	0.52420E-07	458061.0	3770043.7	335.0	3.49	4.00	3.25 YES
L0000992	0	0.52420E-07	458069.6	3770043.6	335.0	3.49	4.00	3.25 YES
L0000993	0	0.52420E-07	458078.2	3770043.6	335.0	3.49	4.00	3.25 YES
L0000994	0	0.52420E-07	458086.8	3770043.5	335.0	3.49	4.00	3.25 YES
L0000995	0	0.52420E-07	458095.4	3770043.4	335.0	3.49	4.00	3.25 YES
L0000996	0	0.52420E-07	458104.0	3770043.4	335.0	3.49	4.00	3.25 YES
L0000997	0	0.52420E-07	458112.6	3770043.3	335.1	3.49	4.00	3.25 YES

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
L0000998	0	0.52420E-07	458121.1	3770043.3	335.2	3.49	4.00	3.25	YES	
L0000999	0	0.52420E-07	458129.7	3770043.2	335.4	3.49	4.00	3.25	YES	
L0001000	0	0.52420E-07	458131.7	3770036.6	335.2	3.49	4.00	3.25	YES	
L0001001	0	0.52420E-07	458131.6	3770028.0	335.0	3.49	4.00	3.25	YES	
L0001002	0	0.52420E-07	458131.6	3770019.4	335.0	3.49	4.00	3.25	YES	
L0001003	0	0.52420E-07	458131.5	3770010.8	335.0	3.49	4.00	3.25	YES	
L0001004	0	0.52420E-07	458131.5	3770002.3	335.0	3.49	4.00	3.25	YES	
L0001005	0	0.52420E-07	458131.4	3769993.7	334.9	3.49	4.00	3.25	YES	
L0001006	0	0.52420E-07	458131.4	3769985.1	334.6	3.49	4.00	3.25	YES	
L0001007	0	0.52420E-07	458131.3	3769976.5	334.3	3.49	4.00	3.25	YES	
L0001008	0	0.52420E-07	458131.3	3769967.9	334.1	3.49	4.00	3.25	YES	
L0001009	0	0.52420E-07	458131.2	3769959.3	334.0	3.49	4.00	3.25	YES	
L0001010	0	0.52420E-07	458131.1	3769950.7	334.0	3.49	4.00	3.25	YES	
L0001011	0	0.52420E-07	458131.9	3769942.2	334.0	3.49	4.00	3.25	YES	
L0001012	0	0.52420E-07	458132.9	3769933.6	333.9	3.49	4.00	3.25	YES	

L0001013	0	0.52420E-07	458133.8	3769925.1	333.6	3.49	4.00
3.25	YES						
L0001014	0	0.52420E-07	458134.7	3769916.6	333.3	3.49	4.00
3.25	YES						
L0001015	0	0.52420E-07	458135.5	3769908.0	333.1	3.49	4.00
3.25	YES						
L0001016	0	0.52420E-07	458135.9	3769899.4	333.0	3.49	4.00
3.25	YES						
L0001017	0	0.52420E-07	458136.2	3769890.8	332.9	3.49	4.00
3.25	YES						
L0001018	0	0.52420E-07	458136.6	3769882.3	332.9	3.49	4.00
3.25	YES						
L0001019	0	0.52420E-07	458136.9	3769873.7	332.8	3.49	4.00
3.25	YES						
L0001020	0	0.52420E-07	458137.1	3769865.1	332.6	3.49	4.00
3.25	YES						
L0001021	0	0.52420E-07	458136.6	3769856.5	332.3	3.49	4.00
3.25	YES						
L0001022	0	0.52420E-07	458136.1	3769847.9	332.1	3.49	4.00
3.25	YES						
L0001023	0	0.52420E-07	458135.6	3769839.4	332.0	3.49	4.00
3.25	YES						
L0001024	0	0.52420E-07	458135.4	3769830.8	331.9	3.49	4.00
3.25	YES						
L0001025	0	0.52420E-07	458135.4	3769822.2	331.9	3.49	4.00
3.25	YES						
L0001026	0	0.52420E-07	458135.5	3769813.6	332.0	3.49	4.00
3.25	YES						
L0001027	0	0.52420E-07	458135.6	3769805.0	332.2	3.49	4.00
3.25	YES						
L0001028	0	0.52420E-07	458135.7	3769796.4	332.5	3.49	4.00
3.25	YES						
L0001029	0	0.52420E-07	458135.8	3769787.8	332.8	3.49	4.00
3.25	YES						
L0001030	0	0.52420E-07	458135.9	3769779.2	333.3	3.49	4.00
3.25	YES						
L0001031	0	0.52420E-07	458136.0	3769770.7	333.9	3.49	4.00
3.25	YES						
L0001032	0	0.52420E-07	458136.1	3769762.1	334.4	3.49	4.00
3.25	YES						
L0001033	0	0.52420E-07	458136.1	3769753.5	334.8	3.49	4.00
3.25	YES						
L0001034	0	0.52420E-07	458136.2	3769744.9	334.9	3.49	4.00
3.25	YES						
L0001035	0	0.52420E-07	458136.3	3769736.3	334.9	3.49	4.00
3.25	YES						
L0001036	0	0.52420E-07	458136.4	3769727.7	335.0	3.49	4.00
3.25	YES						
L0001037	0	0.52420E-07	458136.5	3769719.1	335.0	3.49	4.00
3.25	YES						

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
L0001038	0	0.52420E-07	458136.6	3769710.5	335.0	3.49	4.00	3.25	YES	
L0001039	0	0.52420E-07	458136.7	3769701.9	335.0	3.49	4.00	3.25	YES	
L0001040	0	0.52420E-07	458136.8	3769693.4	334.4	3.49	4.00	3.25	YES	
L0001041	0	0.52420E-07	458136.9	3769684.8	332.7	3.49	4.00	3.25	YES	
L0001042	0	0.52420E-07	458136.9	3769676.2	331.0	3.49	4.00	3.25	YES	
L0001043	0	0.52420E-07	458137.0	3769667.6	329.2	3.49	4.00	3.25	YES	
L0001044	0	0.52420E-07	458137.1	3769659.0	330.4	3.49	4.00	3.25	YES	
L0001045	0	0.52420E-07	458137.2	3769650.4	332.1	3.49	4.00	3.25	YES	
L0001046	0	0.52420E-07	458137.3	3769641.8	333.8	3.49	4.00	3.25	YES	
L0001047	0	0.52420E-07	458137.4	3769633.2	334.9	3.49	4.00	3.25	YES	
L0001048	0	0.52420E-07	458137.5	3769624.6	334.9	3.49	4.00	3.25	YES	
L0001049	0	0.52420E-07	458137.6	3769616.0	335.0	3.49	4.00	3.25	YES	
L0001050	0	0.52420E-07	458137.7	3769607.5	335.0	3.49	4.00	3.25	YES	
L0001051	0	0.52420E-07	458137.7	3769598.9	335.0	3.49	4.00	3.25	YES	
L0001052	0	0.52420E-07	458137.8	3769590.3	334.9	3.49	4.00	3.25	YES	

 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

                                          *** SOURCE IDs DEFINING SOURCE GROUPS ***

 SRCGROUP ID   SOURCE IDs
 -----------   ----------

  ALL   L0000922   , L0000923   , L0000924   , L0000925   , L0000926   , L0000927   , L0000928   , L0000929   ,

             L0000930   , L0000931   , L0000932   , L0000933   , L0000934   , L0000935   , L0000936   , L0000937   ,

             L0000938   , L0000939   , L0000940   , L0000941   , L0000942   , L0000943   , L0000944   , L0000945   ,

             L0000946   , L0000947   , L0000948   , L0000949   , L0000950   , L0000951   , L0000952   , L0000953   ,

             L0000954   , L0000955   , L0000956   , L0000957   , L0000958   , L0000959   , L0000960   , L0000961   ,

             L0000962   , L0000963   , L0000964   , L0000965   , L0000966   , L0000967   , L0000968   , L0000969   ,

             L0000970   , L0000971   , L0000972   , L0000973   , L0000974   , L0000975   , L0000976   , L0000977   ,

             L0000978   , L0000979   , L0000980   , L0000981   , L0000982   , L0000983   , L0000984   , L0000985   ,

             L0000986   , L0000987   , L0000988   , L0000989   , L0000990   , L0000991   , L0000992   , L0000993   ,

             L0000994   , L0000995   , L0000996   , L0000997   , L0000998   , L0000999   , L0001000   , L0001001   ,

             L0001002   , L0001003   , L0001004   , L0001005   , L0001006   , L0001007   , L0001008   , L0001009   ,

             L0001010   , L0001011   , L0001012   , L0001013   , L0001014   ,

L0001015 , L0001016 , L0001017 ,

L0001018 , L0001019 , L0001020 , L0001021 , L0001022 ,
L0001023 , L0001024 , L0001025 ,

L0001026 , L0001027 , L0001028 , L0001029 , L0001030 ,
L0001031 , L0001032 , L0001033 ,

L0001034 , L0001035 , L0001036 , L0001037 , L0001038 ,
L0001039 , L0001040 , L0001041 ,

L0001042 , L0001043 , L0001044 , L0001045 , L0001046 ,
L0001047 , L0001048 , L0001049 ,

L0001050 , L0001051 , L0001052 ,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINED AS URBAN SOURCES ***

URBAN ID	URBAN POP	SOURCE IDs
	2035210.	L0000922 , L0000923 , L0000924 , L0000925 , L0000926 , L0000927 , L0000928 , L0000929 ,
		L0000930 , L0000931 , L0000932 , L0000933 , L0000934 , L0000935 , L0000936 , L0000937 ,
		L0000938 , L0000939 , L0000940 , L0000941 , L0000942 , L0000943 , L0000944 , L0000945 ,
		L0000946 , L0000947 , L0000948 , L0000949 , L0000950 , L0000951 , L0000952 , L0000953 ,
		L0000954 , L0000955 , L0000956 , L0000957 , L0000958 , L0000959 , L0000960 , L0000961 ,
		L0000962 , L0000963 , L0000964 , L0000965 , L0000966 , L0000967 , L0000968 , L0000969 ,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

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

(457621.4, 3770252.1, 334.9, 334.9, 0.0); (457689.0, 3770249.4, 335.4, 335.4, 0.0);
(457745.6, 3770252.9, 336.0, 336.0, 0.0); (457745.4, 3770222.3, 335.9, 335.9, 0.0);
(457750.0, 3770137.3, 335.0, 335.0, 0.0); (457519.2, 3770256.5, 334.0, 334.0, 0.0);
(457414.4, 3770278.1, 334.0, 334.0, 0.0); (457617.4,

```
3770107.4,     333.0,     333.0,       0.0);
     ( 457615.2, 3770174.2,     334.0,     334.0,       0.0);         ( 457596.8,
3770198.0,     334.0,     334.0,       0.0);
     ( 457663.1, 3770249.1,     335.1,     335.1,       0.0);         ( 457757.0,
3770115.1,     335.0,     335.0,       0.0);
     ( 457660.0, 3769988.4,     331.7,     331.7,       0.0);         ( 457750.5,
3770071.8,     334.0,     334.0,       0.0);
     ( 457749.7, 3770190.8,     335.5,     335.5,       0.0);         ( 457490.1,
3770394.8,     335.5,     335.5,       0.0);
     ( 457372.8, 3770367.4,     335.4,     335.4,       0.0);         ( 457415.0,
3770345.8,     335.0,     335.0,       0.0);
     ( 457415.0, 3770323.8,     334.9,     334.9,       0.0);         ( 457414.6,
3770303.3,     334.2,     334.2,       0.0);
     ( 457517.1, 3770280.9,     334.5,     334.5,       0.0);         ( 457442.7,
3770259.2,     334.0,     334.0,       0.0);
     ( 457592.7, 3770080.6,     332.6,     332.6,       0.0);         ( 457922.8,
3770071.3,     334.9,     334.9,       0.0);
     ( 457802.0, 3770086.3,     334.8,     334.8,       0.0);         ( 457792.2,
3769422.9,     325.9,     325.9,       0.0);
```


*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***

(1=YES; 0=NO)

```
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1
```

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

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

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

Surface file: FontanaADJU\FONT_V9_ADJU\FONT_v9.SFC
Met Version: 16216
Profile file: FontanaADJU\FONT_V9_ADJU\FONT_v9.PFL

Surface format: FREE

Profile format: FREE

Surface station no.: 3102 Upper air station no.: 3190
Name: UNKNOWN Name: UNKNOWN

Year: 2011 Year: 2011

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
11	01	01	1	01	-18.5	0.194	-9.000	-9.000	-999.	204.	41.2	0.25	2.82	1.00	1.80	69.	9.1	276.4	5.5
11	01	01	1	02	-23.8	0.239	-9.000	-9.000	-999.	281.	63.0	0.25	2.82	1.00	2.20	52.	9.1	275.4	5.5
11	01	01	1	03	-18.5	0.194	-9.000	-9.000	-999.	205.	41.2	0.25	2.82	1.00	1.80	32.	9.1	275.4	5.5
11	01	01	1	04	-1.4	0.067	-9.000	-9.000	-999.	57.	18.3	0.25	2.82	1.00	0.40	27.	9.1	274.2	5.5
11	01	01	1	05	-18.6	0.194	-9.000	-9.000	-999.	204.	41.2	0.25	2.82	1.00	1.80	51.	9.1	274.2	5.5
11	01	01	1	06	-29.7	0.296	-9.000	-9.000	-999.	387.	96.6	0.25	2.82	1.00	2.70	53.	9.1	274.2	5.5
11	01	01	1	07	-24.0	0.239	-9.000	-9.000	-999.	282.	63.0	0.25	2.82						

```
1.00    2.20   70.    9.1  274.2    5.5
 11 01 01   1 08   -8.4  0.138 -9.000 -9.000 -999.  127.     27.3  0.25   2.82
0.54    1.30   72.    9.1  275.4    5.5
 11 01 01   1 09   44.3  0.280  0.571  0.005  147.  356.    -43.5  0.25   2.82
0.32    2.20   67.    9.1  277.5    5.5
 11 01 01   1 10  122.7  0.264  0.952  0.005  247.  326.    -13.2  0.25   2.82
0.25    1.80   83.    9.1  279.9    5.5
 11 01 01   1 11  179.8  0.316  1.733  0.005 1017.  426.    -15.4  0.25   2.82
0.22    2.20   58.    9.1  282.0    5.5
 11 01 01   1 12  206.0  0.320  1.940  0.008 1244.  435.    -14.0  0.25   2.82
0.21    2.20  115.    9.1  283.1    5.5
 11 01 01   1 13  132.6  0.214  1.733  0.009 1377.  243.     -6.5  0.25   2.82
0.21    1.30  147.    9.1  284.2    5.5
 11 01 01   1 14  147.0  0.216  1.818  0.009 1431.  242.     -6.0  0.25   2.82
0.23    1.30  219.    9.1  284.9    5.5
 11 01 01   1 15  104.0  0.208  1.633  0.009 1468.  228.     -7.6  0.25   2.82
0.26    1.30  126.    9.1  285.4    5.5
 11 01 01   1 16   26.4  0.140  1.037  0.009 1477.  127.     -9.1  0.25   2.82
0.35    0.90  151.    9.1  284.9    5.5
 11 01 01   1 17   -9.0  0.137 -9.000 -9.000 -999.  121.     24.9  0.25   2.82
0.63    1.30   69.    9.1  283.1    5.5
 11 01 01   1 18  -33.4  0.342 -9.000 -9.000 -999.  481.    129.0  0.25   2.82
1.00    3.10   81.    9.1  281.4    5.5
 11 01 01   1 19  -33.6  0.342 -9.000 -9.000 -999.  481.    128.9  0.25   2.82
1.00    3.10   51.    9.1  279.9    5.5
 11 01 01   1 20  -23.6  0.239 -9.000 -9.000 -999.  287.     63.1  0.25   2.82
1.00    2.20   77.    9.1  278.8    5.5
 11 01 01   1 21  -18.5  0.194 -9.000 -9.000 -999.  205.     41.2  0.25   2.82
1.00    1.80   53.    9.1  277.5    5.5
 11 01 01   1 22  -23.7  0.239 -9.000 -9.000 -999.  281.     63.0  0.25   2.82
1.00    2.20   58.    9.1  277.5    5.5
 11 01 01   1 23  -18.5  0.194 -9.000 -9.000 -999.  205.     41.2  0.25   2.82
1.00    1.80   64.    9.1  277.5    5.5
 11 01 01   1 24   -4.5  0.094 -9.000 -9.000 -999.   74.     16.3  0.25   2.82
1.00    0.90   52.    9.1  277.0    5.5


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 11 01 01 01    5.5 0 -999.  -99.00   276.5   99.0  -99.00  -99.00
 11 01 01 01    9.1 1   69.    1.80  -999.0   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
↑ *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD View\13550 HRA\13550
HRA.isc                         ***        09/07/21
 *** AERMET - VERSION  16216 ***   ***
                          ***        16:35:21

                                    PAGE  11
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN  ADJ_U*
```

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
457621.37	3770252.07	0.00047	457689.05	3770249.38	0.00054
457745.61	3770252.92	0.00041	457745.44	3770222.28	0.00058
457749.99	3770137.26	0.00081	457519.19	3770256.50	0.00022
457414.41	3770278.09	0.00011	457617.38	3770107.43	0.00213
457615.20	3770174.19	0.00184	457596.77	3770197.96	0.00083
457663.13	3770249.07	0.00055	457757.01	3770115.08	0.00070
457660.01	3769988.45	0.00041	457750.50	3770071.81	0.00080
457749.68	3770190.82	0.00073	457490.11	3770394.76	0.00009
457372.82	3770367.43	0.00007	457414.95	3770345.79	0.00009
457414.95	3770323.77	0.00009	457414.58	3770303.28	0.00010
457517.06	3770280.88	0.00019	457442.66	3770259.24	0.00013
457592.74	3770080.61	0.00089	457922.83	3770071.30	0.00052
457801.98	3770086.33	0.00055	457792.19	3769422.88	0.00004

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS
AVERAGED OVER   5 YEARS ***

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

GROUP ID	NETWORK AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	GRID-ID
ALL	1ST HIGHEST VALUE IS	0.00213 AT (457617.38, 3770107.43, 333.00, 333.00, 0.00)	DC	
	2ND HIGHEST VALUE IS	0.00184 AT (457615.20, 3770174.19, 334.00, 334.00, 0.00)	DC	
	3RD HIGHEST VALUE IS	0.00089 AT (457592.74, 3770080.61, 332.62, 332.62, 0.00)	DC	
	4TH HIGHEST VALUE IS	0.00083 AT (457596.77, 3770197.96, 334.00, 334.00, 0.00)	DC	
	5TH HIGHEST VALUE IS	0.00081 AT (457749.99, 3770137.26, 335.00, 335.00, 0.00)	DC	
	6TH HIGHEST VALUE IS	0.00080 AT (457750.50, 3770071.81, 334.00, 334.00, 0.00)	DC	
	7TH HIGHEST VALUE IS	0.00073 AT (457749.68, 3770190.82, 335.48, 335.48, 0.00)	DC	
	8TH HIGHEST VALUE IS	0.00070 AT (457757.01, 3770115.08, 334.96, 334.96, 0.00)	DC	
	9TH HIGHEST VALUE IS	0.00058 AT (457745.44, 3770222.28, 335.94, 335.94, 0.00)	DC	
	10TH HIGHEST VALUE IS	0.00055 AT (457663.13, 3770249.07, 335.05, 335.05, 0.00)	DC	

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

*** 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   7 Warning Message(s)
A Total of   838 Informational Message(s)

A Total of   43848 Hours Were Processed

A Total of   40 Calm Hours Identified

A Total of   798 Missing Hours Identified (1.82 Percent)

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

   ********   WARNING MESSAGES   ********
ME W186   382   MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
     0.50
ME W187   382   MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

MX W438   8800   METQA: Convective Velocity Data Out-of-Range. KURDAT =
 12010216
MX W438   11536   METQA: Convective Velocity Data Out-of-Range. KURDAT =
 12042516
MX W420   16779   METQA: Wind Speed Out-of-Range.   KURDAT =
 12113003
MX W450   26305   CHKDAT: Record Out of Sequence in Meteorological File at:
 15010101
MX W450   26305   CHKDAT: Record Out of Sequence in Meteorological File at:
1 year gap

   ****
   *** AERMOD Finishes Successfully ***
   ****

AVERAGE EMISSION FACTOR
SAN BERNARDINO COUNTY 2022

Speed	LHD1	MHD	HHD
0	0.356236	0.114036	0.01588
5	0.031861	0.052929	0.04181
25	0.011555	0.026796	0.01757

Speed	Weighted Average Emissions
0	**0.09641**
5	**0.04250**
25	**0.01853**

Emission Rates - 2022 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	23			0.0964	0.55	6.416E-06
On-Site Travel	46	3.30	0.0425		0.14	1.625E-06
Off-Site Travel	46	27.13	0.0185		0.50	5.819E-06

[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_y	season_m	sub_area	vehicle_class	fuel	temperatu	relative_h	process	speed_tim	pollutant	emission_rate
2022	Annual	San Bernar	HHDT	Dsl	60	70	RUNEX	5	PM10	0.045082
2022	Annual	San Bernar	HHDT	Dsl	60	70	RUNEX	25	PM10	0.018946
2022	Annual	San Bernar	LHDT1	Dsl	60	70	RUNEX	5	PM10	0.070615
2022	Annual	San Bernar	LHDT1	Dsl	60	70	RUNEX	25	PM10	0.02561
2022	Annual	San Bernar	MHDT	Dsl	60	70	RUNEX	5	PM10	0.05814
2022	Annual	San Bernar	MHDT	Dsl	60	70	RUNEX	25	PM10	0.029434
2022	Annual	San Bernar	HHDT	Dsl			IDLEX		PM10	0.017119
2022	Annual	San Bernar	LHDT1	Dsl			IDLEX		PM10	0.789532
2022	Annual	San Bernar	MHDT	Dsl			IDLEX		PM10	0.125262

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: SAN BERNARDINO COUNTY
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Y	Vehicle Ca	Model Yea	Speed	Fuel	Population
San Berna	2022	HHDT	Aggregate	Aggregate	Gasoline	5.738391
San Berna	2022	HHDT	Aggregate	Aggregate	Diesel	14883.97
San Berna	2022	HHDT	Aggregate	Aggregate	Natural Ga	1157.768
San Berna	2022	LHDT1	Aggregate	Aggregate	Gasoline	14369.53
San Berna	2022	LHDT1	Aggregate	Aggregate	Diesel	11813.96
San Berna	2022	MHDT	Aggregate	Aggregate	Gasoline	1426.666
San Berna	2022	MHDT	Aggregate	Aggregate	Diesel	14492.29

HHDT% GAS/NG	0.0725
HHDT% DSL	0.9275
LHDT1% GAS	0.5488
LHDT1% DSL	0.4512
MHDT% GAS	0.08962
MHDT% DSL	0.91038

APPENDIX 2.3:

RISK CALCULATIONS

Table 1
Quantification of Carcinogenic Risks and Noncarcinogenic Hazards
0-2 Age Bin Exposure Scenario - Construction Activity

Source	Mass GLC		Weight Fraction	Contaminant	Carcinogenic Risk				Noncarcinogenic Hazards/ Toxicological Endpoints**								
					URF	CPF	DOSE	RISK	REL	RfD	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
	(ug/m^3)	(mg/m^3)			(ug/m^3)$^{-1}$	(mg/kg/day)$^{-1}$	(mg/kg-day)		(ug/m^3)	(mg/kg/day)								
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)
	0.08970	8.97E-05	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	7.1E-05	6.9E-06	5.0E+00	1.4E-03	1.8E-02							
TOTAL								6.9E-06			1.8E-02	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
								6.89										

** 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)	264
exposure duration (years)	0.76
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 1
Quantification of Carcinogenic Risks and Noncarcinogenic Hazards
-0.25 to 0 Age Bin Exposure Scenario

Source	Mass GLC		Weight Fraction	Contaminant	Carcinogenic Risk				Noncarcinogenic Hazards/ Toxicological Endpoints**								
					URF	CPF	DOSE	RISK	REL	RfD	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
	(ug/m^3)	(mg/m^3)			(ug/m^3)$^{-1}$	(mg/kg/day)$^{-1}$	(mg/kg-day)		(ug/m^3)	(mg/kg/day)								
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)
	0.00081	8.10E-07	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	2.8E-07	8.9E-09	5.0E+00	1.4E-03	1.6E-04							
TOTAL								8.9E-09			1.6E-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	Mass GLC		Weight Fraction	Contaminant	Carcinogenic Risk				Noncarcinogenic Hazards/ Toxicological Endpoints**								
					URF	CPF	DOSE	RISK	REL	RfD	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
	(ug/m^3)	(mg/m^3)			(ug/m^3)$^{-1}$	(mg/kg/day)$^{-1}$	(mg/kg-day)		(ug/m^3)	(mg/kg/day)								
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)
	0.00081	8.10E-07	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	8.5E-07	2.2E-07	5.0E+00	1.4E-03	1.6E-04							
TOTAL								2.2E-07			1.6E-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	Mass GLC		Weight Fraction	Contaminant	Carcinogenic Risk				Noncarcinogenic Hazards/ Toxicological Endpoints**								
					URF	CPF	DOSE	RISK	REL	RfD	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
	(ug/m^3)	(mg/m^3)			(ug/m^3)$^{-1}$	(mg/kg/day)$^{-1}$	(mg/kg-day)		(ug/m^3)	(mg/kg/day)								
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)
	0.00081	8.10E-07	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	4.4E-07	2.0E-07	5.0E+00	1.4E-03	1.6E-04							
TOTAL								2.0E-07			1.6E-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	Mass GLC		Weight Fraction	Contaminant	Carcinogenic Risk				Noncarcinogenic Hazards/ Toxicological Endpoints**								
					URF	CPF	DOSE	RISK	REL	RfD	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
	(ug/m^3)	(mg/m^3)			$(ug/m^3)^{-1}$	$(mg/kg/day)^{-1}$	(mg/kg-day)		(ug/m^3)	(mg/kg/day)								
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)
	0.00081	8.10E-07	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	2.0E-07	3.1E-08	5.0E+00	1.4E-03	1.6E-04							
TOTAL								3.1E-08			1.6E-04	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
								0.03										

** 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) 0.46

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**									
						URF	CPF	DOSE	RISK	REL	RfD	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
		(ug/m^3)	(mg/m^3)			($ug/m^3)^{-1}$	$(mg/kg/day)^{-1}$	(mg/kg-day)		(ug/m^3)	(mg/kg/day)								
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)
1	Diesel Particulates	2.13E-03	2.13E-06	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	3.4E-07	1.3E-07	5.0E+00	1.4E-03	4.3E-04							
	TOTAL								1.4E-07			4.6E-04	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
									0.14										

** 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)	250
exposure duration (years)	25
inhalation rate (L/kg-day))	230
inhalation absorption factor	1
averaging time (years)	70

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**									
						URF	CPF	DOSE	RISK	REL	RfD	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
		(ug/m^3)	(mg/m^3)			(ug/m^3)$^{-1}$	(mg/kg/day)$^{-1}$	(mg/kg-day)		(ug/m^3)	(mg/kg/day)								
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)
1	Diesel Particulates	2.20E-04	2.20E-07	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	6.2E-08	2.5E-08	5.0E+00	1.4E-03	4.4E-05							
	TOTAL								4.6E-08			8.0E-05	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)	180
exposure duration (years)	9
inhalation rate (L/kg-day))	572
inhalation absorption factor	1
averaging time (years)	70
age sensitivity factor (ages 4-13)	3

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

Source	Mass GLC		Weight Fraction	Contaminant	Carcinogenic Risk				Noncarcinogenic Hazards/ Toxicological Endpoints**								
					URF	CPF	DOSE	RISK	REL	RfD	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
	(ug/m^3)	(mg/m^3)			(ug/m^3)$^{-1}$	(mg/kg/day)$^{-1}$	(mg/kg-day)		(ug/m^3)	(mg/kg/day)								
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)
	0.00054	5.40E-07	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	3.0E-07	1.3E-07	5.0E+00	1.4E-03	1.1E-04							
TOTAL								1.3E-07			1.1E-04	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

** Key to Toxicological Endpoints

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

Note: Exposure factors used to calculate contaminant intake

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

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

Source	Mass GLC		Weight Fraction	Contaminant	Carcinogenic Risk				Noncarcinogenic Hazards/ Toxicological Endpoints**									
					URF	CPF	DOSE	RISK	REL	RfD	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
	(ug/m^3)	(mg/m^3)			(ug/m^3)$^{-1}$	(mg/kg/day)$^{-1}$	(mg/kg-day)		(ug/m^3)	(mg/kg/day)								
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)
	0.00054	5.40E-07	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	1.4E-07	2.1E-08	5.0E+00	1.4E-03	1.1E-04							
TOTAL								2.1E-08			1.1E-04	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

0.02

** 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) 0.02

Table 1 - R26
Quantification of Carcinogenic Risks and Noncarcinogenic Hazards
0-2 Age Bin Exposure Scenario - Construction Activity

Source	Mass GLC		Weight Fraction	Contaminant	Carcinogenic Risk				Noncarcinogenic Hazards/ Toxicological Endpoints**								
					URF	CPF	DOSE	RISK	REL	RfD	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
	(ug/m^3)	(mg/m^3)			(ug/m^3)$^{-1}$	(mg/kg/day)$^{-1}$	(mg/kg-day)		(ug/m^3)	(mg/kg/day)								
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)
	0.00057	5.70E-07	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	4.5E-07	4.4E-08	5.0E+00	1.4E-03	1.1E-04							
TOTAL								4.4E-08			1.1E-04	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
								0.04										

** 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)	264
exposure duration (years)	0.76
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 2 - R26
Quantification of Carcinogenic Risks and Noncarcinogenic Hazards
2-16 Age Bin Exposure Scenario

Source	Mass GLC		Weight Fraction	Contaminant	Carcinogenic Risk				Noncarcinogenic Hazards/ Toxicological Endpoints**								
					URF	CPF	DOSE	RISK	REL	RfD	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
	(ug/m^3)	(mg/m^3)			$(ug/m^3)^{-1}$	$(mg/kg/day)^{-1}$	(mg/kg-day)		(ug/m^3)	(mg/kg/day)								
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)
	0.00004	4.00E-08	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	2.2E-08	1.0E-08	5.0E+00	1.4E-03	8.0E-06							
TOTAL								1.0E-08			8.0E-06	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
								9.95E-03										

** 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 3 - R26
Quantification of Carcinogenic Risks and Noncarcinogenic Hazards
16-30 Age Bin Exposure Scenario

Source	Mass GLC		Weight Fraction	Contaminant	Carcinogenic Risk				Noncarcinogenic Hazards/ Toxicological Endpoints**									
					URF	CPF	DOSE	RISK	REL	RfD	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
	(ug/m^3)	(mg/m^3)			(ug/m^3)$^{-1}$	(mg/kg/day)$^{-1}$	(mg/kg-day)		(ug/m^3)	(mg/kg/day)								
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)
	0.00004	4.00E-08	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	1.0E-08	1.5E-09	5.0E+00	1.4E-03	8.0E-06							
TOTAL								1.5E-09			8.0E-06	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
								0.0015										

** 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) 0.06

APPENDIX 3.1:

BOYLE WAREHOUSE HEALTH RISK ASSESSMENT

UltraSystems
environmental•management•planning

MEMO

TO: Rina Leung, Associate Planner, City of Fontana, California

FROM: Michael B. Rogozen, D. Env.
Victor Paitimusa, Associate Planner

DATE: November 14, 2019

PROJECT #: 7028

RE: Air Toxics Health Risk Assessment for the Boyle Warehouse Project, Fontana, California

1.0 BACKGROUND

This health risk assessment (HRA) was conducted in support of an Addendum to the Certified Southwest Industrial Park (SWIP) Specific Plan Program Environmental Impact Report (PEIR) prepared under the California Environmental Quality Act (CEQA). The addendum covers a specific project under the SWIP: a proposed warehouse facility at 15950 Boyle Avenue, in Fontana, California. It is in a predominantly industrial area, with residential neighborhoods on the east and south. The facility will be visited at all hours of the day by diesel trucks. As the California Air Resources Board (ARB) has formally designated particulate emissions from diesel engines as a toxic air contaminant (TAC),[1] this HRA focuses on diesel particulate matter (DPM) emissions from diesel trucks used in freight service.

1.1 Proposed Project

The proposed project consists of the development of a 126,655-square-foot warehouse/manufacturing facility, located on a 5.54-acre parcel. The proposed warehouse building would include 3,000 square feet of built-out office improvements on the ground floor and a 3,000-square-foot mezzanine floor for additional office space.

The site will provide adequate ingress and egress, parking, and loading areas for passenger vehicles, tractor/trailer vehicles, and pedestrians. Circulation and street improvements will be provided along Boyle Avenue through roadway widening improvements and two driveway approaches. Four catch basins and an underground storage chamber will be provided on site for treatment of stormwater runoff.

1 The Toxic Air Contaminant Identification Process: Toxic Air Contaminant Emissions from Diesel-fueled Engines. Fact Sheet. California Air Resources Board, Sacramento, CA. October 1998. https://www.arb.ca.gov/toxics/dieseltac/factsht1.pdf.

Corporate Office – Orange County
16431 Scientific Way
Irvine, CA 92618-4355

Telephone: 949.788.4900
Facsimile: 949.788.4901
Website: www.ultrasystems.com

Eighty-five parking stalls would be provided on-site, with 81 spaces dedicated for standard use and four handicapped-accessible spaces. An asphalt concrete truck yard area would be provided in the northern portion of the project site. The warehouse building would include 14 dock doors, all on the north side, facing the I-10 Freeway.

Access to the site would be via driveways off of Boyle Avenue at the southwest and southeast site corners. Truck access and egress would be from either entrance. The proposed building would be operational 24 hours per day, seven days per week. Operation of the proposed project would be conducted within the enclosed building, with the exception of truck traffic, parking, and loading/unloading of trucks onsite. The number of truck trips per day is not known. However, for the purpose of preparing this HRA, 72 arrivals and 72 departures were assumed.[2]

1.2 Scope of the Health Risk Assessment

The purpose of this HRA was to address partially question III.c of the CEQA Guidelines: "Would the project expose sensitive receptors to substantial pollutant concentrations?" Exposure to criteria pollutants is discussed in **Section 4.3.3** of the Addendum. This HRA expands the discussion to exposure to diesel exhaust, which has been determined by the State of California to be a toxic air contaminant.[3] HRAs frequently cover cancer and noncancer health risks. As will be discussed below, this analysis was limited to cancer risk. The objective was to determine whether the increase in maximum individual cancer risk (MICR) would exceed the CEQA significance threshold established by the South Coast Air Quality Management District (SCAQMD). That threshold is a risk increase of 10 in one million (10×10^{-6}).[4]

2.0 METHODS

2.1 Overview

The HRA generally followed procedures prescribed by the SCAQMD for analyzing cancer risks from mobile source diesel idling emissions.[5] Although "Idling" is in the title, the guidance covers emissions from truck traffic on local streets and/or arterials, onsite truck movement, and onsite truck idling.[6] Those three activities are included in this HRA. The analysis consisted of three steps:

- Estimation of emissions;
- Dispersion modeling to calculate ground-level concentrations of diesel particulate matter (DPM) in the vicinity of the site and along truck routes; and
- Calculation of individual cancer risk.

2 Estimation of truck trips is discussed in Section 2.2.

3 The Toxic Air Contaminant Identification Process: Toxic Air Contaminant Emissions from Diesel-fueled Engines. Fact Sheet. California Air Resources Board, Sacramento, CA. October 1998. https://www.arb.ca.gov/toxics/dieseltac/factsht1.pdf..

4 SCAQMD Air Quality Significance Thresholds. South Coast Air Quality Management District. March. http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2.

5 Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Idling Emissions for CEQA Air Quality Analysis. South Coast Air Quality Management District, Diamond Bar, CA. August 2003.

6 The guidance also includes transportation refrigeration units and auxiliary power units, but those devices were assumed not to be included in the proposed project.

Additional guidance was obtained from a review of a recent HRA in the project area[7] and from SCAQMD comments on health risk assessments reported in various CEQA documents.

2.2 Emissions Estimates

Following ARB guidance,[8] the analysis used particulate matter with an aerodynamic diameter less than 10 micrometers (PM_{10}) to represent DPM. This is a conservative approach, since about 90% of DPM emissions are actually less than 2.5 micrometers ($PM_{2.5}$),[9] and $PM_{2.5}$ emissions are always less than or equal to those of PM_{10}.

2.2.1 Number of Daily Diesel Trucks

For a similar project, the SCAQMD recommended a total vehicle daily trip rate of 1.68 vehicles (passenger cars, freight trucks, delivery vehicles, etc.) per thousand square feet of warehouse space.[10] For the Boyle Warehouse project, the total vehicle trip rate would be 212. The HRA considered three categories of freight trucks: light heavy duty, medium heavy duty, and heavy, heavy duty. **Table 2.2-1** shows their definitions and percentages of the total traffic generated.

Table 2.2-1
DEFINITIONS OF TRUCK CATEGORIES

Category	Axles	EMFAC2014 Class	Fraction of Total Vehicles[a]	No. Trucks per Day
Light	2	LHD1 & LHD2	0.0645	13.69
Medium	3	MHDT	0.0865	18.36
Heavy	4 or more	HHDT	0.23	48.82

[a]Fractions of total vehicles are from Air Quality, Health Risk, and Greenhouse Gas Analysis Report. Santa Ana Avenue and Citrus Avenue Warehouse Project. City of Fontana, San Bernardino County, California. Prepared by First Carbon Solutions, San Bernardino, CA for Seefried Industrial Properties, Inc., Phoenix, AZ. January 6, 2017.

The percentages of the light-, medium- and heavy-heavy duty trucks that use diesel fuel were assumed to be 57.8%, 86.7%, and 99.1%, respectively.[11] As a result, the total number of diesel trucks traveling to and from the facility was estimated to be 72.

2.2.2 Scheduling

For modeling purposes, it was assumed that each of the 72 trucks per day would arrive on site, go to a loading dock, be unloaded and/or loaded, and depart from the site. The 72 trip cycles were distributed fairly evenly through the day. For each hour of the day the number of trucks in each of

7 Air Quality, Health Risk, and Greenhouse Gas Analysis Report. Santa Ana Avenue and Citrus Avenue Warehouse Project. City of Fontana, San Bernardino County, California. Prepared by First Carbon Solutions, San Bernardino, CA for Seefried Industrial Properties, Inc., Phoenix, AZ. January 6, 2016.

8 HARP Users Guide. Appendix K. Risk Assessment Procedures to Evaluate Particulate Emissions from Diesel-Fueled Engines. California Air Resources Board. 2003. https://www.arb.ca.gov/toxics/harp/docs/userguide/appendixK.pdf.

9 Overview: Diesel Exhaust and Health. California Air Resources Board. April 12, 2016. https://www.arb.ca.gov/research/diesel/diesel-health.htm.

10 Letter from Jillian Wong, Planning and Rules Manager, South Coast Air Quality Management District, Diamond Bar, CA to Nikki Cavazos, Assistant Planner, City of Rancho Cucamonga, CA re Mitigated Negative Declaration (MND) for the Proposed Hickory Warehouse. January 27, 2017.

11 Air Quality, Health Risk, and Greenhouse Gas Analysis Report. Santa Ana Avenue and Citrus Avenue Warehouse Project. City of Fontana, San Bernardino County, California. Prepared by First Carbon Solutions, San Bernardino, CA for Seefried Industrial Properties, Inc., Phoenix, AZ. January 6, 2016.

the activities was estimated. It was also assumed that the departing trucks would be in the idling mode for 15 minutes during their hour of departure. This is a conservative assumption because SWIP PEIR mitigation measure 4.2-2c limits idling to five minutes.

2.2.3 Emission Factors

For trucks in motion (on streets to and from the facility and traveling on the project site), emission factors (in grams per mile) were obtained from the ARB's EMFAC 2017 Web Database.[12] Onsite and on-road vehicle speeds were assumed to be 5 and 25 miles per hour, respectively. Emission factors for each truck class were obtained for 2021 through 2050 and then averaged. **Table 2.2-2** summarizes the emission factor data.

Table 2.2-2
DIESEL TRUCK EMISSION FACTORS

Vehicle Class	Emissions (g/mile)	
	On-road (25 mph)	Onsite (5 mph)
Light Heavy Duty	0.0152	0.0289
Medium Heavy Duty	0.00341	0.0115
Heavy, Heavy Duty	0.00698	0.0181

Idling emissions for the light-, medium- and heavy-heavy duty trucks were 0.472, 0.018, and 0.004 grams per idle hour, respectively.[13] Trucks were assumed to idle for a maximum of 15 minutes per hour, so each of these rates was divided by four.

Emissions while the trucks are moving were estimated by multiplying the emission factors by vehicle miles traveled on the project site or on streets between the facility and the Citrus Avenue onramps and offramps of the I-10 freeway. The emission rates were converted to the units needed by the dispersion model, which are grams per second per square meter. (See **Section 2.3.1**.)

2.3 Dispersion Modeling

The U.S. Environmental Protection Agency's AERMOD model, Version 16216r, was used for the dispersion modeling. Inputs to the model were entered through the Air Dispersion Modeling and Risk Assessment Tool (ADMRT) of the ARB's Hotspots Analysis and Report Program (HARP2).[14] After ADMRT set up an input file, some inputs were revised directly in that file.

2.3.1 Sources

Road segments between the project site and I-15 were modeled as discrete "line sources." **Figure 1** shows the ten line source segments.[15] They were as follows:

12 California Air Resources Board. EMFAC2017 Web Database. Available at https://www.arb.ca.gov/emfac/2017/?_ga=2.140099124.605539534.1572938781-2103175871.1572938781.

13 Air Quality, Health Risk, and Greenhouse Gas Analysis Report. Santa Ana Avenue and Citrus Avenue Warehouse Project. City of Fontana, San Bernardino County, California. Prepared by First Carbon Solutions, San Bernardino, CA for Seefried Industrial Properties, Inc., Phoenix, AZ. January 6, 2016.

14 User Manual for the Hotspots Analysis and Reporting Program Air Dispersion Modeling and Risk Assessment Tool, Version 2. California Air Resources Board. Transportation and Toxics Division, Sacramento, CA. March 17, 2015.

15 Figures are in **Attachment 1**.

ARR01E: Eastbound arrival on the I-10 via the southbound I-10 offramp at Citrus Avenue, south on Citrus Avenue to Slover Avenue.

ARR01W: Westbound arrival on the I-10 via the southbound I-10 offramp at Citrus Avenue, south on Citrus Avenue to Slover Avenue.

ARR02: Westbound on Slover Avenue from Citrus Avenue to Catawba Avenue.

ARR03: Northbound on Catawba Avenue from Slover Avenue to Boyle Avenue.

ARR04: Eastbound on Boyle Avenue to facility entrance.

DEP01: Departure on Boyle Avenue from facility exit to Catawba Avenue.

DEPO2: Southbound on Catawba Avenue from Boyle Avenue to Slover Avenue.

DEP03: Westbound on Slover Avenue from Catawba Avenue to Citrus Avenue.

DEP04E: Northbound on Citrus Avenue to the eastbound onramp to the I-10.

DEP04W: Northbound on Citrus Avenue to the westbound onramp to the I-10.

The remaining activities (onsite travel and idling) were defined as components of an "area source," the area being the entire site. Thus, the red project boundary in **Figure 1** is the area source.

2.3.2 Receptor Grid

AERMOD was first run with a "coarse" grid to identify areas of highest ground-level concentration. All receptor points were identified with Zone 11 Universal Trans Mercator (UTM) coordinates. The coarse grid had both north-south and east-west receptor point spacing of 50 meters. Modeling with this grid indicated that the areas of highest concentration were on the facility itself. The highest offsite concentrations were in the residential neighborhoods directly south of the facility, across Boyle Avenue; and to the east. About 70% of the airborne DPM in the residential area was from onsite operations, and about 30% was from truck travel along local streets. To locate the point of maximum exposure more precisely, the model was run again with a smaller grid and 20-meter spacing.

2.3.3 Meteorology

Pre-processed meteorological data were obtained from the SCAQMD, for the Fontana meteorological station.[16] AERMOD requires five years of data; the Fontana data set includes 2011 through 2013, and 2015-2016.

2.4 Risk Calculations

Health risk assessments for DPM usually address cancer and chronic noncancer risk. Acute (short-term exposure) risk for DPM is not assessed because health risk data for acute exposure are

16 http://www.aqmd.gov/home/air-quality/air-quality-data-studies/meteorological-data/data-for-aermod.

lacking. For the proposed project, chronic noncancer risk was not assessed because it is generally much lower than its CEQA threshold than is the cancer risk from its threshold.[17]

Cancer risk was calculated by multiplying average annual ground level concentrations by the unit risk factor for DPM, which is 3.0 x 10^{-4} per microgram per cubic meter, according to the Office of Environmental Health Hazard Assessment.[18]

3.0 RESULTS AND DISCUSSION

Cancer risk values at the 20-meter grid points were used to develop isopleths[19] of equal risk. These are shown in **Figure 2**. It is clear that the highest exposures are due to onsite truck activities, including movement to and from docks and idling. On-road diesel truck traffic makes a small but noticeable contribution, as indicated by the extension past Citrus Avenue of the 0.2-per-million contour. The location of the maximum residential receptor risk is indicated with a solid circle. That risk is 0.63 in one million.

Table 3.0-1 summarizes the results of the modeling and risk calculation. It is clear that the maximum residential exposure is below the SCAQMD's threshold.

Table 3.0-1
MAXIMUM INDIVIDUAL CANCER RISK RESULTS

Receptor Type	Location	Maximum Individual Cancer Risk (per million)	SCAQMD CEQA Significance Threshold (per million)
Maximum onsite	Project Site UTM 457,910 m Easting UTM 3,769,500 m Northing	1.46	10
Maximum residential	Boyle Avenue UTM 457,797 m Easting UTM 3,769,419 Northing	0.63	10

The analysis probably overestimates the actual exposure. The warehouse's 14 loading docks are all located on the north side of the building, and the building would block a substantial percentage of the emissions from traveling to the residential areas south of Boyle Avenue.

As was noted previously, this analysis did not include chronic noncancer risk, since that type of risk relative to its CEQA threshold would be even lower than the cancer risk is to the 10-in-one-million threshold. Also, risk to workers in the surrounding area was not included because occupational

17 The relative importance of DPM cancer risk and chronic noncancer risk is discussed in HARP Users Guide. Appendix K. Risk Assessment Procedures to Evaluate Particulate Emissions from Diesel-Fueled Engines. California Air Resources Board. 2003. https://www.arb.ca.gov/toxics/harp/docs/userguide/appendixK.pdf.

17 Overview: Diesel Exhaust and Health. California Air Resources Board. April 12, 2016. https://www.arb.ca.gov/research/diesel/diesel-health.htm.

18 Hot Spots Unit Risk and Cancer Potency Values. Office of Environmental Health Hazard Assessment. Updated May 2019. https://oehha.ca.gov/media/CPFs042909.pdf. Accessed November 13, 2019.

19 An isopleth on a map is a line representing equal values of some variable; a common example of an isopleth is a contour line on a topographic map, in which case the values are of elevation.

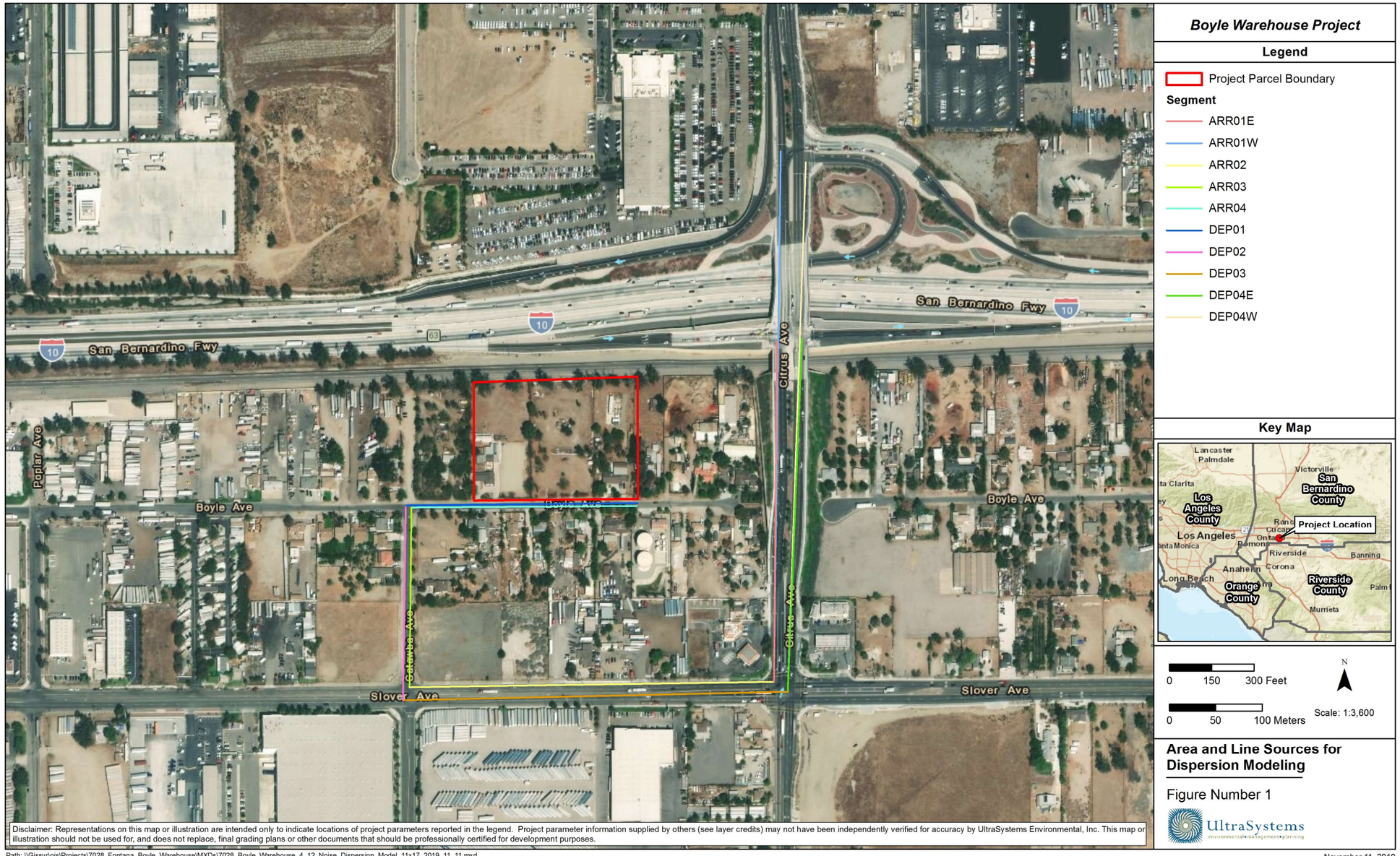
lifetime exposures would be less than those of the residential area,[20] and the latter are already far below the CEQA threshold.

Attachment 1 - Figures

Figure 1 - Area and Line Sources for Dispersion Modeling
Figure 2 - Cancer Risk Isopleths and Point of Maximum Risk in A Residential Area

20 Residents are assumed to be exposed 24 hours per day, 365 days per year, for 70 years. Worker exposure would occur only during their time at their workplaces.

Figure 1
AREA AND LINE SOURCES FOR DISPERSION MODELING



Disclaimer: Representations on this map or illustration are intended only to indicate locations of project parameters reported in the legend. Project parameter information supplied by others (see layer credits) may not have been independently verified for accuracy by UltraSystems Environmental, Inc. This map or illustration should not be used for, and does not replace, final grading plans or other documents that should be professionally certified for development purposes.

Path: \\Cissvrlgis\Projects\7028_Fontana_Boyle_Warehouse\MXDs\7028_Boyle_Warehouse_4_12_Noise_Dispersion_Model_11x17_2019_11_11.mxd
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community, Esri, HERE, Garmin, (c) OpenStreetMap contributors, Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community; USGS, 2007; CAL Fire, 2007; UltraSystems Environmental, Inc., 2019

November 11, 2019

Figure 2
CANCER RISK ISOPLETHS AND POINT OF MAXIMUM RISK IN A RESIDENTIAL AREA