Second Street Housing

AIR TOXIC AND CRITERIA POLLUTANT HEALTH RISK ASSESSMENT

CITY OF CORONA

PREPARED BY:

Haseeb Qureshi
hqureshi@urbanxroads.com

JANUARY 19, 2024

TABLE OF CONTENTS

APPENDICES

LIST OF EXHIBITS

LIST OF TABLES

LIST OF ABBREVIATED TERMS

(1)	Reference
AADT	Annual Average Daily Traffic Volumes
ARB	Air Resources Board
CAAQS	California Ambient Air Quality Standards
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CO	Carbon Monoxide
CPF	Cancer Potency Factor
EPA	Environmental Protection Agency
HRA	Health Risk Assessment
LDA	Light Duty Auto
LDT	Light Duty Truck
LHD	Light Heavy Duty
MCY	Motorcycle
MDV	Medium Duty Vehicle
NO2	Nitrogen Dioxide
OBUS	Other Bus
PM10	Particulate Matter 10 microns in diameter or less
PM2.5	Particulate Matter 2.5 microns in diameter or less
PPM	Parts per Million
Project	Crestview Apartments
PVMRM	Plume Volume Molar Ratio Methods
REL	Reference Exposure Level
RME	Reasonable Maximum Exposure
SBUS	School Bus
SCAQMD	South Coast Air Quality Management District
TACs	Toxic Air Contaminants
UBUS	Urban Bus
URF	Unit Risk Factor
UTM	Universal Traverse Mercator

EXECUTIVE SUMMARY

In 2005, the California Air Resources Board (ARB) promulgated an advisory recommendation to avoid setting sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. The ARB indicates that due to traffic-generated pollutants, there is an estimated increased cancer risk incidence of 300 to 1,700 per million within this domain. At some point however, the increased cancer risk incidence due the effects of freeway/roadway corridor pollutants become indistinguishable from the ambient air quality condition. In this regard, the effects of freeway/roadway-source pollutants that may impact the Project site are already acknowledged and accounted for within the ambient air quality discussions presented within this Section. More specifically, the MATES-V Study data for the Project site comprehensively reflects increased TAC-source cancer risks affecting the City and Project site, inclusive of increased cancer risks due to freeway sources.

The 2005 ARB guidance noted previously, information made available through the MATES-V Study, and configuration and design of the Project would suggest that further assessment of freeway-source pollutant impacts is not warranted. Notwithstanding, this Off-Site Freeway-Source Air Toxic and Criteria Pollutant Health Risk Assessment has been prepared for the Project and is intended to:

- Comply with and support CEQA Section 15003 (i) policies addressing adequacy, completeness, and a good-faith effort at full disclosure;
- Disaggregate potential freeway-source air pollutant health effects from other background conditions identified in the MATES V Study; and
- Identify means to reduce the specific effects of freeway-source pollutants at the Project site.

Findings and conclusions of this Assessment are summarized below.

SUMMARY OF FINDINGS

For carcinogenic exposures resulting from exposure to toxics from the freeway, the summation of risk for the maximum exposed residential receptor totaled 0.80 in one million and will not exceed the SCAQMD significance threshold of 10 in one million.

For chronic noncarcinogenic effects, the hazard index identified for each toxicological endpoint totaled less than one. For acute exposures, the hazard indices for the identified averaging times did not exceed unity. Therefore, noncarcinogenic hazards are calculated to be within acceptable limits and a less than significant impact would occur.

For the maximum exposed residential receptor, results of the analysis predicted freeway emissions will produce PM10 concentrations of 0.12 μg/m3 and 0.07 μg/m3 for the 24-hour and annual averaging times. These values will not exceed the SCAQMD significance thresholds of 2.5 μg/m3 and 1.0 μg/m3, respectively.

For PM2.5, a maximum 24-hour average concentration of 0.16 μg/m3 was predicted. This value also will not exceed the identified significance threshold of 2.5 μg/m3.

The maximum modeled 1-hour average concentration for CO of 0.02 parts per million (ppm), when added to an existing background concentration of 3.3 ppm, would equal a total Project concentration of 3.32 ppm. This would not cause an exceedance of the California Ambient Air Quality Standards (CAAQS) of 20 ppm. For the 8-hour averaging time, the maximum predicted concentration of 0.02 ppm, when added to an existing background level of 1.2 ppm, would equal a total Project concentration of 1.22 ppm. This would not cause an exceedance of the CAAQS of 9 ppm.

For NO2, a maximum one-hour concentration of 0.01 ppm was predicted. This concentration, when added to a background concentration of 0.066 ppm, would equal a total Project concentration of 0.09 ppm. This would not cause an exceedance of the CAAQS of 0.18 ppm.

As noted, short duration (i.e., 1 and 8-hour) exposures associated with both toxic and criteria pollutants are within acceptable limits. As such, less than significant impacts are anticipated to residents who would access and utilize outdoor amenities.

This page intentionally left blank

1 INTRODUCTION

In 2005, the California Air Resources Board (ARB) promulgated an advisory recommendation to avoid setting sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day or rural roads with 50,000 vehicles per day. According to the ARB, the increased cancer risk is 300 to 1,700 per million within this domain. The strongest association of traffic related emissions with adverse health outcomes was seen within 300 feet of roadways with high truck densities. Notwithstanding, the ARB notes that a site-specific analysis would be required to determine the actual risk near a particular land use and should consider factors such as prevailing wind direction, local topography and climate.

In consideration of the above referenced requirement, the assessment and dispersion modeling methodologies used in the preparation of this report were composed of all relevant and appropriate procedures presented by the U.S. Environmental Protection Agency, California Environmental Protection Agency and South Coast Air Quality Management District (SCAQMD). The methodologies and assumptions offered under this regulatory guidance were used to ensure that the assessment effectively quantified residential exposures associated with the generation of contaminant emissions from adjacent mobile source activity.

This report summarizes the protocol used to evaluate contaminant exposures and presents the results of the health risk assessment (HRA) prepared by Urban Crossroads, Inc., for the proposed Second Street Housing development (referred to as "Project).

1.1 SITE LOCATION

The proposed project is located on the southwest corner of Buena Vista Avenue and 2nd Street in the City of Corona. The Project site is located approximately 215 feet south of the centerline of California State Route 91 (CA-91).

1.2 PROJECT DESCRIPTION

The Project is located at APN 118-270-055 in the City of Corona as shown on Exhibit 1. It is our understanding that the Project consists of a 25-dwelling unit affordable housing development[1], as shown on Exhibit 2. The proposed project is anticipated to be constructed and fully operational by the year 2026.

[1] It is important to note, that though the Project includes a 25 DU affordable housing development, the higher DU count of 110 has been evaluated in order to account for any minor changes that may occur as part of the final design. Additionally, emissions associated with the higher DU count would not result in any air quality, greenhouse gas, or energy impacts therefore analyzing the lower DU count would result in fewer emission and energy usage.

EXHIBIT 1-A: LOCATION MAP

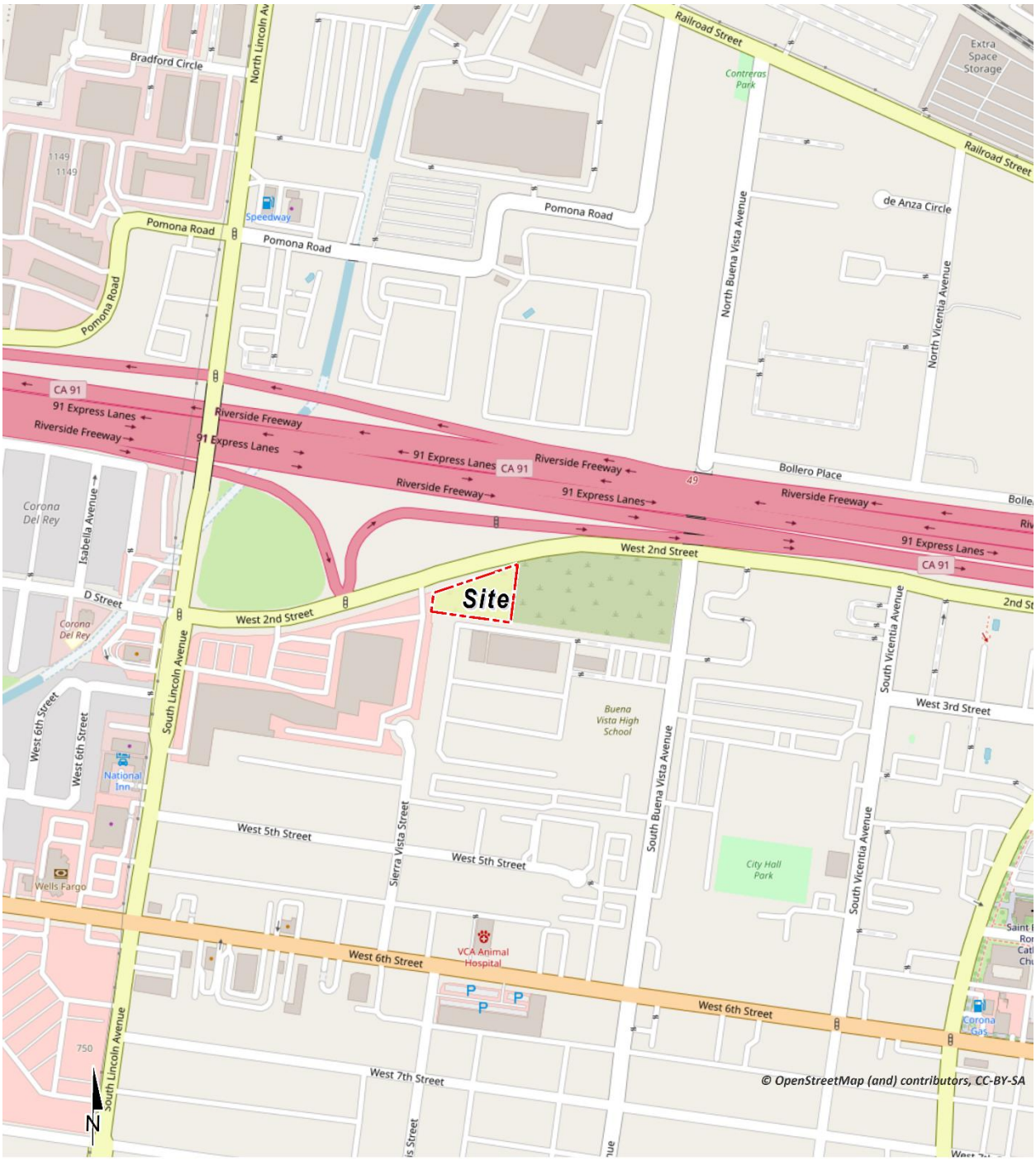


EXHIBIT 1-B: SITE PLAN

This page intentionally left blank

2 SOURCE IDENTIFICATION

The California Department of Transportation (Caltrans), Traffic and Vehicle Data Systems Unit collects and maintains traffic volume counts for vehicles traversing the California state highway system. Table 2-1 presents the average daily traffic volumes (ADT) for the freeway segment considered in the assessment. The ADT volumes are based on existing volumes obtained from the Caltrans Traffic Data Branch.

TABLE 2-1 FREEWAY TRAFFIC VOLUMES

Roadway Segment	Vehicles Per Hour (ALL)	Vehicles Per Hour (gas)	Vehicles Per Hour (diesel)
91 EB	6,938	6,541	396
91 WB	6,938	6,541	396

[1]Based on CalTrans 2020 Traffic Counts

This page intentionally left blank

3 SOURCE CHARACTERIZATION

In urban communities, vehicle emissions contribute significantly to localized concentrations of air contaminants. Typically, emissions generated from these sources are characterized by vehicle mix, the rate pollutants are generated during the course of travel and the number of vehicles traversing the roadway network.

Currently, emission factors are generated from a series of computer-based programs to produce a composite emission rate for vehicles traveling at various speeds within a defined geographical area or along a discrete roadway segment. To account for the emission standards imposed on the California fleet, the ARB has developed the EMFAC2021 emission factor model. EMFAC2021 was utilized to identify pollutant emission rates for total organic gases (TOG), diesel particulates, particulates (PM_{10} and $PM_{2.5}$), carbon monoxide (CO) and nitrogen oxide (NOx) compounds (1). To produce a representative vehicle fleet distribution, the assessment utilized ARB's Riverside County vehicle population estimates for the 2026 calendar year, consistent with the Project's anticipated Opening Year for analytical purposes. This approach provides an estimate of vehicle mix associated with operational profiles at the link or intersection level. Table 3-1 lists the identified fleet mix considered in the assessment.

Based upon the freeway traffic volumes and vehicle population profiles noted above, discrete traffic counts were identified for each roadway segment. Diesel vehicles account for 5.7 percent of the total on-road mobile fleet. For chronic (long term) and acute (e.g., 1-hour) exposures, ADT values were averaged to produce representative hourly traffic volumes.

TABLE 3-1: VEHICLE FLEET MIX PROFILE

Vehicle Class	Riverside County		
	Fuel	Population	Percent
LDA	Dsl	1,556	0.11%
LDA	Elec	41,335	2.89%
LDA	Gas	629,868	44.06%
LDA	Phe	21,619	1.51%
LDT1	Dsl	12	0.00%
LDT1	Elec	208	0.01%
LDT1	Gas	53,721	3.76%
LDT1	Phe	186	0.01%
LDT2	Dsl	1,040	0.07%
LDT2	Elec	3,646	0.26%
LDT2	Gas	300,108	20.99%
LDT2	Phe	3,738	0.26%
LHDT1	Dsl	18,906	1.32%
LHDT1	Elec	700	0.05%
LHDT1	Gas	23,560	1.65%
LHDT2	Dsl	8,665	0.61%
LHDT2	Elec	178	0.01%
LHDT2	Gas	3,552	0.25%
MCY	Gas	31,244	2.19%
MDV	Dsl	3,067	0.21%
MDV	Elec	3,939	0.28%
MDV	Gas	216,401	15.14%
MDV	Phe	2,466	0.17%
MH	Dsl	2,564	0.18%
MH	Gas	5,007	0.35%
MHDT	Dsl	16,576	1.16%
MHDT	Elec	454	0.03%
MHDT	Gas	1,928	0.13%
MHDT	NG	234	0.02%
HHDT	Dsl	28,296	1.98%
HHDT	Elec	471	0.03%
HHDT	Gas	7	0.00%
HHDT	NG	1,034	0.07%
OBUS	Dsl	300	0.02%
OBUS	Elec	8	0.00%
OBUS	Gas	483	0.03%
OBUS	NG	48	0.00%
SBUS	Dsl	619	0.04%
SBUS	Elec	20	0.00%
SBUS	Gas	537	0.04%
SBUS	NG	655	0.05%
UBUS	Dsl	0	0.00%
UBUS	Elec	22	0.00%
UBUS	Gas	147	0.01%
UBUS	NG	372	0.03%

Note: Vehicle category descriptions can be found on the California Air Resources Board website at http://www.arb.ca.gov/msei/modeling.htm.

Average observed route speeds were assumed for vehicles traversing the highway link (I-15).

For particulates (PM10 and PM2.5), emissions were quantified through the reentrainment of paved roadway dust. The predictive emission equation developed by the U.S. Environmental Protection Agency (AP-42, Section 13.2.1) was utilized to generate particulate source strength (2). To account for the mass rate of emissions entrained from the roadway surface, the contribution from exhaust, break and tire wear were added to the AP-42 emission factor equation.

A list of compounds associated with mobile source emissions is presented in Table 3-3. Appendix 3.1 presents the on-road emission rate calculation worksheets for the freeway segments considered in the assessment.

TABLE 3-3: COMPOUNDS EMITTED FROM ON ROAD MOBILE SOURCE ACTIVITY

Source	Pollutant
Freeway	Benzene Formaldehyde 1,3-Butadiene Acetaldehyde Acrolein Diesel Particulates Reentrained Particulates (PM10, PM2.5) Carbon Monoxide Nitrogen Dioxide

This page intentionally left blank

4 EXPOSURE QUANTIFICATION

In order to assess the impact of emitted compounds on individuals who reside at the proposed apartment complex, air quality modeling utilizing the AMS/EPA Regulatory Model AERMOD was performed to assess the downwind extent of mobile source emissions located within a 1,000 feet of the project site. AERMOD's air dispersion algorithms are based upon a planetary boundary layer turbulence structure and scaling concepts, including the treatment of surface and elevated sources in simple and complex terrain.

The model offers additional flexibility by allowing the user to assign initial vertical and lateral dispersion parameters for sources representative of a localized mobile fleet. For this assessment, the volume source algorithm was utilized to model the emissions generated from on-road mobile source activity.

The modeling conservatively utilizes the full conversion protocol to perform the NOx to NO2 conversion.

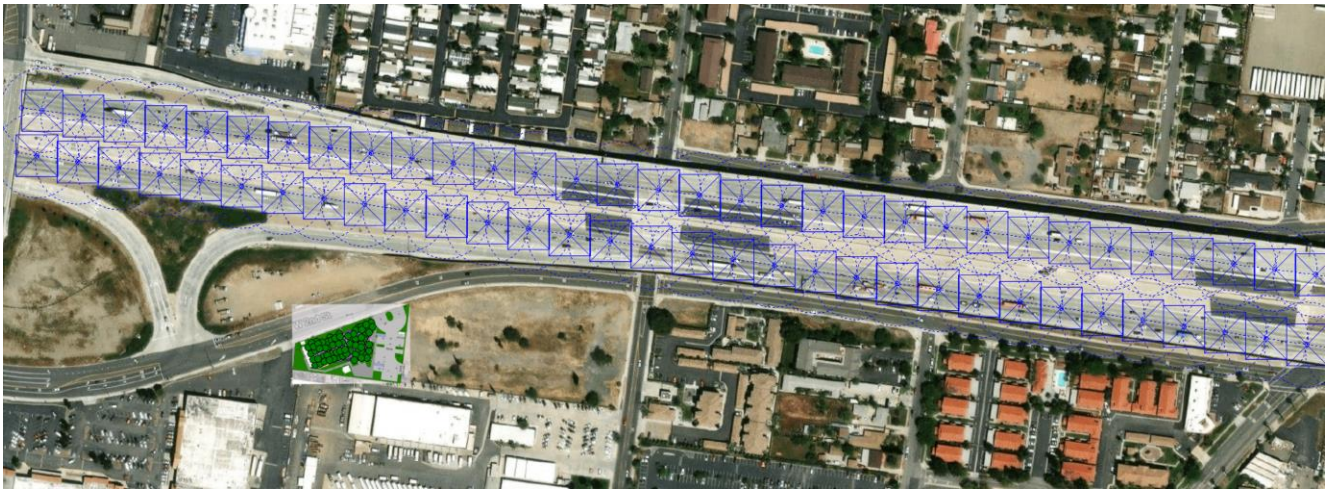
Air dispersion models require additional input parameters including pollutant emission data and local meteorology. Due to the their sensitivity to individual meteorological parameters such as wind speed and direction, the U.S. Environmental Protection Agency recommends that meteorological data used as input into dispersion models be selected on the basis of relative spatial and temporal conditions that exist in the area of concern. In response to this recommendation, the nearest meteorological data available from the SCAQMD Redlands Meteorological Data Station (Source Receptor Area 35), was used to represent local weather conditions and prevailing winds. Five years (2012-2016) of available AERMOD meteorological data was utilized in the modeling, which is the latest available information from SCAQMD.

The modeling analysis also considered the spatial distribution of mobile source activity traversing the freeway in relation to the proposed site. To accommodate a Cartesian grid format, direction dependent calculations were obtained by identifying the universal transverse mercator (UTM) coordinates for each volume source location. On-site receptors were placed to provide coverage across the identified residential portion of the site. A ground level receptor height was assumed as a conservative measure. A graphical representation of the source-receptor grid network is presented in Exhibit 4-A. A complete listing of model input/output files are provided in electronic format in Appendix 4.1.

As required by the California Building Energy Efficiency Standards (Title 24, Part 6 of California Code of Regulations (CCR)), the Project will install air filtration systems with efficiencies equal to or exceeding a Minimum Efficiency Reporting Value (MERV) 13 as defined by the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) Standard 52.2. (3)[2].

2 The use of MERV filtration systems to reduce DPM and particulates has been successfully implemented by several lead agencies, including, but not limited to: City of Los Angeles, City of Claremont, City of Irvine, City of Glendale, City of Berkley, City of Oakland, and the Los Angeles Unified School District (LAUSD). The average particle size efficiency (PSE) removal for MERV 13 as defined by the 2019 Title 24 standards is approximately 50% for 0.3 to 1.0 $\mu g/m^3$ (DPM), 85% for 1.0 to 3.0 $\mu g/m^3$ (PM2.5), and 90% for 3.0 to 10.0 $\mu g/m^3$ (PM10) (2).

EXHIBIT 4-A: SOURCE RECEPTOR GRID NETWORK



= Modeled Sensitive Receptors

= Modeled Emissions Source

5 RISK CHARACTERIZATION

5.1 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 ten 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 (4), for purposes of this analysis, ten (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 1 in a million implies a likelihood that up to one person, 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. This risk would be an excess cancer risk that is in addition to any cancer risk borne by a person not exposed to these air toxics.

Health risks associated with exposure to carcinogenic compounds can be defined in terms of the probability of developing cancer as a result of exposure to a chemical at a given concentration. Under a deterministic approach (i.e., point estimate methodology), the cancer risk probability is determined by multiplying the chemical's annual concentration by its unit risk factor (URF). The URF is a measure of the carcinogenic potential of a chemical when a dose is received through the inhalation pathway. It represents an upper bound estimate of the probability of contracting cancer as a result of continuous exposure to an ambient concentration of one microgram per cubic meter ($\mu g/m^3$) over a 70-year lifetime. The URFs utilized in the assessment and corresponding cancer potency factors were obtained from the *Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values*.

Notwithstanding, it is the intent of the HRA to provide cumulative risk estimates from near-field on-road sources that are reflective of anticipated exposures experienced at a given residential occupancy. As such, a review of relevant guidance was conducted to determine applicability of the use of early life exposure adjustments to identified carcinogens. For risk assessments conducted under the auspices of The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, Connelly, Statutes of 1987; Health and Safety Code Section 44300 et seq.) a weighting factor is applied to all carcinogens regardless of purported mechanism of action. However, for this assessment, the HRA relied upon U.S. Environmental Protection Agency guidance relating to the use of early life exposure adjustment factors (Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens, EPA/630/R-003F) whereby adjustment factors are only considered when carcinogens act "through the mutagenic mode of action." A mutagen is a physical or chemical agent that changes genetic material, such as DNA, increasing

the frequency of mutations to produce carcinogenic effects. The U.S. Environmental Protection Agency has identified 19 compounds that elicit a mutagenic mode of action for carcinogenesis. None of the gaseous compounds considered in the HRA elicit a mutagenic mode of action and, therefore, early life exposure adjustments were not considered. For diesel particulates, polycyclic aromatic hydrocarbons (PAHs) and their derivatives, which are known to exhibit a mutagenic mode of action, comprise < 1% of the exhaust particulate mass. To date, the U.S. Environmental Agency reports that whole diesel engine exhaust has not been shown to elicit a mutagenic mode of action.

Accordingly, the health risks to children were not underestimated in the Health Risks Assessment. As discussed, the use of age-weighted factors is not required because none of the gaseous compounds considered in the HRA elicit a primary mutagenic mode of action and none of the pollutants considered are listed by the EPA as having a primary mutagenic mode of action. Therefore, early life exposure adjustments were not considered in accordance with U.S. EPA guidance relating to the use of early life exposure adjustment factors. This analysis appropriately accounts for potential health risk to future residents at the project site.

To effectively quantify dose, the procedure requires the incorporation of several discrete exposure variates. 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 associated with the proposed residential population, the following dose algorithm was utilized.

$$CDI = (C_{air} \times EF \times ED \times IR) / (BW \times AT)$$

Where:

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

C_{air} = concentration of contaminant in air (mg/m^3)

EF = exposure frequency (days/year)

ED = exposure duration (years)

IR = inhalation rate (m^3/day)

BW = body weight (kg)

AT = averaging time (days)

To represent residential exposures, the assessment employed the U.S. Environmental Protection Agency's guidance to develop viable dose estimates based on reasonable maximum exposures (RME). Specifically, activity patterns for population mobility recommended by the U.S. Environmental Protection Agency and presented in the *Exposure Factors Handbook* were utilized. As a result, lifetime risk values for residents were adjusted to account for an exposure duration of 350 days per year for 30 years (i.e., 95^{th} percentile). These values are consistent with the California Environmental Quality Act which considers the evaluation of environmental effects of

proposed projects in a manner that reflects both reasonable and feasible assumptions. For body weight and inhalation, the assessment employed average adult values of 70 kilograms and 20 cubic meters per day, respectively.

For carcinogenic exposures resulting from exposure to toxics from the freeway, the summation of risk for the maximum exposed residential receptor totaled 1.90 in one million and will not exceed the SCAQMD significance threshold of 10 in one million.

Discrete variants for daily breathing rates, exposure frequency, and exposure duration were obtained from relevant distribution profiles presented in the OEHHA guidance document entitled Air Toxic Hot Spots Program Risk Assessment Guidelines, Part IV: Technical Support Document for Exposure Assessment and Stochastic Analysis (5) and guidance from SCAQMD.

Table 5-1 summarizes the Exposure Parameters for Residents. Appendix 5.1 includes the detailed emissions and risk calculation outputs. (6)

TABLE 5-1: EXPOSURE ASSUMPTIONS FOR INDIVIDUAL CANCER RISK

Exposure Parameter	Units	Residential
Exposure Frequency	days/year	350
Exposure Duration	years	70
Inhalation Rate [a]	L/kg-day	302
Exposure Duration	Years	30
Exposure Time	hours/day	24

[a] The residential breathing rate of 302 L/kg-day represents the 80th percentile breathing rate per ARB and consistent with SCAQMD Risk Assessment Procedures for Rules 1401 and 212, the worker breathing rate of 149 L/kg-day is also consistent with SCAQMD Risk Assessment Procedures for Rules 1401 and 212, the school child breathing rate of 581 L/kg-day represents the high end 95th percentile breathing rate.

5.2 NON-CARCINOGENIC EXPOSURES

An evaluation of the potential noncancerous effects of contaminant exposures was also conducted. Under the point estimate approach, adverse health effects are evaluated by comparing the concentration of each compound with the appropriate Reference Exposure Level (REL). Available REL's presented in the *Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values were considered in the assessment.*

To quantify noncarcinogenic impacts, the hazard index approach was used. The hazard index assumes that subthreshold exposures adversely affect a specific organ or organ system (i.e., toxicological endpoint). For each discrete pollutant exposure, target organs presented in regulatory guidance were utilized.

To calculate the hazard index, the pollutant concentration or dose is divided by the appropriate toxicity value. For compounds affecting the same toxicological endpoint, this ratio is summed. Where the total equals or exceeds one (i.e., unity), a health hazard is presumed to exist. For chronic exposures, REL's were converted to units expressed in mg/kg/day to accommodate the above referenced intake algorithm. To assess acute noncancer impacts, the maximum pollutant

concentration is divided by the REL for the corresponding averaging time (e.g., 1-hour). No exposure adjustments are considered for short duration exposures.

Appendix 5.1, summarizes the REL's and corresponding reference dose values used in the evaluation of chronic noncarcinogenic and acute exposures. The noncancer hazard quotient for identified compounds generated from each source and a summation for each toxicological endpoint are presented on this table.

For chronic noncarcinogenic effects, the hazard index identified for each toxicological endpoint totaled less than the threshold of 1.0 for all exposure scenarios. For acute exposures, the hazard indices for the identified averaging times did not exceed the threshold of 1.0. Therefore, acute and chronic non-carcinogenic hazards were predicted to be within acceptable limits and are less than significant.

5.3 POTENTIAL CANCER AND NON-CANCER RISKS[3]

For carcinogenic exposures the summation of risk for the maximum exposed residential receptor totaled 1.90 in one million, which does not exceed the threshold of 10 in one million. At this same location, non-cancer risks were estimated to be less than 1.0 for all toxicological endpoints.

5.4 CRITERIA POLLUTANT EXPOSURES

The State of California has promulgated strict ambient air quality standards for various pollutants. These standards were established to safeguard the public's health and welfare with specific emphasis on protecting those individuals susceptible to respiratory distress, such as asthmatics, the young, the elderly and those with existing conditions which may be affected by increased pollutant concentrations. However, recent research has shown that unhealthful respiratory responses occur with exposures to pollutants at levels that only marginally exceed clean air standards. Table 5-1 presents the CAAQS for the criteria pollutants considered in the assessment.

Pollutant emissions are considered to have a significant effect on the environment if they result in concentrations that create either a violation of an ambient air quality standard, contribute to an existing air quality violation or expose sensitive receptors to substantive pollutant concentrations. Should ambient air quality already exceed existing standards, the SCAQMD has established significance criteria for selected compounds to account for the continued degradation of local air quality. Background concentrations are based upon the highest observed value for the most recent three-year period.

For PM_{10} emissions, background concentrations representative of the project area exceed the CAAQS for the 24-hour and annual averaging times. As a result, a significant impact is achieved when pollutant concentrations produce a measurable change over existing background levels.

3 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.

Although background concentrations exceed the CAAQS annual averaging time for fine particulates, no measurable change criteria currently exists. As a result, the SCAQMD significance threshold of 2.5 μg/m^3 for the 24-hour averaging time is used to assess $PM_{2.5}$ impacts.

For the CO 1 and 8-hour averaging times and NO_2 1-hour averaging time, background concentrations are below the current air quality standards. As such, significance is achieved when pollutant concentrations add to existing levels and create an exceedance of the CAAQS. Table 5-2 shows the pollutant concentrations collected at the nearest available monitoring site to the Project in 2021. Table 5-3 outlines the relevant significance thresholds considered to affect local air quality.

TABLE 5-1: CALIFORNIA AMBIENT AIR QUALITY STANDARDS

Pollutant	Standard	Health Effects
Particulates (PM10)	>50 μg/m3 (24 hr avg.) >20 μg/m3 (Annual)	1) Excess deaths from short-term exposures and the exacerbation of symptoms in sensitive individuals with respiratory disease. 2) Excess seasonal declines in pulmonary function especially in children.
Particulates (PM2.5)	>12 μg/m3 (Annual)	1) Excess deaths and illness from long-term exposures and the exacerbation of symptoms in sensitive individuals with respiratory and cardio pulmonary disease.
Carbon Monoxide (CO)	>9.0 ppm (8 hr avg.) >20.0 ppm (1 hr avg.)	1) Aggravation of angina pectoris and other aspects of coronary heart disease. 2) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease. 3) Impairment of central nervous system functions. 4) Possible increased risk to fetuses.
Nitrogen Dioxide (NO2)	>0.18 ppm (1 hr avg.)	1) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups. 2) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes.

Abbreviations: ppm: parts per million; μg/m3: micrograms per cubic meter.
Source: California Code of Regulations, Title 17, Section 70200.

TABLE 5-2: PROJECT AREA AIR QUALITY MONITORING SUMMARY 2022

Pollutant/ Averaging Time	Year
	2022
Particulates (PM_{10}) 24-Hour	38.5
Particulates ($PM_{2.5}$) 24-Hour	153
Carbon Monoxide (CO) 1-Hour 8-Hour	3.3 1.2
Nitrogen Dioxide (NO_2) 1-Hour	0.056

Note: PM_{10} concentrations are expressed in micrograms per cubic meter ($\mu g/m^3$). All others are expressed in parts per million (ppm).
Source: U.S. Environmental Protection Agency http://www.epa.gov/airdata/ad_rep_mon.html

TABLE 5-3: SCAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS

Pollutant	Averaging Time	Pollutant Concentration
Particulates (PM10) Particulates (PM2.5)	24-Hours	2.5 μg/m3 (operation)
Particulates (PM10)	Annual	1.0 μg/m3
Carbon Monoxide (CO)	1/8-Hours	SCAQMD is in attainment; impacts are significant if they cause or contribute to an exceedance of the following attainment standards 20 ppm (1-hour) and 9 ppm (8-hour).
Nitrogen Dioxide (NO2)	1-Hour	SCAQMD is in attainment; impacts are significant if they cause or contribute to an exceedance of the following attainment standard 0.18 ppm.

Abbreviations: ppm: parts per million; μg/m3: micrograms per cubic meter
Source: South Coast Air Quality Management District.

For the maximum exposed residential receptor, results of the analysis predicted freeway emissions will produce PM10 concentrations of 0.12 μg/m3 and 0.07 μg/m3 for the 24-hour and annual averaging times. These values will not exceed the SCAQMD significance thresholds of 2.5 μg/m3 and 1.0 μg/m3, respectively.

For PM2.5, a maximum 24-hour average concentration of 0.16 μg/m3 was predicted. This value also will not exceed the identified significance threshold of 2.5 μg/m3.

The maximum modeled 1-hour average concentration for CO of 0.02 parts per million (ppm), when added to an existing background concentration of 3.3 ppm, would equal a total Project concentration of 3.32 ppm. This would not cause an exceedance of the California Ambient Air

Quality Standards (CAAQS) of 20 ppm. For the 8-hour averaging time, the maximum predicted concentration of 0.02 ppm, when added to an existing background level of 1.2 ppm, would equal a total Project concentration of 1.22 ppm. This would not cause an exceedance of the CAAQS of 9 ppm.

For NO2, a maximum one-hour concentration of 0.01 ppm was predicted. This concentration, when added to a background concentration of 0.066 ppm, would equal a total Project concentration of 0.09 ppm. This would not cause an exceedance of the CAAQS of 0.18 ppm.

As noted, short duration (i.e., 1 and 8-hour) exposures associated with both toxic and criteria pollutants are within acceptable limits. As such, less than significant impacts are anticipated to residents who would access and utilize outdoor amenities.

This page intentionally left blank

6 FINDINGS & CONCLUSIONS

For carcinogenic exposures resulting from exposure to toxics from the freeway, the summation of risk for the maximum exposed residential receptor totaled 0.80 in one million and will not exceed the SCAQMD significance threshold of 10 in one million.

For chronic noncarcinogenic effects, the hazard index identified for each toxicological endpoint totaled less than one. For acute exposures, the hazard indices for the identified averaging times did not exceed unity. Therefore, noncarcinogenic hazards are calculated to be within acceptable limits and a less than significant impact would occur.

For the maximum exposed residential receptor, results of the analysis predicted freeway emissions will produce PM10 concentrations of 0.12 μg/m3 and 0.07 μg/m3 for the 24-hour and annual averaging times. These values will not exceed the SCAQMD significance thresholds of 2.5 μg/m3 and 1.0 μg/m3, respectively.

For PM2.5, a maximum 24-hour average concentration of 0.16 μg/m3 was predicted. This value also will not exceed the identified significance threshold of 2.5 μg/m3.

The maximum modeled 1-hour average concentration for CO of 0.02 parts per million (ppm), when added to an existing background concentration of 3.3 ppm, would equal a total Project concentration of 3.32 ppm. This would not cause an exceedance of the California Ambient Air Quality Standards (CAAQS) of 20 ppm. For the 8-hour averaging time, the maximum predicted concentration of 0.02 ppm, when added to an existing background level of 1.2 ppm, would equal a total Project concentration of 1.22 ppm. This would not cause an exceedance of the CAAQS of 9 ppm.

For NO2, a maximum one-hour concentration of 0.01 ppm was predicted. This concentration, when added to a background concentration of 0.066 ppm, would equal a total Project concentration of 0.09 ppm. This would not cause an exceedance of the CAAQS of 0.18 ppm.

As noted, short duration (i.e., 1 and 8-hour) exposures associated with both toxic and criteria pollutants are within acceptable limits. As such, less than significant impacts are anticipated to residents who would access and utilize outdoor amenities.

This page intentionally left blank

7 REFERENCES

1. **California Department of Transportation.** EMFAC Software. [Online] http://www.dot.ca.gov/hq/env/air/pages/emfac.htm.

2. **U.S. Environmental Protection Agency.** 13.2.1 Paved Roads. [Online] http://www.epa.gov/ttnchie1/ap42/ch13/final/c13s0201.pdf.

3. **California Energy Commission.** 2019 Building Energy Efficiency Standards for Residential and Nonresidential Buildings. [Online] [Cited: January 11, 2021.] https://ww2.energy.ca.gov/2018publications/CEC-400-2018-020/CEC-400-2018-020-CMF.pdf.

4. **South Coast Air Quality Managment District.** Mobile Source Toxics Analysis. [Online] 2003. http://www.aqmd.gov/ceqa/handbook/mobile_toxic/mobile_toxic.html.

5. **Office of Environmental Health Hazard Assessmen.** IR TOXICS HOT SPOTS PROGRAM RISK ASSESSMENT GUIDELINES. [Online] September 2000. http://www.oehha.org/air/hot_spots/pdf/Stoch4f.pdf.

6. **South Coast Air Quality Management District.** *Final Localized Significance Threshold Methodology.* 2003.

7. **American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.** *Method of Testing General Ventilation Air Cleaning Devices for Removal by Particle Size.* 2017. ANSI/ASHRAE Standard 52.2.2017.

This page intentionally left blank

8 CERTIFICATION

The contents of this air study report represent an accurate depiction of the environmental impacts associated with the proposed Second Street Housing Project. The information contained in this health risk assessment is based on the best available data at the time of preparation. If you have any questions, please contact me directly at hqureshi@urbanxroads.com.

Haseeb Qureshi
Principal
URBAN CROSSROADS, INC.
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 1.1:

MERV FILTER EFFICIENCY

This page intentionally left blank

TECH TIPS

Sales and Marketing Information on Airguard Air Filtration Products

ASHRAE Standard 52.2 Explained

ASHRAE Efficiency Ratings Provide New Method Of Measuring Filter Performance

The new ASHRAE Standard 52.2 provides the first industry accepted procedure for measuring filter efficiency by particle size.

The need for a more precise measurement of a filter's ability to remove specific particle sizes has become more critical as concern over indoor air quality, respirable particles, as well as protection of products and processes, has continued to grow.

Standard 52.2 Supplements Standard 52.1

Standard 52.2 is not intended to be a replacement for standard 52.1. Both will continue to be relied upon as the industry accepted measures of filter performance. The arrestance and dust holding capacity data provided by Standard 52.1 will remain as valuable performance characteristics. However, it is anticipated that as the fractional efficiency test (52.2) becomes more widely understood and accepted, the atomspheric dust spot efficiency test (52.1) will no longer be utilized.

Particle Size Ranges

The 52.2 procedure calls for efficiency measurements to be taken on twelve (12) particle size ranges. (See example to right.)

For reporting and rating purposes, these twelve (12) ranges are grouped into three (3) wider ranges:

E_1 - 0.3 - 1.0 Microns

E_2 - 1.0 - 3.0 Microns

E_3 - 3.0 - 10.0 Microns

Standard 52.2 Test Procedure

Efficiency measurements are taken on each of the twelve (12) particle size ranges at six (6) different points during the test:

Clean (after (4) increments of dust loading).

After the final resistance has been reached.

Standard synthetic ASHRAE dust, comprised of 72% SAE standard J726 test dust (fine), 23% powdered carbon, and 5% milled cotton linters is used to load the filter in five (5) equal increments.

The six (6) efficiency measurements for each of the twelve (12) particle size ranges (72 total efficiency measurements) are taken by challenging the filter with potassium chloride (KCI) particles. This test aerosol provides particles over the entire range of 0.3 to 10.0 microns required by the test procedure.

The lowest efficiency value (of the six (6) measurements taken throughout the test) for each of the twelve (12) particle size ranges is recorded. (Note: The six (6) readings for each particle size range are not averaged. The lowest efficiency value is used.)

The twelve (12) readings are grouped into the three (3) wider ranges (E_1,E_2,E_3).

These values are then averaged to provide an average Particle Size Efficiency (PSE) for each range. The PSE values are used to classify the filter into one of the sixteen (16) Minimum Efficiency Reporting Value (MERV) Ratings.

Standard Test Air Flow Rates

Standard 52.2 prescribes that the tests are to be run at one of seven (7) air flow rates:

118 FPM (.60 m/s)

246 FPM (1.25 m/s)

295 FPM (1.50 m/s)

374 FPM (1.90 m/s)

492 FPM (2.50 m/s)

630 FPM (3.20 m/s)

748 FPM (3.80 m/s)

Example: MERV-14 Rating (see back for MERV Rating Schedule.)

Particle Size Range (Microns)	Lowest Efficiency (%) (based on 6 readings over life of test)	Average Particle Size Efficiency (PSE)
.30 - .40	74%	84% (E_1)
.40 - .55	82%	
.55 - .70	87%	
.70 - 1.0	92%	
1.0 - 1.3	96%	98% (E_2)
1.3 - 1.6	98%	
1.6 - 2.2	99%	
2.2 - 3.0	100%	
3.0 - 4.0	100%	100% (E_3)
4.0 - 5.5	100%	
5.5 - 7.0	100%	
7.0 - 10.0	100%	

To determine the MERV Rating, start with the PSE value for E_1, then E_2. then E_3 to arrive at the proper rating:

E_1 is 84%: Therefore the maximum rating would be MERV-14.

E_2 and E_3 both exceed 90%: therefore the filter receives an MERV-14 Rating.

AIRGUARD®

Tech Tips

Sales and Marketing Information on Airguard Air Filtration Products

Minimum Efficiency Reporting Values (MERV)
ASHRAE Standard 52.2

Group Number	MERV Rating	E_1 Average Particle Size Efficiency (PSE) 0.3 - 1.0 Microns	E_2 Average Particle Size Efficiency (PSE) 1.0 - 3.0 Microns	E_3 Average Particle Size Efficiency (PSE) 3.0 - 10.0 Microns	Average Arrestance (ASHRAE 52.1)	Minimum Final Resistance (In. W.G.)
1	MERV 1	-	-	Less than 20%	Less than 65%	0.3"
	MERV 2	-	-	Less than 20%	65 - 69.9%	0.3"
	MERV 3	-	-	Less than 20%	70 - 74.9%	0.3"
	MERV 4	-	-	Less than 20%	75% or greater	0.3"
2	MERV 5	-	-	20 - 34.9%	-	0.6"
	MERV 6	-	-	35 - 49.9%	-	0.6"
	MERV 7	-	-	50 - 69.9%	-	0.6"
	MERV 8	-	-	70 - 84.9%	-	0.6"
3	MERV 9	-	Less than 50%	85% or greater	-	1.0"
	MERV 10	-	50% - 64.9%	85% or greater	-	1.0"
	MERV 11	-	65% - 79.9%	85% or greater	-	1.0"
	MERV 12	-	80% - 89.9%	90% or greater	-	1.0"
4	MERV 13	Less than 75%	90% or greater	90% or greater	-	1.4"
	MERV 14	75% - 84.9%	90% or greater	90% or greater	-	1.4"
	MERV 15	85% - 94.9%	90% or greater	90% or greater	-	1.4"
	MERV 16	95% or Greater	95% or greater	95% or greater	-	1.4"

Notes:

1. ASHRAE Standard 52.2 tests are to be conducted at one of seven (7) air flow rates:

   118 FPM (.60 m/s)
   246 FPM (1.25 m/s)
   295 FPM (1.50 m/s)
   374 FPM (1.90 m/s)
   492 FPM (2.50 m/s)
   630 FPM (3.20 m/s)
   748 FPM (3.80 m/s)

2. The air flow rate at which the filter was tested is included in the MERV rating (MERV-10 @2.5 m/s).

3. Filters with an E_3 efficiency of less than 20% (MERV-1 through MERV-4) must also be tested for arrestance per ASHRAE Standard 52.1.

4. Final resistance must be at least twice the initial resistance at the test air flow rate, or the values shown in the table above, whichever is greater.

A-TT52.2-308

AIRGUARD®

www.airguard.com

CLARCOR Air Filtration Products
P. O. Box 32578 • Louisville, KY 40232
Customer Service Team: 1-866-247-4827 • Fax: 1-800-784-3458
Email: mailbag@airguard.com • www.airguard.com

Distributed by:

APPENDIX 3.1:

EMISSION RATE CALCULATION WORKSHEETS

This page intentionally left blank

EMFAC2021 Worksheet
(60 mph)

EMFAC2021 Emission Rates
Vehicle Classification: EMFAC2007 Categories
Pollutant Classification: Criteria

Region	CalYr	Season	Veh_Class	Fuel	MdlYr	Speed (miles/hr)	Population (vehicles)	Wt Frac	CO_RUNEX (gms/mile)	CO_RUNEX AVE (gms/mile)	NOX_RUNEX (gms/mile)	NOx_RUNEX AVE (gms/mile)	PM10_RUNEX (gms/mile)	PM10_RUNEX AVE (gms/mile)
Riverside (SC)	2026	Annual	LDA	Dsl	Aggregated	60	1556.024758	0.0011	0.206585752	0.00022487	0.118469652	0.00012896	0.009375979	0.00001021
Riverside (SC)	2026	Annual	LDA	Elec	Aggregated	60	41335.3283	0.0289	0	0.00000000	0	0.00000000	0	0.00000000
Riverside (SC)	2026	Annual	LDA	Gas	Aggregated	60	629868.0952	0.4406	0.47393351	0.20882547	0.028482453	0.01254999	0.000965892	0.00042559
Riverside (SC)	2026	Annual	LDA	Phe	Aggregated	60	21618.70581	0.0151	0.145860183	0.00220589	0.002276215	0.00003442	0.000447322	0.00000676
Riverside (SC)	2026	Annual	LDT1	Dsl	Aggregated	60	12.46842613	0.0000	2.297692684	0.00002004	1.387605077	0.00001210	0.195036461	0.00000170
Riverside (SC)	2026	Annual	LDT1	Elec	Aggregated	60	208.0056009	0.0001	0	0.00000000	0	0.00000000	0	0.00000000
Riverside (SC)	2026	Annual	LDT1	Gas	Aggregated	60	53721.02723	0.0376	1.130471841	0.04248352	0.129179994	0.00485463	0.001518485	0.00005707
Riverside (SC)	2026	Annual	LDT1	Phe	Aggregated	60	185.9775531	0.0001	0.131940275	0.00001717	0.002058989	0.00000027	0.000278457	0.00000004
Riverside (SC)	2026	Annual	LDT2	Dsl	Aggregated	60	1040.470618	0.0007	0.074877305	0.00005450	0.030266781	0.00002203	0.003715985	0.00000270
Riverside (SC)	2026	Annual	LDT2	Elec	Aggregated	60	3646.006859	0.0026	0	0.00000000	0	0.00000000	0	0.00000000
Riverside (SC)	2026	Annual	LDT2	Gas	Aggregated	60	300107.9094	0.2099	0.540846747	0.11354503	0.046980018	0.00986296	0.000962609	0.00020209
Riverside (SC)	2026	Annual	LDT2	Phe	Aggregated	60	3737.817967	0.0026	0.137538574	0.00035963	0.002146353	0.00000561	0.000337482	0.00000088
Riverside (SC)	2026	Annual	LHDT1	Dsl	Aggregated	60	18905.98906	0.0132	0.210254305	0.00278074	1.340562935	0.01772977	0.019689031	0.00026040
Riverside (SC)	2026	Annual	LHDT1	Elec	Aggregated	60	700.1813165	0.0005	0	0.00000000	0	0.00000000	0	0.00000000
Riverside (SC)	2026	Annual	LHDT1	Gas	Aggregated	60	23559.93668	0.0165	0.773179476	0.01274298	0.111203096	0.00183277	0.001024467	0.00001688
Riverside (SC)	2026	Annual	LHDT2	Dsl	Aggregated	60	8664.740349	0.0061	0.156149091	0.00094648	1.032682172	0.00625949	0.018706515	0.00011339
Riverside (SC)	2026	Annual	LHDT2	Elec	Aggregated	60	178.1617915	0.0001	0	0.00000000	0	0.00000000	0	0.00000000
Riverside (SC)	2026	Annual	LHDT2	Gas	Aggregated	60	3552.105687	0.0025	0.567478256	0.00141011	0.094636818	0.00023516	0.00090239	0.00000224
Riverside (SC)	2026	Annual	MCY	Gas	Aggregated	60	31244.43729	0.0219	11.41169719	0.24942466	0.520772854	0.01138250	0.001605907	0.00003510
Riverside (SC)	2026	Annual	MDV	Dsl	Aggregated	60	3067.061238	0.0021	0.174191438	0.00037374	0.112768578	0.00024195	0.00631845	0.00001356
Riverside (SC)	2026	Annual	MDV	Elec	Aggregated	60	3939.335678	0.0028	0	0.00000000	0	0.00000000	0	0.00000000
Riverside (SC)	2026	Annual	MDV	Gas	Aggregated	60	216400.8647	0.1514	0.661598497	0.10015438	0.073456323	0.01112000	0.001011851	0.00015318
Riverside (SC)	2026	Annual	MDV	Phe	Aggregated	60	2465.74681	0.0017	0.140141132	0.00024173	0.002186967	0.00000377	0.000404156	0.00000070
Riverside (SC)	2026	Annual	MH	Dsl	Aggregated	60	2563.659265	0.0018	0.275816798	0.00049465	3.546470852	0.00636023	0.129175945	0.00023166
Riverside (SC)	2026	Annual	MH	Gas	Aggregated	60	5006.909766	0.0035	0.69755538	0.00244323	0.25302374	0.00088623	0.000873028	0.00000306
Riverside (SC)	2026	Annual	MHDT	Dsl	Aggregated	60	16576.12163	0.0116	0.040160896	0.00046570	0.569167309	0.00659993	0.009835218	0.00011405
Riverside (SC)	2026	Annual	MHDT	Elec	Aggregated	60	454.1119717	0.0003	0	0.00000000	0	0.00000000	0	0.00000000
Riverside (SC)	2026	Annual	MHDT	Gas	Aggregated	60	1927.990351	0.0013	0.662546651	0.00089359	0.240837575	0.00032482	0.000829086	0.00000112
Riverside (SC)	2026	Annual	MHDT	NG	Aggregated	60	234.4547552	0.0002	1.145073747	0.00018781	0.059662368	0.00000979	0.00073941	0.00000012
Riverside (SC)	2026	Annual	HHDT	Dsl	Aggregated	60	28295.94671	0.0198	0.03606765	0.00071393	1.075563673	0.02129006	0.026674914	0.00052801
Riverside (SC)	2026	Annual	HHDT	Elec	Aggregated	60	471.1635235	0.0003	0	0.00000000	0	0.00000000	0	0.00000000
Riverside (SC)	2026	Annual	HHDT	Gas	Aggregated	60	6.705978975	0.0000	25.49672939	0.00011961	4.775395671	0.00002240	0.000963731	0.00000000
Riverside (SC)	2026	Annual	HHDT	NG	Aggregated	60	1034.422414	0.0007	4.47619777	0.00323909	0.318440171	0.00023043	0.001727395	0.00000125
Riverside (SC)	2026	Annual	OBUS	Dsl	Aggregated	60	299.9108443	0.0002	0.149119342	0.00003129	1.435379992	0.00030114	0.041412718	0.00000869
Riverside (SC)	2026	Annual	OBUS	Elec	Aggregated	60	7.720171355	0.0000	0	0.00000000	0	0.00000000	0	0.00000000
Riverside (SC)	2026	Annual	OBUS	Gas	Aggregated	60	482.5016009	0.0003	0.841651869	0.00028408	0.324525096	0.00010954	0.000670873	0.00000023
Riverside (SC)	2026	Annual	OBUS	NG	Aggregated	60	48.28852732	0.0000	1.30316578	0.00004402	0.06811792	0.00000230	0.000670041	0.00000002
Riverside (SC)	2026	Annual	SBUS	Dsl	Aggregated	60	618.8047245	0.0004	0.151432119	0.00006555	4.709832927	0.00203880	0.034185954	0.00001480
Riverside (SC)	2026	Annual	SBUS	Elec	Aggregated	60	19.75443506	0.0000	0	0.00000000	0	0.00000000	0	0.00000000
Riverside (SC)	2026	Annual	SBUS	Gas	Aggregated	60	537.4047498	0.0004	0.733950889	0.00027592	0.354961539	0.00013344	0.000502475	0.00000019
Riverside (SC)	2026	Annual	SBUS	NG	Aggregated	60	654.660935	0.0005	3.902059013	0.00178701	0.113717224	0.00005208	0.002120518	0.00000097
Riverside (SC)	2026	Annual	UBUS	Dsl	Aggregated	60	0.3117338	0.0000	0.012100602	0.00000000	0.047798413	0.00000001	0.004412188	0.00000000
Riverside (SC)	2026	Annual	UBUS	Elec	Aggregated	60	21.78589291	0.0000	0	0.00000000	0	0.00000000	0	0.00000000
Riverside (SC)	2026	Annual	UBUS	Gas	Aggregated	60	147.0093126	0.0001	0.352958853	0.00003630	0.168324211	0.00001731	0.000884022	0.00000009
Riverside (SS)	2026	Annual	UBUS	NG	Aggregated	60	371.9613267	0.0003	13.3357172	0.00347001	0.227141559	0.00005910	7.70E-05	0.00000002
							1429498	1.0		0.750		0.115		0.0022

EMFAC2021 Worksheet
(60 mph)

PM10_PMTW (gms/mile)	PM10_PMTW_AVE (gms/mile)	PM10_PMBW (gms/mile)	PM10_PMBW_AVE (gms/mile)	PM2_5_RUNEX (gms/mile)	PM2_5_RUNEX_AVE (gms/mile)	PM2_5_PMTW (gms/mile)	PM2_5_PMTW_AVE (gms/mile)	PM2_5_PMBW (gms/mile)	PM2_5_PMBW_AVE (gms/mile)
0.008	0.00000871	0.002865542	0.000003119	0.008970378	0.000009764	0.002	0.000002177	0.00100294	0.000001092
0.008	0.00023133	0.001643047	0.000047510	0	0.000000000	0.002	0.000057832	0.000575066	0.000016629
0.008	0.00352498	0.002795816	0.001231898	0.000888102	0.000391317	0.002	0.000881244	0.000978536	0.000431164
0.008	0.00012099	0.00164664	0.000024903	0.000411296	0.000006220	0.002	0.000030247	0.000576324	0.000008716
0.008	0.00000007	0.004211989	0.000000037	0.18659927	0.000001628	0.002	0.000000017	0.001474196	0.000000013
0.008	0.00000116	0.001640435	0.000000239	0	0.000000000	0.002	0.000000291	0.000574152	0.000000084
0.008	0.00030064	0.003714255	0.000139583	0.001396191	0.000052469	0.002	0.000075161	0.001299989	0.000048854
0.008	0.00000104	0.001639858	0.000000213	0.000256031	0.000000033	0.002	0.000000260	0.00057395	0.000000075
0.008	0.00000582	0.00350386	0.000002550	0.003555234	0.000002588	0.002	0.000001456	0.001226351	0.000000893
0.008	0.00002040	0.001640666	0.000004185	0	0.000000000	0.002	0.000005101	0.000574233	0.000001465
0.008	0.00167951	0.003548852	0.000745044	0.000885084	0.000185814	0.002	0.000419879	0.001242098	0.000260765
0.008	0.00002092	0.001642855	0.000004296	0.000310302	0.000000811	0.002	0.000005230	0.000574999	0.000001503
0.012	0.00015871	0.078	0.001031598	0.018837292	0.000249135	0.003	0.000039677	0.0273	0.000361059
0.008	0.00000392	0.039	0.000019103	0	0.000000000	0.002	0.000000980	0.01365	0.000006686
0.008	0.00013185	0.078	0.001285539	0.00094196	0.000015525	0.002	0.000032963	0.0273	0.000449939
0.012	0.00007274	0.091	0.000551586	0.017897279	0.000108482	0.003	0.000018184	0.03185	0.000193055
0.008	0.00000100	0.0455	0.000005671	0	0.000000000	0.002	0.000000249	0.015925	0.000001985
0.008	0.00001988	0.091	0.000226122	0.000829714	0.000002062	0.002	0.000004970	0.03185	0.000079143
0.004	0.00008743	0.012	0.000262283	0.001500752	0.000032802	0.001	0.000021857	0.0042	0.000091799
0.008	0.00001716	0.003760892	0.000008069	0.006045117	0.000012970	0.002	0.000004291	0.001316312	0.000002824
0.008	0.00002205	0.001641205	0.000004523	0	0.000000000	0.002	0.000005511	0.000574422	0.000001583
0.008	0.00121106	0.003684833	0.000557819	0.00093036	0.000140840	0.002	0.000302765	0.001289692	0.000195237
0.008	0.00001380	0.001644888	0.000002837	0.000371606	0.000000641	0.002	0.000003450	0.000575711	0.000000993
0.016	0.00002869	0.041585299	0.000074579	0.123587851	0.000221642	0.004	0.000007174	0.014554855	0.000026103
0.012	0.00004203	0.041585299	0.000145655	0.000802717	0.000002812	0.003	0.000010508	0.014554855	0.000050979
0.012	0.00013915	0.041585299	0.000482213	0.009409751	0.000109113	0.003	0.000034787	0.014554855	0.000168775
0.012	0.00000381	0.02079265	0.000006605	0	0.000000000	0.003	0.000000953	0.007277427	0.000002312
0.012	0.00001618	0.041585299	0.000056087	0.000762314	0.000001028	0.003	0.000004046	0.014554855	0.000019630
0.012	0.00000197	0.041585299	0.000006820	0.00067986	0.000000112	0.003	0.000000492	0.014554855	0.000002387
0.035132954	0.00069543	0.069068719	0.001367169	0.025520969	0.000505170	0.008783238	0.000173858	0.024174052	0.000478509
0.034016918	0.00001121	0.03563969	0.000011747	0	0.000000000	0.008504229	0.000002803	0.012473891	0.000004111
0.02	0.00000009	0.080303848	0.000000377	0.000886115	0.000000004	0.005	0.000000023	0.028106347	0.000000132
0.036	0.00002605	0.092804079	0.000067155	0.001588276	0.000001149	0.009	0.000006513	0.032481428	0.000023504
0.012	0.00000252	0.051392019	0.000010782	0.039621222	0.000008313	0.003	0.000000629	0.017987207	0.000003774
0.012	0.00000006	0.02079265	0.000000112	0	0.000000000	0.003	0.000000016	0.007277427	0.000000039
0.012	0.00000405	0.041585299	0.000014036	0.000616843	0.000000208	0.003	0.000001013	0.014554855	0.000004913
0.012	0.00000041	0.041585299	0.000001405	0.000616078	0.000000021	0.003	0.000000101	0.014554855	0.000000492
0.012	0.00000519	0.041585299	0.000018002	0.032707085	0.000014158	0.003	0.000001299	0.014554855	0.000006301
0.010963438	0.00000015	0.02079265	0.000000287	0	0.000000000	0.002740859	0.000000038	0.007277427	0.000000101
0.008	0.00000301	0.041585299	0.000015634	0.000462007	0.000000174	0.002	0.000000752	0.014554855	0.000005472
0.012	0.00000550	0.041585299	0.000019045	0.001949738	0.000000893	0.003	0.000001374	0.014554855	0.000006666
0.012	0.00000000	0.11	0.000000024	0.004221319	0.000000001	0.003	0.000000001	0.0385	0.000000008
0.028839368	0.00000044	0.055	0.000000838	0	0.000000000	0.007209842	0.000000110	0.01925	0.000000293
0.01036796	0.00000107	0.102247809	0.000010515	0.000812825	0.000000084	0.00259199	0.000000267	0.035786733	0.000003680
0.031315882	0.00000815	0.11	0.000028622	7.37E-05	0.000000019	0.007828971	0.000002037	0.0385	0.000010018

	0.009		0.008		0.0021		0.002		0.003

EMFAC2021 Worksheet
(60 mph)

EMFAC2021 Emission Rates
Vehicle Classification: EMFAC2007 Categories
Pollutant Classification: TOG GAS

Region	CalYr	Season	Veh_Class	Fuel	MdlYr	Speed (miles/hr)	Population (vehicles)	Wt Frac	TOG_RUNEX (gms/mile)	TOG_RUNEX AVE (gms/mile)
Riverside (SC)	2026	Annual	LDA	Gas	Aggregated	60	629868.0952	0.4857	0.007676211	0.0037
Riverside (SC)	2026	Annual	LDA	Phe	Aggregated	60	21618.70581	0.0167	0.001272246	0.0000
Riverside (SC)	2026	Annual	LDT1	Gas	Aggregated	60	53721.02723	0.0414	0.035443249	0.0015
Riverside (SC)	2026	Annual	LDT1	Phe	Aggregated	60	185.9775531	0.0001	0.001150831	0.0000
Riverside (SC)	2026	Annual	LDT2	Gas	Aggregated	60	300107.9094	0.2314	0.010294712	0.0024
Riverside (SC)	2026	Annual	LDT2	Phe	Aggregated	60	3737.817967	0.0029	0.001199662	0.0000
Riverside (SC)	2026	Annual	LHDT1	Gas	Aggregated	60	23559.93668	0.0182	0.018948073	0.0003
Riverside (SC)	2026	Annual	LHDT2	Gas	Aggregated	60	3552.105687	0.0027	0.009354362	0.0000
Riverside (SC)	2026	Annual	MCY	Gas	Aggregated	60	31244.43729	0.0241	1.098504392	0.0265
Riverside (SC)	2026	Annual	MDV	Gas	Aggregated	60	216400.8647	0.1669	0.015638621	0.0026
Riverside (SC)	2026	Annual	MDV	Phe	Aggregated	60	2465.74681	0.0019	0.001222362	0.0000
Riverside (SC)	2026	Annual	MH	Gas	Aggregated	60	5006.909766	0.0039	0.036293467	0.0001
Riverside (SC)	2026	Annual	MHDT	Gas	Aggregated	60	1927.990351	0.0015	0.03777404	0.0001
Riverside (SC)	2026	Annual	MHDT	NG	Aggregated	60	234.4547552	0.0002	0.398772263	0.0001
Riverside (SC)	2026	Annual	HHDT	Gas	Aggregated	60	6.705978975	0.0000	0.740183753	0.0000
Riverside (SC)	2026	Annual	HHDT	NG	Aggregated	60	1034.422414	0.0008	0.802298724	0.0006
Riverside (SC)	2026	Annual	OBUS	Gas	Aggregated	60	482.5016009	0.0004	0.047764055	0.0000
Riverside (SC)	2026	Annual	OBUS	NG	Aggregated	60	48.28852732	0.0000	0.383651086	0.0000
Riverside (SC)	2026	Annual	SBUS	Gas	Aggregated	60	537.4047498	0.0004	0.039907545	0.0000
Riverside (SC)	2026	Annual	SBUS	NG	Aggregated	60	654.660935	0.0005	1.385197669	0.0007
Riverside (SC)	2026	Annual	UBUS	Gas	Aggregated	60	147.0093126	0.0001	0.007917574	0.0000
Riverside (SC)	2026	Annual	UBUS	NG	Aggregated	60	371.9613267	0.0003	0.734258721	0.0002
							1296915	1.0		0.039

EMFAC2021 Emission Rates
Vehicle Classification: EMFAC2007 Categories
Pollutant Classification: TOG DSL

Region	CalYr	Season	Veh_Class	Fuel	MdlYr	Speed (miles/hr)	Population (vehicles)	Wt Frac	TOG_RUNEX (gms/mile)	TOG_RUNEX AVE (gms/mile)
Riverside (SC)	2026	Annual	LDA	DSL	Aggregated	60	1556.024758	0.0191	0.016068046	0.0003
Riverside (SC)	2026	Annual	LDT1	DSL	Aggregated	60	12.46842613	0.0002	0.307721747	0.0000
Riverside (SC)	2026	Annual	LDT2	DSL	Aggregated	60	1040.470618	0.0128	0.008489796	0.0001
Riverside (SC)	2026	Annual	LHDT1	DSL	Aggregated	60	18905.98906	0.2317	0.087552627	0.0203
Riverside (SC)	2026	Annual	LHDT2	DSL	Aggregated	60	8664.740349	0.1062	0.080318354	0.0085
Riverside (SC)	2026	Annual	MDV	DSL	Aggregated	60	3067.061238	0.0376	0.011680332	0.0004
Riverside (SC)	2026	Annual	MH	DSL	Aggregated	60	2563.659265	0.0314	0.064619844	0.0020
Riverside (SC)	2026	Annual	MHDT	DSL	Aggregated	60	16576.12163	0.2031	0.012041807	0.0024
Riverside (SC)	2026	Annual	HHDT	DSL	Aggregated	60	28295.94671	0.3468	0.011945672	0.0041
Riverside (SC)	2026	Annual	OBUS	DSL	Aggregated	60	299.9108443	0.0037	0.054440531	0.0002
Riverside (SC)	2026	Annual	SBUS	DSL	Aggregated	60	618.8047245	0.0076	0.053339157	0.0004
Riverside (SC)	2026	Annual	UBUS	DSL	Aggregated	60	0.3117338	0.0000	0.022043806	0.0000
							81602	1.0		0.039

EMFAC2021 Worksheet
(60 mph)

EMFAC2021 Emission Rates
Vehicle Classification: EMFAC2007 Categories
Pollutant Classification: DSL Particulate

Region	CalYr	Season	Veh_Class	Fuel	MdlYr	Speed (miles/hr)	Population (vehicles)	Wt Frac	PM10_RUNEX (gms/mile)	PM10_RUNEX AVE (gms/mile)
Riverside (SC)	2026	Annual	LDA	DSL	Aggregated	60	1556.024758	0.0191	0.009375979	0.0002
Riverside (SC)	2026	Annual	LDT1	DSL	Aggregated	60	12.46842613	0.0002	0.195036461	0.0000
Riverside (SC)	2026	Annual	LDT2	DSL	Aggregated	60	1040.470618	0.0128	0.003715985	0.0000
Riverside (SC)	2026	Annual	LHDT1	DSL	Aggregated	60	18905.98906	0.2317	0.019689031	0.0046
Riverside (SC)	2026	Annual	LHDT2	DSL	Aggregated	60	8664.740349	0.1062	0.018706515	0.0020
Riverside (SC)	2026	Annual	MDV	DSL	Aggregated	60	3067.061238	0.0376	0.00631845	0.0002
Riverside (SC)	2026	Annual	MH	DSL	Aggregated	60	2563.659265	0.0314	0.129175945	0.0041
Riverside (SC)	2026	Annual	MHDT	DSL	Aggregated	60	16576.12163	0.2031	0.009835218	0.0020
Riverside (SC)	2026	Annual	HHDT	DSL	Aggregated	60	28295.94671	0.3468	0.026674914	0.0092
Riverside (SC)	2026	Annual	OBUS	DSL	Aggregated	60	299.9108443	0.0037	0.041412718	0.0002
Riverside (SC)	2026	Annual	SBUS	DSL	Aggregated	60	618.8047245	0.0076	0.034185954	0.0003
Riverside (SC)	2026	Annual	UBUS	DSL	Aggregated	60	0.3117338	0.0000	0.004412188	0.0000
							81602	1.0		0.023

Emission Factor Profile Worksheet
Chronic Exposure

TOG -Toxic Emissions

Gasoline/Toxic Fractions/Hot Stabilized Exhaust

Year	Benzene	Formaldehyde	1,3-Butadiene	Acetaldehyde	Acrolein
2004	0.028414	0.021422	0.006603	0.005511	0.001533
2005	0.028205	0.021200	0.006551	0.005450	0.001520
2006	0.027938	0.021000	0.006483	0.005350	0.001510
2007	0.027660	0.020700	0.006410	0.005250	0.001490
2008	0.027338	0.020300	0.006326	0.005120	0.001470
2009	0.026849	0.019800	0.006190	0.004870	0.001450
2010	0.026521	0.019400	0.006105	0.004750	0.001430
2011	0.026521	0.019400	0.006105	0.004750	0.001430
2012	0.025656	0.018500	0.005873	0.004370	0.001380
2013	0.025656	0.018500	0.005873	0.004370	0.001380
2014	0.025656	0.018500	0.005873	0.004370	0.001380
2015	0.024349	0.017100	0.005530	0.003850	0.001310
2016	0.024349	0.017100	0.005530	0.003850	0.001310
2017	0.024349	0.017100	0.005530	0.003850	0.001310
2018	0.022182	0.014700	0.004944	0.002860	0.001190
2019	0.022182	0.014700	0.004944	0.002860	0.001130
2020	0.021079	0.013600	0.004659	0.002450	0.001130
2021	0.021079	0.013600	0.004659	0.002450	0.001130
2022	0.021079	0.013600	0.004659	0.002450	0.001130
2023	0.021079	0.013600	0.004659	0.002450	0.001130
2024	0.021079	0.013600	0.004659	0.002450	0.001130
2025	0.021079	0.013600	0.004659	0.002450	0.001130
2026	0.021079	0.013600	0.004659	0.002450	0.001130
2027	0.021079	0.013600	0.004659	0.002450	0.001130
2028	0.021079	0.013600	0.004659	0.002450	0.001130
2029	0.021079	0.013600	0.004659	0.002450	0.001130
2030	0.021079	0.013600	0.004659	0.002450	0.001130

Analysis Year

2026	0.021079	0.013600	0.004659	0.002450	0.001130

TOG Emisson Rate - gr/mi

Speed (MPH)	Acceleration	0.088
	Deceleration	0.452
	60	0.039

Toxic Emission Rate - gr/mi	Acceleration	0.003777
Speed (MPH)	Deceleration	0.019399
	60	0.001674

Weight Fraction / Speciation

Benzene	0.491
Formaldehyde	0.317
1,3-Butadiene	0.109
Acetaldehyde	0.057
Acrolein	0.026

Emission Factor Profile Worksheet
Chronic Exposure

Diesel Particulate Emissions - PM10

PM10 Emission Rate - gr/mi	Acceleration	0.038
Speed (MPH)	Deceleration	0.075
	60	0.023

Source: TOG/toxic fractions from UC Davis-Caltrans Air Quality Project, *Estimating Mobile Source Air Toxic Emissions: A Step-by-Step Project Analysis Methodology*. Task Order No. 61.

Emission Factor Profile Worksheet
Acute/8-Hour Exposure

TOG -Toxic Emissions

Gasoline/Toxic Fractions/Hot Stabilized Exhaust

Year	Benzene	Formaldehyde	1,3-Butadiene	Acetaldehyde	Acrolein
2004	0.028414	0.021422	0.006603	0.005511	0.001533
2005	0.028205	0.021200	0.006551	0.005450	0.001520
2006	0.027938	0.021000	0.006483	0.005350	0.001510
2007	0.027660	0.020700	0.006410	0.005250	0.001490
2008	0.027338	0.020300	0.006326	0.005120	0.001470
2009	0.026849	0.019800	0.006190	0.004870	0.001450
2010	0.026521	0.019400	0.006105	0.004750	0.001430
2011	0.026521	0.019400	0.006105	0.004750	0.001430
2012	0.025656	0.018500	0.005873	0.004370	0.001380
2013	0.025656	0.018500	0.005873	0.004370	0.001380
2014	0.025656	0.018500	0.005873	0.004370	0.001380
2015	0.024349	0.017100	0.005530	0.003850	0.001310
2016	0.024349	0.017100	0.005530	0.003850	0.001310
2017	0.024349	0.017100	0.005530	0.003850	0.001310
2018	0.022182	0.014700	0.004944	0.002860	0.001190
2019	0.022182	0.014700	0.004944	0.002860	0.001130
2020	0.021079	0.013600	0.004659	0.002450	0.001130
2021	0.021079	0.013600	0.004659	0.002450	0.001130
2022	0.021079	0.013600	0.004659	0.002450	0.001130
2023	0.021079	0.013600	0.004659	0.002450	0.001130
2024	0.021079	0.013600	0.004659	0.002450	0.001130
2025	0.021079	0.013600	0.004659	0.002450	0.001130
2026	0.021079	0.013600	0.004659	0.002450	0.001130
2027	0.021079	0.013600	0.004659	0.002450	0.001130
2028	0.021079	0.013600	0.004659	0.002450	0.001130
2029	0.021079	0.013600	0.004659	0.002450	0.001130
2030	0.021079	0.013600	0.004659	0.002450	0.001130

Analysis Year

2026	0.021079	0.013600	0.004659	0.002450	0.001130

TOG Emisson Rate - gr/mi

Speed (MPH)	Acceleration	0.088
	Deceleration	0.452
	50	0.036
	60	0.039

Toxic Emission Rate - gr/mi	Acceleration	0.003777
Speed (MPH)	Deceleration	0.019399
	50	0.001545
	60	0.001674

Weight Fraction / Speciation

Benzene	0.491
Formaldehyde	0.317
1,3-Butadiene	0.109
Acetaldehyde	0.057
Acrolein	0.026

TOG -Toxic Emissions

Emission Factor Profile Worksheet

Diesel/Toxic Fractions/Hot Stabilized Exhaust Acute/8-Hour Exposure

Year	Benzene	Formaldehyde	1,3-Butadiene	Acetaldehyde	Acrolein
2004	0.020009	0.147133	0.001900	0.073526	0
2005	0.020009	0.147133	0.001900	0.073526	0
2006	0.020009	0.147133	0.001900	0.073526	0
2007	0.020009	0.147133	0.001900	0.073526	0
2008	0.020009	0.147133	0.001900	0.073526	0
2009	0.020009	0.147133	0.001900	0.073526	0
2010	0.020009	0.147133	0.001900	0.073526	0
2011	0.020009	0.147133	0.001900	0.073526	0
2012	0.020009	0.147133	0.001900	0.073526	0
2013	0.020009	0.147133	0.001900	0.073526	0
2014	0.020009	0.147133	0.001900	0.073526	0
2015	0.020009	0.147133	0.001900	0.073526	0
2016	0.020009	0.147133	0.001900	0.073526	0
2017	0.020009	0.147133	0.001900	0.073526	0
2018	0.020009	0.147133	0.001900	0.073526	0
2019	0.020009	0.147133	0.001900	0.073526	0
2020	0.020009	0.147133	0.001900	0.073526	0
2021	0.020009	0.147133	0.001900	0.073526	0
2022	0.020009	0.147133	0.001900	0.073526	0
2023	0.020009	0.147133	0.001900	0.073526	0
2024	0.020009	0.147133	0.001900	0.073526	0
2025	0.020009	0.147133	0.001900	0.073526	0
2026	0.020009	0.147133	0.001900	0.073526	0
2027	0.020009	0.147133	0.001900	0.073526	0
2028	0.020009	0.147133	0.001900	0.073526	0
2029	0.020009	0.147133	0.001900	0.073526	0
2030	0.020009	0.147133	0.001900	0.073526	0

Analysis Year

2026	0.020009	0.147133	0.001900	0.073526	0

TOG Emisson Rate - gr/mi

Speed (MPH)	Acceleration	0.112
	Deceleration	0.435
	50	0.042
	60	0.039

Toxic Emission Rate - gr/mi	Acceleration	0.027168
Speed (MPH)	Deceleration	0.105517
	50	0.010188
	60	0.009460

Weight Fraction / Speciation

Benzene	0.082
Formaldehyde	0.607
1,3-Butadiene	0.008
Acetaldehyde	0.303
Acrolein	0.000

On-Road Mobile Sources
Emission Rate Computation

Average Speed Scenario

Interstate 91 / Eastbound

CO Emissions

Number of Sources	33
Link Length (meters)	1042
Volume/Baseline (VPH)	1028
Pollutant Mass Emission Rate (gr/mi)	0.750

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	1.39E-01
Pollutant Emission Rate (gr/sec/source)	4.20E-03

Interstate 91 / Westbound

CO Emissions

Number of Sources	32
Link Length (meters)	1047
Volume/Baseline (VPH)	1537
Pollutant Mass Emission Rate (gr/mi)	0.750

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	2.08E-01
Pollutant Emission Rate (gr/sec/source)	6.51E-03

On-Road Mobile Sources
Emission Rate Computation

Minimum Speed Scenario

Interstate 91 / Eastbound

NOx Emissions

Number of Sources	33
Link Length (meters)	1042
Volume/Baseline (VPH)	1910
Pollutant Mass Emission Rate (gr/mi)	0.105

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	3.61E-02
Pollutant Emission Rate (gr/sec/source)	1.09E-03

Interstate 91 / Westbound

NOx Emissions

Number of Sources	32
Link Length (meters)	1047
Volume/Baseline (VPH)	1648
Pollutant Mass Emission Rate (gr/mi)	0.105

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	3.13E-02
Pollutant Emission Rate (gr/sec/source)	9.77E-04

On-Road Mobile Sources
Emission Rate Computation

Average Speed Scenario

Interstate 91 / Eastbound

PM10 Emissions

Number of Sources	33
Link Length (meters)	1042
Volume/Baseline (VPH)	1028
Particle Size Multiplier (g/mi)	1.0
Road Surface Silt Loading (g/m2)	0.02
Average Vehicle Weight (tons)	2.4
Emfac2021 Emissions Run (g/mi)	0.0022
Emfac2021 Emissions TW/BW (g/mi)	0.0171
PM10 Reentrainment Mass Emission Rate (gr/mi)	0.089

For PM10 Reentrainment: Mass Emission Rate (gr/mile) = ((Particulate PM10 Base Emission Factor) x (Road Surface Silt Loading)$^{0.91}$ x (Gross Vehicle Weight)$^{1.02}$) + (Emfac2014 Emissions)
Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

PM10 Reentrainment Emission Rate (gr/sec)	1.64E-02
PM10 Reentrainment Emission Rate (gr/sec/source)	4.97E-04

Interstate 91 / Westbound

PM10 Emissions

Number of Sources	32
Link Length (meters)	1027
Volume/Baseline (VPH)	1537
Particle Size Multiplier (g/mi)	1.0
Road Surface Silt Loading (g/m2)	0.02
Average Vehicle Weight (tons)	2.4
Emfac2021 Emissions Run (g/mi)	0.0022
Emfac2021 Emissions TW/BW (g/mi)	0.0171
PM10 Reentrainment Mass Emission Rate (gr/mi)	0.089

For PM10 Reentrainment: Mass Emission Rate (gr/mile) = ((Particulate PM10 Base Emission Factor) x (Road Surface Silt Loading)$^{0.91}$ x (Gross Vehicle Weight)$^{1.02}$) + (Emfac2014 Emissions)
Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

PM10 Reentrainment Emission Rate (gr/sec)	2.42E-02
PM10 Reentrainment Emission Rate (gr/sec/source)	7.56E-04

On-Road Mobile Sources
Emission Rate Computation

Average Speed Scenario

Interstate 91 / Eastbound

PM2.5 Emissions

Number of Sources	33
Link Length (meters)	1042
Volume/Baseline (VPH)	1028
Particle Size Multiplier (g/mi)	1.0
Road Surface Silt Loading (g/m2)	0.02
Average Vehicle Weight (tons)	2.4
Emfac2021 Emissions Run (g/mi)	0.0021
Emfac2021 Emissions TW/BW (g/mi)	0.0051
PM10 Reentrainment Mass Emission Rate (gr/mi)	0.077

For PM2.5 Reentrainment: Mass Emission Rate (gr/mile) = ((Particulate PM2.5 Base Emission Factor) x (Road Surface Silt Loading)$^{0.91}$ x (Gross Vehicle Weight)$^{1.02}$) + (Emfac2014 Emissions)
Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

PM2.5 Reentrainment Emission Rate (gr/sec)	1.42E-02
PM2.5 Reentrainment Emission Rate (gr/sec/source)	4.30E-04

Interstate 91 / Westbound

PM2.5 Emissions

Number of Sources	32
Link Length (meters)	1027
Volume/Baseline (VPH)	1537
Particle Size Multiplier (g/mi)	1.0
Road Surface Silt Loading (g/m2)	0.02
Average Vehicle Weight (tons)	2.4
Emfac2021 Emissions Run (g/mi)	0.0021
Emfac2021 Emissions TW/BW (g/mi)	0.0051
PM10 Reentrainment Mass Emission Rate (gr/mi)	0.077

For PM2.5 Reentrainment: Mass Emission Rate (gr/mile) = ((Particulate PM2.5 Base Emission Factor) x (Road Surface Silt Loading)$^{0.91}$ x (Gross Vehicle Weight)$^{1.02}$) + (Emfac2014 Emissions)
Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

PM2.5 Reentrainment Emission Rate (gr/sec)	2.09E-02
PM2.5 Reentrainment Emission Rate (gr/sec/source)	6.53E-04

On-Road Mobile Sources
Emission Rate Computation

Average Speed Scenario

Interstate 91 / Eastbound

TOG GAS Emissions

Number of Sources	33
Link Length (meters)	1042
Volume/Baseline (VPH)	969
Pollutant Mass Emission Rate (gr/mi)	0.001674

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	2.92E-04
Pollutant Emission Rate (gr/sec/source)	8.84E-06

Interstate 91 / Westbound

TOG GAS Emissions

Number of Sources	32
Link Length (meters)	1027
Volume/Baseline (VPH)	1449
Pollutant Mass Emission Rate (gr/mi)	0.001674

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	4.30E-04
Pollutant Emission Rate (gr/sec/source)	1.34E-05

On-Road Mobile Sources
Emission Rate Computation

Average Speed Scenario

Interstate 91 / Eastbound

TOG DSL Emissions

Number of Sources	33
Link Length (meters)	1042
Volume/Baseline (VPH)	59
Pollutant Mass Emission Rate (gr/mi)	0.009460

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	1.00E-04
Pollutant Emission Rate (gr/sec/source)	3.04E-06

Interstate 91 / Westbound

TOG DSL Emissions

Number of Sources	32
Link Length (meters)	1027
Volume/Baseline (VPH)	88
Pollutant Mass Emission Rate (gr/mi)	0.009460

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	1.48E-04
Pollutant Emission Rate (gr/sec/source)	4.61E-06

On-Road Mobile Sources
Emission Rate Computation

Average Speed Scenario

Interstate 91 / Eastbound

DSL Particulate Emissions

Number of Sources	33
Link Length (meters)	1042
Volume/Baseline (VPH)	59
Pollutant Mass Emission Rate (gr/mi)	0.023

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	2.44E-04
Pollutant Emission Rate (gr/sec/source)	7.39E-06

Interstate 91 / Westbound

DSL Particulate Emissions

Number of Sources	32
Link Length (meters)	1027
Volume/Baseline (VPH)	88
Pollutant Mass Emission Rate (gr/mi)	0.023

Emission Rate (gr/sec) = ((Mass Emission Rate x Volume/Baseline)/(1609.3 m/mile) x (3600 sec/hr)) x (Link Length)

Pollutant Emission Rate (gr/sec)	3.59E-04
Pollutant Emission Rate (gr/sec/source)	1.12E-05

All	1429498
DSL	81602

Diesel Fleet Mix (weight fraction)		0.057		
Link Counts	AADT	VPH all	VPH gas	VPH diesel
10 EB Average Speed	166500	6938	6541	396
10 WB Average Speed	166500	6938	6541	396

APPENDIX 4.1:

AERMOD MODEL INPUT/OUTPUT FILE

This page intentionally left blank

```
**
**************************************
**
** AERMOD INPUT PRODUCED BY:
** AERMOD VIEW VER. 12.0.0
** LAKES ENVIRONMENTAL SOFTWARE INC.
** DATE: 1/19/2024
** FILE: C:\LAKES\AERMOD VIEW\15670 HRA\15670 CO\15670 CO.ADI
**
**************************************
**
**
**************************************
** AERMOD CONTROL PATHWAY
**************************************
**
**
CO STARTING
   TITLEONE C:\LAKES\AERMOD VIEW\15670 HRA\15670 CO\15670 CO.ISC
   MODELOPT DFAULT CONC
   AVERTIME 1 8
   URBANOPT 2189641
   POLLUTID CO
   RUNORNOT RUN
   ERRORFIL "15670 CO.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 91 EB
** PREFIX
** LENGTH OF SIDE = 32.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.139
** VERTICAL DIMENSION = 6.99
** SZINIT = 3.25
** NODES = 2
** 446149.796, 3749188.513, 197.76, 3.49, 14.88
** 447179.945, 3749035.478, 191.42, 3.49, 14.88
** ----------------------------------------------------------------------
   LOCATION L0000550     VOLUME   446165.623 3749186.162 196.79
```

```
   LOCATION L0000551     VOLUME   446197.275 3749181.460 196.83
   LOCATION L0000552     VOLUME   446228.928 3749176.757 196.01
   LOCATION L0000553     VOLUME   446260.581 3749172.055 196.14
   LOCATION L0000554     VOLUME   446292.233 3749167.353 196.30
   LOCATION L0000555     VOLUME   446323.886 3749162.651 196.38
   LOCATION L0000556     VOLUME   446355.539 3749157.949 196.00
   LOCATION L0000557     VOLUME   446387.191 3749153.246 195.74
   LOCATION L0000558     VOLUME   446418.844 3749148.544 195.00
   LOCATION L0000559     VOLUME   446450.497 3749143.842 195.00
   LOCATION L0000560     VOLUME   446482.149 3749139.140 195.00
   LOCATION L0000561     VOLUME   446513.802 3749134.438 195.00
   LOCATION L0000562     VOLUME   446545.454 3749129.735 195.00
   LOCATION L0000563     VOLUME   446577.107 3749125.033 195.00
   LOCATION L0000564     VOLUME   446608.760 3749120.331 195.00
   LOCATION L0000565     VOLUME   446640.412 3749115.629 195.00
   LOCATION L0000566     VOLUME   446672.065 3749110.927 195.00
   LOCATION L0000567     VOLUME   446703.718 3749106.224 195.00
   LOCATION L0000568     VOLUME   446735.370 3749101.522 195.00
   LOCATION L0000569     VOLUME   446767.023 3749096.820 195.33
   LOCATION L0000570     VOLUME   446798.675 3749092.118 195.20
   LOCATION L0000571     VOLUME   446830.328 3749087.416 195.00
   LOCATION L0000572     VOLUME   446861.981 3749082.713 195.00
   LOCATION L0000573     VOLUME   446893.633 3749078.011 195.00
   LOCATION L0000574     VOLUME   446925.286 3749073.309 194.89
   LOCATION L0000575     VOLUME   446956.939 3749068.607 194.69
   LOCATION L0000576     VOLUME   446988.591 3749063.905 195.08
   LOCATION L0000577     VOLUME   447020.244 3749059.202 195.06
   LOCATION L0000578     VOLUME   447051.897 3749054.500 195.00
   LOCATION L0000579     VOLUME   447083.549 3749049.798 194.90
   LOCATION L0000580     VOLUME   447115.202 3749045.096 194.63
   LOCATION L0000581     VOLUME   447146.854 3749040.394 193.31
   LOCATION L0000582     VOLUME   447178.507 3749035.691 191.48
** END OF LINE VOLUME SOURCE ID = SLINE1
** ----------------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE2
** DESCRSRC 91 WB
** PREFIX
** LENGTH OF SIDE = 32.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.208
** VERTICAL DIMENSION = 6.99
** SZINIT = 3.25
** NODES = 2
** 446153.936, 3749222.959, 196.45, 3.49, 14.88
** 447172.188, 3749092.095, 193.64, 3.49, 14.88
** ----------------------------------------------------------------------
   LOCATION L0000583     VOLUME   446169.806 3749220.920 195.99
   LOCATION L0000584     VOLUME   446201.545 3749216.841 195.65
   LOCATION L0000585     VOLUME   446233.284 3749212.761 195.68
```

```
   LOCATION L0000586     VOLUME   446265.023 3749208.682 194.98
   LOCATION L0000587     VOLUME   446296.762 3749204.603 195.05
   LOCATION L0000588     VOLUME   446328.501 3749200.524 195.19
   LOCATION L0000589     VOLUME   446360.240 3749196.445 195.33
   LOCATION L0000590     VOLUME   446391.979 3749192.366 195.04
   LOCATION L0000591     VOLUME   446423.718 3749188.287 194.60
   LOCATION L0000592     VOLUME   446455.457 3749184.208 194.59
   LOCATION L0000593     VOLUME   446487.196 3749180.129 194.66
   LOCATION L0000594     VOLUME   446518.935 3749176.050 195.00
   LOCATION L0000595     VOLUME   446550.673 3749171.971 195.00
   LOCATION L0000596     VOLUME   446582.412 3749167.892 194.45
   LOCATION L0000597     VOLUME   446614.151 3749163.813 194.41
   LOCATION L0000598     VOLUME   446645.890 3749159.734 194.55
   LOCATION L0000599     VOLUME   446677.629 3749155.655 194.39
   LOCATION L0000600     VOLUME   446709.368 3749151.576 194.64
   LOCATION L0000601     VOLUME   446741.107 3749147.497 194.87
   LOCATION L0000602     VOLUME   446772.846 3749143.418 194.99
   LOCATION L0000603     VOLUME   446804.585 3749139.339 194.29
   LOCATION L0000604     VOLUME   446836.324 3749135.260 193.44
   LOCATION L0000605     VOLUME   446868.063 3749131.181 192.72
   LOCATION L0000606     VOLUME   446899.802 3749127.102 192.42
   LOCATION L0000607     VOLUME   446931.541 3749123.023 192.55
   LOCATION L0000608     VOLUME   446963.280 3749118.944 192.64
   LOCATION L0000609     VOLUME   446995.019 3749114.865 193.61
   LOCATION L0000610     VOLUME   447026.758 3749110.786 193.78
   LOCATION L0000611     VOLUME   447058.497 3749106.707 193.20
   LOCATION L0000612     VOLUME   447090.236 3749102.627 193.36
   LOCATION L0000613     VOLUME   447121.975 3749098.548 193.01
   LOCATION L0000614     VOLUME   447153.714 3749094.469 193.76
** END OF LINE VOLUME SOURCE ID = SLINE2
** SOURCE PARAMETERS **
** LINE VOLUME SOURCE ID = SLINE1
   SRCPARAM L0000550     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000551     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000552     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000553     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000554     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000555     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000556     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000557     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000558     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000559     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000560     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000561     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000562     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000563     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000564     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000565     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000566     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000567     0.0042121212      3.49     14.88      3.25
```

```
   SRCPARAM L0000568     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000569     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000570     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000571     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000572     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000573     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000574     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000575     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000576     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000577     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000578     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000579     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000580     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000581     0.0042121212      3.49     14.88      3.25
   SRCPARAM L0000582     0.0042121212      3.49     14.88      3.25
** ------------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE2
   SRCPARAM L0000583        0.0065      3.49     14.88      3.25
   SRCPARAM L0000584        0.0065      3.49     14.88      3.25
   SRCPARAM L0000585        0.0065      3.49     14.88      3.25
   SRCPARAM L0000586        0.0065      3.49     14.88      3.25
   SRCPARAM L0000587        0.0065      3.49     14.88      3.25
   SRCPARAM L0000588        0.0065      3.49     14.88      3.25
   SRCPARAM L0000589        0.0065      3.49     14.88      3.25
   SRCPARAM L0000590        0.0065      3.49     14.88      3.25
   SRCPARAM L0000591        0.0065      3.49     14.88      3.25
   SRCPARAM L0000592        0.0065      3.49     14.88      3.25
   SRCPARAM L0000593        0.0065      3.49     14.88      3.25
   SRCPARAM L0000594        0.0065      3.49     14.88      3.25
   SRCPARAM L0000595        0.0065      3.49     14.88      3.25
   SRCPARAM L0000596        0.0065      3.49     14.88      3.25
   SRCPARAM L0000597        0.0065      3.49     14.88      3.25
   SRCPARAM L0000598        0.0065      3.49     14.88      3.25
   SRCPARAM L0000599        0.0065      3.49     14.88      3.25
   SRCPARAM L0000600        0.0065      3.49     14.88      3.25
   SRCPARAM L0000601        0.0065      3.49     14.88      3.25
   SRCPARAM L0000602        0.0065      3.49     14.88      3.25
   SRCPARAM L0000603        0.0065      3.49     14.88      3.25
   SRCPARAM L0000604        0.0065      3.49     14.88      3.25
   SRCPARAM L0000605        0.0065      3.49     14.88      3.25
   SRCPARAM L0000606        0.0065      3.49     14.88      3.25
   SRCPARAM L0000607        0.0065      3.49     14.88      3.25
   SRCPARAM L0000608        0.0065      3.49     14.88      3.25
   SRCPARAM L0000609        0.0065      3.49     14.88      3.25
   SRCPARAM L0000610        0.0065      3.49     14.88      3.25
   SRCPARAM L0000611        0.0065      3.49     14.88      3.25
   SRCPARAM L0000612        0.0065      3.49     14.88      3.25
   SRCPARAM L0000613        0.0065      3.49     14.88      3.25
   SRCPARAM L0000614        0.0065      3.49     14.88      3.25
** ------------------------------------------------------------------
```

```
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD RECEPTOR PATHWAY
**************************************
**
**
RE STARTING
   INCLUDED "15670 CO.ROU"
RE FINISHED
**
**************************************
** AERMOD METEOROLOGY PATHWAY
**************************************
**
**
ME STARTING
   SURFFILE "..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.SFC"
   PROFFILE "..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.PFL"
   SURFDATA 3171 2012
   UAIRDATA 3190 2012
   PROFBASE 245.0 METERS
ME FINISHED
**
**************************************
** AERMOD OUTPUT PATHWAY
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
   RECTABLE 8 1ST
** AUTO-GENERATED PLOTFILES
   PLOTFILE   1 ALL 1ST "15670 CO.AD\01H1GALL.PLT" 31
   PLOTFILE   8 ALL 1ST "15670 CO.AD\08H1GALL.PLT" 32
   SUMMFILE "15670 CO.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     225       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187     225       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


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

↟ *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
CO\15670 CO.ISC                  ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                         ***        12:46:59

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

                                             ***     MODEL SETUP OPTIONS SUMMARY
  ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -

 ** Model Options Selected:
      * Model Uses Regulatory DEFAULT Options
      * Model Is Setup For Calculation of Average CONCentration Values.
      * NO GAS DEPOSITION Data Provided.
      * NO PARTICLE DEPOSITION Data Provided.
      * Model Uses NO DRY DEPLETION. DDPLETE  =  F
      * Model Uses NO WET DEPLETION. WETDPLT  =  F
      * Stack-tip Downwash.
      * Model Accounts for ELEVated Terrain Effects.
      * Use Calms Processing Routine.
      * Use Missing Data Processing Routine.
      * No Exponential Decay.
      * Model Uses URBAN Dispersion Algorithm for the SBL for    65 Source(s),
        for Total of    1 Urban Area(s):
   Urban Population =   2189641.0 ;  Urban Roughness Length =  1.000 m
      * Urban Roughness Length of 1.0 Meter Used.
      * ADJ_U*   - Use ADJ_U* option for SBL in AERMET
      * CCVR_Sub - Meteorological data includes CCVR substitutions
      * TEMP_Sub - Meteorological data includes TEMP substitutions
      * Model Assumes No FLAGPOLE Receptor Heights.
      * The User Specified a Pollutant Type of: CO
```

```
 **Model Calculates  2 Short Term Average(s) of:   1-HR   8-HR

 **This Run Includes:     65 Source(s);       1 Source Group(s); and      68
Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                 and:     65 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)
                 and:      0 SWPOINT source(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 Highest Short Term Values by Receptor (RECTABLE
Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE
Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE
Keyword)

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

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =   245.00 ;  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:   15670 CO.ERR

 **File for Summary of Results:   15670 CO.SUM
```

*** 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	EMISSION RATE SCALAR VARY BY	AIRCRAFT
L0000550	0	0.42121E-02	446165.6	3749186.2	196.8	3.49	14.88	3.25	YES		NO
L0000551	0	0.42121E-02	446197.3	3749181.5	196.8	3.49	14.88	3.25	YES		NO
L0000552	0	0.42121E-02	446228.9	3749176.8	196.0	3.49	14.88	3.25	YES		NO
L0000553	0	0.42121E-02	446260.6	3749172.1	196.1	3.49	14.88	3.25	YES		NO
L0000554	0	0.42121E-02	446292.2	3749167.4	196.3	3.49	14.88	3.25	YES		NO
L0000555	0	0.42121E-02	446323.9	3749162.7	196.4	3.49	14.88	3.25	YES		NO
L0000556	0	0.42121E-02	446355.5	3749157.9	196.0	3.49	14.88	3.25	YES		NO
L0000557	0	0.42121E-02	446387.2	3749153.2	195.7	3.49	14.88	3.25	YES		NO
L0000558	0	0.42121E-02	446418.8	3749148.5	195.0	3.49	14.88	3.25	YES		NO
L0000559	0	0.42121E-02	446450.5	3749143.8	195.0	3.49	14.88	3.25	YES		NO
L0000560	0	0.42121E-02	446482.1	3749139.1	195.0	3.49	14.88	3.25	YES		NO
L0000561	0	0.42121E-02	446513.8	3749134.4	195.0	3.49	14.88	3.25	YES		NO
L0000562	0	0.42121E-02	446545.5	3749129.7	195.0	3.49	14.88	3.25	YES		NO
L0000563	0	0.42121E-02	446577.1	3749125.0	195.0	3.49	14.88	3.25	YES		NO
L0000564	0	0.42121E-02	446608.8	3749120.3	195.0	3.49	14.88				

```
3.25     YES                    NO
 L0000565         0   0.42121E-02  446640.4 3749115.6   195.0     3.49    14.88
3.25     YES                    NO
 L0000566         0   0.42121E-02  446672.1 3749110.9   195.0     3.49    14.88
3.25     YES                    NO
 L0000567         0   0.42121E-02  446703.7 3749106.2   195.0     3.49    14.88
3.25     YES                    NO
 L0000568         0   0.42121E-02  446735.4 3749101.5   195.0     3.49    14.88
3.25     YES                    NO
 L0000569         0   0.42121E-02  446767.0 3749096.8   195.3     3.49    14.88
3.25     YES                    NO
 L0000570         0   0.42121E-02  446798.7 3749092.1   195.2     3.49    14.88
3.25     YES                    NO
 L0000571         0   0.42121E-02  446830.3 3749087.4   195.0     3.49    14.88
3.25     YES                    NO
 L0000572         0   0.42121E-02  446862.0 3749082.7   195.0     3.49    14.88
3.25     YES                    NO
 L0000573         0   0.42121E-02  446893.6 3749078.0   195.0     3.49    14.88
3.25     YES                    NO
 L0000574         0   0.42121E-02  446925.3 3749073.3   194.9     3.49    14.88
3.25     YES                    NO
 L0000575         0   0.42121E-02  446956.9 3749068.6   194.7     3.49    14.88
3.25     YES                    NO
 L0000576         0   0.42121E-02  446988.6 3749063.9   195.1     3.49    14.88
3.25     YES                    NO
 L0000577         0   0.42121E-02  447020.2 3749059.2   195.1     3.49    14.88
3.25     YES                    NO
 L0000578         0   0.42121E-02  447051.9 3749054.5   195.0     3.49    14.88
3.25     YES                    NO
 L0000579         0   0.42121E-02  447083.5 3749049.8   194.9     3.49    14.88
3.25     YES                    NO
 L0000580         0   0.42121E-02  447115.2 3749045.1   194.6     3.49    14.88
3.25     YES                    NO
 L0000581         0   0.42121E-02  447146.9 3749040.4   193.3     3.49    14.88
3.25     YES                    NO
 L0000582         0   0.42121E-02  447178.5 3749035.7   191.5     3.49    14.88
3.25     YES                    NO
 L0000583         0   0.65000E-02  446169.8 3749220.9   196.0     3.49    14.88
3.25     YES                    NO
 L0000584         0   0.65000E-02  446201.5 3749216.8   195.7     3.49    14.88
3.25     YES                    NO
 L0000585         0   0.65000E-02  446233.3 3749212.8   195.7     3.49    14.88
3.25     YES                    NO
 L0000586         0   0.65000E-02  446265.0 3749208.7   195.0     3.49    14.88
3.25     YES                    NO
 L0000587         0   0.65000E-02  446296.8 3749204.6   195.1     3.49    14.88
3.25     YES                    NO
 L0000588         0   0.65000E-02  446328.5 3749200.5   195.2     3.49    14.88
3.25     YES                    NO
 L0000589         0   0.65000E-02  446360.2 3749196.4   195.3     3.49    14.88
```

 *** 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	AIRCRAFT
L0000590	0	0.65000E-02	446392.0	3749192.4	195.0	3.49	14.88	3.25	YES	NO	
L0000591	0	0.65000E-02	446423.7	3749188.3	194.6	3.49	14.88	3.25	YES	NO	
L0000592	0	0.65000E-02	446455.5	3749184.2	194.6	3.49	14.88	3.25	YES	NO	
L0000593	0	0.65000E-02	446487.2	3749180.1	194.7	3.49	14.88	3.25	YES	NO	
L0000594	0	0.65000E-02	446518.9	3749176.0	195.0	3.49	14.88	3.25	YES	NO	
L0000595	0	0.65000E-02	446550.7	3749172.0	195.0	3.49	14.88	3.25	YES	NO	
L0000596	0	0.65000E-02	446582.4	3749167.9	194.5	3.49	14.88	3.25	YES	NO	
L0000597	0	0.65000E-02	446614.2	3749163.8	194.4	3.49	14.88	3.25	YES	NO	
L0000598	0	0.65000E-02	446645.9	3749159.7	194.6	3.49	14.88	3.25	YES	NO	
L0000599	0	0.65000E-02	446677.6	3749155.7	194.4	3.49	14.88	3.25	YES	NO	
L0000600	0	0.65000E-02	446709.4	3749151.6	194.6	3.49	14.88	3.25	YES	NO	
L0000601	0	0.65000E-02	446741.1	3749147.5	194.9	3.49	14.88	3.25	YES	NO	
L0000602	0	0.65000E-02	446772.8	3749143.4	195.0	3.49	14.88	3.25	YES	NO	
L0000603	0	0.65000E-02	446804.6	3749139.3	194.3	3.49	14.88	3.25	YES	NO	
L0000604	0	0.65000E-02	446836.3	3749135.3	193.4	3.49	14.88				

```
3.25     YES                    NO
 L0000605         0   0.65000E-02  446868.1 3749131.2   192.7     3.49    14.88
3.25     YES                    NO
 L0000606         0   0.65000E-02  446899.8 3749127.1   192.4     3.49    14.88
3.25     YES                    NO
 L0000607         0   0.65000E-02  446931.5 3749123.0   192.6     3.49    14.88
3.25     YES                    NO
 L0000608         0   0.65000E-02  446963.3 3749118.9   192.6     3.49    14.88
3.25     YES                    NO
 L0000609         0   0.65000E-02  446995.0 3749114.9   193.6     3.49    14.88
3.25     YES                    NO
 L0000610         0   0.65000E-02  447026.8 3749110.8   193.8     3.49    14.88
3.25     YES                    NO
 L0000611         0   0.65000E-02  447058.5 3749106.7   193.2     3.49    14.88
3.25     YES                    NO
 L0000612         0   0.65000E-02  447090.2 3749102.6   193.4     3.49    14.88
3.25     YES                    NO
 L0000613         0   0.65000E-02  447122.0 3749098.5   193.0     3.49    14.88
3.25     YES                    NO
 L0000614         0   0.65000E-02  447153.7 3749094.5   193.8     3.49    14.88
3.25     YES                    NO
 *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
CO\15670 CO.ISC                 ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                          ***        12:46:59

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


                                              *** SOURCE IDs DEFINING SOURCE GROUPS
***

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


  ALL        L0000550    , L0000551    , L0000552    , L0000553    , L0000554    ,
L0000555    , L0000556    , L0000557    ,

             L0000558    , L0000559    , L0000560    , L0000561    , L0000562    ,
L0000563    , L0000564    , L0000565    ,

             L0000566    , L0000567    , L0000568    , L0000569    , L0000570    ,
L0000571    , L0000572    , L0000573    ,

             L0000574    , L0000575    , L0000576    , L0000577    , L0000578    ,
L0000579    , L0000580    , L0000581    ,

             L0000582    , L0000583    , L0000584    , L0000585    , L0000586    ,
```

L0000587   , L0000588   , L0000589   ,

             L0000590   , L0000591   , L0000592   , L0000593   , L0000594   ,
L0000595   , L0000596   , L0000597   ,

             L0000598   , L0000599   , L0000600   , L0000601   , L0000602   ,
L0000603   , L0000604   , L0000605   ,

             L0000606   , L0000607   , L0000608   , L0000609   , L0000610   ,
L0000611   , L0000612   , L0000613   ,

             L0000614   ,

 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

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

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

              2189641.   L0000550   , L0000551   , L0000552   , L0000553   ,
L0000554   , L0000555   , L0000556   ,
 L0000557   ,

             L0000558   , L0000559   , L0000560   , L0000561   , L0000562   ,
L0000563   , L0000564   , L0000565   ,

             L0000566   , L0000567   , L0000568   , L0000569   , L0000570   ,
L0000571   , L0000572   , L0000573   ,

             L0000574   , L0000575   , L0000576   , L0000577   , L0000578   ,
L0000579   , L0000580   , L0000581   ,

             L0000582   , L0000583   , L0000584   , L0000585   , L0000586   ,
L0000587   , L0000588   , L0000589   ,

             L0000590   , L0000591   , L0000592   , L0000593   , L0000594   ,
L0000595   , L0000596   , L0000597   ,

             L0000598   , L0000599   , L0000600   , L0000601   , L0000602   ,
L0000603   , L0000604   , L0000605   ,

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

(446398.2, 3749030.8, 197.3, 197.3, 0.0); (446412.0,
3749033.1, 197.0, 197.0, 0.0);
(446418.1, 3749034.5, 196.9, 196.9, 0.0); (446423.8,
3749057.5, 196.5, 196.5, 0.0);
(446420.6, 3749030.4, 197.0, 197.0, 0.0); (446392.1,
3749046.1, 197.2, 197.2, 0.0);
(446399.1, 3749048.7, 197.1, 197.1, 0.0); (446382.0,
3749042.8, 197.4, 197.4, 0.0);
(446380.7, 3749024.7, 198.0, 198.0, 0.0); (446384.8,
3749025.9, 197.8, 197.8, 0.0);
(446386.7, 3749031.1, 197.6, 197.6, 0.0); (446393.4,
3749033.4, 197.4, 197.4, 0.0);
(446395.0, 3749029.6, 197.4, 197.4, 0.0); (446418.2,
3749054.9, 196.7, 196.7, 0.0);
(446391.4, 3749039.1, 197.3, 197.3, 0.0); (446389.8,
3749042.9, 197.3, 197.3, 0.0);
(446377.4, 3749033.4, 197.8, 197.8, 0.0); (446401.6,
3749042.4, 197.1, 197.1, 0.0);
(446393.0, 3749043.8, 197.2, 197.2, 0.0); (446397.0,
3749034.7, 197.3, 197.3, 0.0);
(446408.8, 3749045.8, 197.0, 197.0, 0.0); (446379.3,
3749029.0, 197.9, 197.9, 0.0);
(446383.1, 3749029.8, 197.8, 197.8, 0.0); (446388.0,
3749027.5, 197.7, 197.7, 0.0);
(446390.0, 3749032.4, 197.5, 197.5, 0.0); (446416.2,
3749030.1, 197.0, 197.0, 0.0);
(446419.4, 3749047.7, 196.8, 196.8, 0.0); (446414.0,
3749053.5, 196.9, 196.9, 0.0);
(446375.2, 3749038.3, 197.7, 197.7, 0.0); (446396.2,
3749045.6, 197.2, 197.2, 0.0);
(446394.4, 3749039.8, 197.3, 197.3, 0.0); (446401.8,
3749031.8, 197.2, 197.2, 0.0);
(446380.7, 3749035.5, 197.7, 197.7, 0.0); (446388.5,
3749037.6, 197.4, 197.4, 0.0);

```
     ( 446391.6, 3749028.4,     197.6,     197.6,       0.0);         ( 446407.3,
3749035.5,     197.1,     197.1,       0.0);
     ( 446416.2, 3749035.5,     196.9,     196.9,       0.0);         ( 446418.2,
3749044.9,     196.8,     196.8,       0.0);
     ( 446412.0, 3749051.6,     196.9,     196.9,       0.0);         ( 446415.8,
3749044.3,     196.9,     196.9,       0.0);
     ( 446413.8, 3749037.3,     197.0,     197.0,       0.0);         ( 446404.8,
3749033.6,     197.1,     197.1,       0.0);
     ( 446410.7, 3749028.4,     197.0,     197.0,       0.0);         ( 446400.0,
3749035.8,     197.2,     197.2,       0.0);
     ( 446378.0, 3749041.7,     197.5,     197.5,       0.0);         ( 446379.4,
3749039.2,     197.6,     197.6,       0.0);
     ( 446386.3, 3749042.0,     197.4,     197.4,       0.0);         ( 446398.5,
3749040.9,     197.2,     197.2,       0.0);
     ( 446407.3, 3749040.9,     197.0,     197.0,       0.0);         ( 446416.2,
3749040.9,     196.9,     196.9,       0.0);
     ( 446411.8, 3749044.9,     197.0,     197.0,       0.0);         ( 446410.0,
3749048.5,     197.0,     197.0,       0.0);
     ( 446420.7, 3749054.0,     196.7,     196.7,       0.0);         ( 446411.8,
3749040.3,     197.0,     197.0,       0.0);
     ( 446403.5, 3749037.0,     197.1,     197.1,       0.0);         ( 446422.0,
3749035.4,     196.9,     196.9,       0.0);
     ( 446424.7, 3749054.3,     196.5,     196.5,       0.0);         ( 446382.9,
3749040.9,     197.5,     197.5,       0.0);
     ( 446384.1, 3749037.0,     197.5,     197.5,       0.0);         ( 446399.9,
3749046.4,     197.1,     197.1,       0.0);
     ( 446405.8, 3749047.1,     197.0,     197.0,       0.0);         ( 446416.2,
3749046.2,     196.9,     196.9,       0.0);
     ( 446422.3, 3749050.0,     196.7,     196.7,       0.0);         ( 446416.1,
3749054.2,     196.8,     196.8,       0.0);
     ( 446416.7, 3749051.9,     196.8,     196.8,       0.0);         ( 446416.2,
3749038.4,     196.9,     196.9,       0.0);
     ( 446422.0, 3749040.5,     196.8,     196.8,       0.0);         ( 446420.1,
3749055.9,     196.7,     196.7,       0.0);
 *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
CO\15670 CO.ISC                ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                         ***        12:46:59

                                    PAGE   7
 *** 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 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)

                                                 1.54,   3.09,   5.14,   8.23,
10.80,
↑ *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
CO\15670 CO.ISC                ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                        ***        12:46:59

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

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

   Surface file:   ..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.SFC
                  Met Version:  16216
   Profile file:   ..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.PFL

   Surface format: FREE

   Profile format: FREE

   Surface station no.:     3171                  Upper air station no.:     3190
                  Name: UNKNOWN                                    Name: UNKNOWN

                  Year:   2012                                     Year:   2012

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN
ALBEDO  REF WS   WD     HT  REF TA     HT
```

```
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - -
 12 01 01   1 01  -25.6  0.266 -9.000 -9.000 -999.  330.     77.9  0.15   2.40
1.00    2.93   55.   10.1  288.1    2.0
 12 01 01   1 02  -26.8  0.277 -9.000 -9.000 -999.  351.     84.7  0.15   2.40
1.00    3.05   55.   10.1  287.0    2.0
 12 01 01   1 03  -21.5  0.221 -9.000 -9.000 -999.  250.     53.5  0.15   2.40
1.00    2.45   74.   10.1  284.2    2.0
 12 01 01   1 04  -22.0  0.227 -9.000 -9.000 -999.  260.     56.8  0.15   2.40
1.00    2.52   77.   10.1  285.9    2.0
 12 01 01   1 05  -20.0  0.206 -9.000 -9.000 -999.  225.     46.8  0.15   2.40
1.00    2.30   80.   10.1  285.4    2.0
 12 01 01   1 06  -14.4  0.171 -9.000 -9.000 -999.  170.     32.1  0.15   2.40
1.00    1.93   79.   10.1  287.0    2.0
 12 01 01   1 07  -14.9  0.174 -9.000 -9.000 -999.  174.     33.2  0.15   2.40
1.00    1.96   77.   10.1  284.2    2.0
 12 01 01   1 08  -11.9  0.169 -9.000 -9.000 -999.  167.     36.1  0.15   2.40
0.53    1.89   77.   10.1  288.1    2.0
 12 01 01   1 09   40.4  0.234  0.359  0.006   40.  272.    -28.1  0.15   2.40
0.31    2.10   81.   10.1  289.2    2.0
 12 01 01   1 10  112.6  0.246  0.742  0.005  129.  293.    -11.8  0.15   2.40
0.24    1.99  101.   10.1  296.4    2.0
 12 01 01   1 11  161.0  0.402  1.188  0.005  369.  611.    -35.6  0.15   2.40
0.21    3.68   78.   10.1  298.8    2.0
 12 01 01   1 12  184.7  0.337  1.516  0.005  668.  473.    -18.4  0.15   2.40
0.20    2.89   68.   10.1  300.4    2.0
 12 01 01   1 13  183.9  0.310  1.809  0.005 1139.  414.    -14.2  0.15   2.40
0.20    2.57   64.   10.1  302.5    2.0
 12 01 01   1 14  156.6  0.374  1.852  0.005 1434.  549.    -29.5  0.15   2.40
0.22    3.37   63.   10.1  303.1    2.0
 12 01 01   1 15  104.3  0.382  1.658  0.005 1546.  567.    -47.2  0.15   2.40
0.25    3.59   62.   10.1  302.5    2.0
 12 01 01   1 16   31.8  0.374  1.123  0.005 1573.  550.   -145.8  0.15   2.40
0.34    3.76   69.   10.1  300.9    2.0
 12 01 01   1 17  -23.3  0.276 -9.000 -9.000 -999.  354.     84.0  0.15   2.40
0.62    3.03   59.   10.1  297.5    2.0
 12 01 01   1 18  -21.5  0.229 -9.000 -9.000 -999.  264.     57.8  0.15   2.40
1.00    2.54   54.   10.1  295.4    2.0
 12 01 01   1 19  -19.3  0.204 -9.000 -9.000 -999.  221.     45.6  0.15   2.40
1.00    2.27   79.   10.1  292.0    2.0
 12 01 01   1 20  -20.7  0.218 -9.000 -9.000 -999.  244.     52.2  0.15   2.40
1.00    2.42   79.   10.1  292.5    2.0
 12 01 01   1 21  -19.7  0.206 -9.000 -9.000 -999.  225.     46.9  0.15   2.40
1.00    2.30   95.   10.1  290.9    2.0
 12 01 01   1 22  -17.6  0.190 -9.000 -9.000 -999.  199.     39.8  0.15   2.40
1.00    2.13   78.   10.1  290.4    2.0
 12 01 01   1 23  -20.3  0.211 -9.000 -9.000 -999.  233.     49.0  0.15   2.40
1.00    2.35   52.   10.1  289.2    2.0
 12 01 01   1 24  -16.4  0.183 -9.000 -9.000 -999.  189.     37.0  0.15   2.40
1.00    2.06   75.   10.1  288.8    2.0
```

First hour of profile data
YR MO DY HR HEIGHT F WDIR   WSPD AMB_TMP sigmaA sigmaW sigmaV
12 01 01 01   10.1 1   55.   2.93   288.2   99.0 -99.00 -99.00

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

↑ *** AERMOD - VERSION 23132 ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670 CO\15670 CO.ISC   ***   01/19/24
*** AERMET - VERSION 16216 ***   ***
                       ***   12:46:59

PAGE   9

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

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

INCLUDING SOURCE(S):   L0000550   , L0000551   , L0000552   , L0000553   , L0000554   ,
L0000555   , L0000556   , L0000557   , L0000558   , L0000559   , L0000560   , L0000561   , L0000562   ,
L0000563   , L0000564   , L0000565   , L0000566   , L0000567   , L0000568   , L0000569   , L0000570   ,
L0000571   , L0000572   , L0000573   , L0000574   , L0000575   , L0000576   , L0000577   , . . .   ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

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

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
446398.16	3749030.75	13.70925	(13041207)	446412.02	3749033.12	14.18536	(13041207)
446418.14	3749034.53	14.43539	(13041207)	446423.79	3749057.48	17.72832	(13041207)
446420.60	3749030.38	14.00637	(13041207)	446392.07	3749046.15	15.40785	(13041207)
446399.10	3749048.66	15.87194	(13041207)	446382.04	3749042.82	14.80172	(13041207)
446380.74	3749024.73	12.82959	(13041207)	446384.77	3749025.87	13.00088	(13041207)
446386.66	3749031.14	13.56150	(13041207)	446393.40	3749033.41	13.91564	(13041207)
446395.01	3749029.57	13.53501	(13041207)	446418.16	3749054.95	17.18295	(13041207)

446391.41 3749039.11 14.52469 (13041207) 446389.75
3749042.95 14.95820 (13041207)
446377.36 3749033.44 13.65014 (13041207) 446401.65
3749042.38 15.09919 (13041207)
446393.02 3749043.80 15.12295 (13041207) 446397.05
3749034.69 14.11709 (13041207)
446408.79 3749045.79 15.66341 (13041207) 446379.31
3749028.98 13.21772 (13041207)
446383.06 3749029.83 13.36629 (13041207) 446387.95
3749027.55 13.21663 (13041207)
446389.98 3749032.39 13.74871 (13041207) 446416.22
3749030.11 13.91653 (13041207)
446419.40 3749047.72 16.13441 (13041207) 446413.99
3749053.46 16.85681 (13041207)
446375.19 3749038.32 14.15012 (13041207) 446396.25
3749045.62 15.41553 (13041207)
446394.44 3749039.79 14.65805 (13041207) 446401.75
3749031.82 13.88111 (13041207)
446380.74 3749035.49 13.92716 (13041207) 446388.47
3749037.63 14.30188 (13041207)
446391.64 3749028.38 13.35925 (13041207) 446407.35
3749035.49 14.37774 (13041207)
446416.22 3749035.49 14.51689 (13041207) 446418.22
3749044.94 15.72929 (13041207)
446412.00 3749051.65 16.54230 (13041207) 446415.77
3749044.35 15.60550 (13041207)
446413.80 3749037.32 14.69269 (13041207) 446404.78
3749033.64 14.12825 (13041207)
446410.66 3749028.36 13.65709 (13041207) 446400.04
3749035.78 14.28891 (13041207)
446378.02 3749041.71 14.59344 (13041207) 446379.40
3749039.20 14.32252 (13041207)
446386.33 3749042.01 14.78157 (13041207) 446398.48
3749040.87 14.85756 (13041207)
446407.35 3749040.87 15.01288 (13041207) 446416.22
3749040.87 15.16555 (13041207)
446411.77 3749044.90 15.60280 (13041207) 446409.96
3749048.55 16.05840 (13041207)
446420.71 3749053.97 17.08841 (13041207) 446411.76
3749040.28 15.01625 (13041207)
446403.50 3749037.03 14.48920 (13041207) 446421.99
3749035.45 14.60177 (13041207)
446424.71 3749054.30 17.23186 (13041207) 446382.91
3749040.90 14.58577 (13041207)
446384.08 3749037.05 14.15917 (13041207) 446399.90
3749046.40 15.58401 (13041207)
446405.79 3749047.06 15.77815 (13041207) 446416.22
3749046.25 15.86827 (13041207)
446422.29 3749050.01 16.52261 (13041207) 446416.08
3749054.20 17.01806 (13041207)

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000550 , L0000551
, L0000552 , L0000553 , L0000554 ,
L0000555 , L0000556 , L0000557 , L0000558 , L0000559
, L0000560 , L0000561 , L0000562 ,
L0000563 , L0000564 , L0000565 , L0000566 , L0000567
, L0000568 , L0000569 , L0000570 ,
L0000571 , L0000572 , L0000573 , L0000574 , L0000575
, L0000576 , L0000577 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS
***

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

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
446398.16	3749030.75	10.86475c	(12121708)	446412.02	3749033.12	11.28414c	(12121708)
446418.14	3749034.53	11.50355c	(12121708)	446423.79	3749057.48	13.89905c	(12121708)
446420.60	3749030.38	11.20749c	(12121708)	446392.07	3749046.15	12.04444c	(12121708)
446399.10	3749048.66	12.42277c	(12121708)	446382.04	3749042.82	11.55206c	(12121708)
446380.74	3749024.73	10.14437c	(12121708)	446384.77	3749025.87	10.28808c	(12121708)
446386.66	3749031.14	10.69884c	(12121708)	446393.40	3749033.41	10.98793c	(12121708)
446395.01	3749029.57	10.72319c	(12121708)	446418.16	3749054.95	13.48079c	(12121708)
446391.41	3749039.11	11.41235c	(12121708)	446389.75	3749042.95	11.71073c	(12121708)
446377.36	3749033.44	10.70968c	(12121708)	446401.65			

3749042.38 11.88539c (12121708)
446393.02 3749043.80 11.84872c (12121708) 446397.05
3749034.69 11.15228c (12121708)
446408.79 3749045.79 12.33721c (12121708) 446379.31
3749028.98 10.41610c (12121708)
446383.06 3749029.83 10.54085c (12121708) 446387.95
3749027.55 10.45870c (12121708)
446389.98 3749032.39 10.85013c (12121708) 446416.22
3749030.11 11.11487c (12121708)
446419.40 3749047.72 12.73581c (12121708) 446413.99
3749053.46 13.22556c (12121708)
446375.19 3749038.32 11.04931c (12121708) 446396.25
3749045.62 12.07723c (12121708)
446394.44 3749039.79 11.52536c (12121708) 446401.75
3749031.82 11.00742c (12121708)
446380.74 3749035.49 10.92656c (12121708) 446388.47
3749037.63 11.23643c (12121708)
446391.64 3749028.38 10.57974c (12121708) 446407.35
3749035.49 11.39702c (12121708)
446416.22 3749035.49 11.55088c (12121708) 446418.22
3749044.94 12.43829c (12121708)
446412.00 3749051.65 12.98963c (12121708) 446415.77
3749044.35 12.33478c (12121708)
446413.80 3749037.32 11.66385c (12121708) 446404.78
3749033.64 11.20237c (12121708)
446410.66 3749028.36 10.89042c (12121708) 446400.04
3749035.78 11.29256c (12121708)
446378.02 3749041.71 11.38049c (12121708) 446379.40
3749039.20 11.19810c (12121708)
446386.33 3749042.01 11.56397c (12121708) 446398.48
3749040.87 11.69285c (12121708)
446407.35 3749040.87 11.85700c (12121708) 446416.22
3749040.87 12.02016c (12121708)
446411.77 3749044.90 12.31022c (12121708) 446409.96
3749048.55 12.62992c (12121708)
446420.71 3749053.97 13.42626c (12121708) 446411.76
3749040.28 11.88557c (12121708)
446403.50 3749037.03 11.45679c (12121708) 446421.99
3749035.45 11.64701c (12121708)
446424.71 3749054.30 13.54980c (12121708) 446382.91
3749040.90 11.40473c (12121708)
446384.08 3749037.05 11.11009c (12121708) 446399.90
3749046.40 12.22167c (12121708)
446405.79 3749047.06 12.40059c (12121708) 446416.22
3749046.25 12.52687c (12121708)
446422.29 3749050.01 13.03018c (12121708) 446416.08
3749054.20 13.35183c (12121708)
446416.69 3749051.94 13.11888c (12121708) 446416.16
3749038.36 11.79576c (12121708)
446421.97 3749040.46 12.08809c (12121708) 446420.08

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

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

GROUP ID	AVERAGE	CONC OF TYPE	NETWORK GRID-ID	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)
ALL	HIGH	1ST HIGH VALUE IS	17.72832	ON 13041207:	AT (446423.79, 3749057.48, 196.50, 196.50, 0.00) DC

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

*** THE SUMMARY OF HIGHEST 8-HR RESULTS ***

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

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

```
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS      13.89905c ON 12121708: AT (  446423.79,
3749057.48,   196.50,   196.50,    0.00)  DC


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

```
↑ *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
CO\15670 CO.ISC                    ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                        ***       12:46:59

                                    PAGE  13
 *** 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           2 Warning Message(s)
 A Total of        1638 Informational Message(s)

 A Total of       43848 Hours Were Processed

 A Total of        1039 Calm Hours Identified

 A Total of         599 Missing Hours Identified (  1.37 Percent)


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


    ********   WARNING MESSAGES   ********
 ME W186     225       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187     225       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


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

```
** AERMOD INPUT PRODUCED BY:
** AERMOD VIEW VER. 12.0.0
** LAKES ENVIRONMENTAL SOFTWARE INC.
** DATE: 1/19/2024
** FILE: C:\LAKES\AERMOD VIEW\15670 HRA\15670 NO2\15670 NO2.ADI
**
**************************************
**
**
**************************************
** AERMOD CONTROL PATHWAY
**************************************
**
**
CO STARTING
   TITLEONE C:\LAKES\AERMOD VIEW\15670 HRA\15670 NO2\15670 NO2.ISC
   MODELOPT DFAULT CONC
   AVERTIME 1 24 ANNUAL
   URBANOPT 2189641
   POLLUTID NO2
   RUNORNOT RUN
   ERRORFIL "15670 NO2.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 91 EB
** PREFIX
** LENGTH OF SIDE = 32.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.0361
** VERTICAL DIMENSION = 6.99
** SZINIT = 3.25
** NODES = 2
** 446149.796, 3749188.513, 197.76, 3.49, 14.88
** 447179.945, 3749035.478, 191.42, 3.49, 14.88
** ------------------------------------------------------------------
   LOCATION L0000485     VOLUME   446165.623 3749186.162 196.79
   LOCATION L0000486     VOLUME   446197.275 3749181.460 196.83
   LOCATION L0000487     VOLUME   446228.928 3749176.757 196.01
   LOCATION L0000488     VOLUME   446260.581 3749172.055 196.14
```

```
   LOCATION L0000489     VOLUME   446292.233 3749167.353 196.30
   LOCATION L0000490     VOLUME   446323.886 3749162.651 196.38
   LOCATION L0000491     VOLUME   446355.539 3749157.949 196.00
   LOCATION L0000492     VOLUME   446387.191 3749153.246 195.74
   LOCATION L0000493     VOLUME   446418.844 3749148.544 195.00
   LOCATION L0000494     VOLUME   446450.497 3749143.842 195.00
   LOCATION L0000495     VOLUME   446482.149 3749139.140 195.00
   LOCATION L0000496     VOLUME   446513.802 3749134.438 195.00
   LOCATION L0000497     VOLUME   446545.454 3749129.735 195.00
   LOCATION L0000498     VOLUME   446577.107 3749125.033 195.00
   LOCATION L0000499     VOLUME   446608.760 3749120.331 195.00
   LOCATION L0000500     VOLUME   446640.412 3749115.629 195.00
   LOCATION L0000501     VOLUME   446672.065 3749110.927 195.00
   LOCATION L0000502     VOLUME   446703.718 3749106.224 195.00
   LOCATION L0000503     VOLUME   446735.370 3749101.522 195.00
   LOCATION L0000504     VOLUME   446767.023 3749096.820 195.33
   LOCATION L0000505     VOLUME   446798.675 3749092.118 195.20
   LOCATION L0000506     VOLUME   446830.328 3749087.416 195.00
   LOCATION L0000507     VOLUME   446861.981 3749082.713 195.00
   LOCATION L0000508     VOLUME   446893.633 3749078.011 195.00
   LOCATION L0000509     VOLUME   446925.286 3749073.309 194.89
   LOCATION L0000510     VOLUME   446956.939 3749068.607 194.69
   LOCATION L0000511     VOLUME   446988.591 3749063.905 195.08
   LOCATION L0000512     VOLUME   447020.244 3749059.202 195.06
   LOCATION L0000513     VOLUME   447051.897 3749054.500 195.00
   LOCATION L0000514     VOLUME   447083.549 3749049.798 194.90
   LOCATION L0000515     VOLUME   447115.202 3749045.096 194.63
   LOCATION L0000516     VOLUME   447146.854 3749040.394 193.31
   LOCATION L0000517     VOLUME   447178.507 3749035.691 191.48
** END OF LINE VOLUME SOURCE ID = SLINE1
** ----------------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE2
** DESCRSRC 91 WB
** PREFIX
** LENGTH OF SIDE = 32.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.0313
** VERTICAL DIMENSION = 6.99
** SZINIT = 3.25
** NODES = 2
** 446153.936, 3749222.959, 196.45, 3.49, 14.88
** 447172.188, 3749092.095, 193.64, 3.49, 14.88
** ----------------------------------------------------------------------
   LOCATION L0000518     VOLUME   446169.806 3749220.920 195.99
   LOCATION L0000519     VOLUME   446201.545 3749216.841 195.65
   LOCATION L0000520     VOLUME   446233.284 3749212.761 195.68
   LOCATION L0000521     VOLUME   446265.023 3749208.682 194.98
   LOCATION L0000522     VOLUME   446296.762 3749204.603 195.05
   LOCATION L0000523     VOLUME   446328.501 3749200.524 195.19
```

```
   LOCATION L0000524     VOLUME   446360.240 3749196.445 195.33
   LOCATION L0000525     VOLUME   446391.979 3749192.366 195.04
   LOCATION L0000526     VOLUME   446423.718 3749188.287 194.60
   LOCATION L0000527     VOLUME   446455.457 3749184.208 194.59
   LOCATION L0000528     VOLUME   446487.196 3749180.129 194.66
   LOCATION L0000529     VOLUME   446518.935 3749176.050 195.00
   LOCATION L0000530     VOLUME   446550.673 3749171.971 195.00
   LOCATION L0000531     VOLUME   446582.412 3749167.892 194.45
   LOCATION L0000532     VOLUME   446614.151 3749163.813 194.41
   LOCATION L0000533     VOLUME   446645.890 3749159.734 194.55
   LOCATION L0000534     VOLUME   446677.629 3749155.655 194.39
   LOCATION L0000535     VOLUME   446709.368 3749151.576 194.64
   LOCATION L0000536     VOLUME   446741.107 3749147.497 194.87
   LOCATION L0000537     VOLUME   446772.846 3749143.418 194.99
   LOCATION L0000538     VOLUME   446804.585 3749139.339 194.29
   LOCATION L0000539     VOLUME   446836.324 3749135.260 193.44
   LOCATION L0000540     VOLUME   446868.063 3749131.181 192.72
   LOCATION L0000541     VOLUME   446899.802 3749127.102 192.42
   LOCATION L0000542     VOLUME   446931.541 3749123.023 192.55
   LOCATION L0000543     VOLUME   446963.280 3749118.944 192.64
   LOCATION L0000544     VOLUME   446995.019 3749114.865 193.61
   LOCATION L0000545     VOLUME   447026.758 3749110.786 193.78
   LOCATION L0000546     VOLUME   447058.497 3749106.707 193.20
   LOCATION L0000547     VOLUME   447090.236 3749102.627 193.36
   LOCATION L0000548     VOLUME   447121.975 3749098.548 193.01
   LOCATION L0000549     VOLUME   447153.714 3749094.469 193.76
** END OF LINE VOLUME SOURCE ID = SLINE2
** SOURCE PARAMETERS **
** LINE VOLUME SOURCE ID = SLINE1
   SRCPARAM L0000485     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000486     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000487     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000488     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000489     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000490     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000491     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000492     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000493     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000494     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000495     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000496     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000497     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000498     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000499     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000500     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000501     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000502     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000503     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000504     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000505     0.0010939394      3.49     14.88      3.25
```

```
   SRCPARAM L0000506     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000507     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000508     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000509     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000510     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000511     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000512     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000513     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000514     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000515     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000516     0.0010939394      3.49     14.88      3.25
   SRCPARAM L0000517     0.0010939394      3.49     14.88      3.25
** ------------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE2
   SRCPARAM L0000518     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000519     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000520     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000521     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000522     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000523     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000524     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000525     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000526     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000527     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000528     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000529     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000530     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000531     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000532     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000533     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000534     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000535     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000536     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000537     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000538     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000539     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000540     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000541     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000542     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000543     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000544     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000545     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000546     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000547     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000548     0.000978125      3.49     14.88      3.25
   SRCPARAM L0000549     0.000978125      3.49     14.88      3.25
** ------------------------------------------------------------------
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
```

```
**
**************************************
** AERMOD RECEPTOR PATHWAY
**************************************
**
**
RE STARTING
   INCLUDED "15670 NO2.ROU"
RE FINISHED
**
**************************************
** AERMOD METEOROLOGY PATHWAY
**************************************
**
**
ME STARTING
   SURFFILE "..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.SFC"
   PROFFILE "..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.PFL"
   SURFDATA 3171 2012
   UAIRDATA 3190 2012
   PROFBASE 245.0 METERS
ME FINISHED
**
**************************************
** AERMOD OUTPUT PATHWAY
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
   RECTABLE 24 1ST
** AUTO-GENERATED PLOTFILES
   PLOTFILE   1 ALL 1ST "15670 NO2.AD\01H1GALL.PLT" 31
   PLOTFILE   24 ALL 1ST "15670 NO2.AD\24H1GALL.PLT" 32
   PLOTFILE   ANNUAL ALL "15670 NO2.AD\AN00GALL.PLT" 33
   SUMMFILE "15670 NO2.SUM"
OU FINISHED


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

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

 A Total of            0 Fatal Error Message(s)
 A Total of            4 Warning Message(s)
 A Total of            0 Informational Message(s)


    ******** FATAL ERROR MESSAGES ********
```

```
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 CO W361      26       COCARD: Multiyear PERIOD/ANNUAL values for NO2/SO2 require
MULTYEAR Opt
 CO W362      26       COCARD: Multiyear 1h NO2/SO2 processing not applicable for
 24-hr Ave
 ME W186     225       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187     225       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


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

 *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
NO2\15670 NO2.ISC               ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                         ***        14:36:10

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

                                              ***     MODEL SETUP OPTIONS SUMMARY
  ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - -

 ** Model Options Selected:
      * Model Uses Regulatory DEFAULT Options
      * Model Is Setup For Calculation of Average CONCentration Values.
      * NO GAS DEPOSITION Data Provided.
      * NO PARTICLE DEPOSITION Data Provided.
      * Model Uses NO DRY DEPLETION. DDPLETE  =  F
      * Model Uses NO WET DEPLETION. WETDPLT  =  F
      * Stack-tip Downwash.
      * Model Accounts for ELEVated Terrain Effects.
      * Use Calms Processing Routine.
      * Use Missing Data Processing Routine.
      * No Exponential Decay.
      * Full Conversion Assumed for NO2.
      * Model Uses URBAN Dispersion Algorithm for the SBL for    65 Source(s),
        for Total of    1 Urban Area(s):
   Urban Population =   2189641.0 ;  Urban Roughness Length =  1.000 m
      * Urban Roughness Length of 1.0 Meter Used.
      * ADJ_U*   - Use ADJ_U* option for SBL in AERMET
      * CCVR_Sub - Meteorological data includes CCVR substitutions
      * TEMP_Sub - Meteorological data includes TEMP substitutions
```

```
      * Model Assumes No FLAGPOLE Receptor Heights.
      * The User Specified a Pollutant Type of: NO2

 **NOTE: Special processing requirements applicable for the 1-hour NO2 NAAQS have
been disabled!!!
         User has specified non-standard averaging periods:   24-HR

         High ranked 1-hour values are NOT averaged across the number of years
modeled, and
         complete years of data are NOT required.

 **Model Calculates  2 Short Term Average(s) of:   1-HR  24-HR
     and Calculates ANNUAL Averages

 **This Run Includes:     65 Source(s);       1 Source Group(s); and      68
Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                 and:     65 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)
                 and:      0 SWPOINT source(s)


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

 **The AERMET Input Meteorological Data Version Date:  16216

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

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

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =   245.00 ;  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: 15670 NO2.ERR

**File for Summary of Results: 15670 NO2.SUM

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER EMISSION RATE 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 SCALAR VARY BY	AIRCRAFT
L0000485	0	0.10939E-02	446165.6	3749186.2	196.8	3.49	14.88	3.25	YES	NO	
L0000486	0	0.10939E-02	446197.3	3749181.5	196.8	3.49	14.88	3.25	YES	NO	
L0000487	0	0.10939E-02	446228.9	3749176.8	196.0	3.49	14.88	3.25	YES	NO	
L0000488	0	0.10939E-02	446260.6	3749172.1	196.1	3.49	14.88	3.25	YES	NO	
L0000489	0	0.10939E-02	446292.2	3749167.4	196.3	3.49	14.88	3.25	YES	NO	
L0000490	0	0.10939E-02	446323.9	3749162.7	196.4	3.49	14.88	3.25	YES	NO	
L0000491	0	0.10939E-02	446355.5	3749157.9	196.0	3.49	14.88	3.25	YES	NO	
L0000492	0	0.10939E-02	446387.2	3749153.2	195.7	3.49	14.88	3.25	YES	NO	

L0000493	0	0.10939E-02	446418.8	3749148.5	195.0	3.49	14.88	
3.25	YES		NO					
L0000494	0	0.10939E-02	446450.5	3749143.8	195.0	3.49	14.88	
3.25	YES		NO					
L0000495	0	0.10939E-02	446482.1	3749139.1	195.0	3.49	14.88	
3.25	YES		NO					
L0000496	0	0.10939E-02	446513.8	3749134.4	195.0	3.49	14.88	
3.25	YES		NO					
L0000497	0	0.10939E-02	446545.5	3749129.7	195.0	3.49	14.88	
3.25	YES		NO					
L0000498	0	0.10939E-02	446577.1	3749125.0	195.0	3.49	14.88	
3.25	YES		NO					
L0000499	0	0.10939E-02	446608.8	3749120.3	195.0	3.49	14.88	
3.25	YES		NO					
L0000500	0	0.10939E-02	446640.4	3749115.6	195.0	3.49	14.88	
3.25	YES		NO					
L0000501	0	0.10939E-02	446672.1	3749110.9	195.0	3.49	14.88	
3.25	YES		NO					
L0000502	0	0.10939E-02	446703.7	3749106.2	195.0	3.49	14.88	
3.25	YES		NO					
L0000503	0	0.10939E-02	446735.4	3749101.5	195.0	3.49	14.88	
3.25	YES		NO					
L0000504	0	0.10939E-02	446767.0	3749096.8	195.3	3.49	14.88	
3.25	YES		NO					
L0000505	0	0.10939E-02	446798.7	3749092.1	195.2	3.49	14.88	
3.25	YES		NO					
L0000506	0	0.10939E-02	446830.3	3749087.4	195.0	3.49	14.88	
3.25	YES		NO					
L0000507	0	0.10939E-02	446862.0	3749082.7	195.0	3.49	14.88	
3.25	YES		NO					
L0000508	0	0.10939E-02	446893.6	3749078.0	195.0	3.49	14.88	
3.25	YES		NO					
L0000509	0	0.10939E-02	446925.3	3749073.3	194.9	3.49	14.88	
3.25	YES		NO					
L0000510	0	0.10939E-02	446956.9	3749068.6	194.7	3.49	14.88	
3.25	YES		NO					
L0000511	0	0.10939E-02	446988.6	3749063.9	195.1	3.49	14.88	
3.25	YES		NO					
L0000512	0	0.10939E-02	447020.2	3749059.2	195.1	3.49	14.88	
3.25	YES		NO					
L0000513	0	0.10939E-02	447051.9	3749054.5	195.0	3.49	14.88	
3.25	YES		NO					
L0000514	0	0.10939E-02	447083.5	3749049.8	194.9	3.49	14.88	
3.25	YES		NO					
L0000515	0	0.10939E-02	447115.2	3749045.1	194.6	3.49	14.88	
3.25	YES		NO					
L0000516	0	0.10939E-02	447146.9	3749040.4	193.3	3.49	14.88	
3.25	YES		NO					
L0000517	0	0.10939E-02	447178.5	3749035.7	191.5	3.49	14.88	
3.25	YES		NO					

```
 L0000518         0   0.97813E-03  446169.8 3749220.9   196.0     3.49    14.88
3.25     YES                    NO
 L0000519         0   0.97813E-03  446201.5 3749216.8   195.7     3.49    14.88
3.25     YES                    NO
 L0000520         0   0.97813E-03  446233.3 3749212.8   195.7     3.49    14.88
3.25     YES                    NO
 L0000521         0   0.97813E-03  446265.0 3749208.7   195.0     3.49    14.88
3.25     YES                    NO
 L0000522         0   0.97813E-03  446296.8 3749204.6   195.1     3.49    14.88
3.25     YES                    NO
 L0000523         0   0.97813E-03  446328.5 3749200.5   195.2     3.49    14.88
3.25     YES                    NO
 L0000524         0   0.97813E-03  446360.2 3749196.4   195.3     3.49    14.88
3.25     YES                    NO
 *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
NO2\15670 NO2.ISC               ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                         ***       14:36:10

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


                                                    *** VOLUME SOURCE DATA ***

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

 L0000525         0   0.97813E-03  446392.0 3749192.4   195.0     3.49    14.88
3.25     YES                    NO
 L0000526         0   0.97813E-03  446423.7 3749188.3   194.6     3.49    14.88
3.25     YES                    NO
 L0000527         0   0.97813E-03  446455.5 3749184.2   194.6     3.49    14.88
3.25     YES                    NO
 L0000528         0   0.97813E-03  446487.2 3749180.1   194.7     3.49    14.88
3.25     YES                    NO
 L0000529         0   0.97813E-03  446518.9 3749176.0   195.0     3.49    14.88
3.25     YES                    NO
 L0000530         0   0.97813E-03  446550.7 3749172.0   195.0     3.49    14.88
3.25     YES                    NO
 L0000531         0   0.97813E-03  446582.4 3749167.9   194.5     3.49    14.88
3.25     YES                    NO
 L0000532         0   0.97813E-03  446614.2 3749163.8   194.4     3.49    14.88
3.25     YES                    NO
```

```
 L0000533         0   0.97813E-03  446645.9 3749159.7   194.6     3.49    14.88
3.25     YES                    NO
 L0000534         0   0.97813E-03  446677.6 3749155.7   194.4     3.49    14.88
3.25     YES                    NO
 L0000535         0   0.97813E-03  446709.4 3749151.6   194.6     3.49    14.88
3.25     YES                    NO
 L0000536         0   0.97813E-03  446741.1 3749147.5   194.9     3.49    14.88
3.25     YES                    NO
 L0000537         0   0.97813E-03  446772.8 3749143.4   195.0     3.49    14.88
3.25     YES                    NO
 L0000538         0   0.97813E-03  446804.6 3749139.3   194.3     3.49    14.88
3.25     YES                    NO
 L0000539         0   0.97813E-03  446836.3 3749135.3   193.4     3.49    14.88
3.25     YES                    NO
 L0000540         0   0.97813E-03  446868.1 3749131.2   192.7     3.49    14.88
3.25     YES                    NO
 L0000541         0   0.97813E-03  446899.8 3749127.1   192.4     3.49    14.88
3.25     YES                    NO
 L0000542         0   0.97813E-03  446931.5 3749123.0   192.6     3.49    14.88
3.25     YES                    NO
 L0000543         0   0.97813E-03  446963.3 3749118.9   192.6     3.49    14.88
3.25     YES                    NO
 L0000544         0   0.97813E-03  446995.0 3749114.9   193.6     3.49    14.88
3.25     YES                    NO
 L0000545         0   0.97813E-03  447026.8 3749110.8   193.8     3.49    14.88
3.25     YES                    NO
 L0000546         0   0.97813E-03  447058.5 3749106.7   193.2     3.49    14.88
3.25     YES                    NO
 L0000547         0   0.97813E-03  447090.2 3749102.6   193.4     3.49    14.88
3.25     YES                    NO
 L0000548         0   0.97813E-03  447122.0 3749098.5   193.0     3.49    14.88
3.25     YES                    NO
 L0000549         0   0.97813E-03  447153.7 3749094.5   193.8     3.49    14.88
3.25     YES                    NO
↑ *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
NO2\15670 NO2.ISC               ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                         ***        14:36:10

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


                                              *** SOURCE IDs DEFINING SOURCE GROUPS
***

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

```
  ALL        L0000485    , L0000486    , L0000487    , L0000488    , L0000489    ,
L0000490    , L0000491    , L0000492    ,

             L0000493    , L0000494    , L0000495    , L0000496    , L0000497    ,
L0000498    , L0000499    , L0000500    ,

             L0000501    , L0000502    , L0000503    , L0000504    , L0000505    ,
L0000506    , L0000507    , L0000508    ,

             L0000509    , L0000510    , L0000511    , L0000512    , L0000513    ,
L0000514    , L0000515    , L0000516    ,

             L0000517    , L0000518    , L0000519    , L0000520    , L0000521    ,
L0000522    , L0000523    , L0000524    ,

             L0000525    , L0000526    , L0000527    , L0000528    , L0000529    ,
L0000530    , L0000531    , L0000532    ,

             L0000533    , L0000534    , L0000535    , L0000536    , L0000537    ,
L0000538    , L0000539    , L0000540    ,

             L0000541    , L0000542    , L0000543    , L0000544    , L0000545    ,
L0000546    , L0000547    , L0000548    ,

             L0000549    ,
 *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
NO2\15670 NO2.ISC               ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                         ***        14:36:10

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


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

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


              2189641.   L0000485    , L0000486    , L0000487    , L0000488    ,
L0000489    , L0000490    , L0000491    ,
 L0000492    ,

             L0000493    , L0000494    , L0000495    , L0000496    , L0000497    ,
L0000498    , L0000499    , L0000500    ,

             L0000501    , L0000502    , L0000503    , L0000504    , L0000505    ,
L0000506    , L0000507    , L0000508    ,
```

```
             L0000509    , L0000510    , L0000511    , L0000512    , L0000513    ,
L0000514    , L0000515    , L0000516    ,

             L0000517    , L0000518    , L0000519    , L0000520    , L0000521    ,
L0000522    , L0000523    , L0000524    ,

             L0000525    , L0000526    , L0000527    , L0000528    , L0000529    ,
L0000530    , L0000531    , L0000532    ,

             L0000533    , L0000534    , L0000535    , L0000536    , L0000537    ,
L0000538    , L0000539    , L0000540    ,

             L0000541    , L0000542    , L0000543    , L0000544    , L0000545    ,
L0000546    , L0000547    , L0000548    ,

             L0000549    ,
```


*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

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

```
     ( 446398.2, 3749030.8,     197.3,     197.3,       0.0);         ( 446412.0,
3749033.1,     197.0,     197.0,       0.0);
     ( 446418.1, 3749034.5,     196.9,     196.9,       0.0);         ( 446423.8,
3749057.5,     196.5,     196.5,       0.0);
     ( 446420.6, 3749030.4,     197.0,     197.0,       0.0);         ( 446392.1,
3749046.1,     197.2,     197.2,       0.0);
     ( 446399.1, 3749048.7,     197.1,     197.1,       0.0);         ( 446382.0,
3749042.8,     197.4,     197.4,       0.0);
     ( 446380.7, 3749024.7,     198.0,     198.0,       0.0);         ( 446384.8,
3749025.9,     197.8,     197.8,       0.0);
     ( 446386.7, 3749031.1,     197.6,     197.6,       0.0);         ( 446393.4,
3749033.4,     197.4,     197.4,       0.0);
     ( 446395.0, 3749029.6,     197.4,     197.4,       0.0);         ( 446418.2,
3749054.9,     196.7,     196.7,       0.0);
     ( 446391.4, 3749039.1,     197.3,     197.3,       0.0);         ( 446389.8,
3749042.9,     197.3,     197.3,       0.0);
     ( 446377.4, 3749033.4,     197.8,     197.8,       0.0);         ( 446401.6,
3749042.4,     197.1,     197.1,       0.0);
     ( 446393.0, 3749043.8,     197.2,     197.2,       0.0);         ( 446397.0,
3749034.7,     197.3,     197.3,       0.0);
     ( 446408.8, 3749045.8,     197.0,     197.0,       0.0);         ( 446379.3,
```

```
3749029.0,     197.9,     197.9,       0.0);
     ( 446383.1, 3749029.8,     197.8,     197.8,       0.0);         ( 446388.0,
3749027.5,     197.7,     197.7,       0.0);
     ( 446390.0, 3749032.4,     197.5,     197.5,       0.0);         ( 446416.2,
3749030.1,     197.0,     197.0,       0.0);
     ( 446419.4, 3749047.7,     196.8,     196.8,       0.0);         ( 446414.0,
3749053.5,     196.9,     196.9,       0.0);
     ( 446375.2, 3749038.3,     197.7,     197.7,       0.0);         ( 446396.2,
3749045.6,     197.2,     197.2,       0.0);
     ( 446394.4, 3749039.8,     197.3,     197.3,       0.0);         ( 446401.8,
3749031.8,     197.2,     197.2,       0.0);
     ( 446380.7, 3749035.5,     197.7,     197.7,       0.0);         ( 446388.5,
3749037.6,     197.4,     197.4,       0.0);
     ( 446391.6, 3749028.4,     197.6,     197.6,       0.0);         ( 446407.3,
3749035.5,     197.1,     197.1,       0.0);
     ( 446416.2, 3749035.5,     196.9,     196.9,       0.0);         ( 446418.2,
3749044.9,     196.8,     196.8,       0.0);
     ( 446412.0, 3749051.6,     196.9,     196.9,       0.0);         ( 446415.8,
3749044.3,     196.9,     196.9,       0.0);
     ( 446413.8, 3749037.3,     197.0,     197.0,       0.0);         ( 446404.8,
3749033.6,     197.1,     197.1,       0.0);
     ( 446410.7, 3749028.4,     197.0,     197.0,       0.0);         ( 446400.0,
3749035.8,     197.2,     197.2,       0.0);
     ( 446378.0, 3749041.7,     197.5,     197.5,       0.0);         ( 446379.4,
3749039.2,     197.6,     197.6,       0.0);
     ( 446386.3, 3749042.0,     197.4,     197.4,       0.0);         ( 446398.5,
3749040.9,     197.2,     197.2,       0.0);
     ( 446407.3, 3749040.9,     197.0,     197.0,       0.0);         ( 446416.2,
3749040.9,     196.9,     196.9,       0.0);
     ( 446411.8, 3749044.9,     197.0,     197.0,       0.0);         ( 446410.0,
3749048.5,     197.0,     197.0,       0.0);
     ( 446420.7, 3749054.0,     196.7,     196.7,       0.0);         ( 446411.8,
3749040.3,     197.0,     197.0,       0.0);
     ( 446403.5, 3749037.0,     197.1,     197.1,       0.0);         ( 446422.0,
3749035.4,     196.9,     196.9,       0.0);
     ( 446424.7, 3749054.3,     196.5,     196.5,       0.0);         ( 446382.9,
3749040.9,     197.5,     197.5,       0.0);
     ( 446384.1, 3749037.0,     197.5,     197.5,       0.0);         ( 446399.9,
3749046.4,     197.1,     197.1,       0.0);
     ( 446405.8, 3749047.1,     197.0,     197.0,       0.0);         ( 446416.2,
3749046.2,     196.9,     196.9,       0.0);
     ( 446422.3, 3749050.0,     196.7,     196.7,       0.0);         ( 446416.1,
3749054.2,     196.8,     196.8,       0.0);
     ( 446416.7, 3749051.9,     196.8,     196.8,       0.0);         ( 446416.2,
3749038.4,     196.9,     196.9,       0.0);
     ( 446422.0, 3749040.5,     196.8,     196.8,       0.0);         ( 446420.1,
3749055.9,     196.7,     196.7,       0.0);
 *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
NO2\15670 NO2.ISC               ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
```

```
                        ***        14:36:10

                                   PAGE   7
 *** 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 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)

                                                 1.54,   3.09,   5.14,   8.23,
10.80,
↑ *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
NO2\15670 NO2.ISC               ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                        ***        14:36:10

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

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

   Surface file:   ..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.SFC
                  Met Version:  16216
   Profile file:   ..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.PFL
```

Surface format: FREE

Profile format: FREE

Surface station no.: 3171 Upper air station no.: 3190
Name: UNKNOWN Name: UNKNOWN

Year: 2012 Year: 2012

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
12	01	01	1	01	-25.6	0.266	-9.000	-9.000	-999.	330.	77.9	0.15	2.40	1.00	2.93	55.	10.1	288.1	2.0
12	01	01	1	02	-26.8	0.277	-9.000	-9.000	-999.	351.	84.7	0.15	2.40	1.00	3.05	55.	10.1	287.0	2.0
12	01	01	1	03	-21.5	0.221	-9.000	-9.000	-999.	250.	53.5	0.15	2.40	1.00	2.45	74.	10.1	284.2	2.0
12	01	01	1	04	-22.0	0.227	-9.000	-9.000	-999.	260.	56.8	0.15	2.40	1.00	2.52	77.	10.1	285.9	2.0
12	01	01	1	05	-20.0	0.206	-9.000	-9.000	-999.	225.	46.8	0.15	2.40	1.00	2.30	80.	10.1	285.4	2.0
12	01	01	1	06	-14.4	0.171	-9.000	-9.000	-999.	170.	32.1	0.15	2.40	1.00	1.93	79.	10.1	287.0	2.0
12	01	01	1	07	-14.9	0.174	-9.000	-9.000	-999.	174.	33.2	0.15	2.40	1.00	1.96	77.	10.1	284.2	2.0
12	01	01	1	08	-11.9	0.169	-9.000	-9.000	-999.	167.	36.1	0.15	2.40	0.53	1.89	77.	10.1	288.1	2.0
12	01	01	1	09	40.4	0.234	0.359	0.006	40.	272.	-28.1	0.15	2.40	0.31	2.10	81.	10.1	289.2	2.0
12	01	01	1	10	112.6	0.246	0.742	0.005	129.	293.	-11.8	0.15	2.40	0.24	1.99	101.	10.1	296.4	2.0
12	01	01	1	11	161.0	0.402	1.188	0.005	369.	611.	-35.6	0.15	2.40	0.21	3.68	78.	10.1	298.8	2.0
12	01	01	1	12	184.7	0.337	1.516	0.005	668.	473.	-18.4	0.15	2.40	0.20	2.89	68.	10.1	300.4	2.0
12	01	01	1	13	183.9	0.310	1.809	0.005	1139.	414.	-14.2	0.15	2.40	0.20	2.57	64.	10.1	302.5	2.0
12	01	01	1	14	156.6	0.374	1.852	0.005	1434.	549.	-29.5	0.15	2.40	0.22	3.37	63.	10.1	303.1	2.0
12	01	01	1	15	104.3	0.382	1.658	0.005	1546.	567.	-47.2	0.15	2.40	0.25	3.59	62.	10.1	302.5	2.0
12	01	01	1	16	31.8	0.374	1.123	0.005	1573.	550.	-145.8	0.15	2.40	0.34	3.76	69.	10.1	300.9	2.0
12	01	01	1	17	-23.3	0.276	-9.000	-9.000	-999.	354.	84.0	0.15	2.40	0.62	3.03	59.	10.1	297.5	2.0
12	01	01	1	18	-21.5	0.229	-9.000	-9.000	-999.	264.	57.8	0.15	2.40						

```
1.00    2.54   54.   10.1  295.4    2.0
 12 01 01   1 19  -19.3  0.204 -9.000 -9.000 -999.  221.     45.6  0.15   2.40
1.00    2.27   79.   10.1  292.0    2.0
 12 01 01   1 20  -20.7  0.218 -9.000 -9.000 -999.  244.     52.2  0.15   2.40
1.00    2.42   79.   10.1  292.5    2.0
 12 01 01   1 21  -19.7  0.206 -9.000 -9.000 -999.  225.     46.9  0.15   2.40
1.00    2.30   95.   10.1  290.9    2.0
 12 01 01   1 22  -17.6  0.190 -9.000 -9.000 -999.  199.     39.8  0.15   2.40
1.00    2.13   78.   10.1  290.4    2.0
 12 01 01   1 23  -20.3  0.211 -9.000 -9.000 -999.  233.     49.0  0.15   2.40
1.00    2.35   52.   10.1  289.2    2.0
 12 01 01   1 24  -16.4  0.183 -9.000 -9.000 -999.  189.     37.0  0.15   2.40
1.00    2.06   75.   10.1  288.8    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 12 01 01 01   10.1 1   55.    2.93   288.2   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
↑ *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
NO2\15670 NO2.ISC               ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                         ***        14:36:10

                                    PAGE   9
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     L0000485    , L0000486
 , L0000487    , L0000488    , L0000489    ,
                   L0000490    , L0000491    , L0000492    , L0000493    , L0000494
 , L0000495    , L0000496    , L0000497    ,
                   L0000498    , L0000499    , L0000500    , L0000501    , L0000502
 , L0000503    , L0000504    , L0000505    ,
                   L0000506    , L0000507    , L0000508    , L0000509    , L0000510
 , L0000511    , L0000512    ,  . . .      ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                          ** CONC OF NO2      IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)        CONC                        X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - -
         446398.16    3749030.75        0.90952                       446412.02
```

3749033.12 0.94904
446418.14 3749034.53 0.96967 446423.79
3749057.48 1.20191
446420.60 3749030.38 0.94181 446392.07
3749046.15 1.02023
446399.10 3749048.66 1.05632 446382.04
3749042.82 0.97360
446380.74 3749024.73 0.84499 446384.77
3749025.87 0.85811
446386.66 3749031.14 0.89487 446393.40
3749033.41 0.92082
446395.01 3749029.57 0.89685 446418.16
3749054.95 1.15984
446391.41 3749039.11 0.96045 446389.75
3749042.95 0.98855
446377.36 3749033.44 0.89688 446401.65
3749042.38 1.00523
446393.02 3749043.80 1.00161 446397.05
3749034.69 0.93624
446408.79 3749045.79 1.04834 446379.31
3749028.98 0.86975
446383.06 3749029.83 0.88126 446387.95
3749027.55 0.87318
446389.98 3749032.39 0.90848 446416.22
3749030.11 0.93320
446419.40 3749047.72 1.08743 446413.99
3749053.46 1.13438
446375.19 3749038.32 0.92790 446396.25
3749045.62 1.02336
446394.44 3749039.79 0.97112 446401.75
3749031.82 0.92290
446380.74 3749035.49 0.91633 446388.47
3749037.63 0.94444
446391.64 3749028.38 0.88351 446407.35
3749035.49 0.95948
446416.22 3749035.49 0.97411 446418.22
3749044.94 1.05865
446412.00 3749051.65 1.11123 446415.77
3749044.35 1.04858
446413.80 3749037.32 0.98471 446404.78
3749033.64 0.94117
446410.66 3749028.36 0.91241 446400.04
3749035.78 0.94942
446378.02 3749041.71 0.95799 446379.40
3749039.20 0.94128
446386.33 3749042.01 0.97471 446398.48
3749040.87 0.98695
446407.35 3749040.87 1.00275 446416.22
3749040.87 1.01856
446411.77 3749044.90 1.04597 446409.96

 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

                               *** THE   1ST HIGHEST 1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP: ALL   ***
                                  INCLUDING SOURCE(S):   L0000485   , L0000486
 , L0000487   , L0000488   , L0000489   ,
                 L0000490   , L0000491   , L0000492   , L0000493   , L0000494
 , L0000495   , L0000496   , L0000497   ,
                 L0000498   , L0000499   , L0000500   , L0000501   , L0000502
 , L0000503   , L0000504   , L0000505   ,
                 L0000506   , L0000507   , L0000508   , L0000509   , L0000510
 , L0000511   , L0000512   , . . .   ,

                                        *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                   ** CONC OF NO2   IN MICROGRAMS/M**3
                  **

      X-COORD (M) Y-COORD (M)   CONC   (YYMMDDHH)   X-COORD (M)
Y-COORD (M)   CONC   (YYMMDDHH)
 -
- -
        446398.16   3749030.75   2.76492 (13041207)   446412.02
 3749033.12   2.86486 (13041207)
        446418.14   3749034.53   2.91740 (13041207)   446423.79
 3749057.48   3.60961 (13041207)

```
       446420.60   3749030.38        2.82806  (13041207)               446392.07
3749046.15        3.11930  (13041207)
       446399.10   3749048.66        3.21704  (13041207)               446382.04
3749042.82        2.99186  (13041207)
       446380.74   3749024.73        2.58145  (13041207)               446384.77
3749025.87        2.61713  (13041207)
       446386.66   3749031.14        2.73361  (13041207)               446393.40
3749033.41        2.80764  (13041207)
       446395.01   3749029.57        2.72851  (13041207)               446418.16
3749054.95        3.49407  (13041207)
       446391.41   3749039.11        2.93453  (13041207)               446389.75
3749042.95        3.02503  (13041207)
       446377.36   3749033.44        2.75158  (13041207)               446401.65
3749042.38        3.05519  (13041207)
       446393.02   3749043.80        3.05968  (13041207)               446397.05
3749034.69        2.84980  (13041207)
       446408.79   3749045.79        3.17381  (13041207)               446379.31
3749028.98        2.66187  (13041207)
       446383.06   3749029.83        2.69288  (13041207)               446387.95
3749027.55        2.66203  (13041207)
       446389.98   3749032.39        2.77271  (13041207)               446416.22
3749030.11        2.80907  (13041207)
       446419.40   3749047.72        3.27337  (13041207)               446413.99
3749053.46        3.42506  (13041207)
       446375.19   3749038.32        2.85552  (13041207)               446396.25
3749045.62        3.12115  (13041207)
       446394.44   3749039.79        2.96255  (13041207)               446401.75
3749031.82        2.80088  (13041207)
       446380.74   3749035.49        2.80938  (13041207)               446388.47
3749037.63        2.88788  (13041207)
       446391.64   3749028.38        2.69182  (13041207)               446407.35
3749035.49        2.90473  (13041207)
       446416.22   3749035.49        2.93429  (13041207)               446418.22
3749044.94        3.18823  (13041207)
       446412.00   3749051.65        3.35869  (13041207)               446415.77
3749044.35        3.16210  (13041207)
       446413.80   3749037.32        2.97087  (13041207)               446404.78
3749033.64        2.85254  (13041207)
       446410.66   3749028.36        2.75475  (13041207)               446400.04
3749035.78        2.88579  (13041207)
       446378.02   3749041.71        2.94812  (13041207)               446379.40
3749039.20        2.89168  (13041207)
       446386.33   3749042.01        2.98791  (13041207)               446398.48
3749040.87        3.00446  (13041207)
       446407.35   3749040.87        3.03745  (13041207)               446416.22
3749040.87        3.06994  (13041207)
       446411.77   3749044.90        3.16129  (13041207)               446409.96
3749048.55        3.25680  (13041207)
       446420.71   3749053.97        3.47429  (13041207)               446411.76
3749040.28        3.03841  (13041207)
```

```
       446403.50   3749037.03        2.92777  (13041207)               446421.99
 3749035.45        2.95240  (13041207)
       446424.71   3749054.30        3.50484  (13041207)               446382.91
 3749040.90        2.94681  (13041207)
       446384.08   3749037.05        2.85788  (13041207)               446399.90
 3749046.40        3.15667  (13041207)
       446405.79   3749047.06        3.19772  (13041207)               446416.22
 3749046.25        3.21727  (13041207)
       446422.29   3749050.01        3.35520  (13041207)               446416.08
 3749054.20        3.45917  (13041207)
       446416.69   3749051.94        3.38984  (13041207)               446416.16
 3749038.36        3.00506  (13041207)
       446421.97   3749040.46        3.08029  (13041207)               446420.08
 3749055.93        3.53661  (13041207)
 *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
NO2\15670 NO2.ISC               ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                        ***        14:36:10

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

                              *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     L0000485    , L0000486
 , L0000487    , L0000488    , L0000489    ,
                 L0000490    , L0000491    , L0000492    , L0000493    , L0000494
 , L0000495    , L0000496    , L0000497    ,
                 L0000498    , L0000499    , L0000500    , L0000501    , L0000502
 , L0000503    , L0000504    , L0000505    ,
                 L0000506    , L0000507    , L0000508    , L0000509    , L0000510
 , L0000511    , L0000512    ,  . . .      ,

                                        *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                     ** CONC OF NO2      IN MICROGRAMS/M**3
                  **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       446398.16   3749030.75        1.60148b (16120624)               446412.02
 3749033.12        1.67338b (16120624)
       446418.14   3749034.53        1.71072b (16120624)               446423.79
 3749057.48        2.10629b (16120624)
       446420.60   3749030.38        1.66333b (16120624)               446392.07
 3749046.15        1.79061b (16120624)
       446399.10   3749048.66        1.85453b (16120624)               446382.04
```

3749042.82 1.70752b (16120624)
446380.74 3749024.73 1.48340b (16120624) 446384.77
3749025.87 1.50731b (16120624)
446386.66 3749031.14 1.57248b (16120624) 446393.40
3749033.41 1.61986b (16120624)
446395.01 3749029.57 1.57827b (16120624) 446418.16
3749054.95 2.03495b (16120624)
446391.41 3749039.11 1.68777b (16120624) 446389.75
3749042.95 1.73562b (16120624)
446377.36 3749033.44 1.57274b (16120624) 446401.65
3749042.38 1.76771b (16120624)
446393.02 3749043.80 1.75904b (16120624) 446397.05
3749034.69 1.64748b (16120624)
446408.79 3749045.79 1.84364b (16120624) 446379.31
3749028.98 1.52631b (16120624)
446383.06 3749029.83 1.54722b (16120624) 446387.95
3749027.55 1.53490b (16120624)
446389.98 3749032.39 1.59719b (16120624) 446416.22
3749030.11 1.64715b (16120624)
446419.40 3749047.72 1.91260b (16120624) 446413.99
3749053.46 1.99128b (16120624)
446375.19 3749038.32 1.62608b (16120624) 446396.25
3749045.62 1.79725b (16120624)
446394.44 3749039.79 1.70701b (16120624) 446401.75
3749031.82 1.62556b (16120624)
446380.74 3749035.49 1.60789b (16120624) 446388.47
3749037.63 1.65898b (16120624)
446391.64 3749028.38 1.55427b (16120624) 446407.35
3749035.49 1.69025b (16120624)
446416.22 3749035.49 1.71786b (16120624) 446418.22
3749044.94 1.86336b (16120624)
446412.00 3749051.65 1.95169b (16120624) 446415.77
3749044.35 1.84560b (16120624)
446413.80 3749037.32 1.73550b (16120624) 446404.78
3749033.64 1.65796b (16120624)
446410.66 3749028.36 1.60941b (16120624) 446400.04
3749035.78 1.67106b (16120624)
446378.02 3749041.71 1.67914b (16120624) 446379.40
3749039.20 1.65066b (16120624)
446386.33 3749042.01 1.71077b (16120624) 446398.48
3749040.87 1.73542b (16120624)
446407.35 3749040.87 1.76491b (16120624) 446416.22
3749040.87 1.79431b (16120624)
446411.77 3749044.90 1.84024b (16120624) 446409.96
3749048.55 1.89191b (16120624)
446420.71 3749053.97 2.02687b (16120624) 446411.76
3749040.28 1.77096b (16120624)
446403.50 3749037.03 1.69871b (16120624) 446421.99
3749035.45 1.73519b (16120624)
446424.71 3749054.30 2.04874b (16120624) 446382.91

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

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

** CONC OF NO2 IN MICROGRAMS/M**3 **

GROUP ID	NETWORK AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	GRID-ID
ALL	1ST HIGHEST VALUE IS	1.20191 AT (446423.79, 3749057.48, 196.50, 196.50, 0.00)	DC	
	2ND HIGHEST VALUE IS	1.17520 AT (446420.08, 3749055.93, 196.65, 196.65, 0.00)	DC	
	3RD HIGHEST VALUE IS	1.16751 AT (446424.71, 3749054.30, 196.52, 196.52, 0.00)	DC	
	4TH HIGHEST VALUE IS	1.15984 AT (446418.16, 3749054.95, 196.72, 196.72, 0.00)	DC	
	5TH HIGHEST VALUE IS	1.15483 AT (446420.71, 3749053.97, 196.65, 196.65, 0.00)	DC	
	6TH HIGHEST VALUE IS	1.14696 AT (446416.08, 3749054.20, 196.79, 196.79, 0.00)	DC	
	7TH HIGHEST VALUE IS	1.13438 AT (446413.99, 3749053.46, 196.86, 196.86, 0.00)	DC	
	8TH HIGHEST VALUE IS	1.12433 AT (446416.69, 3749051.94, 196.79, 196.79, 0.00)	DC	
	9TH HIGHEST VALUE IS	1.11627 AT (446422.29, 3749050.01,		

196.66,   196.66,   0.00) DC
         10TH HIGHEST VALUE IS   1.11123 AT (446412.00, 3749051.65,
196.93,   196.93,   0.00) DC

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

 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

                                                *** THE SUMMARY OF HIGHEST 1-HR
RESULTS ***

                                   ** CONC OF NO2   IN MICROGRAMS/M**3
              **

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

ALL   HIGH   1ST HIGH VALUE IS   3.60961 ON 13041207: AT (446423.79,
3749057.48,   196.50,   196.50,   0.00) DC

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

 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

                                                *** THE SUMMARY OF HIGHEST 24-HR
RESULTS ***

```
                                ** CONC OF NO2      IN MICROGRAMS/M**3
                **

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

ALL      HIGH   1ST HIGH VALUE IS       2.10629b ON 16120624: AT (  446423.79,
3749057.48,   196.50,   196.50,    0.00)  DC


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

```
 *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
NO2\15670 NO2.ISC               ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                        ***       14:36:10

                                           PAGE  15
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN  ADJ_U*

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

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

 A Total of             0 Fatal Error Message(s)
 A Total of             4 Warning Message(s)
 A Total of          1638 Informational Message(s)

 A Total of         43848 Hours Were Processed

 A Total of          1039 Calm Hours Identified

 A Total of           599 Missing Hours Identified (  1.37 Percent)


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


    ********   WARNING MESSAGES   ********
 CO W361      26       COCARD: Multiyear PERIOD/ANNUAL values for NO2/SO2 require
MULTYEAR Opt
 CO W362      26       COCARD: Multiyear 1h NO2/SO2 processing not applicable for
```

```
 24-hr Ave
 ME W186     225       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187     225       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


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

**
****************************************
**
** AERMOD INPUT PRODUCED BY:
** AERMOD VIEW VER. 12.0.0
** LAKES ENVIRONMENTAL SOFTWARE INC.
** DATE: 1/19/2024
** FILE: C:\LAKES\AERMOD VIEW\15670 HRA\15670 PM10\15670 PM10.ADI
**
****************************************
**
**
****************************************
** AERMOD CONTROL PATHWAY
****************************************
**
**
CO STARTING
   TITLEONE C:\LAKES\AERMOD VIEW\15670 HRA\15670 PM10\15670 PM10.ISC
   MODELOPT DFAULT CONC
   AVERTIME 24 ANNUAL
   URBANOPT 2189641
   POLLUTID PM_10
   RUNORNOT RUN
   ERRORFIL "15670 PM10.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 91 EB
** PREFIX
```

```
** LENGTH OF SIDE = 32.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.0164
** VERTICAL DIMENSION = 6.99
** SZINIT = 3.25
** NODES = 2
** 446149.796, 3749188.513, 197.76, 3.49, 14.88
** 447179.945, 3749035.478, 191.42, 3.49, 14.88
** ----------------------------------------------------------------------
   LOCATION L0000420     VOLUME   446165.623 3749186.162 196.79
   LOCATION L0000421     VOLUME   446197.275 3749181.460 196.83
   LOCATION L0000422     VOLUME   446228.928 3749176.757 196.01
   LOCATION L0000423     VOLUME   446260.581 3749172.055 196.14
   LOCATION L0000424     VOLUME   446292.233 3749167.353 196.30
   LOCATION L0000425     VOLUME   446323.886 3749162.651 196.38
   LOCATION L0000426     VOLUME   446355.539 3749157.949 196.00
   LOCATION L0000427     VOLUME   446387.191 3749153.246 195.74
   LOCATION L0000428     VOLUME   446418.844 3749148.544 195.00
   LOCATION L0000429     VOLUME   446450.497 3749143.842 195.00
   LOCATION L0000430     VOLUME   446482.149 3749139.140 195.00
   LOCATION L0000431     VOLUME   446513.802 3749134.438 195.00
   LOCATION L0000432     VOLUME   446545.454 3749129.735 195.00
   LOCATION L0000433     VOLUME   446577.107 3749125.033 195.00
   LOCATION L0000434     VOLUME   446608.760 3749120.331 195.00
   LOCATION L0000435     VOLUME   446640.412 3749115.629 195.00
   LOCATION L0000436     VOLUME   446672.065 3749110.927 195.00
   LOCATION L0000437     VOLUME   446703.718 3749106.224 195.00
   LOCATION L0000438     VOLUME   446735.370 3749101.522 195.00
   LOCATION L0000439     VOLUME   446767.023 3749096.820 195.33
   LOCATION L0000440     VOLUME   446798.675 3749092.118 195.20
   LOCATION L0000441     VOLUME   446830.328 3749087.416 195.00
   LOCATION L0000442     VOLUME   446861.981 3749082.713 195.00
   LOCATION L0000443     VOLUME   446893.633 3749078.011 195.00
   LOCATION L0000444     VOLUME   446925.286 3749073.309 194.89
   LOCATION L0000445     VOLUME   446956.939 3749068.607 194.69
   LOCATION L0000446     VOLUME   446988.591 3749063.905 195.08
   LOCATION L0000447     VOLUME   447020.244 3749059.202 195.06
   LOCATION L0000448     VOLUME   447051.897 3749054.500 195.00
   LOCATION L0000449     VOLUME   447083.549 3749049.798 194.90
   LOCATION L0000450     VOLUME   447115.202 3749045.096 194.63
   LOCATION L0000451     VOLUME   447146.854 3749040.394 193.31
   LOCATION L0000452     VOLUME   447178.507 3749035.691 191.48
** END OF LINE VOLUME SOURCE ID = SLINE1
** ----------------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE2
** DESCRSRC 91 WB
** PREFIX
** LENGTH OF SIDE = 32.00
** CONFIGURATION = ADJACENT
```

```
** EMISSION RATE = 0.0242
** VERTICAL DIMENSION = 6.99
** SZINIT = 3.25
** NODES = 2
** 446153.936, 3749222.959, 196.45, 3.49, 14.88
** 447172.188, 3749092.095, 193.64, 3.49, 14.88
** ----------------------------------------------------------------
   LOCATION L0000453     VOLUME   446169.806 3749220.920 195.99
   LOCATION L0000454     VOLUME   446201.545 3749216.841 195.65
   LOCATION L0000455     VOLUME   446233.284 3749212.761 195.68
   LOCATION L0000456     VOLUME   446265.023 3749208.682 194.98
   LOCATION L0000457     VOLUME   446296.762 3749204.603 195.05
   LOCATION L0000458     VOLUME   446328.501 3749200.524 195.19
   LOCATION L0000459     VOLUME   446360.240 3749196.445 195.33
   LOCATION L0000460     VOLUME   446391.979 3749192.366 195.04
   LOCATION L0000461     VOLUME   446423.718 3749188.287 194.60
   LOCATION L0000462     VOLUME   446455.457 3749184.208 194.59
   LOCATION L0000463     VOLUME   446487.196 3749180.129 194.66
   LOCATION L0000464     VOLUME   446518.935 3749176.050 195.00
   LOCATION L0000465     VOLUME   446550.673 3749171.971 195.00
   LOCATION L0000466     VOLUME   446582.412 3749167.892 194.45
   LOCATION L0000467     VOLUME   446614.151 3749163.813 194.41
   LOCATION L0000468     VOLUME   446645.890 3749159.734 194.55
   LOCATION L0000469     VOLUME   446677.629 3749155.655 194.39
   LOCATION L0000470     VOLUME   446709.368 3749151.576 194.64
   LOCATION L0000471     VOLUME   446741.107 3749147.497 194.87
   LOCATION L0000472     VOLUME   446772.846 3749143.418 194.99
   LOCATION L0000473     VOLUME   446804.585 3749139.339 194.29
   LOCATION L0000474     VOLUME   446836.324 3749135.260 193.44
   LOCATION L0000475     VOLUME   446868.063 3749131.181 192.72
   LOCATION L0000476     VOLUME   446899.802 3749127.102 192.42
   LOCATION L0000477     VOLUME   446931.541 3749123.023 192.55
   LOCATION L0000478     VOLUME   446963.280 3749118.944 192.64
   LOCATION L0000479     VOLUME   446995.019 3749114.865 193.61
   LOCATION L0000480     VOLUME   447026.758 3749110.786 193.78
   LOCATION L0000481     VOLUME   447058.497 3749106.707 193.20
   LOCATION L0000482     VOLUME   447090.236 3749102.627 193.36
   LOCATION L0000483     VOLUME   447121.975 3749098.548 193.01
   LOCATION L0000484     VOLUME   447153.714 3749094.469 193.76
** END OF LINE VOLUME SOURCE ID = SLINE2
** SOURCE PARAMETERS **
** LINE VOLUME SOURCE ID = SLINE1
   SRCPARAM L0000420     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000421     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000422     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000423     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000424     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000425     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000426     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000427     0.0004969697      3.49     14.88      3.25
```

```
   SRCPARAM L0000428     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000429     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000430     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000431     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000432     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000433     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000434     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000435     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000436     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000437     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000438     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000439     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000440     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000441     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000442     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000443     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000444     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000445     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000446     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000447     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000448     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000449     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000450     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000451     0.0004969697      3.49     14.88      3.25
   SRCPARAM L0000452     0.0004969697      3.49     14.88      3.25
** ----------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE2
   SRCPARAM L0000453     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000454     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000455     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000456     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000457     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000458     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000459     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000460     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000461     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000462     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000463     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000464     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000465     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000466     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000467     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000468     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000469     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000470     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000471     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000472     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000473     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000474     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000475     0.00075625      3.49     14.88      3.25
```

```
   SRCPARAM L0000476     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000477     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000478     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000479     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000480     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000481     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000482     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000483     0.00075625      3.49     14.88      3.25
   SRCPARAM L0000484     0.00075625      3.49     14.88      3.25
** ------------------------------------------------------------------
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD RECEPTOR PATHWAY
**************************************
**
**
RE STARTING
   INCLUDED "15670 PM10.ROU"
RE FINISHED
**
**************************************
** AERMOD METEOROLOGY PATHWAY
**************************************
**
**
ME STARTING
   SURFFILE "..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.SFC"
   PROFFILE "..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.PFL"
   SURFDATA 3171 2012
   UAIRDATA 3190 2012
   PROFBASE 245.0 METERS
ME FINISHED
**
**************************************
** AERMOD OUTPUT PATHWAY
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 24 1ST
** AUTO-GENERATED PLOTFILES
   PLOTFILE   24 ALL 1ST "15670 PM10.AD\24H1GALL.PLT" 31
   PLOTFILE   ANNUAL ALL "15670 PM10.AD\AN00GALL.PLT" 32
   SUMMFILE "15670 PM10.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     225       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187     225       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


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

 *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
PM10\15670 PM10.ISC             ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                        ***        14:38:44

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

                                            ***     MODEL SETUP OPTIONS SUMMARY
  ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -

 ** Model Options Selected:
      * Model Uses Regulatory DEFAULT Options
      * Model Is Setup For Calculation of Average CONCentration Values.
      * NO GAS DEPOSITION Data Provided.
      * NO PARTICLE DEPOSITION Data Provided.
      * Model Uses NO DRY DEPLETION. DDPLETE  =  F
      * Model Uses NO WET DEPLETION. WETDPLT  =  F
      * Stack-tip Downwash.
      * Model Accounts for ELEVated Terrain Effects.
      * Use Calms Processing Routine.
      * Use Missing Data Processing Routine.
      * No Exponential Decay.
      * Model Uses URBAN Dispersion Algorithm for the SBL for    65 Source(s),
```

```
        for Total of    1 Urban Area(s):
   Urban Population =   2189641.0 ;  Urban Roughness Length =  1.000 m
      * Urban Roughness Length of 1.0 Meter Used.
      * ADJ_U*   - Use ADJ_U* option for SBL in AERMET
      * CCVR_Sub - Meteorological data includes CCVR substitutions
      * TEMP_Sub - Meteorological data includes TEMP substitutions
      * Model Assumes No FLAGPOLE Receptor Heights.
      * The User Specified a Pollutant Type of: PM_10

 **Model Calculates  1 Short Term Average(s) of:  24-HR
     and Calculates ANNUAL Averages

 **This Run Includes:     65 Source(s);       1 Source Group(s); and      68
Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                 and:     65 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)
                 and:      0 SWPOINT source(s)


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

 **The AERMET Input Meteorological Data Version Date:  16216

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

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

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =   245.00 ;  Decay
Coef. =    0.000     ;  Rot. Angle =     0.0
                  Emission Units = GRAMS/SEC                                 ;
Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3
```

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER EMISSION RATE PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	AIRCRAFT EMISSION RATE SCALAR VARY BY
L0000420	0	0.49697E-03	446165.6	3749186.2	196.8	3.49	14.88	3.25	YES	NO
L0000421	0	0.49697E-03	446197.3	3749181.5	196.8	3.49	14.88	3.25	YES	NO
L0000422	0	0.49697E-03	446228.9	3749176.8	196.0	3.49	14.88	3.25	YES	NO
L0000423	0	0.49697E-03	446260.6	3749172.1	196.1	3.49	14.88	3.25	YES	NO
L0000424	0	0.49697E-03	446292.2	3749167.4	196.3	3.49	14.88	3.25	YES	NO
L0000425	0	0.49697E-03	446323.9	3749162.7	196.4	3.49	14.88	3.25	YES	NO
L0000426	0	0.49697E-03	446355.5	3749157.9	196.0	3.49	14.88	3.25	YES	NO
L0000427	0	0.49697E-03	446387.2	3749153.2	195.7	3.49	14.88	3.25	YES	NO
L0000428	0	0.49697E-03	446418.8	3749148.5	195.0	3.49	14.88	3.25	YES	NO

```
 L0000429         0   0.49697E-03  446450.5 3749143.8   195.0     3.49    14.88
3.25     YES                   NO
 L0000430         0   0.49697E-03  446482.1 3749139.1   195.0     3.49    14.88
3.25     YES                   NO
 L0000431         0   0.49697E-03  446513.8 3749134.4   195.0     3.49    14.88
3.25     YES                   NO
 L0000432         0   0.49697E-03  446545.5 3749129.7   195.0     3.49    14.88
3.25     YES                   NO
 L0000433         0   0.49697E-03  446577.1 3749125.0   195.0     3.49    14.88
3.25     YES                   NO
 L0000434         0   0.49697E-03  446608.8 3749120.3   195.0     3.49    14.88
3.25     YES                   NO
 L0000435         0   0.49697E-03  446640.4 3749115.6   195.0     3.49    14.88
3.25     YES                   NO
 L0000436         0   0.49697E-03  446672.1 3749110.9   195.0     3.49    14.88
3.25     YES                   NO
 L0000437         0   0.49697E-03  446703.7 3749106.2   195.0     3.49    14.88
3.25     YES                   NO
 L0000438         0   0.49697E-03  446735.4 3749101.5   195.0     3.49    14.88
3.25     YES                   NO
 L0000439         0   0.49697E-03  446767.0 3749096.8   195.3     3.49    14.88
3.25     YES                   NO
 L0000440         0   0.49697E-03  446798.7 3749092.1   195.2     3.49    14.88
3.25     YES                   NO
 L0000441         0   0.49697E-03  446830.3 3749087.4   195.0     3.49    14.88
3.25     YES                   NO
 L0000442         0   0.49697E-03  446862.0 3749082.7   195.0     3.49    14.88
3.25     YES                   NO
 L0000443         0   0.49697E-03  446893.6 3749078.0   195.0     3.49    14.88
3.25     YES                   NO
 L0000444         0   0.49697E-03  446925.3 3749073.3   194.9     3.49    14.88
3.25     YES                   NO
 L0000445         0   0.49697E-03  446956.9 3749068.6   194.7     3.49    14.88
3.25     YES                   NO
 L0000446         0   0.49697E-03  446988.6 3749063.9   195.1     3.49    14.88
3.25     YES                   NO
 L0000447         0   0.49697E-03  447020.2 3749059.2   195.1     3.49    14.88
3.25     YES                   NO
 L0000448         0   0.49697E-03  447051.9 3749054.5   195.0     3.49    14.88
3.25     YES                   NO
 L0000449         0   0.49697E-03  447083.5 3749049.8   194.9     3.49    14.88
3.25     YES                   NO
 L0000450         0   0.49697E-03  447115.2 3749045.1   194.6     3.49    14.88
3.25     YES                   NO
 L0000451         0   0.49697E-03  447146.9 3749040.4   193.3     3.49    14.88
3.25     YES                   NO
 L0000452         0   0.49697E-03  447178.5 3749035.7   191.5     3.49    14.88
3.25     YES                   NO
 L0000453         0   0.75625E-03  446169.8 3749220.9   196.0     3.49    14.88
3.25     YES                   NO
```

*** 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 SCALAR VARY BY	AIRCRAFT
L0000460	0	0.75625E-03	446392.0	3749192.4	195.0	3.49	14.88	3.25	YES	NO	
L0000461	0	0.75625E-03	446423.7	3749188.3	194.6	3.49	14.88	3.25	YES	NO	
L0000462	0	0.75625E-03	446455.5	3749184.2	194.6	3.49	14.88	3.25	YES	NO	
L0000463	0	0.75625E-03	446487.2	3749180.1	194.7	3.49	14.88	3.25	YES	NO	
L0000464	0	0.75625E-03	446518.9	3749176.0	195.0	3.49	14.88	3.25	YES	NO	
L0000465	0	0.75625E-03	446550.7	3749172.0	195.0	3.49	14.88	3.25	YES	NO	
L0000466	0	0.75625E-03	446582.4	3749167.9	194.5	3.49	14.88	3.25	YES	NO	
L0000467	0	0.75625E-03	446614.2	3749163.8	194.4	3.49	14.88	3.25	YES	NO	
L0000468	0	0.75625E-03	446645.9	3749159.7	194.6	3.49	14.88	3.25	YES	NO	

```
 L0000469         0   0.75625E-03  446677.6 3749155.7   194.4     3.49    14.88
3.25     YES                    NO
 L0000470         0   0.75625E-03  446709.4 3749151.6   194.6     3.49    14.88
3.25     YES                    NO
 L0000471         0   0.75625E-03  446741.1 3749147.5   194.9     3.49    14.88
3.25     YES                    NO
 L0000472         0   0.75625E-03  446772.8 3749143.4   195.0     3.49    14.88
3.25     YES                    NO
 L0000473         0   0.75625E-03  446804.6 3749139.3   194.3     3.49    14.88
3.25     YES                    NO
 L0000474         0   0.75625E-03  446836.3 3749135.3   193.4     3.49    14.88
3.25     YES                    NO
 L0000475         0   0.75625E-03  446868.1 3749131.2   192.7     3.49    14.88
3.25     YES                    NO
 L0000476         0   0.75625E-03  446899.8 3749127.1   192.4     3.49    14.88
3.25     YES                    NO
 L0000477         0   0.75625E-03  446931.5 3749123.0   192.6     3.49    14.88
3.25     YES                    NO
 L0000478         0   0.75625E-03  446963.3 3749118.9   192.6     3.49    14.88
3.25     YES                    NO
 L0000479         0   0.75625E-03  446995.0 3749114.9   193.6     3.49    14.88
3.25     YES                    NO
 L0000480         0   0.75625E-03  447026.8 3749110.8   193.8     3.49    14.88
3.25     YES                    NO
 L0000481         0   0.75625E-03  447058.5 3749106.7   193.2     3.49    14.88
3.25     YES                    NO
 L0000482         0   0.75625E-03  447090.2 3749102.6   193.4     3.49    14.88
3.25     YES                    NO
 L0000483         0   0.75625E-03  447122.0 3749098.5   193.0     3.49    14.88
3.25     YES                    NO
 L0000484         0   0.75625E-03  447153.7 3749094.5   193.8     3.49    14.88
3.25     YES                    NO
 *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
PM10\15670 PM10.ISC             ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                          ***        14:38:44

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


                                              *** SOURCE IDs DEFINING SOURCE GROUPS
***

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


  ALL        L0000420    , L0000421    , L0000422    , L0000423    , L0000424    ,
L0000425    , L0000426    , L0000427    ,
```

```
             L0000428    , L0000429    , L0000430    , L0000431    , L0000432    ,
L0000433    , L0000434    , L0000435    ,

             L0000436    , L0000437    , L0000438    , L0000439    , L0000440    ,
L0000441    , L0000442    , L0000443    ,

             L0000444    , L0000445    , L0000446    , L0000447    , L0000448    ,
L0000449    , L0000450    , L0000451    ,

             L0000452    , L0000453    , L0000454    , L0000455    , L0000456    ,
L0000457    , L0000458    , L0000459    ,

             L0000460    , L0000461    , L0000462    , L0000463    , L0000464    ,
L0000465    , L0000466    , L0000467    ,

             L0000468    , L0000469    , L0000470    , L0000471    , L0000472    ,
L0000473    , L0000474    , L0000475    ,

             L0000476    , L0000477    , L0000478    , L0000479    , L0000480    ,
L0000481    , L0000482    , L0000483    ,

             L0000484    ,
```


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

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


              2189641.   L0000420    , L0000421    , L0000422    , L0000423    ,
L0000424    , L0000425    , L0000426    ,
 L0000427    ,

             L0000428    , L0000429    , L0000430    , L0000431    , L0000432    ,
L0000433    , L0000434    , L0000435    ,

             L0000436    , L0000437    , L0000438    , L0000439    , L0000440    ,
L0000441    , L0000442    , L0000443    ,

             L0000444    , L0000445    , L0000446    , L0000447    , L0000448    ,
```

L0000449 , L0000450 , L0000451 ,

L0000452 , L0000453 , L0000454 , L0000455 , L0000456 ,
L0000457 , L0000458 , L0000459 ,

L0000460 , L0000461 , L0000462 , L0000463 , L0000464 ,
L0000465 , L0000466 , L0000467 ,

L0000468 , L0000469 , L0000470 , L0000471 , L0000472 ,
L0000473 , L0000474 , L0000475 ,

L0000476 , L0000477 , L0000478 , L0000479 , L0000480 ,
L0000481 , L0000482 , L0000483 ,

L0000484 ,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

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

(446398.2, 3749030.8, 197.3, 197.3, 0.0); (446412.0, 3749033.1, 197.0, 197.0, 0.0);
(446418.1, 3749034.5, 196.9, 196.9, 0.0); (446423.8, 3749057.5, 196.5, 196.5, 0.0);
(446420.6, 3749030.4, 197.0, 197.0, 0.0); (446392.1, 3749046.1, 197.2, 197.2, 0.0);
(446399.1, 3749048.7, 197.1, 197.1, 0.0); (446382.0, 3749042.8, 197.4, 197.4, 0.0);
(446380.7, 3749024.7, 198.0, 198.0, 0.0); (446384.8, 3749025.9, 197.8, 197.8, 0.0);
(446386.7, 3749031.1, 197.6, 197.6, 0.0); (446393.4, 3749033.4, 197.4, 197.4, 0.0);
(446395.0, 3749029.6, 197.4, 197.4, 0.0); (446418.2, 3749054.9, 196.7, 196.7, 0.0);
(446391.4, 3749039.1, 197.3, 197.3, 0.0); (446389.8, 3749042.9, 197.3, 197.3, 0.0);
(446377.4, 3749033.4, 197.8, 197.8, 0.0); (446401.6, 3749042.4, 197.1, 197.1, 0.0);
(446393.0, 3749043.8, 197.2, 197.2, 0.0); (446397.0, 3749034.7, 197.3, 197.3, 0.0);
(446408.8, 3749045.8, 197.0, 197.0, 0.0); (446379.3, 3749029.0, 197.9, 197.9, 0.0);
(446383.1, 3749029.8, 197.8, 197.8, 0.0); (446388.0,

```
3749027.5,     197.7,     197.7,       0.0);
     ( 446390.0, 3749032.4,     197.5,     197.5,       0.0);         ( 446416.2,
3749030.1,     197.0,     197.0,       0.0);
     ( 446419.4, 3749047.7,     196.8,     196.8,       0.0);         ( 446414.0,
3749053.5,     196.9,     196.9,       0.0);
     ( 446375.2, 3749038.3,     197.7,     197.7,       0.0);         ( 446396.2,
3749045.6,     197.2,     197.2,       0.0);
     ( 446394.4, 3749039.8,     197.3,     197.3,       0.0);         ( 446401.8,
3749031.8,     197.2,     197.2,       0.0);
     ( 446380.7, 3749035.5,     197.7,     197.7,       0.0);         ( 446388.5,
3749037.6,     197.4,     197.4,       0.0);
     ( 446391.6, 3749028.4,     197.6,     197.6,       0.0);         ( 446407.3,
3749035.5,     197.1,     197.1,       0.0);
     ( 446416.2, 3749035.5,     196.9,     196.9,       0.0);         ( 446418.2,
3749044.9,     196.8,     196.8,       0.0);
     ( 446412.0, 3749051.6,     196.9,     196.9,       0.0);         ( 446415.8,
3749044.3,     196.9,     196.9,       0.0);
     ( 446413.8, 3749037.3,     197.0,     197.0,       0.0);         ( 446404.8,
3749033.6,     197.1,     197.1,       0.0);
     ( 446410.7, 3749028.4,     197.0,     197.0,       0.0);         ( 446400.0,
3749035.8,     197.2,     197.2,       0.0);
     ( 446378.0, 3749041.7,     197.5,     197.5,       0.0);         ( 446379.4,
3749039.2,     197.6,     197.6,       0.0);
     ( 446386.3, 3749042.0,     197.4,     197.4,       0.0);         ( 446398.5,
3749040.9,     197.2,     197.2,       0.0);
     ( 446407.3, 3749040.9,     197.0,     197.0,       0.0);         ( 446416.2,
3749040.9,     196.9,     196.9,       0.0);
     ( 446411.8, 3749044.9,     197.0,     197.0,       0.0);         ( 446410.0,
3749048.5,     197.0,     197.0,       0.0);
     ( 446420.7, 3749054.0,     196.7,     196.7,       0.0);         ( 446411.8,
3749040.3,     197.0,     197.0,       0.0);
     ( 446403.5, 3749037.0,     197.1,     197.1,       0.0);         ( 446422.0,
3749035.4,     196.9,     196.9,       0.0);
     ( 446424.7, 3749054.3,     196.5,     196.5,       0.0);         ( 446382.9,
3749040.9,     197.5,     197.5,       0.0);
     ( 446384.1, 3749037.0,     197.5,     197.5,       0.0);         ( 446399.9,
3749046.4,     197.1,     197.1,       0.0);
     ( 446405.8, 3749047.1,     197.0,     197.0,       0.0);         ( 446416.2,
3749046.2,     196.9,     196.9,       0.0);
     ( 446422.3, 3749050.0,     196.7,     196.7,       0.0);         ( 446416.1,
3749054.2,     196.8,     196.8,       0.0);
     ( 446416.7, 3749051.9,     196.8,     196.8,       0.0);         ( 446416.2,
3749038.4,     196.9,     196.9,       0.0);
     ( 446422.0, 3749040.5,     196.8,     196.8,       0.0);         ( 446420.1,
3749055.9,     196.7,     196.7,       0.0);
 *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
PM10\15670 PM10.ISC             ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                        ***       14:38:44
```

*** 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 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)

1.54, 3.09, 5.14, 8.23, 10.80,

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

Surface file: ..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.SFC
Met Version: 16216
Profile file: ..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.PFL

Surface format: FREE

Profile format: FREE

Surface station no.: 3171 Upper air station no.: 3190
Name: UNKNOWN Name: UNKNOWN

Year: 2012 Year: 2012

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
12	01	01	1	01	-25.6	0.266	-9.000	-9.000	-999.	330.	77.9	0.15	2.40	1.00	2.93	55.	10.1	288.1	2.0
12	01	01	1	02	-26.8	0.277	-9.000	-9.000	-999.	351.	84.7	0.15	2.40	1.00	3.05	55.	10.1	287.0	2.0
12	01	01	1	03	-21.5	0.221	-9.000	-9.000	-999.	250.	53.5	0.15	2.40	1.00	2.45	74.	10.1	284.2	2.0
12	01	01	1	04	-22.0	0.227	-9.000	-9.000	-999.	260.	56.8	0.15	2.40	1.00	2.52	77.	10.1	285.9	2.0
12	01	01	1	05	-20.0	0.206	-9.000	-9.000	-999.	225.	46.8	0.15	2.40	1.00	2.30	80.	10.1	285.4	2.0
12	01	01	1	06	-14.4	0.171	-9.000	-9.000	-999.	170.	32.1	0.15	2.40	1.00	1.93	79.	10.1	287.0	2.0
12	01	01	1	07	-14.9	0.174	-9.000	-9.000	-999.	174.	33.2	0.15	2.40	1.00	1.96	77.	10.1	284.2	2.0
12	01	01	1	08	-11.9	0.169	-9.000	-9.000	-999.	167.	36.1	0.15	2.40	0.53	1.89	77.	10.1	288.1	2.0
12	01	01	1	09	40.4	0.234	0.359	0.006	40.	272.	-28.1	0.15	2.40	0.31	2.10	81.	10.1	289.2	2.0
12	01	01	1	10	112.6	0.246	0.742	0.005	129.	293.	-11.8	0.15	2.40	0.24	1.99	101.	10.1	296.4	2.0
12	01	01	1	11	161.0	0.402	1.188	0.005	369.	611.	-35.6	0.15	2.40	0.21	3.68	78.	10.1	298.8	2.0
12	01	01	1	12	184.7	0.337	1.516	0.005	668.	473.	-18.4	0.15	2.40	0.20	2.89	68.	10.1	300.4	2.0
12	01	01	1	13	183.9	0.310	1.809	0.005	1139.	414.	-14.2	0.15	2.40	0.20	2.57	64.	10.1	302.5	2.0
12	01	01	1	14	156.6	0.374	1.852	0.005	1434.	549.	-29.5	0.15	2.40	0.22	3.37	63.	10.1	303.1	2.0
12	01	01	1	15	104.3	0.382	1.658	0.005	1546.	567.	-47.2	0.15	2.40	0.25	3.59	62.	10.1	302.5	2.0
12	01	01	1	16	31.8	0.374	1.123	0.005	1573.	550.	-145.8	0.15	2.40	0.34	3.76	69.	10.1	300.9	2.0
12	01	01	1	17	-23.3	0.276	-9.000	-9.000	-999.	354.	84.0	0.15	2.40	0.62	3.03	59.	10.1	297.5	2.0
12	01	01	1	18	-21.5	0.229	-9.000	-9.000	-999.	264.	57.8	0.15	2.40	1.00	2.54	54.	10.1	295.4	2.0
12	01	01	1	19	-19.3	0.204	-9.000	-9.000	-999.	221.	45.6	0.15	2.40						

```
1.00    2.27   79.   10.1  292.0    2.0
 12 01 01   1 20  -20.7  0.218 -9.000 -9.000 -999.  244.     52.2  0.15   2.40
1.00    2.42   79.   10.1  292.5    2.0
 12 01 01   1 21  -19.7  0.206 -9.000 -9.000 -999.  225.     46.9  0.15   2.40
1.00    2.30   95.   10.1  290.9    2.0
 12 01 01   1 22  -17.6  0.190 -9.000 -9.000 -999.  199.     39.8  0.15   2.40
1.00    2.13   78.   10.1  290.4    2.0
 12 01 01   1 23  -20.3  0.211 -9.000 -9.000 -999.  233.     49.0  0.15   2.40
1.00    2.35   52.   10.1  289.2    2.0
 12 01 01   1 24  -16.4  0.183 -9.000 -9.000 -999.  189.     37.0  0.15   2.40
1.00    2.06   75.   10.1  288.8    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 12 01 01 01   10.1 1   55.    2.93   288.2   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
↑ *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
PM10\15670 PM10.ISC             ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                       ***        14:38:44

                                  PAGE   9
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     L0000420    , L0000421
 , L0000422    , L0000423    , L0000424    ,
                   L0000425    , L0000426    , L0000427    , L0000428    , L0000429
 , L0000430    , L0000431    , L0000432    ,
                   L0000433    , L0000434    , L0000435    , L0000436    , L0000437
 , L0000438    , L0000439    , L0000440    ,
                   L0000441    , L0000442    , L0000443    , L0000444    , L0000445
 , L0000446    , L0000447    ,  . . .      ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                          ** CONC OF PM_10    IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)        CONC                        X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - -
         446398.16    3749030.75        0.52812                       446412.02
3749033.12        0.55035
         446418.14    3749034.53        0.56192                       446423.79
```

3749057.48 0.69116
446420.60 3749030.38 0.54629 446392.07
3749046.15 0.59015
446399.10 3749048.66 0.61031 446382.04
3749042.82 0.56405
446380.74 3749024.73 0.49216 446384.77
3749025.87 0.49958
446386.66 3749031.14 0.52007 446393.40
3749033.41 0.53447
446395.01 3749029.57 0.52110 446418.16
3749054.95 0.66786
446391.41 3749039.11 0.55671 446389.75
3749042.95 0.57244
446377.36 3749033.44 0.52139 446401.65
3749042.38 0.58180
446393.02 3749043.80 0.57976 446397.05
3749034.69 0.54314
446408.79 3749045.79 0.60588 446379.31
3749028.98 0.50612
446383.06 3749029.83 0.51262 446387.95
3749027.55 0.50795
446389.98 3749032.39 0.52764 446416.22
3749030.11 0.54145
446419.40 3749047.72 0.62768 446413.99
3749053.46 0.65374
446375.19 3749038.32 0.53868 446396.25
3749045.62 0.59191
446394.44 3749039.79 0.56270 446401.75
3749031.82 0.53565
446380.74 3749035.49 0.53220 446388.47
3749037.63 0.54784
446391.64 3749028.38 0.51359 446407.35
3749035.49 0.55620
446416.22 3749035.49 0.56441 446418.22
3749044.94 0.61165
446412.00 3749051.65 0.64088 446415.77
3749044.35 0.60603
446413.80 3749037.32 0.57034 446404.78
3749033.64 0.54592
446410.66 3749028.36 0.52976 446400.04
3749035.78 0.55055
446378.02 3749041.71 0.55540 446379.40
3749039.20 0.54613
446386.33 3749042.01 0.56469 446398.48
3749040.87 0.57157
446407.35 3749040.87 0.58043 446416.22
3749040.87 0.58928
446411.77 3749044.90 0.60457 446409.96
3749048.55 0.62151
446420.71 3749053.97 0.66510 446411.76

 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

                              *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP: ALL   ***
                                 INCLUDING SOURCE(S):   L0000420   , L0000421
 , L0000422   , L0000423   , L0000424   ,
                  L0000425   , L0000426   , L0000427   , L0000428   , L0000429
 , L0000430   , L0000431   , L0000432   ,
                  L0000433   , L0000434   , L0000435   , L0000436   , L0000437
 , L0000438   , L0000439   , L0000440   ,
                  L0000441   , L0000442   , L0000443   , L0000444   , L0000445
 , L0000446   , L0000447   , . . .   ,

                                     *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                   ** CONC OF PM_10   IN MICROGRAMS/M**3
                  **

      X-COORD (M) Y-COORD (M)   CONC   (YYMMDDHH)   X-COORD (M)
Y-COORD (M)   CONC   (YYMMDDHH)
 -
- -
        446398.16   3749030.75   0.93029b (16120624)   446412.02
 3749033.12   0.97105b (16120624)
        446418.14   3749034.53   0.99215b (16120624)   446423.79
 3749057.48   1.21342b (16120624)
        446420.60   3749030.38   0.96550b (16120624)   446392.07
 3749046.15   1.03656b (16120624)

```
       446399.10   3749048.66        1.07251b (16120624)                446382.04
3749042.82        0.98972b (16120624)
       446380.74   3749024.73        0.86376b (16120624)                446384.77
3749025.87        0.87733b (16120624)
       446386.66   3749031.14        0.91397b (16120624)                446393.40
3749033.41        0.94058b (16120624)
       446395.01   3749029.57        0.91724b (16120624)                446418.16
3749054.95        1.17361b (16120624)
       446391.41   3749039.11        0.97880b (16120624)                446389.75
3749042.95        1.00566b (16120624)
       446377.36   3749033.44        0.91421b (16120624)                446401.65
3749042.38        1.02391b (16120624)
       446393.02   3749043.80        1.01887b (16120624)                446397.05
3749034.69        0.95622b (16120624)
       446408.79   3749045.79        1.06660b (16120624)                446379.31
3749028.98        0.88802b (16120624)
       446383.06   3749029.83        0.89988b (16120624)                446387.95
3749027.55        0.89286b (16120624)
       446389.98   3749032.39        0.92786b (16120624)                446416.22
3749030.11        0.95632b (16120624)
       446419.40   3749047.72        1.10539b (16120624)                446413.99
3749053.46        1.14919b (16120624)
       446375.19   3749038.32        0.94412b (16120624)                446396.25
3749045.62        1.04038b (16120624)
       446394.44   3749039.79        0.98967b (16120624)                446401.75
3749031.82        0.94394b (16120624)
       446380.74   3749035.49        0.93397b (16120624)                446388.47
3749037.63        0.96265b (16120624)
       446391.64   3749028.38        0.90364b (16120624)                446407.35
3749035.49        0.98047b (16120624)
       446416.22   3749035.49        0.99614b (16120624)                446418.22
3749044.94        1.07782b (16120624)
       446412.00   3749051.65        1.12706b (16120624)                446415.77
3749044.35        1.06783b (16120624)
       446413.80   3749037.32        1.00602b (16120624)                446404.78
3749033.64        0.96225b (16120624)
       446410.66   3749028.36        0.93496b (16120624)                446400.04
3749035.78        0.96955b (16120624)
       446378.02   3749041.71        0.97381b (16120624)                446379.40
3749039.20        0.95793b (16120624)
       446386.33   3749042.01        0.99163b (16120624)                446398.48
3749040.87        1.00572b (16120624)
       446407.35   3749040.87        1.02244b (16120624)                446416.22
3749040.87        1.03909b (16120624)
       446411.77   3749044.90        1.06476b (16120624)                446409.96
3749048.55        1.09364b (16120624)
       446420.71   3749053.97        1.16917b (16120624)                446411.76
3749040.28        1.02591b (16120624)
       446403.50   3749037.03        0.98517b (16120624)                446421.99
3749035.45        1.00597b (16120624)
```

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

                                    ** CONC OF PM_10   IN MICROGRAMS/M**3
              **

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

ALL   1ST HIGHEST VALUE IS   0.69116 AT (446423.79, 3749057.48,
196.50,   196.50,   0.00) DC
          2ND HIGHEST VALUE IS   0.67637 AT (446420.08, 3749055.93,
196.65,   196.65,   0.00) DC
          3RD HIGHEST VALUE IS   0.67213 AT (446424.71, 3749054.30,
196.52,   196.52,   0.00) DC
          4TH HIGHEST VALUE IS   0.66786 AT (446418.16, 3749054.95,
196.72,   196.72,   0.00) DC
          5TH HIGHEST VALUE IS   0.66510 AT (446420.71, 3749053.97,
196.65,   196.65,   0.00) DC
          6TH HIGHEST VALUE IS   0.66072 AT (446416.08, 3749054.20,
196.79,   196.79,   0.00) DC
          7TH HIGHEST VALUE IS   0.65374 AT (446413.99, 3749053.46,
196.86,   196.86,   0.00) DC
          8TH HIGHEST VALUE IS   0.64817 AT (446416.69, 3749051.94,
196.79,   196.79,   0.00) DC

```
          9TH HIGHEST VALUE IS       0.64372 AT (  446422.29,  3749050.01,
196.66,   196.66,    0.00)  DC
         10TH HIGHEST VALUE IS       0.64088 AT (  446412.00,  3749051.65,
196.93,   196.93,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
↑ *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
PM10\15670 PM10.ISC             ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                       ***        14:38:44

                                  PAGE  12
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN  ADJ_U*

                                                *** THE SUMMARY OF HIGHEST 24-HR
RESULTS ***


                                   ** CONC OF PM_10    IN MICROGRAMS/M**3
              **

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

ALL      HIGH   1ST HIGH VALUE IS       1.21342b ON 16120624: AT (  446423.79,
3749057.48,   196.50,   196.50,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
↑ *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
PM10\15670 PM10.ISC             ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                       ***        14:38:44

                                  PAGE  13
 *** 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            2 Warning Message(s)
 A Total of         1638 Informational Message(s)

 A Total of        43848 Hours Were Processed

 A Total of         1039 Calm Hours Identified

 A Total of          599 Missing Hours Identified (  1.37 Percent)


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


    ********   WARNING MESSAGES   ********
 ME W186     225       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187     225       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


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

**
****************************************
**
** AERMOD INPUT PRODUCED BY:
** AERMOD VIEW VER. 12.0.0
** LAKES ENVIRONMENTAL SOFTWARE INC.
** DATE: 1/19/2024
** FILE: C:\LAKES\AERMOD VIEW\15670 HRA\15670 PM25\15670 PM25.ADI
**
****************************************
**
**
****************************************
** AERMOD CONTROL PATHWAY
****************************************
**
**
CO STARTING
   TITLEONE C:\LAKES\AERMOD VIEW\15670 HRA\15670 PM25\15670 PM25.ISC
   MODELOPT DFAULT CONC
   AVERTIME 24 ANNUAL
   URBANOPT 2189641
   POLLUTID PM_2.5
```

```
   RUNORNOT RUN
   ERRORFIL "15670 PM25.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 91 EB
** PREFIX
** LENGTH OF SIDE = 32.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.0142
** VERTICAL DIMENSION = 6.99
** SZINIT = 3.25
** NODES = 2
** 446149.796, 3749188.513, 197.76, 3.49, 14.88
** 447179.945, 3749035.478, 191.42, 3.49, 14.88
** ------------------------------------------------------------------
   LOCATION L0000355     VOLUME   446165.623 3749186.162 196.79
   LOCATION L0000356     VOLUME   446197.275 3749181.460 196.83
   LOCATION L0000357     VOLUME   446228.928 3749176.757 196.01
   LOCATION L0000358     VOLUME   446260.581 3749172.055 196.14
   LOCATION L0000359     VOLUME   446292.233 3749167.353 196.30
   LOCATION L0000360     VOLUME   446323.886 3749162.651 196.38
   LOCATION L0000361     VOLUME   446355.539 3749157.949 196.00
   LOCATION L0000362     VOLUME   446387.191 3749153.246 195.74
   LOCATION L0000363     VOLUME   446418.844 3749148.544 195.00
   LOCATION L0000364     VOLUME   446450.497 3749143.842 195.00
   LOCATION L0000365     VOLUME   446482.149 3749139.140 195.00
   LOCATION L0000366     VOLUME   446513.802 3749134.438 195.00
   LOCATION L0000367     VOLUME   446545.454 3749129.735 195.00
   LOCATION L0000368     VOLUME   446577.107 3749125.033 195.00
   LOCATION L0000369     VOLUME   446608.760 3749120.331 195.00
   LOCATION L0000370     VOLUME   446640.412 3749115.629 195.00
   LOCATION L0000371     VOLUME   446672.065 3749110.927 195.00
   LOCATION L0000372     VOLUME   446703.718 3749106.224 195.00
   LOCATION L0000373     VOLUME   446735.370 3749101.522 195.00
   LOCATION L0000374     VOLUME   446767.023 3749096.820 195.33
   LOCATION L0000375     VOLUME   446798.675 3749092.118 195.20
   LOCATION L0000376     VOLUME   446830.328 3749087.416 195.00
   LOCATION L0000377     VOLUME   446861.981 3749082.713 195.00
   LOCATION L0000378     VOLUME   446893.633 3749078.011 195.00
```

```
   LOCATION L0000379     VOLUME   446925.286 3749073.309 194.89
   LOCATION L0000380     VOLUME   446956.939 3749068.607 194.69
   LOCATION L0000381     VOLUME   446988.591 3749063.905 195.08
   LOCATION L0000382     VOLUME   447020.244 3749059.202 195.06
   LOCATION L0000383     VOLUME   447051.897 3749054.500 195.00
   LOCATION L0000384     VOLUME   447083.549 3749049.798 194.90
   LOCATION L0000385     VOLUME   447115.202 3749045.096 194.63
   LOCATION L0000386     VOLUME   447146.854 3749040.394 193.31
   LOCATION L0000387     VOLUME   447178.507 3749035.691 191.48
** END OF LINE VOLUME SOURCE ID = SLINE1
** ----------------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE2
** DESCRSRC 91 WB
** PREFIX
** LENGTH OF SIDE = 32.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.0209
** VERTICAL DIMENSION = 6.99
** SZINIT = 3.25
** NODES = 2
** 446153.936, 3749222.959, 196.45, 3.49, 14.88
** 447172.188, 3749092.095, 193.64, 3.49, 14.88
** ----------------------------------------------------------------------
   LOCATION L0000388     VOLUME   446169.806 3749220.920 195.99
   LOCATION L0000389     VOLUME   446201.545 3749216.841 195.65
   LOCATION L0000390     VOLUME   446233.284 3749212.761 195.68
   LOCATION L0000391     VOLUME   446265.023 3749208.682 194.98
   LOCATION L0000392     VOLUME   446296.762 3749204.603 195.05
   LOCATION L0000393     VOLUME   446328.501 3749200.524 195.19
   LOCATION L0000394     VOLUME   446360.240 3749196.445 195.33
   LOCATION L0000395     VOLUME   446391.979 3749192.366 195.04
   LOCATION L0000396     VOLUME   446423.718 3749188.287 194.60
   LOCATION L0000397     VOLUME   446455.457 3749184.208 194.59
   LOCATION L0000398     VOLUME   446487.196 3749180.129 194.66
   LOCATION L0000399     VOLUME   446518.935 3749176.050 195.00
   LOCATION L0000400     VOLUME   446550.673 3749171.971 195.00
   LOCATION L0000401     VOLUME   446582.412 3749167.892 194.45
   LOCATION L0000402     VOLUME   446614.151 3749163.813 194.41
   LOCATION L0000403     VOLUME   446645.890 3749159.734 194.55
   LOCATION L0000404     VOLUME   446677.629 3749155.655 194.39
   LOCATION L0000405     VOLUME   446709.368 3749151.576 194.64
   LOCATION L0000406     VOLUME   446741.107 3749147.497 194.87
   LOCATION L0000407     VOLUME   446772.846 3749143.418 194.99
   LOCATION L0000408     VOLUME   446804.585 3749139.339 194.29
   LOCATION L0000409     VOLUME   446836.324 3749135.260 193.44
   LOCATION L0000410     VOLUME   446868.063 3749131.181 192.72
   LOCATION L0000411     VOLUME   446899.802 3749127.102 192.42
   LOCATION L0000412     VOLUME   446931.541 3749123.023 192.55
   LOCATION L0000413     VOLUME   446963.280 3749118.944 192.64
```

```
   LOCATION L0000414     VOLUME   446995.019 3749114.865 193.61
   LOCATION L0000415     VOLUME   447026.758 3749110.786 193.78
   LOCATION L0000416     VOLUME   447058.497 3749106.707 193.20
   LOCATION L0000417     VOLUME   447090.236 3749102.627 193.36
   LOCATION L0000418     VOLUME   447121.975 3749098.548 193.01
   LOCATION L0000419     VOLUME   447153.714 3749094.469 193.76
** END OF LINE VOLUME SOURCE ID = SLINE2
** SOURCE PARAMETERS **
** LINE VOLUME SOURCE ID = SLINE1
   SRCPARAM L0000355     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000356     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000357     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000358     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000359     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000360     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000361     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000362     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000363     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000364     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000365     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000366     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000367     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000368     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000369     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000370     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000371     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000372     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000373     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000374     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000375     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000376     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000377     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000378     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000379     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000380     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000381     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000382     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000383     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000384     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000385     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000386     0.000430303      3.49     14.88      3.25
   SRCPARAM L0000387     0.000430303      3.49     14.88      3.25
** ----------------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE2
   SRCPARAM L0000388     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000389     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000390     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000391     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000392     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000393     0.000653125      3.49     14.88      3.25
```

```
   SRCPARAM L0000394     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000395     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000396     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000397     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000398     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000399     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000400     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000401     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000402     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000403     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000404     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000405     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000406     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000407     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000408     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000409     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000410     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000411     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000412     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000413     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000414     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000415     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000416     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000417     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000418     0.000653125      3.49     14.88      3.25
   SRCPARAM L0000419     0.000653125      3.49     14.88      3.25
** ------------------------------------------------------------------
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD RECEPTOR PATHWAY
**************************************
**
**
RE STARTING
   INCLUDED "15670 PM25.ROU"
RE FINISHED
**
**************************************
** AERMOD METEOROLOGY PATHWAY
**************************************
**
**
ME STARTING
   SURFFILE "..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.SFC"
   PROFFILE "..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.PFL"
   SURFDATA 3171 2012
   UAIRDATA 3190 2012
```

```
   PROFBASE 245.0 METERS
ME FINISHED
**
**************************************
** AERMOD OUTPUT PATHWAY
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 24 1ST
** AUTO-GENERATED PLOTFILES
   PLOTFILE   24 ALL 1ST "15670 PM25.AD\24H1GALL.PLT" 31
   PLOTFILE   ANNUAL ALL "15670 PM25.AD\AN00GALL.PLT" 32
   SUMMFILE "15670 PM25.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     225       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187     225       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


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

 *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
PM25\15670 PM25.ISC             ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                         ***        14:41:05

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

                                              ***     MODEL SETUP OPTIONS SUMMARY
```

```
  ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - -

 ** Model Options Selected:
      * Model Uses Regulatory DEFAULT Options
      * Model Is Setup For Calculation of Average CONCentration Values.
      * NO GAS DEPOSITION Data Provided.
      * NO PARTICLE DEPOSITION Data Provided.
      * Model Uses NO DRY DEPLETION. DDPLETE  =  F
      * Model Uses NO WET DEPLETION. WETDPLT  =  F
      * Stack-tip Downwash.
      * Model Accounts for ELEVated Terrain Effects.
      * Use Calms Processing Routine.
      * Use Missing Data Processing Routine.
      * No Exponential Decay.
      * Model Uses URBAN Dispersion Algorithm for the SBL for    65 Source(s),
        for Total of    1 Urban Area(s):
   Urban Population =   2189641.0 ;  Urban Roughness Length =  1.000 m
      * Urban Roughness Length of 1.0 Meter Used.
      * ADJ_U*   - Use ADJ_U* option for SBL in AERMET
      * CCVR_Sub - Meteorological data includes CCVR substitutions
      * TEMP_Sub - Meteorological data includes TEMP substitutions
      * Model Assumes No FLAGPOLE Receptor Heights.
      * The User Specified a Pollutant Type of: PM_2.5

 **Model Calculates  1 Short Term Average(s) of:  24-HR
     and Calculates ANNUAL Averages

 **This Run Includes:     65 Source(s);       1 Source Group(s); and      68
Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                 and:     65 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)
                 and:      0 SWPOINT source(s)


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

 **The AERMET Input Meteorological Data Version Date:  16216

 **Output Options Selected:
          Model Outputs Tables of ANNUAL Averages by Receptor
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE
```

Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE
Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE
Keyword)

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

 **Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) =   245.00 ; 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: 15670 PM25.ERR

 **File for Summary of Results: 15670 PM25.SUM

 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

                                                  *** VOLUME SOURCE DATA ***

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

 L0000355   0   0.43030E-03 446165.6 3749186.2   196.8   3.49   14.88

```
3.25     YES                    NO
 L0000356         0   0.43030E-03  446197.3 3749181.5   196.8     3.49    14.88
3.25     YES                    NO
 L0000357         0   0.43030E-03  446228.9 3749176.8   196.0     3.49    14.88
3.25     YES                    NO
 L0000358         0   0.43030E-03  446260.6 3749172.1   196.1     3.49    14.88
3.25     YES                    NO
 L0000359         0   0.43030E-03  446292.2 3749167.4   196.3     3.49    14.88
3.25     YES                    NO
 L0000360         0   0.43030E-03  446323.9 3749162.7   196.4     3.49    14.88
3.25     YES                    NO
 L0000361         0   0.43030E-03  446355.5 3749157.9   196.0     3.49    14.88
3.25     YES                    NO
 L0000362         0   0.43030E-03  446387.2 3749153.2   195.7     3.49    14.88
3.25     YES                    NO
 L0000363         0   0.43030E-03  446418.8 3749148.5   195.0     3.49    14.88
3.25     YES                    NO
 L0000364         0   0.43030E-03  446450.5 3749143.8   195.0     3.49    14.88
3.25     YES                    NO
 L0000365         0   0.43030E-03  446482.1 3749139.1   195.0     3.49    14.88
3.25     YES                    NO
 L0000366         0   0.43030E-03  446513.8 3749134.4   195.0     3.49    14.88
3.25     YES                    NO
 L0000367         0   0.43030E-03  446545.5 3749129.7   195.0     3.49    14.88
3.25     YES                    NO
 L0000368         0   0.43030E-03  446577.1 3749125.0   195.0     3.49    14.88
3.25     YES                    NO
 L0000369         0   0.43030E-03  446608.8 3749120.3   195.0     3.49    14.88
3.25     YES                    NO
 L0000370         0   0.43030E-03  446640.4 3749115.6   195.0     3.49    14.88
3.25     YES                    NO
 L0000371         0   0.43030E-03  446672.1 3749110.9   195.0     3.49    14.88
3.25     YES                    NO
 L0000372         0   0.43030E-03  446703.7 3749106.2   195.0     3.49    14.88
3.25     YES                    NO
 L0000373         0   0.43030E-03  446735.4 3749101.5   195.0     3.49    14.88
3.25     YES                    NO
 L0000374         0   0.43030E-03  446767.0 3749096.8   195.3     3.49    14.88
3.25     YES                    NO
 L0000375         0   0.43030E-03  446798.7 3749092.1   195.2     3.49    14.88
3.25     YES                    NO
 L0000376         0   0.43030E-03  446830.3 3749087.4   195.0     3.49    14.88
3.25     YES                    NO
 L0000377         0   0.43030E-03  446862.0 3749082.7   195.0     3.49    14.88
3.25     YES                    NO
 L0000378         0   0.43030E-03  446893.6 3749078.0   195.0     3.49    14.88
3.25     YES                    NO
 L0000379         0   0.43030E-03  446925.3 3749073.3   194.9     3.49    14.88
3.25     YES                    NO
 L0000380         0   0.43030E-03  446956.9 3749068.6   194.7     3.49    14.88
```

```
3.25     YES                    NO
 L0000381         0   0.43030E-03  446988.6 3749063.9   195.1     3.49    14.88
3.25     YES                    NO
 L0000382         0   0.43030E-03  447020.2 3749059.2   195.1     3.49    14.88
3.25     YES                    NO
 L0000383         0   0.43030E-03  447051.9 3749054.5   195.0     3.49    14.88
3.25     YES                    NO
 L0000384         0   0.43030E-03  447083.5 3749049.8   194.9     3.49    14.88
3.25     YES                    NO
 L0000385         0   0.43030E-03  447115.2 3749045.1   194.6     3.49    14.88
3.25     YES                    NO
 L0000386         0   0.43030E-03  447146.9 3749040.4   193.3     3.49    14.88
3.25     YES                    NO
 L0000387         0   0.43030E-03  447178.5 3749035.7   191.5     3.49    14.88
3.25     YES                    NO
 L0000388         0   0.65313E-03  446169.8 3749220.9   196.0     3.49    14.88
3.25     YES                    NO
 L0000389         0   0.65313E-03  446201.5 3749216.8   195.7     3.49    14.88
3.25     YES                    NO
 L0000390         0   0.65313E-03  446233.3 3749212.8   195.7     3.49    14.88
3.25     YES                    NO
 L0000391         0   0.65313E-03  446265.0 3749208.7   195.0     3.49    14.88
3.25     YES                    NO
 L0000392         0   0.65313E-03  446296.8 3749204.6   195.1     3.49    14.88
3.25     YES                    NO
 L0000393         0   0.65313E-03  446328.5 3749200.5   195.2     3.49    14.88
3.25     YES                    NO
 L0000394         0   0.65313E-03  446360.2 3749196.4   195.3     3.49    14.88
3.25     YES                    NO
↟ *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
PM25\15670 PM25.ISC             ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                        ***        14:41:05

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


                                                    *** VOLUME SOURCE DATA ***

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

 L0000395         0   0.65313E-03  446392.0 3749192.4   195.0     3.49    14.88
```

```
3.25     YES                    NO
 L0000396         0   0.65313E-03  446423.7 3749188.3   194.6     3.49    14.88
3.25     YES                    NO
 L0000397         0   0.65313E-03  446455.5 3749184.2   194.6     3.49    14.88
3.25     YES                    NO
 L0000398         0   0.65313E-03  446487.2 3749180.1   194.7     3.49    14.88
3.25     YES                    NO
 L0000399         0   0.65313E-03  446518.9 3749176.0   195.0     3.49    14.88
3.25     YES                    NO
 L0000400         0   0.65313E-03  446550.7 3749172.0   195.0     3.49    14.88
3.25     YES                    NO
 L0000401         0   0.65313E-03  446582.4 3749167.9   194.5     3.49    14.88
3.25     YES                    NO
 L0000402         0   0.65313E-03  446614.2 3749163.8   194.4     3.49    14.88
3.25     YES                    NO
 L0000403         0   0.65313E-03  446645.9 3749159.7   194.6     3.49    14.88
3.25     YES                    NO
 L0000404         0   0.65313E-03  446677.6 3749155.7   194.4     3.49    14.88
3.25     YES                    NO
 L0000405         0   0.65313E-03  446709.4 3749151.6   194.6     3.49    14.88
3.25     YES                    NO
 L0000406         0   0.65313E-03  446741.1 3749147.5   194.9     3.49    14.88
3.25     YES                    NO
 L0000407         0   0.65313E-03  446772.8 3749143.4   195.0     3.49    14.88
3.25     YES                    NO
 L0000408         0   0.65313E-03  446804.6 3749139.3   194.3     3.49    14.88
3.25     YES                    NO
 L0000409         0   0.65313E-03  446836.3 3749135.3   193.4     3.49    14.88
3.25     YES                    NO
 L0000410         0   0.65313E-03  446868.1 3749131.2   192.7     3.49    14.88
3.25     YES                    NO
 L0000411         0   0.65313E-03  446899.8 3749127.1   192.4     3.49    14.88
3.25     YES                    NO
 L0000412         0   0.65313E-03  446931.5 3749123.0   192.6     3.49    14.88
3.25     YES                    NO
 L0000413         0   0.65313E-03  446963.3 3749118.9   192.6     3.49    14.88
3.25     YES                    NO
 L0000414         0   0.65313E-03  446995.0 3749114.9   193.6     3.49    14.88
3.25     YES                    NO
 L0000415         0   0.65313E-03  447026.8 3749110.8   193.8     3.49    14.88
3.25     YES                    NO
 L0000416         0   0.65313E-03  447058.5 3749106.7   193.2     3.49    14.88
3.25     YES                    NO
 L0000417         0   0.65313E-03  447090.2 3749102.6   193.4     3.49    14.88
3.25     YES                    NO
 L0000418         0   0.65313E-03  447122.0 3749098.5   193.0     3.49    14.88
3.25     YES                    NO
 L0000419         0   0.65313E-03  447153.7 3749094.5   193.8     3.49    14.88
3.25     YES                    NO
↟ *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
```

*** SOURCE IDs DEFINING SOURCE GROUPS
***

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

  ALL   L0000355   , L0000356   , L0000357   , L0000358   , L0000359   ,
L0000360   , L0000361   , L0000362   ,

             L0000363   , L0000364   , L0000365   , L0000366   , L0000367   ,
L0000368   , L0000369   , L0000370   ,

             L0000371   , L0000372   , L0000373   , L0000374   , L0000375   ,
L0000376   , L0000377   , L0000378   ,

             L0000379   , L0000380   , L0000381   , L0000382   , L0000383   ,
L0000384   , L0000385   , L0000386   ,

             L0000387   , L0000388   , L0000389   , L0000390   , L0000391   ,
L0000392   , L0000393   , L0000394   ,

             L0000395   , L0000396   , L0000397   , L0000398   , L0000399   ,
L0000400   , L0000401   , L0000402   ,

             L0000403   , L0000404   , L0000405   , L0000406   , L0000407   ,
L0000408   , L0000409   , L0000410   ,

             L0000411   , L0000412   , L0000413   , L0000414   , L0000415   ,
L0000416   , L0000417   , L0000418   ,

             L0000419   ,

*** SOURCE IDs DEFINED AS URBAN SOURCES

***

URBAN ID	URBAN POP	SOURCE IDs
	2189641.	L0000355 , L0000356 , L0000357 , L0000358 , L0000359 , L0000360 , L0000361 , L0000362 ,
		L0000363 , L0000364 , L0000365 , L0000366 , L0000367 , L0000368 , L0000369 , L0000370 ,
		L0000371 , L0000372 , L0000373 , L0000374 , L0000375 , L0000376 , L0000377 , L0000378 ,
		L0000379 , L0000380 , L0000381 , L0000382 , L0000383 , L0000384 , L0000385 , L0000386 ,
		L0000387 , L0000388 , L0000389 , L0000390 , L0000391 , L0000392 , L0000393 , L0000394 ,
		L0000395 , L0000396 , L0000397 , L0000398 , L0000399 , L0000400 , L0000401 , L0000402 ,
		L0000403 , L0000404 , L0000405 , L0000406 , L0000407 , L0000408 , L0000409 , L0000410 ,
		L0000411 , L0000412 , L0000413 , L0000414 , L0000415 , L0000416 , L0000417 , L0000418 ,
		L0000419 ,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

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

(446398.2, 3749030.8, 197.3, 197.3, 0.0); (446412.0, 3749033.1, 197.0, 197.0, 0.0);
(446418.1, 3749034.5, 196.9, 196.9, 0.0); (446423.8, 3749057.5, 196.5, 196.5, 0.0);
(446420.6, 3749030.4, 197.0, 197.0, 0.0); (446392.1, 3749046.1, 197.2, 197.2, 0.0);

```
     ( 446399.1, 3749048.7,     197.1,     197.1,       0.0);         ( 446382.0,
3749042.8,     197.4,     197.4,       0.0);
     ( 446380.7, 3749024.7,     198.0,     198.0,       0.0);         ( 446384.8,
3749025.9,     197.8,     197.8,       0.0);
     ( 446386.7, 3749031.1,     197.6,     197.6,       0.0);         ( 446393.4,
3749033.4,     197.4,     197.4,       0.0);
     ( 446395.0, 3749029.6,     197.4,     197.4,       0.0);         ( 446418.2,
3749054.9,     196.7,     196.7,       0.0);
     ( 446391.4, 3749039.1,     197.3,     197.3,       0.0);         ( 446389.8,
3749042.9,     197.3,     197.3,       0.0);
     ( 446377.4, 3749033.4,     197.8,     197.8,       0.0);         ( 446401.6,
3749042.4,     197.1,     197.1,       0.0);
     ( 446393.0, 3749043.8,     197.2,     197.2,       0.0);         ( 446397.0,
3749034.7,     197.3,     197.3,       0.0);
     ( 446408.8, 3749045.8,     197.0,     197.0,       0.0);         ( 446379.3,
3749029.0,     197.9,     197.9,       0.0);
     ( 446383.1, 3749029.8,     197.8,     197.8,       0.0);         ( 446388.0,
3749027.5,     197.7,     197.7,       0.0);
     ( 446390.0, 3749032.4,     197.5,     197.5,       0.0);         ( 446416.2,
3749030.1,     197.0,     197.0,       0.0);
     ( 446419.4, 3749047.7,     196.8,     196.8,       0.0);         ( 446414.0,
3749053.5,     196.9,     196.9,       0.0);
     ( 446375.2, 3749038.3,     197.7,     197.7,       0.0);         ( 446396.2,
3749045.6,     197.2,     197.2,       0.0);
     ( 446394.4, 3749039.8,     197.3,     197.3,       0.0);         ( 446401.8,
3749031.8,     197.2,     197.2,       0.0);
     ( 446380.7, 3749035.5,     197.7,     197.7,       0.0);         ( 446388.5,
3749037.6,     197.4,     197.4,       0.0);
     ( 446391.6, 3749028.4,     197.6,     197.6,       0.0);         ( 446407.3,
3749035.5,     197.1,     197.1,       0.0);
     ( 446416.2, 3749035.5,     196.9,     196.9,       0.0);         ( 446418.2,
3749044.9,     196.8,     196.8,       0.0);
     ( 446412.0, 3749051.6,     196.9,     196.9,       0.0);         ( 446415.8,
3749044.3,     196.9,     196.9,       0.0);
     ( 446413.8, 3749037.3,     197.0,     197.0,       0.0);         ( 446404.8,
3749033.6,     197.1,     197.1,       0.0);
     ( 446410.7, 3749028.4,     197.0,     197.0,       0.0);         ( 446400.0,
3749035.8,     197.2,     197.2,       0.0);
     ( 446378.0, 3749041.7,     197.5,     197.5,       0.0);         ( 446379.4,
3749039.2,     197.6,     197.6,       0.0);
     ( 446386.3, 3749042.0,     197.4,     197.4,       0.0);         ( 446398.5,
3749040.9,     197.2,     197.2,       0.0);
     ( 446407.3, 3749040.9,     197.0,     197.0,       0.0);         ( 446416.2,
3749040.9,     196.9,     196.9,       0.0);
     ( 446411.8, 3749044.9,     197.0,     197.0,       0.0);         ( 446410.0,
3749048.5,     197.0,     197.0,       0.0);
     ( 446420.7, 3749054.0,     196.7,     196.7,       0.0);         ( 446411.8,
3749040.3,     197.0,     197.0,       0.0);
     ( 446403.5, 3749037.0,     197.1,     197.1,       0.0);         ( 446422.0,
3749035.4,     196.9,     196.9,       0.0);
```

```
     ( 446424.7, 3749054.3,     196.5,     196.5,       0.0);         ( 446382.9,
3749040.9,     197.5,     197.5,       0.0);
     ( 446384.1, 3749037.0,     197.5,     197.5,       0.0);         ( 446399.9,
3749046.4,     197.1,     197.1,       0.0);
     ( 446405.8, 3749047.1,     197.0,     197.0,       0.0);         ( 446416.2,
3749046.2,     196.9,     196.9,       0.0);
     ( 446422.3, 3749050.0,     196.7,     196.7,       0.0);         ( 446416.1,
3749054.2,     196.8,     196.8,       0.0);
     ( 446416.7, 3749051.9,     196.8,     196.8,       0.0);         ( 446416.2,
3749038.4,     196.9,     196.9,       0.0);
     ( 446422.0, 3749040.5,     196.8,     196.8,       0.0);         ( 446420.1,
3749055.9,     196.7,     196.7,       0.0);
↑ *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
PM25\15670 PM25.ISC            ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                        ***       14:41:05

                                   PAGE   7
 *** 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 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)

                                                 1.54,   3.09,   5.14,   8.23,
```

10.80,
↑ *** AERMOD - VERSION 23132 *** *** C:\LAKES\AERMOD VIEW\15670 HRA\15670 PM25\15670 PM25.ISC *** 01/19/24
*** AERMET - VERSION 16216 *** ***
*** 14:41:05

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

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

Surface file: ..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.SFC
Met Version: 16216
Profile file: ..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.PFL

Surface format: FREE

Profile format: FREE

Surface station no.: 3171 Upper air station no.: 3190
Name: UNKNOWN Name: UNKNOWN

Year: 2012 Year: 2012

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
12	01	01	1	01	-25.6	0.266	-9.000	-9.000	-999.	330.	77.9	0.15	2.40	1.00	2.93	55.	10.1	288.1	2.0
12	01	01	1	02	-26.8	0.277	-9.000	-9.000	-999.	351.	84.7	0.15	2.40	1.00	3.05	55.	10.1	287.0	2.0
12	01	01	1	03	-21.5	0.221	-9.000	-9.000	-999.	250.	53.5	0.15	2.40	1.00	2.45	74.	10.1	284.2	2.0
12	01	01	1	04	-22.0	0.227	-9.000	-9.000	-999.	260.	56.8	0.15	2.40	1.00	2.52	77.	10.1	285.9	2.0
12	01	01	1	05	-20.0	0.206	-9.000	-9.000	-999.	225.	46.8	0.15	2.40	1.00	2.30	80.	10.1	285.4	2.0
12	01	01	1	06	-14.4	0.171	-9.000	-9.000	-999.	170.	32.1	0.15	2.40	1.00	1.93	79.	10.1	287.0	2.0
12	01	01	1	07	-14.9	0.174	-9.000	-9.000	-999.	174.	33.2	0.15	2.40	1.00	1.96	77.	10.1	284.2	2.0
12	01	01	1	08	-11.9	0.169	-9.000	-9.000	-999.	167.	36.1	0.15	2.40	0.53	1.89	77.	10.1	288.1	2.0
12	01	01	1	09	40.4	0.234	0.359	0.006	40.	272.	-28.1	0.15	2.40	0.31	2.10	81.	10.1	289.2	2.0
12	01	01	1	10	112.6	0.246	0.742	0.005	129.	293.	-11.8	0.15	2.40	0.24	1.99	101.	10.1	296.4	2.0

```
 12 01 01   1 11  161.0  0.402  1.188  0.005  369.  611.    -35.6  0.15   2.40
0.21    3.68   78.   10.1  298.8    2.0
 12 01 01   1 12  184.7  0.337  1.516  0.005  668.  473.    -18.4  0.15   2.40
0.20    2.89   68.   10.1  300.4    2.0
 12 01 01   1 13  183.9  0.310  1.809  0.005 1139.  414.    -14.2  0.15   2.40
0.20    2.57   64.   10.1  302.5    2.0
 12 01 01   1 14  156.6  0.374  1.852  0.005 1434.  549.    -29.5  0.15   2.40
0.22    3.37   63.   10.1  303.1    2.0
 12 01 01   1 15  104.3  0.382  1.658  0.005 1546.  567.    -47.2  0.15   2.40
0.25    3.59   62.   10.1  302.5    2.0
 12 01 01   1 16   31.8  0.374  1.123  0.005 1573.  550.   -145.8  0.15   2.40
0.34    3.76   69.   10.1  300.9    2.0
 12 01 01   1 17  -23.3  0.276 -9.000 -9.000 -999.  354.     84.0  0.15   2.40
0.62    3.03   59.   10.1  297.5    2.0
 12 01 01   1 18  -21.5  0.229 -9.000 -9.000 -999.  264.     57.8  0.15   2.40
1.00    2.54   54.   10.1  295.4    2.0
 12 01 01   1 19  -19.3  0.204 -9.000 -9.000 -999.  221.     45.6  0.15   2.40
1.00    2.27   79.   10.1  292.0    2.0
 12 01 01   1 20  -20.7  0.218 -9.000 -9.000 -999.  244.     52.2  0.15   2.40
1.00    2.42   79.   10.1  292.5    2.0
 12 01 01   1 21  -19.7  0.206 -9.000 -9.000 -999.  225.     46.9  0.15   2.40
1.00    2.30   95.   10.1  290.9    2.0
 12 01 01   1 22  -17.6  0.190 -9.000 -9.000 -999.  199.     39.8  0.15   2.40
1.00    2.13   78.   10.1  290.4    2.0
 12 01 01   1 23  -20.3  0.211 -9.000 -9.000 -999.  233.     49.0  0.15   2.40
1.00    2.35   52.   10.1  289.2    2.0
 12 01 01   1 24  -16.4  0.183 -9.000 -9.000 -999.  189.     37.0  0.15   2.40
1.00    2.06   75.   10.1  288.8    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 12 01 01 01   10.1 1   55.    2.93   288.2   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
 *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
PM25\15670 PM25.ISC             ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                       ***        14:41:05

                                  PAGE   9
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN  ADJ_U*

                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                   INCLUDING SOURCE(S):     L0000355    , L0000356
 , L0000357    , L0000358    , L0000359    ,
                  L0000360    , L0000361    , L0000362    , L0000363    , L0000364
 , L0000365    , L0000366    , L0000367    ,
                  L0000368    , L0000369    , L0000370    , L0000371    , L0000372
```

```
 , L0000373    , L0000374    , L0000375    ,
                 L0000376    , L0000377    , L0000378    , L0000379    , L0000380
 , L0000381    , L0000382    ,  . . .      ,

                                          *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                      ** CONC OF PM_2.5   IN MICROGRAMS/M**3
                  **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
         446398.16    3749030.75        0.45666                      446412.02
3749033.12        0.47588
         446418.14    3749034.53        0.48589                      446423.79
3749057.48        0.59766
         446420.60    3749030.38        0.47237                      446392.07
3749046.15        0.51030
         446399.10    3749048.66        0.52773                      446382.04
3749042.82        0.48773
         446380.74    3749024.73        0.42556                      446384.77
3749025.87        0.43197
         446386.66    3749031.14        0.44970                      446393.40
3749033.41        0.46215
         446395.01    3749029.57        0.45059                      446418.16
3749054.95        0.57751
         446391.41    3749039.11        0.48138                      446389.75
3749042.95        0.49499
         446377.36    3749033.44        0.45083                      446401.65
3749042.38        0.50308
         446393.02    3749043.80        0.50131                      446397.05
3749034.69        0.46965
         446408.79    3749045.79        0.52391                      446379.31
3749028.98        0.43763
         446383.06    3749029.83        0.44325                      446387.95
3749027.55        0.43921
         446389.98    3749032.39        0.45624                      446416.22
3749030.11        0.46819
         446419.40    3749047.72        0.54276                      446413.99
3749053.46        0.56530
         446375.19    3749038.32        0.46579                      446396.25
3749045.62        0.51183
         446394.44    3749039.79        0.48656                      446401.75
3749031.82        0.46317
         446380.74    3749035.49        0.46019                      446388.47
3749037.63        0.47371
         446391.64    3749028.38        0.44409                      446407.35
3749035.49        0.48094
```

```
         446416.22    3749035.49        0.48804                      446418.22
3749044.94        0.52890
         446412.00    3749051.65        0.55418                      446415.77
3749044.35        0.52404
         446413.80    3749037.32        0.49317                      446404.78
3749033.64        0.47205
         446410.66    3749028.36        0.45808                      446400.04
3749035.78        0.47605
         446378.02    3749041.71        0.48024                      446379.40
3749039.20        0.47223
         446386.33    3749042.01        0.48828                      446398.48
3749040.87        0.49423
         446407.35    3749040.87        0.50189                      446416.22
3749040.87        0.50955
         446411.77    3749044.90        0.52277                      446409.96
3749048.55        0.53742
         446420.71    3749053.97        0.57512                      446411.76
3749040.28        0.50329
         446403.50    3749037.03        0.48356                      446421.99
3749035.45        0.49249
         446424.71    3749054.30        0.58121                      446382.91
3749040.90        0.48134
         446384.08    3749037.05        0.46794                      446399.90
3749046.40        0.51849
         446405.79    3749047.06        0.52678                      446416.22
3749046.25        0.53293
         446422.29    3749050.01        0.55663                      446416.08
3749054.20        0.57133
         446416.69    3749051.94        0.56048                      446416.16
3749038.36        0.49924
         446421.97    3749040.46        0.51280                      446420.08
3749055.93        0.58487
 *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
PM25\15670 PM25.ISC             ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                         ***        14:41:05

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

                               *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     L0000355    , L0000356
 , L0000357    , L0000358    , L0000359    ,
                 L0000360    , L0000361    , L0000362    , L0000363    , L0000364
 , L0000365    , L0000366    , L0000367    ,
                 L0000368    , L0000369    , L0000370    , L0000371    , L0000372
 , L0000373    , L0000374    , L0000375    ,
                 L0000376    , L0000377    , L0000378    , L0000379    , L0000380
 , L0000381    , L0000382    ,  . . .      ,
```

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC (YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC (YYMMDDHH)
446398.16	3749030.75	0.80441b (16120624)	446412.02	3749033.12	0.83965b (16120624)
446418.14	3749034.53	0.85790b (16120624)	446423.79	3749057.48	1.04927b (16120624)
446420.60	3749030.38	0.83485b (16120624)	446392.07	3749046.15	0.89631b (16120624)
446399.10	3749048.66	0.92740b (16120624)	446382.04	3749042.82	0.85580b (16120624)
446380.74	3749024.73	0.74687b (16120624)	446384.77	3749025.87	0.75860b (16120624)
446386.66	3749031.14	0.79029b (16120624)	446393.40	3749033.41	0.81331b (16120624)
446395.01	3749029.57	0.79312b (16120624)	446418.16	3749054.95	1.01484b (16120624)
446391.41	3749039.11	0.84636b (16120624)	446389.75	3749042.95	0.86959b (16120624)
446377.36	3749033.44	0.79049b (16120624)	446401.65	3749042.38	0.88537b (16120624)
446393.02	3749043.80	0.88101b (16120624)	446397.05	3749034.69	0.82683b (16120624)
446408.79	3749045.79	0.92229b (16120624)	446379.31	3749028.98	0.76785b (16120624)
446383.06	3749029.83	0.77810b (16120624)	446387.95	3749027.55	0.77204b (16120624)
446389.98	3749032.39	0.80230b (16120624)	446416.22	3749030.11	0.82691b (16120624)
446419.40	3749047.72	0.95583b (16120624)	446413.99	3749053.46	0.99371b (16120624)
446375.19	3749038.32	0.81637b (16120624)	446396.25	3749045.62	0.89961b (16120624)
446394.44	3749039.79	0.85576b (16120624)	446401.75	3749031.82	0.81621b (16120624)
446380.74	3749035.49	0.80759b (16120624)	446388.47	3749037.63	0.83239b (16120624)
446391.64	3749028.38	0.78136b (16120624)	446407.35	3749035.49	0.84780b (16120624)
446416.22	3749035.49	0.86135b (16120624)	446418.22	3749044.94	0.93199b (16120624)
446412.00	3749051.65	0.97458b (16120624)	446415.77		

```
 3749044.35        0.92335b (16120624)
       446413.80   3749037.32        0.86990b (16120624)               446404.78
 3749033.64        0.83204b (16120624)
       446410.66   3749028.36        0.80844b (16120624)               446400.04
 3749035.78        0.83836b (16120624)
       446378.02   3749041.71        0.84204b (16120624)               446379.40
 3749039.20        0.82831b (16120624)
       446386.33   3749042.01        0.85746b (16120624)               446398.48
 3749040.87        0.86963b (16120624)
       446407.35   3749040.87        0.88410b (16120624)               446416.22
 3749040.87        0.89849b (16120624)
       446411.77   3749044.90        0.92070b (16120624)               446409.96
 3749048.55        0.94567b (16120624)
       446420.71   3749053.97        1.01100b (16120624)               446411.76
 3749040.28        0.88710b (16120624)
       446403.50   3749037.03        0.85187b (16120624)               446421.99
 3749035.45        0.86985b (16120624)
       446424.71   3749054.30        1.02161b (16120624)               446382.91
 3749040.90        0.84473b (16120624)
       446384.08   3749037.05        0.82177b (16120624)               446399.90
 3749046.40        0.91164b (16120624)
       446405.79   3749047.06        0.92679b (16120624)               446416.22
 3749046.25        0.93867b (16120624)
       446422.29   3749050.01        0.97977b (16120624)               446416.08
 3749054.20        1.00417b (16120624)
       446416.69   3749051.94        0.98577b (16120624)               446416.16
 3749038.36        0.88071b (16120624)
       446421.97   3749040.46        0.90483b (16120624)               446420.08
 3749055.93        1.02745b (16120624)
 *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
PM25\15670 PM25.ISC             ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                        ***        14:41:05

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

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


                                    ** CONC OF PM_2.5   IN MICROGRAMS/M**3
               **


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

```
ALL       1ST HIGHEST VALUE IS       0.59766 AT (  446423.79,  3749057.48,
196.50,   196.50,    0.00)  DC
          2ND HIGHEST VALUE IS       0.58487 AT (  446420.08,  3749055.93,
196.65,   196.65,    0.00)  DC
          3RD HIGHEST VALUE IS       0.58121 AT (  446424.71,  3749054.30,
196.52,   196.52,    0.00)  DC
          4TH HIGHEST VALUE IS       0.57751 AT (  446418.16,  3749054.95,
196.72,   196.72,    0.00)  DC
          5TH HIGHEST VALUE IS       0.57512 AT (  446420.71,  3749053.97,
196.65,   196.65,    0.00)  DC
          6TH HIGHEST VALUE IS       0.57133 AT (  446416.08,  3749054.20,
196.79,   196.79,    0.00)  DC
          7TH HIGHEST VALUE IS       0.56530 AT (  446413.99,  3749053.46,
196.86,   196.86,    0.00)  DC
          8TH HIGHEST VALUE IS       0.56048 AT (  446416.69,  3749051.94,
196.79,   196.79,    0.00)  DC
          9TH HIGHEST VALUE IS       0.55663 AT (  446422.29,  3749050.01,
196.66,   196.66,    0.00)  DC
         10TH HIGHEST VALUE IS       0.55418 AT (  446412.00,  3749051.65,
196.93,   196.93,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
↑ *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
PM25\15670 PM25.ISC             ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                       ***        14:41:05

                                  PAGE  12
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN  ADJ_U*

                                                *** THE SUMMARY OF HIGHEST 24-HR
RESULTS ***


                                   ** CONC OF PM_2.5   IN MICROGRAMS/M**3
              **

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

ALL      HIGH   1ST HIGH VALUE IS       1.04927b ON 16120624: AT (  446423.79,
```

```
3749057.48,   196.50,   196.50,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
↑ *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
PM25\15670 PM25.ISC             ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                       ***        14:41:05

                                  PAGE  13
 *** 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            2 Warning Message(s)
 A Total of         1638 Informational Message(s)

 A Total of        43848 Hours Were Processed

 A Total of         1039 Calm Hours Identified

 A Total of          599 Missing Hours Identified (  1.37 Percent)


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


    ********   WARNING MESSAGES   ********
 ME W186     225       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187     225       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


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

**
**************************************
**
** AERMOD INPUT PRODUCED BY:
** AERMOD VIEW VER. 12.0.0
** LAKES ENVIRONMENTAL SOFTWARE INC.
```

```
** DATE: 1/19/2024
** FILE: C:\LAKES\AERMOD VIEW\15670 HRA\15670 DPM\15670 DPM.ADI
**
**************************************
**
**
**************************************
** AERMOD CONTROL PATHWAY
**************************************
**
**
CO STARTING
   TITLEONE C:\LAKES\AERMOD VIEW\15670 HRA\15670 DPM\15670 DPM.ISC
   MODELOPT DFAULT CONC
   AVERTIME ANNUAL
   URBANOPT 2189641
   POLLUTID DPM
   RUNORNOT RUN
   ERRORFIL "15670 DPM.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 91 EB
** PREFIX
** LENGTH OF SIDE = 32.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.000244
** VERTICAL DIMENSION = 6.99
** SZINIT = 3.25
** NODES = 2
** 446149.796, 3749188.513, 197.76, 3.49, 14.88
** 447179.945, 3749035.478, 191.42, 3.49, 14.88
** ------------------------------------------------------------------
   LOCATION L0000160     VOLUME   446165.623 3749186.162 196.79
   LOCATION L0000161     VOLUME   446197.275 3749181.460 196.83
   LOCATION L0000162     VOLUME   446228.928 3749176.757 196.01
   LOCATION L0000163     VOLUME   446260.581 3749172.055 196.14
   LOCATION L0000164     VOLUME   446292.233 3749167.353 196.30
   LOCATION L0000165     VOLUME   446323.886 3749162.651 196.38
   LOCATION L0000166     VOLUME   446355.539 3749157.949 196.00
```

```
   LOCATION L0000167     VOLUME   446387.191 3749153.246 195.74
   LOCATION L0000168     VOLUME   446418.844 3749148.544 195.00
   LOCATION L0000169     VOLUME   446450.497 3749143.842 195.00
   LOCATION L0000170     VOLUME   446482.149 3749139.140 195.00
   LOCATION L0000171     VOLUME   446513.802 3749134.438 195.00
   LOCATION L0000172     VOLUME   446545.454 3749129.735 195.00
   LOCATION L0000173     VOLUME   446577.107 3749125.033 195.00
   LOCATION L0000174     VOLUME   446608.760 3749120.331 195.00
   LOCATION L0000175     VOLUME   446640.412 3749115.629 195.00
   LOCATION L0000176     VOLUME   446672.065 3749110.927 195.00
   LOCATION L0000177     VOLUME   446703.718 3749106.224 195.00
   LOCATION L0000178     VOLUME   446735.370 3749101.522 195.00
   LOCATION L0000179     VOLUME   446767.023 3749096.820 195.33
   LOCATION L0000180     VOLUME   446798.675 3749092.118 195.20
   LOCATION L0000181     VOLUME   446830.328 3749087.416 195.00
   LOCATION L0000182     VOLUME   446861.981 3749082.713 195.00
   LOCATION L0000183     VOLUME   446893.633 3749078.011 195.00
   LOCATION L0000184     VOLUME   446925.286 3749073.309 194.89
   LOCATION L0000185     VOLUME   446956.939 3749068.607 194.69
   LOCATION L0000186     VOLUME   446988.591 3749063.905 195.08
   LOCATION L0000187     VOLUME   447020.244 3749059.202 195.06
   LOCATION L0000188     VOLUME   447051.897 3749054.500 195.00
   LOCATION L0000189     VOLUME   447083.549 3749049.798 194.90
   LOCATION L0000190     VOLUME   447115.202 3749045.096 194.63
   LOCATION L0000191     VOLUME   447146.854 3749040.394 193.31
   LOCATION L0000192     VOLUME   447178.507 3749035.691 191.48
** END OF LINE VOLUME SOURCE ID = SLINE1
** ----------------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE2
** DESCRSRC 91 WB
** PREFIX
** LENGTH OF SIDE = 32.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.000359
** VERTICAL DIMENSION = 6.99
** SZINIT = 3.25
** NODES = 2
** 446153.936, 3749222.959, 196.45, 3.49, 14.88
** 447172.188, 3749092.095, 193.64, 3.49, 14.88
** ----------------------------------------------------------------------
   LOCATION L0000193     VOLUME   446169.806 3749220.920 195.99
   LOCATION L0000194     VOLUME   446201.545 3749216.841 195.65
   LOCATION L0000195     VOLUME   446233.284 3749212.761 195.68
   LOCATION L0000196     VOLUME   446265.023 3749208.682 194.98
   LOCATION L0000197     VOLUME   446296.762 3749204.603 195.05
   LOCATION L0000198     VOLUME   446328.501 3749200.524 195.19
   LOCATION L0000199     VOLUME   446360.240 3749196.445 195.33
   LOCATION L0000200     VOLUME   446391.979 3749192.366 195.04
   LOCATION L0000201     VOLUME   446423.718 3749188.287 194.60
```

```
   LOCATION L0000202     VOLUME   446455.457 3749184.208 194.59
   LOCATION L0000203     VOLUME   446487.196 3749180.129 194.66
   LOCATION L0000204     VOLUME   446518.935 3749176.050 195.00
   LOCATION L0000205     VOLUME   446550.673 3749171.971 195.00
   LOCATION L0000206     VOLUME   446582.412 3749167.892 194.45
   LOCATION L0000207     VOLUME   446614.151 3749163.813 194.41
   LOCATION L0000208     VOLUME   446645.890 3749159.734 194.55
   LOCATION L0000209     VOLUME   446677.629 3749155.655 194.39
   LOCATION L0000210     VOLUME   446709.368 3749151.576 194.64
   LOCATION L0000211     VOLUME   446741.107 3749147.497 194.87
   LOCATION L0000212     VOLUME   446772.846 3749143.418 194.99
   LOCATION L0000213     VOLUME   446804.585 3749139.339 194.29
   LOCATION L0000214     VOLUME   446836.324 3749135.260 193.44
   LOCATION L0000215     VOLUME   446868.063 3749131.181 192.72
   LOCATION L0000216     VOLUME   446899.802 3749127.102 192.42
   LOCATION L0000217     VOLUME   446931.541 3749123.023 192.55
   LOCATION L0000218     VOLUME   446963.280 3749118.944 192.64
   LOCATION L0000219     VOLUME   446995.019 3749114.865 193.61
   LOCATION L0000220     VOLUME   447026.758 3749110.786 193.78
   LOCATION L0000221     VOLUME   447058.497 3749106.707 193.20
   LOCATION L0000222     VOLUME   447090.236 3749102.627 193.36
   LOCATION L0000223     VOLUME   447121.975 3749098.548 193.01
   LOCATION L0000224     VOLUME   447153.714 3749094.469 193.76
** END OF LINE VOLUME SOURCE ID = SLINE2
** SOURCE PARAMETERS **
** LINE VOLUME SOURCE ID = SLINE1
   SRCPARAM L0000160     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000161     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000162     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000163     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000164     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000165     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000166     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000167     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000168     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000169     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000170     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000171     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000172     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000173     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000174     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000175     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000176     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000177     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000178     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000179     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000180     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000181     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000182     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000183     0.000007394      3.49     14.88      3.25
```

```
   SRCPARAM L0000184     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000185     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000186     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000187     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000188     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000189     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000190     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000191     0.000007394      3.49     14.88      3.25
   SRCPARAM L0000192     0.000007394      3.49     14.88      3.25
** ------------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE2
   SRCPARAM L0000193     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000194     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000195     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000196     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000197     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000198     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000199     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000200     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000201     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000202     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000203     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000204     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000205     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000206     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000207     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000208     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000209     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000210     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000211     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000212     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000213     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000214     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000215     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000216     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000217     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000218     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000219     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000220     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000221     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000222     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000223     0.0000112188      3.49     14.88      3.25
   SRCPARAM L0000224     0.0000112188      3.49     14.88      3.25
** ------------------------------------------------------------------
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD RECEPTOR PATHWAY
```

```
**************************************
**
**
RE STARTING
   INCLUDED "15670 DPM.ROU"
RE FINISHED
**
**************************************
** AERMOD METEOROLOGY PATHWAY
**************************************
**
**
ME STARTING
   SURFFILE "..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.SFC"
   PROFFILE "..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.PFL"
   SURFDATA 3171 2012
   UAIRDATA 3190 2012
   PROFBASE 245.0 METERS
ME FINISHED
**
**************************************
** AERMOD OUTPUT PATHWAY
**************************************
**
**
OU STARTING
** AUTO-GENERATED PLOTFILES
   PLOTFILE   ANNUAL ALL "15670 DPM.AD\AN00GALL.PLT" 31
   SUMMFILE "15670 DPM.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     225       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187     225       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
```

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

 *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
DPM\15670 DPM.ISC               ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                         ***        14:33:27

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

                                             ***     MODEL SETUP OPTIONS SUMMARY
  ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -

 ** Model Options Selected:
      * Model Uses Regulatory DEFAULT Options
      * Model Is Setup For Calculation of Average CONCentration Values.
      * NO GAS DEPOSITION Data Provided.
      * NO PARTICLE DEPOSITION Data Provided.
      * Model Uses NO DRY DEPLETION. DDPLETE  =  F
      * Model Uses NO WET DEPLETION. WETDPLT  =  F
      * Stack-tip Downwash.
      * Model Accounts for ELEVated Terrain Effects.
      * Use Calms Processing Routine.
      * Use Missing Data Processing Routine.
      * No Exponential Decay.
      * Model Uses URBAN Dispersion Algorithm for the SBL for    65 Source(s),
        for Total of    1 Urban Area(s):
   Urban Population =   2189641.0 ;  Urban Roughness Length =  1.000 m
      * Urban Roughness Length of 1.0 Meter Used.
      * ADJ_U*   - Use ADJ_U* option for SBL in AERMET
      * CCVR_Sub - Meteorological data includes CCVR substitutions
      * TEMP_Sub - Meteorological data includes TEMP substitutions
      * Model Assumes No FLAGPOLE Receptor Heights.
      * The User Specified a Pollutant Type of: DPM

 **Model Calculates ANNUAL Averages Only

 **This Run Includes:     65 Source(s);       1 Source Group(s); and      68
Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                 and:     65 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)
                and:      0 SWPOINT source(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) =   245.00 ;  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:   15670 DPM.ERR

 **File for Summary of Results:   15670 DPM.SUM

 *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
DPM\15670 DPM.ISC               ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                       ***        14:33:27

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


                                                  *** VOLUME SOURCE DATA ***
```

SOURCE ID	NUMBER PART. SCALAR CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE VARY BY	AIRCRAFT EMISSION RATE
L0000160	0	0.73940E-05	446165.6	3749186.2	196.8	3.49	14.88	3.25	YES	NO
L0000161	0	0.73940E-05	446197.3	3749181.5	196.8	3.49	14.88	3.25	YES	NO
L0000162	0	0.73940E-05	446228.9	3749176.8	196.0	3.49	14.88	3.25	YES	NO
L0000163	0	0.73940E-05	446260.6	3749172.1	196.1	3.49	14.88	3.25	YES	NO
L0000164	0	0.73940E-05	446292.2	3749167.4	196.3	3.49	14.88	3.25	YES	NO
L0000165	0	0.73940E-05	446323.9	3749162.7	196.4	3.49	14.88	3.25	YES	NO
L0000166	0	0.73940E-05	446355.5	3749157.9	196.0	3.49	14.88	3.25	YES	NO
L0000167	0	0.73940E-05	446387.2	3749153.2	195.7	3.49	14.88	3.25	YES	NO
L0000168	0	0.73940E-05	446418.8	3749148.5	195.0	3.49	14.88	3.25	YES	NO
L0000169	0	0.73940E-05	446450.5	3749143.8	195.0	3.49	14.88	3.25	YES	NO
L0000170	0	0.73940E-05	446482.1	3749139.1	195.0	3.49	14.88	3.25	YES	NO
L0000171	0	0.73940E-05	446513.8	3749134.4	195.0	3.49	14.88	3.25	YES	NO
L0000172	0	0.73940E-05	446545.5	3749129.7	195.0	3.49	14.88	3.25	YES	NO
L0000173	0	0.73940E-05	446577.1	3749125.0	195.0	3.49	14.88	3.25	YES	NO
L0000174	0	0.73940E-05	446608.8	3749120.3	195.0	3.49	14.88	3.25	YES	NO
L0000175	0	0.73940E-05	446640.4	3749115.6	195.0	3.49	14.88	3.25	YES	NO
L0000176	0	0.73940E-05	446672.1	3749110.9	195.0	3.49	14.88	3.25	YES	NO
L0000177	0	0.73940E-05	446703.7	3749106.2	195.0	3.49	14.88	3.25	YES	NO
L0000178	0	0.73940E-05	446735.4	3749101.5	195.0	3.49	14.88	3.25	YES	NO
L0000179	0	0.73940E-05	446767.0	3749096.8	195.3	3.49	14.88	3.25	YES	NO

```
 L0000180         0   0.73940E-05  446798.7 3749092.1   195.2     3.49    14.88
3.25     YES                    NO
 L0000181         0   0.73940E-05  446830.3 3749087.4   195.0     3.49    14.88
3.25     YES                    NO
 L0000182         0   0.73940E-05  446862.0 3749082.7   195.0     3.49    14.88
3.25     YES                    NO
 L0000183         0   0.73940E-05  446893.6 3749078.0   195.0     3.49    14.88
3.25     YES                    NO
 L0000184         0   0.73940E-05  446925.3 3749073.3   194.9     3.49    14.88
3.25     YES                    NO
 L0000185         0   0.73940E-05  446956.9 3749068.6   194.7     3.49    14.88
3.25     YES                    NO
 L0000186         0   0.73940E-05  446988.6 3749063.9   195.1     3.49    14.88
3.25     YES                    NO
 L0000187         0   0.73940E-05  447020.2 3749059.2   195.1     3.49    14.88
3.25     YES                    NO
 L0000188         0   0.73940E-05  447051.9 3749054.5   195.0     3.49    14.88
3.25     YES                    NO
 L0000189         0   0.73940E-05  447083.5 3749049.8   194.9     3.49    14.88
3.25     YES                    NO
 L0000190         0   0.73940E-05  447115.2 3749045.1   194.6     3.49    14.88
3.25     YES                    NO
 L0000191         0   0.73940E-05  447146.9 3749040.4   193.3     3.49    14.88
3.25     YES                    NO
 L0000192         0   0.73940E-05  447178.5 3749035.7   191.5     3.49    14.88
3.25     YES                    NO
 L0000193         0   0.11219E-04  446169.8 3749220.9   196.0     3.49    14.88
3.25     YES                    NO
 L0000194         0   0.11219E-04  446201.5 3749216.8   195.7     3.49    14.88
3.25     YES                    NO
 L0000195         0   0.11219E-04  446233.3 3749212.8   195.7     3.49    14.88
3.25     YES                    NO
 L0000196         0   0.11219E-04  446265.0 3749208.7   195.0     3.49    14.88
3.25     YES                    NO
 L0000197         0   0.11219E-04  446296.8 3749204.6   195.1     3.49    14.88
3.25     YES                    NO
 L0000198         0   0.11219E-04  446328.5 3749200.5   195.2     3.49    14.88
3.25     YES                    NO
 L0000199         0   0.11219E-04  446360.2 3749196.4   195.3     3.49    14.88
3.25     YES                    NO
↟ *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
DPM\15670 DPM.ISC               ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                       ***        14:33:27

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


                                                    *** VOLUME SOURCE DATA ***
```

SOURCE ID	NUMBER PART. SCALAR CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE VARY BY	AIRCRAFT
L0000200	0	0.11219E-04	446392.0	3749192.4	195.0	3.49	14.88	3.25	YES	NO
L0000201	0	0.11219E-04	446423.7	3749188.3	194.6	3.49	14.88	3.25	YES	NO
L0000202	0	0.11219E-04	446455.5	3749184.2	194.6	3.49	14.88	3.25	YES	NO
L0000203	0	0.11219E-04	446487.2	3749180.1	194.7	3.49	14.88	3.25	YES	NO
L0000204	0	0.11219E-04	446518.9	3749176.0	195.0	3.49	14.88	3.25	YES	NO
L0000205	0	0.11219E-04	446550.7	3749172.0	195.0	3.49	14.88	3.25	YES	NO
L0000206	0	0.11219E-04	446582.4	3749167.9	194.5	3.49	14.88	3.25	YES	NO
L0000207	0	0.11219E-04	446614.2	3749163.8	194.4	3.49	14.88	3.25	YES	NO
L0000208	0	0.11219E-04	446645.9	3749159.7	194.6	3.49	14.88	3.25	YES	NO
L0000209	0	0.11219E-04	446677.6	3749155.7	194.4	3.49	14.88	3.25	YES	NO
L0000210	0	0.11219E-04	446709.4	3749151.6	194.6	3.49	14.88	3.25	YES	NO
L0000211	0	0.11219E-04	446741.1	3749147.5	194.9	3.49	14.88	3.25	YES	NO
L0000212	0	0.11219E-04	446772.8	3749143.4	195.0	3.49	14.88	3.25	YES	NO
L0000213	0	0.11219E-04	446804.6	3749139.3	194.3	3.49	14.88	3.25	YES	NO
L0000214	0	0.11219E-04	446836.3	3749135.3	193.4	3.49	14.88	3.25	YES	NO
L0000215	0	0.11219E-04	446868.1	3749131.2	192.7	3.49	14.88	3.25	YES	NO
L0000216	0	0.11219E-04	446899.8	3749127.1	192.4	3.49	14.88	3.25	YES	NO
L0000217	0	0.11219E-04	446931.5	3749123.0	192.6	3.49	14.88	3.25	YES	NO
L0000218	0	0.11219E-04	446963.3	3749118.9	192.6	3.49	14.88	3.25	YES	NO
L0000219	0	0.11219E-04	446995.0	3749114.9	193.6	3.49	14.88	3.25	YES	NO

*** SOURCE IDs DEFINING SOURCE GROUPS
***

SRCGROUP ID	SOURCE IDs
ALL	L0000160 , L0000161 , L0000162 , L0000163 , L0000164 , L0000165 , L0000166 , L0000167 ,
	L0000168 , L0000169 , L0000170 , L0000171 , L0000172 , L0000173 , L0000174 , L0000175 ,
	L0000176 , L0000177 , L0000178 , L0000179 , L0000180 , L0000181 , L0000182 , L0000183 ,
	L0000184 , L0000185 , L0000186 , L0000187 , L0000188 , L0000189 , L0000190 , L0000191 ,
	L0000192 , L0000193 , L0000194 , L0000195 , L0000196 , L0000197 , L0000198 , L0000199 ,
	L0000200 , L0000201 , L0000202 , L0000203 , L0000204 , L0000205 , L0000206 , L0000207 ,
	L0000208 , L0000209 , L0000210 , L0000211 , L0000212 , L0000213 , L0000214 , L0000215 ,
	L0000216 , L0000217 , L0000218 , L0000219 , L0000220 , L0000221 , L0000222 , L0000223 ,

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

URBAN ID	URBAN POP	SOURCE IDs
	2189641.	L0000160 , L0000161 , L0000162 , L0000163 , L0000164 , L0000165 , L0000166 , L0000167 ,
		L0000168 , L0000169 , L0000170 , L0000171 , L0000172 , L0000173 , L0000174 , L0000175 ,
		L0000176 , L0000177 , L0000178 , L0000179 , L0000180 , L0000181 , L0000182 , L0000183 ,
		L0000184 , L0000185 , L0000186 , L0000187 , L0000188 , L0000189 , L0000190 , L0000191 ,
		L0000192 , L0000193 , L0000194 , L0000195 , L0000196 , L0000197 , L0000198 , L0000199 ,
		L0000200 , L0000201 , L0000202 , L0000203 , L0000204 , L0000205 , L0000206 , L0000207 ,
		L0000208 , L0000209 , L0000210 , L0000211 , L0000212 , L0000213 , L0000214 , L0000215 ,
		L0000216 , L0000217 , L0000218 , L0000219 , L0000220 , L0000221 , L0000222 , L0000223 ,
		L0000224 ,

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

(446398.2, 3749030.8, 197.3, 197.3, 0.0); (446412.0, 3749033.1, 197.0, 197.0, 0.0);
(446418.1, 3749034.5, 196.9, 196.9, 0.0); (446423.8, 3749057.5, 196.5, 196.5, 0.0);
(446420.6, 3749030.4, 197.0, 197.0, 0.0); (446392.1, 3749046.1, 197.2, 197.2, 0.0);
(446399.1, 3749048.7, 197.1, 197.1, 0.0); (446382.0, 3749042.8, 197.4, 197.4, 0.0);
(446380.7, 3749024.7, 198.0, 198.0, 0.0); (446384.8, 3749025.9, 197.8, 197.8, 0.0);
(446386.7, 3749031.1, 197.6, 197.6, 0.0); (446393.4, 3749033.4, 197.4, 197.4, 0.0);
(446395.0, 3749029.6, 197.4, 197.4, 0.0); (446418.2, 3749054.9, 196.7, 196.7, 0.0);
(446391.4, 3749039.1, 197.3, 197.3, 0.0); (446389.8, 3749042.9, 197.3, 197.3, 0.0);
(446377.4, 3749033.4, 197.8, 197.8, 0.0); (446401.6, 3749042.4, 197.1, 197.1, 0.0);
(446393.0, 3749043.8, 197.2, 197.2, 0.0); (446397.0, 3749034.7, 197.3, 197.3, 0.0);
(446408.8, 3749045.8, 197.0, 197.0, 0.0); (446379.3, 3749029.0, 197.9, 197.9, 0.0);
(446383.1, 3749029.8, 197.8, 197.8, 0.0); (446388.0, 3749027.5, 197.7, 197.7, 0.0);
(446390.0, 3749032.4, 197.5, 197.5, 0.0); (446416.2, 3749030.1, 197.0, 197.0, 0.0);
(446419.4, 3749047.7, 196.8, 196.8, 0.0); (446414.0, 3749053.5, 196.9, 196.9, 0.0);
(446375.2, 3749038.3, 197.7, 197.7, 0.0); (446396.2, 3749045.6, 197.2, 197.2, 0.0);
(446394.4, 3749039.8, 197.3, 197.3, 0.0); (446401.8, 3749031.8, 197.2, 197.2, 0.0);
(446380.7, 3749035.5, 197.7, 197.7, 0.0); (446388.5, 3749037.6, 197.4, 197.4, 0.0);
(446391.6, 3749028.4, 197.6, 197.6, 0.0); (446407.3, 3749035.5, 197.1, 197.1, 0.0);
(446416.2, 3749035.5, 196.9, 196.9, 0.0); (446418.2, 3749044.9, 196.8, 196.8, 0.0);
(446412.0, 3749051.6, 196.9, 196.9, 0.0); (446415.8, 3749044.3, 196.9, 196.9, 0.0);
(446413.8, 3749037.3, 197.0, 197.0, 0.0); (446404.8, 3749033.6, 197.1, 197.1, 0.0);
(446410.7, 3749028.4, 197.0, 197.0, 0.0); (446400.0, 3749035.8, 197.2, 197.2, 0.0);
(446378.0, 3749041.7, 197.5, 197.5, 0.0); (446379.4,

```
3749039.2,     197.6,     197.6,       0.0);
     ( 446386.3, 3749042.0,     197.4,     197.4,       0.0);          ( 446398.5,
3749040.9,     197.2,     197.2,       0.0);
     ( 446407.3, 3749040.9,     197.0,     197.0,       0.0);          ( 446416.2,
3749040.9,     196.9,     196.9,       0.0);
     ( 446411.8, 3749044.9,     197.0,     197.0,       0.0);          ( 446410.0,
3749048.5,     197.0,     197.0,       0.0);
     ( 446420.7, 3749054.0,     196.7,     196.7,       0.0);          ( 446411.8,
3749040.3,     197.0,     197.0,       0.0);
     ( 446403.5, 3749037.0,     197.1,     197.1,       0.0);          ( 446422.0,
3749035.4,     196.9,     196.9,       0.0);
     ( 446424.7, 3749054.3,     196.5,     196.5,       0.0);          ( 446382.9,
3749040.9,     197.5,     197.5,       0.0);
     ( 446384.1, 3749037.0,     197.5,     197.5,       0.0);          ( 446399.9,
3749046.4,     197.1,     197.1,       0.0);
     ( 446405.8, 3749047.1,     197.0,     197.0,       0.0);          ( 446416.2,
3749046.2,     196.9,     196.9,       0.0);
     ( 446422.3, 3749050.0,     196.7,     196.7,       0.0);          ( 446416.1,
3749054.2,     196.8,     196.8,       0.0);
     ( 446416.7, 3749051.9,     196.8,     196.8,       0.0);          ( 446416.2,
3749038.4,     196.9,     196.9,       0.0);
     ( 446422.0, 3749040.5,     196.8,     196.8,       0.0);          ( 446420.1,
3749055.9,     196.7,     196.7,       0.0);
↑ *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
DPM\15670 DPM.ISC               ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                        ***        14:33:27

                                   PAGE   7
 *** 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 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)

1.54, 3.09, 5.14, 8.23, 10.80,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

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

Surface file: ..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.SFC
Met Version: 16216
Profile file: ..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.PFL

Surface format: FREE

Profile format: FREE

Surface station no.: 3171 Upper air station no.: 3190
Name: UNKNOWN Name: UNKNOWN

Year: 2012 Year: 2012

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
12	01	01	1	01	-25.6	0.266	-9.000	-9.000	-999.	330.	77.9	0.15	2.40	1.00	2.93	55.	10.1	288.1	2.0
12	01	01	1	02	-26.8	0.277	-9.000	-9.000	-999.	351.	84.7	0.15	2.40	1.00	3.05	55.	10.1	287.0	2.0
12	01	01	1	03	-21.5	0.221	-9.000	-9.000	-999.	250.	53.5	0.15	2.40	1.00	2.45	74.	10.1	284.2	2.0
12	01	01	1	04	-22.0	0.227	-9.000	-9.000	-999.	260.	56.8	0.15	2.40	1.00	2.52	77.	10.1	285.9	2.0
12	01	01	1	05	-20.0	0.206	-9.000	-9.000	-999.	225.	46.8	0.15	2.40						

```
1.00    2.30   80.   10.1  285.4    2.0
 12 01 01   1 06  -14.4  0.171 -9.000 -9.000 -999.  170.     32.1  0.15   2.40
1.00    1.93   79.   10.1  287.0    2.0
 12 01 01   1 07  -14.9  0.174 -9.000 -9.000 -999.  174.     33.2  0.15   2.40
1.00    1.96   77.   10.1  284.2    2.0
 12 01 01   1 08  -11.9  0.169 -9.000 -9.000 -999.  167.     36.1  0.15   2.40
0.53    1.89   77.   10.1  288.1    2.0
 12 01 01   1 09   40.4  0.234  0.359  0.006   40.  272.    -28.1  0.15   2.40
0.31    2.10   81.   10.1  289.2    2.0
 12 01 01   1 10  112.6  0.246  0.742  0.005  129.  293.    -11.8  0.15   2.40
0.24    1.99  101.   10.1  296.4    2.0
 12 01 01   1 11  161.0  0.402  1.188  0.005  369.  611.    -35.6  0.15   2.40
0.21    3.68   78.   10.1  298.8    2.0
 12 01 01   1 12  184.7  0.337  1.516  0.005  668.  473.    -18.4  0.15   2.40
0.20    2.89   68.   10.1  300.4    2.0
 12 01 01   1 13  183.9  0.310  1.809  0.005 1139.  414.    -14.2  0.15   2.40
0.20    2.57   64.   10.1  302.5    2.0
 12 01 01   1 14  156.6  0.374  1.852  0.005 1434.  549.    -29.5  0.15   2.40
0.22    3.37   63.   10.1  303.1    2.0
 12 01 01   1 15  104.3  0.382  1.658  0.005 1546.  567.    -47.2  0.15   2.40
0.25    3.59   62.   10.1  302.5    2.0
 12 01 01   1 16   31.8  0.374  1.123  0.005 1573.  550.   -145.8  0.15   2.40
0.34    3.76   69.   10.1  300.9    2.0
 12 01 01   1 17  -23.3  0.276 -9.000 -9.000 -999.  354.     84.0  0.15   2.40
0.62    3.03   59.   10.1  297.5    2.0
 12 01 01   1 18  -21.5  0.229 -9.000 -9.000 -999.  264.     57.8  0.15   2.40
1.00    2.54   54.   10.1  295.4    2.0
 12 01 01   1 19  -19.3  0.204 -9.000 -9.000 -999.  221.     45.6  0.15   2.40
1.00    2.27   79.   10.1  292.0    2.0
 12 01 01   1 20  -20.7  0.218 -9.000 -9.000 -999.  244.     52.2  0.15   2.40
1.00    2.42   79.   10.1  292.5    2.0
 12 01 01   1 21  -19.7  0.206 -9.000 -9.000 -999.  225.     46.9  0.15   2.40
1.00    2.30   95.   10.1  290.9    2.0
 12 01 01   1 22  -17.6  0.190 -9.000 -9.000 -999.  199.     39.8  0.15   2.40
1.00    2.13   78.   10.1  290.4    2.0
 12 01 01   1 23  -20.3  0.211 -9.000 -9.000 -999.  233.     49.0  0.15   2.40
1.00    2.35   52.   10.1  289.2    2.0
 12 01 01   1 24  -16.4  0.183 -9.000 -9.000 -999.  189.     37.0  0.15   2.40
1.00    2.06   75.   10.1  288.8    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 12 01 01 01   10.1 1   55.    2.93   288.2   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
 *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
DPM\15670 DPM.ISC               ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                         ***        14:33:27
```

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5 YEARS FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S): L0000160 , L0000161 , L0000162 , L0000163 , L0000164 , L0000165 , L0000166 , L0000167 , L0000168 , L0000169 , L0000170 , L0000171 , L0000172 , L0000173 , L0000174 , L0000175 , L0000176 , L0000177 , L0000178 , L0000179 , L0000180 , L0000181 , L0000182 , L0000183 , L0000184 , L0000185 , L0000186 , L0000187 , . . . ,

*** 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
446398.16	3749030.75	0.00785	446412.02	3749033.12	0.00818
446418.14	3749034.53	0.00835	446423.79	3749057.48	0.01027
446420.60	3749030.38	0.00812	446392.07	3749046.15	0.00877
446399.10	3749048.66	0.00907	446382.04	3749042.82	0.00838
446380.74	3749024.73	0.00731	446384.77	3749025.87	0.00742
446386.66	3749031.14	0.00773	446393.40	3749033.41	0.00794
446395.01	3749029.57	0.00774	446418.16	3749054.95	0.00992
446391.41	3749039.11	0.00827	446389.75	3749042.95	0.00850
446377.36	3749033.44	0.00775	446401.65	3749042.38	0.00864
446393.02	3749043.80	0.00861	446397.05	3749034.69	0.00807
446408.79	3749045.79	0.00900	446379.31	3749028.98	0.00752
446383.06	3749029.83	0.00761	446387.95	3749027.55	0.00755
446389.98	3749032.39	0.00784	446416.22		

```
3749030.11        0.00804
         446419.40    3749047.72        0.00932                        446413.99
3749053.46        0.00971
         446375.19    3749038.32        0.00800                        446396.25
3749045.62        0.00879
         446394.44    3749039.79        0.00836                        446401.75
3749031.82        0.00796
         446380.74    3749035.49        0.00791                        446388.47
3749037.63        0.00814
         446391.64    3749028.38        0.00763                        446407.35
3749035.49        0.00826
         446416.22    3749035.49        0.00838                        446418.22
3749044.94        0.00909
         446412.00    3749051.65        0.00952                        446415.77
3749044.35        0.00900
         446413.80    3749037.32        0.00847                        446404.78
3749033.64        0.00811
         446410.66    3749028.36        0.00787                        446400.04
3749035.78        0.00818
         446378.02    3749041.71        0.00825                        446379.40
3749039.20        0.00811
         446386.33    3749042.01        0.00839                        446398.48
3749040.87        0.00849
         446407.35    3749040.87        0.00862                        446416.22
3749040.87        0.00875
         446411.77    3749044.90        0.00898                        446409.96
3749048.55        0.00923
         446420.71    3749053.97        0.00988                        446411.76
3749040.28        0.00865
         446403.50    3749037.03        0.00831                        446421.99
3749035.45        0.00846
         446424.71    3749054.30        0.00999                        446382.91
3749040.90        0.00827
         446384.08    3749037.05        0.00804                        446399.90
3749046.40        0.00891
         446405.79    3749047.06        0.00905                        446416.22
3749046.25        0.00916
         446422.29    3749050.01        0.00956                        446416.08
3749054.20        0.00982
         446416.69    3749051.94        0.00963                        446416.16
3749038.36        0.00858
         446421.97    3749040.46        0.00881                        446420.08
3749055.93        0.01005
 *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
DPM\15670 DPM.ISC               ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                        ***        14:33:27

                                   PAGE  10
 *** 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	0.01027 AT (446423.79, 3749057.48, 196.50, 196.50, 0.00)	DC	
	2ND HIGHEST VALUE IS	0.01005 AT (446420.08, 3749055.93, 196.65, 196.65, 0.00)	DC	
	3RD HIGHEST VALUE IS	0.00999 AT (446424.71, 3749054.30, 196.52, 196.52, 0.00)	DC	
	4TH HIGHEST VALUE IS	0.00992 AT (446418.16, 3749054.95, 196.72, 196.72, 0.00)	DC	
	5TH HIGHEST VALUE IS	0.00988 AT (446420.71, 3749053.97, 196.65, 196.65, 0.00)	DC	
	6TH HIGHEST VALUE IS	0.00982 AT (446416.08, 3749054.20, 196.79, 196.79, 0.00)	DC	
	7TH HIGHEST VALUE IS	0.00971 AT (446413.99, 3749053.46, 196.86, 196.86, 0.00)	DC	
	8TH HIGHEST VALUE IS	0.00963 AT (446416.69, 3749051.94, 196.79, 196.79, 0.00)	DC	
	9TH HIGHEST VALUE IS	0.00956 AT (446422.29, 3749050.01, 196.66, 196.66, 0.00)	DC	
	10TH HIGHEST VALUE IS	0.00952 AT (446412.00, 3749051.65, 196.93, 196.93, 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            2 Warning Message(s)
 A Total of         1638 Informational Message(s)

 A Total of        43848 Hours Were Processed

 A Total of         1039 Calm Hours Identified

 A Total of          599 Missing Hours Identified (  1.37 Percent)


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


    ********   WARNING MESSAGES   ********
 ME W186     225       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187     225       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


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

**
**************************************
**
** AERMOD INPUT PRODUCED BY:
** AERMOD VIEW VER. 12.0.0
** LAKES ENVIRONMENTAL SOFTWARE INC.
** DATE: 1/19/2024
** FILE: C:\LAKES\AERMOD VIEW\15670 HRA\15670 TOGDSL\15670 TOGDSL.ADI
**
**************************************
**
**
**************************************
** AERMOD CONTROL PATHWAY
**************************************
**
**
CO STARTING
   TITLEONE C:\LAKES\AERMOD VIEW\15670 HRA\15670 TOGDSL\15670 TOGDSL.ISC
   MODELOPT DFAULT CONC
   AVERTIME 1 8
   URBANOPT 2189641
```

```
   POLLUTID TOGDSL
   RUNORNOT RUN
   ERRORFIL "15670 TOGDSL.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 91 EB
** PREFIX
** LENGTH OF SIDE = 32.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.0001
** VERTICAL DIMENSION = 6.99
** SZINIT = 3.25
** NODES = 2
** 446149.796, 3749188.513, 197.76, 3.49, 14.88
** 447179.945, 3749035.478, 191.42, 3.49, 14.88
** ---------------------------------------------------------------------
   LOCATION L0000290     VOLUME   446165.623 3749186.162 196.79
   LOCATION L0000291     VOLUME   446197.275 3749181.460 196.83
   LOCATION L0000292     VOLUME   446228.928 3749176.757 196.01
   LOCATION L0000293     VOLUME   446260.581 3749172.055 196.14
   LOCATION L0000294     VOLUME   446292.233 3749167.353 196.30
   LOCATION L0000295     VOLUME   446323.886 3749162.651 196.38
   LOCATION L0000296     VOLUME   446355.539 3749157.949 196.00
   LOCATION L0000297     VOLUME   446387.191 3749153.246 195.74
   LOCATION L0000298     VOLUME   446418.844 3749148.544 195.00
   LOCATION L0000299     VOLUME   446450.497 3749143.842 195.00
   LOCATION L0000300     VOLUME   446482.149 3749139.140 195.00
   LOCATION L0000301     VOLUME   446513.802 3749134.438 195.00
   LOCATION L0000302     VOLUME   446545.454 3749129.735 195.00
   LOCATION L0000303     VOLUME   446577.107 3749125.033 195.00
   LOCATION L0000304     VOLUME   446608.760 3749120.331 195.00
   LOCATION L0000305     VOLUME   446640.412 3749115.629 195.00
   LOCATION L0000306     VOLUME   446672.065 3749110.927 195.00
   LOCATION L0000307     VOLUME   446703.718 3749106.224 195.00
   LOCATION L0000308     VOLUME   446735.370 3749101.522 195.00
   LOCATION L0000309     VOLUME   446767.023 3749096.820 195.33
   LOCATION L0000310     VOLUME   446798.675 3749092.118 195.20
   LOCATION L0000311     VOLUME   446830.328 3749087.416 195.00
   LOCATION L0000312     VOLUME   446861.981 3749082.713 195.00
```

```
   LOCATION L0000313     VOLUME   446893.633 3749078.011 195.00
   LOCATION L0000314     VOLUME   446925.286 3749073.309 194.89
   LOCATION L0000315     VOLUME   446956.939 3749068.607 194.69
   LOCATION L0000316     VOLUME   446988.591 3749063.905 195.08
   LOCATION L0000317     VOLUME   447020.244 3749059.202 195.06
   LOCATION L0000318     VOLUME   447051.897 3749054.500 195.00
   LOCATION L0000319     VOLUME   447083.549 3749049.798 194.90
   LOCATION L0000320     VOLUME   447115.202 3749045.096 194.63
   LOCATION L0000321     VOLUME   447146.854 3749040.394 193.31
   LOCATION L0000322     VOLUME   447178.507 3749035.691 191.48
** END OF LINE VOLUME SOURCE ID = SLINE1
** ----------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE2
** DESCRSRC 91 WB
** PREFIX
** LENGTH OF SIDE = 32.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.000148
** VERTICAL DIMENSION = 6.99
** SZINIT = 3.25
** NODES = 2
** 446153.936, 3749222.959, 196.45, 3.49, 14.88
** 447172.188, 3749092.095, 193.64, 3.49, 14.88
** ----------------------------------------------------------------
   LOCATION L0000258     VOLUME   446169.806 3749220.920 195.99
   LOCATION L0000259     VOLUME   446201.545 3749216.841 195.65
   LOCATION L0000260     VOLUME   446233.284 3749212.761 195.68
   LOCATION L0000261     VOLUME   446265.023 3749208.682 194.98
   LOCATION L0000262     VOLUME   446296.762 3749204.603 195.05
   LOCATION L0000263     VOLUME   446328.501 3749200.524 195.19
   LOCATION L0000264     VOLUME   446360.240 3749196.445 195.33
   LOCATION L0000265     VOLUME   446391.979 3749192.366 195.04
   LOCATION L0000266     VOLUME   446423.718 3749188.287 194.60
   LOCATION L0000267     VOLUME   446455.457 3749184.208 194.59
   LOCATION L0000268     VOLUME   446487.196 3749180.129 194.66
   LOCATION L0000269     VOLUME   446518.935 3749176.050 195.00
   LOCATION L0000270     VOLUME   446550.673 3749171.971 195.00
   LOCATION L0000271     VOLUME   446582.412 3749167.892 194.45
   LOCATION L0000272     VOLUME   446614.151 3749163.813 194.41
   LOCATION L0000273     VOLUME   446645.890 3749159.734 194.55
   LOCATION L0000274     VOLUME   446677.629 3749155.655 194.39
   LOCATION L0000275     VOLUME   446709.368 3749151.576 194.64
   LOCATION L0000276     VOLUME   446741.107 3749147.497 194.87
   LOCATION L0000277     VOLUME   446772.846 3749143.418 194.99
   LOCATION L0000278     VOLUME   446804.585 3749139.339 194.29
   LOCATION L0000279     VOLUME   446836.324 3749135.260 193.44
   LOCATION L0000280     VOLUME   446868.063 3749131.181 192.72
   LOCATION L0000281     VOLUME   446899.802 3749127.102 192.42
   LOCATION L0000282     VOLUME   446931.541 3749123.023 192.55
```

```
   LOCATION L0000283     VOLUME   446963.280 3749118.944 192.64
   LOCATION L0000284     VOLUME   446995.019 3749114.865 193.61
   LOCATION L0000285     VOLUME   447026.758 3749110.786 193.78
   LOCATION L0000286     VOLUME   447058.497 3749106.707 193.20
   LOCATION L0000287     VOLUME   447090.236 3749102.627 193.36
   LOCATION L0000288     VOLUME   447121.975 3749098.548 193.01
   LOCATION L0000289     VOLUME   447153.714 3749094.469 193.76
** END OF LINE VOLUME SOURCE ID = SLINE2
** SOURCE PARAMETERS **
** LINE VOLUME SOURCE ID = SLINE1
   SRCPARAM L0000290     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000291     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000292     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000293     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000294     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000295     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000296     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000297     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000298     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000299     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000300     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000301     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000302     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000303     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000304     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000305     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000306     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000307     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000308     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000309     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000310     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000311     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000312     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000313     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000314     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000315     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000316     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000317     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000318     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000319     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000320     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000321     0.00000303      3.49     14.88      3.25
   SRCPARAM L0000322     0.00000303      3.49     14.88      3.25
** ----------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE2
   SRCPARAM L0000258     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000259     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000260     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000261     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000262     0.000004625      3.49     14.88      3.25
```

```
   SRCPARAM L0000263     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000264     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000265     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000266     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000267     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000268     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000269     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000270     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000271     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000272     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000273     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000274     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000275     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000276     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000277     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000278     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000279     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000280     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000281     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000282     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000283     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000284     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000285     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000286     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000287     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000288     0.000004625      3.49     14.88      3.25
   SRCPARAM L0000289     0.000004625      3.49     14.88      3.25
** ------------------------------------------------------------------
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD RECEPTOR PATHWAY
**************************************
**
**
RE STARTING
   INCLUDED "15670 TOGDSL.ROU"
RE FINISHED
**
**************************************
** AERMOD METEOROLOGY PATHWAY
**************************************
**
**
ME STARTING
   SURFFILE "..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.SFC"
   PROFFILE "..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.PFL"
   SURFDATA 3171 2012
```

```
   UAIRDATA 3190 2012
   PROFBASE 245.0 METERS
ME FINISHED
**
**************************************
** AERMOD OUTPUT PATHWAY
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
   RECTABLE 8 1ST
** AUTO-GENERATED PLOTFILES
   PLOTFILE   1 ALL 1ST "15670 TOGDSL.AD\01H1GALL.PLT" 31
   PLOTFILE   8 ALL 1ST "15670 TOGDSL.AD\08H1GALL.PLT" 32
   SUMMFILE "15670 TOGDSL.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     225       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187     225       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


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

↟ *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
TOGDSL\15670 TOGDSL.ISC         ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                         ***        15:43:13

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

```
                                                   ***     MODEL SETUP OPTIONS SUMMARY
  ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - -

 ** Model Options Selected:
      * Model Uses Regulatory DEFAULT Options
      * Model Is Setup For Calculation of Average CONCentration Values.
      * NO GAS DEPOSITION Data Provided.
      * NO PARTICLE DEPOSITION Data Provided.
      * Model Uses NO DRY DEPLETION. DDPLETE  =  F
      * Model Uses NO WET DEPLETION. WETDPLT  =  F
      * Stack-tip Downwash.
      * Model Accounts for ELEVated Terrain Effects.
      * Use Calms Processing Routine.
      * Use Missing Data Processing Routine.
      * No Exponential Decay.
      * Model Uses URBAN Dispersion Algorithm for the SBL for    65 Source(s),
        for Total of    1 Urban Area(s):
   Urban Population =   2189641.0 ;  Urban Roughness Length =  1.000 m
      * Urban Roughness Length of 1.0 Meter Used.
      * ADJ_U*   - Use ADJ_U* option for SBL in AERMET
      * CCVR_Sub - Meteorological data includes CCVR substitutions
      * TEMP_Sub - Meteorological data includes TEMP substitutions
      * Model Assumes No FLAGPOLE Receptor Heights.
      * The User Specified a Pollutant Type of: TOGDSL

 **Model Calculates  2 Short Term Average(s) of:   1-HR   8-HR

 **This Run Includes:     65 Source(s);       1 Source Group(s); and      68
Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                 and:     65 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)
                 and:      0 SWPOINT source(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 Highest Short Term Values by Receptor (RECTABLE
```

Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE
Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE
Keyword)

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

 **Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) =   245.00 ; 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: 15670 TOGDSL.ERR

 **File for Summary of Results: 15670 TOGDSL.SUM

 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

                                                  *** VOLUME SOURCE DATA ***

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

 L0000290   0   0.30300E-05 446165.6 3749186.2   196.8   3.49   14.88

```
3.25     YES                  NO
 L0000291         0   0.30300E-05  446197.3 3749181.5   196.8     3.49    14.88
3.25     YES                  NO
 L0000292         0   0.30300E-05  446228.9 3749176.8   196.0     3.49    14.88
3.25     YES                  NO
 L0000293         0   0.30300E-05  446260.6 3749172.1   196.1     3.49    14.88
3.25     YES                  NO
 L0000294         0   0.30300E-05  446292.2 3749167.4   196.3     3.49    14.88
3.25     YES                  NO
 L0000295         0   0.30300E-05  446323.9 3749162.7   196.4     3.49    14.88
3.25     YES                  NO
 L0000296         0   0.30300E-05  446355.5 3749157.9   196.0     3.49    14.88
3.25     YES                  NO
 L0000297         0   0.30300E-05  446387.2 3749153.2   195.7     3.49    14.88
3.25     YES                  NO
 L0000298         0   0.30300E-05  446418.8 3749148.5   195.0     3.49    14.88
3.25     YES                  NO
 L0000299         0   0.30300E-05  446450.5 3749143.8   195.0     3.49    14.88
3.25     YES                  NO
 L0000300         0   0.30300E-05  446482.1 3749139.1   195.0     3.49    14.88
3.25     YES                  NO
 L0000301         0   0.30300E-05  446513.8 3749134.4   195.0     3.49    14.88
3.25     YES                  NO
 L0000302         0   0.30300E-05  446545.5 3749129.7   195.0     3.49    14.88
3.25     YES                  NO
 L0000303         0   0.30300E-05  446577.1 3749125.0   195.0     3.49    14.88
3.25     YES                  NO
 L0000304         0   0.30300E-05  446608.8 3749120.3   195.0     3.49    14.88
3.25     YES                  NO
 L0000305         0   0.30300E-05  446640.4 3749115.6   195.0     3.49    14.88
3.25     YES                  NO
 L0000306         0   0.30300E-05  446672.1 3749110.9   195.0     3.49    14.88
3.25     YES                  NO
 L0000307         0   0.30300E-05  446703.7 3749106.2   195.0     3.49    14.88
3.25     YES                  NO
 L0000308         0   0.30300E-05  446735.4 3749101.5   195.0     3.49    14.88
3.25     YES                  NO
 L0000309         0   0.30300E-05  446767.0 3749096.8   195.3     3.49    14.88
3.25     YES                  NO
 L0000310         0   0.30300E-05  446798.7 3749092.1   195.2     3.49    14.88
3.25     YES                  NO
 L0000311         0   0.30300E-05  446830.3 3749087.4   195.0     3.49    14.88
3.25     YES                  NO
 L0000312         0   0.30300E-05  446862.0 3749082.7   195.0     3.49    14.88
3.25     YES                  NO
 L0000313         0   0.30300E-05  446893.6 3749078.0   195.0     3.49    14.88
3.25     YES                  NO
 L0000314         0   0.30300E-05  446925.3 3749073.3   194.9     3.49    14.88
3.25     YES                  NO
 L0000315         0   0.30300E-05  446956.9 3749068.6   194.7     3.49    14.88
```

```
3.25     YES                    NO
 L0000316         0   0.30300E-05  446988.6 3749063.9   195.1     3.49    14.88
3.25     YES                    NO
 L0000317         0   0.30300E-05  447020.2 3749059.2   195.1     3.49    14.88
3.25     YES                    NO
 L0000318         0   0.30300E-05  447051.9 3749054.5   195.0     3.49    14.88
3.25     YES                    NO
 L0000319         0   0.30300E-05  447083.5 3749049.8   194.9     3.49    14.88
3.25     YES                    NO
 L0000320         0   0.30300E-05  447115.2 3749045.1   194.6     3.49    14.88
3.25     YES                    NO
 L0000321         0   0.30300E-05  447146.9 3749040.4   193.3     3.49    14.88
3.25     YES                    NO
 L0000322         0   0.30300E-05  447178.5 3749035.7   191.5     3.49    14.88
3.25     YES                    NO
 L0000258         0   0.46250E-05  446169.8 3749220.9   196.0     3.49    14.88
3.25     YES                    NO
 L0000259         0   0.46250E-05  446201.5 3749216.8   195.7     3.49    14.88
3.25     YES                    NO
 L0000260         0   0.46250E-05  446233.3 3749212.8   195.7     3.49    14.88
3.25     YES                    NO
 L0000261         0   0.46250E-05  446265.0 3749208.7   195.0     3.49    14.88
3.25     YES                    NO
 L0000262         0   0.46250E-05  446296.8 3749204.6   195.1     3.49    14.88
3.25     YES                    NO
 L0000263         0   0.46250E-05  446328.5 3749200.5   195.2     3.49    14.88
3.25     YES                    NO
 L0000264         0   0.46250E-05  446360.2 3749196.4   195.3     3.49    14.88
3.25     YES                    NO
↑ *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
TOGDSL\15670 TOGDSL.ISC         ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                        ***        15:43:13

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


                                                    *** VOLUME SOURCE DATA ***

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

 L0000265         0   0.46250E-05  446392.0 3749192.4   195.0     3.49    14.88
```

```
3.25     YES                    NO
 L0000266         0   0.46250E-05  446423.7 3749188.3   194.6     3.49    14.88
3.25     YES                    NO
 L0000267         0   0.46250E-05  446455.5 3749184.2   194.6     3.49    14.88
3.25     YES                    NO
 L0000268         0   0.46250E-05  446487.2 3749180.1   194.7     3.49    14.88
3.25     YES                    NO
 L0000269         0   0.46250E-05  446518.9 3749176.0   195.0     3.49    14.88
3.25     YES                    NO
 L0000270         0   0.46250E-05  446550.7 3749172.0   195.0     3.49    14.88
3.25     YES                    NO
 L0000271         0   0.46250E-05  446582.4 3749167.9   194.5     3.49    14.88
3.25     YES                    NO
 L0000272         0   0.46250E-05  446614.2 3749163.8   194.4     3.49    14.88
3.25     YES                    NO
 L0000273         0   0.46250E-05  446645.9 3749159.7   194.6     3.49    14.88
3.25     YES                    NO
 L0000274         0   0.46250E-05  446677.6 3749155.7   194.4     3.49    14.88
3.25     YES                    NO
 L0000275         0   0.46250E-05  446709.4 3749151.6   194.6     3.49    14.88
3.25     YES                    NO
 L0000276         0   0.46250E-05  446741.1 3749147.5   194.9     3.49    14.88
3.25     YES                    NO
 L0000277         0   0.46250E-05  446772.8 3749143.4   195.0     3.49    14.88
3.25     YES                    NO
 L0000278         0   0.46250E-05  446804.6 3749139.3   194.3     3.49    14.88
3.25     YES                    NO
 L0000279         0   0.46250E-05  446836.3 3749135.3   193.4     3.49    14.88
3.25     YES                    NO
 L0000280         0   0.46250E-05  446868.1 3749131.2   192.7     3.49    14.88
3.25     YES                    NO
 L0000281         0   0.46250E-05  446899.8 3749127.1   192.4     3.49    14.88
3.25     YES                    NO
 L0000282         0   0.46250E-05  446931.5 3749123.0   192.6     3.49    14.88
3.25     YES                    NO
 L0000283         0   0.46250E-05  446963.3 3749118.9   192.6     3.49    14.88
3.25     YES                    NO
 L0000284         0   0.46250E-05  446995.0 3749114.9   193.6     3.49    14.88
3.25     YES                    NO
 L0000285         0   0.46250E-05  447026.8 3749110.8   193.8     3.49    14.88
3.25     YES                    NO
 L0000286         0   0.46250E-05  447058.5 3749106.7   193.2     3.49    14.88
3.25     YES                    NO
 L0000287         0   0.46250E-05  447090.2 3749102.6   193.4     3.49    14.88
3.25     YES                    NO
 L0000288         0   0.46250E-05  447122.0 3749098.5   193.0     3.49    14.88
3.25     YES                    NO
 L0000289         0   0.46250E-05  447153.7 3749094.5   193.8     3.49    14.88
3.25     YES                    NO
↟ *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
```

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ALL	L0000290 , L0000291 , L0000292 , L0000293 , L0000294 , L0000295 , L0000296 , L0000297 , L0000298 , L0000299 , L0000300 , L0000301 , L0000302 , L0000303 , L0000304 , L0000305 , L0000306 , L0000307 , L0000308 , L0000309 , L0000310 , L0000311 , L0000312 , L0000313 , L0000314 , L0000315 , L0000316 , L0000317 , L0000318 , L0000319 , L0000320 , L0000321 , L0000322 , L0000258 , L0000259 , L0000260 , L0000261 , L0000262 , L0000263 , L0000264 , L0000265 , L0000266 , L0000267 , L0000268 , L0000269 , L0000270 , L0000271 , L0000272 , L0000273 , L0000274 , L0000275 , L0000276 , L0000277 , L0000278 , L0000279 , L0000280 , L0000281 , L0000282 , L0000283 , L0000284 , L0000285 , L0000286 , L0000287 , L0000288 , L0000289 ,

*** SOURCE IDs DEFINED AS URBAN SOURCES

***

URBAN ID	URBAN POP	SOURCE IDs
	2189641.	L0000290 , L0000291 , L0000292 , L0000293 , L0000294 , L0000295 , L0000296 , L0000297 ,
		L0000298 , L0000299 , L0000300 , L0000301 , L0000302 , L0000303 , L0000304 , L0000305 ,
		L0000306 , L0000307 , L0000308 , L0000309 , L0000310 , L0000311 , L0000312 , L0000313 ,
		L0000314 , L0000315 , L0000316 , L0000317 , L0000318 , L0000319 , L0000320 , L0000321 ,
		L0000322 , L0000258 , L0000259 , L0000260 , L0000261 , L0000262 , L0000263 , L0000264 ,
		L0000265 , L0000266 , L0000267 , L0000268 , L0000269 , L0000270 , L0000271 , L0000272 ,
		L0000273 , L0000274 , L0000275 , L0000276 , L0000277 , L0000278 , L0000279 , L0000280 ,
		L0000281 , L0000282 , L0000283 , L0000284 , L0000285 , L0000286 , L0000287 , L0000288 ,
		L0000289 ,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

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

(446398.2, 3749030.8, 197.3, 197.3, 0.0); (446412.0, 3749033.1, 197.0, 197.0, 0.0);
(446418.1, 3749034.5, 196.9, 196.9, 0.0); (446423.8, 3749057.5, 196.5, 196.5, 0.0);
(446420.6, 3749030.4, 197.0, 197.0, 0.0); (446392.1, 3749046.1, 197.2, 197.2, 0.0);

```
     ( 446399.1, 3749048.7,     197.1,     197.1,       0.0);         ( 446382.0,
3749042.8,     197.4,     197.4,       0.0);
     ( 446380.7, 3749024.7,     198.0,     198.0,       0.0);         ( 446384.8,
3749025.9,     197.8,     197.8,       0.0);
     ( 446386.7, 3749031.1,     197.6,     197.6,       0.0);         ( 446393.4,
3749033.4,     197.4,     197.4,       0.0);
     ( 446395.0, 3749029.6,     197.4,     197.4,       0.0);         ( 446418.2,
3749054.9,     196.7,     196.7,       0.0);
     ( 446391.4, 3749039.1,     197.3,     197.3,       0.0);         ( 446389.8,
3749042.9,     197.3,     197.3,       0.0);
     ( 446377.4, 3749033.4,     197.8,     197.8,       0.0);         ( 446401.6,
3749042.4,     197.1,     197.1,       0.0);
     ( 446393.0, 3749043.8,     197.2,     197.2,       0.0);         ( 446397.0,
3749034.7,     197.3,     197.3,       0.0);
     ( 446408.8, 3749045.8,     197.0,     197.0,       0.0);         ( 446379.3,
3749029.0,     197.9,     197.9,       0.0);
     ( 446383.1, 3749029.8,     197.8,     197.8,       0.0);         ( 446388.0,
3749027.5,     197.7,     197.7,       0.0);
     ( 446390.0, 3749032.4,     197.5,     197.5,       0.0);         ( 446416.2,
3749030.1,     197.0,     197.0,       0.0);
     ( 446419.4, 3749047.7,     196.8,     196.8,       0.0);         ( 446414.0,
3749053.5,     196.9,     196.9,       0.0);
     ( 446375.2, 3749038.3,     197.7,     197.7,       0.0);         ( 446396.2,
3749045.6,     197.2,     197.2,       0.0);
     ( 446394.4, 3749039.8,     197.3,     197.3,       0.0);         ( 446401.8,
3749031.8,     197.2,     197.2,       0.0);
     ( 446380.7, 3749035.5,     197.7,     197.7,       0.0);         ( 446388.5,
3749037.6,     197.4,     197.4,       0.0);
     ( 446391.6, 3749028.4,     197.6,     197.6,       0.0);         ( 446407.3,
3749035.5,     197.1,     197.1,       0.0);
     ( 446416.2, 3749035.5,     196.9,     196.9,       0.0);         ( 446418.2,
3749044.9,     196.8,     196.8,       0.0);
     ( 446412.0, 3749051.6,     196.9,     196.9,       0.0);         ( 446415.8,
3749044.3,     196.9,     196.9,       0.0);
     ( 446413.8, 3749037.3,     197.0,     197.0,       0.0);         ( 446404.8,
3749033.6,     197.1,     197.1,       0.0);
     ( 446410.7, 3749028.4,     197.0,     197.0,       0.0);         ( 446400.0,
3749035.8,     197.2,     197.2,       0.0);
     ( 446378.0, 3749041.7,     197.5,     197.5,       0.0);         ( 446379.4,
3749039.2,     197.6,     197.6,       0.0);
     ( 446386.3, 3749042.0,     197.4,     197.4,       0.0);         ( 446398.5,
3749040.9,     197.2,     197.2,       0.0);
     ( 446407.3, 3749040.9,     197.0,     197.0,       0.0);         ( 446416.2,
3749040.9,     196.9,     196.9,       0.0);
     ( 446411.8, 3749044.9,     197.0,     197.0,       0.0);         ( 446410.0,
3749048.5,     197.0,     197.0,       0.0);
     ( 446420.7, 3749054.0,     196.7,     196.7,       0.0);         ( 446411.8,
3749040.3,     197.0,     197.0,       0.0);
     ( 446403.5, 3749037.0,     197.1,     197.1,       0.0);         ( 446422.0,
3749035.4,     196.9,     196.9,       0.0);
```

```
     ( 446424.7, 3749054.3,     196.5,     196.5,       0.0);         ( 446382.9,
3749040.9,     197.5,     197.5,       0.0);
     ( 446384.1, 3749037.0,     197.5,     197.5,       0.0);         ( 446399.9,
3749046.4,     197.1,     197.1,       0.0);
     ( 446405.8, 3749047.1,     197.0,     197.0,       0.0);         ( 446416.2,
3749046.2,     196.9,     196.9,       0.0);
     ( 446422.3, 3749050.0,     196.7,     196.7,       0.0);         ( 446416.1,
3749054.2,     196.8,     196.8,       0.0);
     ( 446416.7, 3749051.9,     196.8,     196.8,       0.0);         ( 446416.2,
3749038.4,     196.9,     196.9,       0.0);
     ( 446422.0, 3749040.5,     196.8,     196.8,       0.0);         ( 446420.1,
3749055.9,     196.7,     196.7,       0.0);
```


*** 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 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)

1.54,   3.09,   5.14,   8.23,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

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

Surface file: ..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.SFC
Met Version: 16216
Profile file: ..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.PFL

Surface format: FREE

Profile format: FREE

Surface station no.: 3171 Upper air station no.: 3190
Name: UNKNOWN Name: UNKNOWN

Year: 2012 Year: 2012

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
12	01	01	1	01	-25.6	0.266	-9.000	-9.000	-999.	330.	77.9	0.15	2.40	1.00	2.93	55.	10.1	288.1	2.0
12	01	01	1	02	-26.8	0.277	-9.000	-9.000	-999.	351.	84.7	0.15	2.40	1.00	3.05	55.	10.1	287.0	2.0
12	01	01	1	03	-21.5	0.221	-9.000	-9.000	-999.	250.	53.5	0.15	2.40	1.00	2.45	74.	10.1	284.2	2.0
12	01	01	1	04	-22.0	0.227	-9.000	-9.000	-999.	260.	56.8	0.15	2.40	1.00	2.52	77.	10.1	285.9	2.0
12	01	01	1	05	-20.0	0.206	-9.000	-9.000	-999.	225.	46.8	0.15	2.40	1.00	2.30	80.	10.1	285.4	2.0
12	01	01	1	06	-14.4	0.171	-9.000	-9.000	-999.	170.	32.1	0.15	2.40	1.00	1.93	79.	10.1	287.0	2.0
12	01	01	1	07	-14.9	0.174	-9.000	-9.000	-999.	174.	33.2	0.15	2.40	1.00	1.96	77.	10.1	284.2	2.0
12	01	01	1	08	-11.9	0.169	-9.000	-9.000	-999.	167.	36.1	0.15	2.40	0.53	1.89	77.	10.1	288.1	2.0
12	01	01	1	09	40.4	0.234	0.359	0.006	40.	272.	-28.1	0.15	2.40	0.31	2.10	81.	10.1	289.2	2.0
12	01	01	1	10	112.6	0.246	0.742	0.005	129.	293.	-11.8	0.15	2.40	0.24	1.99	101.	10.1	296.4	2.0

```
 12 01 01   1 11  161.0  0.402  1.188  0.005  369.  611.    -35.6  0.15   2.40
0.21    3.68   78.   10.1  298.8    2.0
 12 01 01   1 12  184.7  0.337  1.516  0.005  668.  473.    -18.4  0.15   2.40
0.20    2.89   68.   10.1  300.4    2.0
 12 01 01   1 13  183.9  0.310  1.809  0.005 1139.  414.    -14.2  0.15   2.40
0.20    2.57   64.   10.1  302.5    2.0
 12 01 01   1 14  156.6  0.374  1.852  0.005 1434.  549.    -29.5  0.15   2.40
0.22    3.37   63.   10.1  303.1    2.0
 12 01 01   1 15  104.3  0.382  1.658  0.005 1546.  567.    -47.2  0.15   2.40
0.25    3.59   62.   10.1  302.5    2.0
 12 01 01   1 16   31.8  0.374  1.123  0.005 1573.  550.   -145.8  0.15   2.40
0.34    3.76   69.   10.1  300.9    2.0
 12 01 01   1 17  -23.3  0.276 -9.000 -9.000 -999.  354.     84.0  0.15   2.40
0.62    3.03   59.   10.1  297.5    2.0
 12 01 01   1 18  -21.5  0.229 -9.000 -9.000 -999.  264.     57.8  0.15   2.40
1.00    2.54   54.   10.1  295.4    2.0
 12 01 01   1 19  -19.3  0.204 -9.000 -9.000 -999.  221.     45.6  0.15   2.40
1.00    2.27   79.   10.1  292.0    2.0
 12 01 01   1 20  -20.7  0.218 -9.000 -9.000 -999.  244.     52.2  0.15   2.40
1.00    2.42   79.   10.1  292.5    2.0
 12 01 01   1 21  -19.7  0.206 -9.000 -9.000 -999.  225.     46.9  0.15   2.40
1.00    2.30   95.   10.1  290.9    2.0
 12 01 01   1 22  -17.6  0.190 -9.000 -9.000 -999.  199.     39.8  0.15   2.40
1.00    2.13   78.   10.1  290.4    2.0
 12 01 01   1 23  -20.3  0.211 -9.000 -9.000 -999.  233.     49.0  0.15   2.40
1.00    2.35   52.   10.1  289.2    2.0
 12 01 01   1 24  -16.4  0.183 -9.000 -9.000 -999.  189.     37.0  0.15   2.40
1.00    2.06   75.   10.1  288.8    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 12 01 01 01   10.1 1   55.    2.93   288.2   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
↑ *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
TOGDSL\15670 TOGDSL.ISC         ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                       ***        15:43:13

                                  PAGE   9
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN  ADJ_U*

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     L0000290    , L0000291
 , L0000292    , L0000293    , L0000294    ,
                 L0000295    , L0000296    , L0000297    , L0000298    , L0000299
 , L0000300    , L0000301    , L0000302    ,
                 L0000303    , L0000304    , L0000305    , L0000306    , L0000307
```

```
 , L0000308    , L0000309    , L0000310    ,
                 L0000311    , L0000312    , L0000313    , L0000314    , L0000315
 , L0000316    , L0000317    ,  . . .      ,

                                          *** DISCRETE CARTESIAN RECEPTOR POINTS
***

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

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        446398.16   3749030.75        0.00980  (13041207)               446412.02
 3749033.12        0.01015  (13041207)
        446418.14   3749034.53        0.01032  (13041207)               446423.79
 3749057.48        0.01268  (13041207)
        446420.60   3749030.38        0.01002  (13041207)               446392.07
 3749046.15        0.01102  (13041207)
        446399.10   3749048.66        0.01135  (13041207)               446382.04
 3749042.82        0.01059  (13041207)
        446380.74   3749024.73        0.00918  (13041207)               446384.77
 3749025.87        0.00930  (13041207)
        446386.66   3749031.14        0.00970  (13041207)               446393.40
 3749033.41        0.00995  (13041207)
        446395.01   3749029.57        0.00968  (13041207)               446418.16
 3749054.95        0.01229  (13041207)
        446391.41   3749039.11        0.01039  (13041207)               446389.75
 3749042.95        0.01070  (13041207)
        446377.36   3749033.44        0.00976  (13041207)               446401.65
 3749042.38        0.01080  (13041207)
        446393.02   3749043.80        0.01082  (13041207)               446397.05
 3749034.69        0.01010  (13041207)
        446408.79   3749045.79        0.01120  (13041207)               446379.31
 3749028.98        0.00945  (13041207)
        446383.06   3749029.83        0.00956  (13041207)               446387.95
 3749027.55        0.00945  (13041207)
        446389.98   3749032.39        0.00983  (13041207)               446416.22
 3749030.11        0.00995  (13041207)
        446419.40   3749047.72        0.01154  (13041207)               446413.99
 3749053.46        0.01206  (13041207)
        446375.19   3749038.32        0.01012  (13041207)               446396.25
 3749045.62        0.01103  (13041207)
        446394.44   3749039.79        0.01048  (13041207)               446401.75
 3749031.82        0.00993  (13041207)
        446380.74   3749035.49        0.00996  (13041207)               446388.47
 3749037.63        0.01023  (13041207)
        446391.64   3749028.38        0.00955  (13041207)               446407.35
 3749035.49        0.01028  (13041207)
```

```
       446416.22   3749035.49        0.01038  (13041207)               446418.22
 3749044.94        0.01125  (13041207)
       446412.00   3749051.65        0.01183  (13041207)               446415.77
 3749044.35        0.01116  (13041207)
       446413.80   3749037.32        0.01051  (13041207)               446404.78
 3749033.64        0.01010  (13041207)
       446410.66   3749028.36        0.00977  (13041207)               446400.04
 3749035.78        0.01022  (13041207)
       446378.02   3749041.71        0.01044  (13041207)               446379.40
 3749039.20        0.01024  (13041207)
       446386.33   3749042.01        0.01057  (13041207)               446398.48
 3749040.87        0.01063  (13041207)
       446407.35   3749040.87        0.01074  (13041207)               446416.22
 3749040.87        0.01085  (13041207)
       446411.77   3749044.90        0.01116  (13041207)               446409.96
 3749048.55        0.01149  (13041207)
       446420.71   3749053.97        0.01222  (13041207)               446411.76
 3749040.28        0.01074  (13041207)
       446403.50   3749037.03        0.01036  (13041207)               446421.99
 3749035.45        0.01044  (13041207)
       446424.71   3749054.30        0.01233  (13041207)               446382.91
 3749040.90        0.01043  (13041207)
       446384.08   3749037.05        0.01013  (13041207)               446399.90
 3749046.40        0.01115  (13041207)
       446405.79   3749047.06        0.01129  (13041207)               446416.22
 3749046.25        0.01135  (13041207)
       446422.29   3749050.01        0.01182  (13041207)               446416.08
 3749054.20        0.01217  (13041207)
       446416.69   3749051.94        0.01194  (13041207)               446416.16
 3749038.36        0.01063  (13041207)
       446421.97   3749040.46        0.01088  (13041207)               446420.08
 3749055.93        0.01244  (13041207)
 *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
TOGDSL\15670 TOGDSL.ISC         ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                        ***        15:43:13

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

                              *** THE   1ST HIGHEST  8-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     L0000290    , L0000291
 , L0000292    , L0000293    , L0000294    ,
                 L0000295    , L0000296    , L0000297    , L0000298    , L0000299
 , L0000300    , L0000301    , L0000302    ,
                 L0000303    , L0000304    , L0000305    , L0000306    , L0000307
 , L0000308    , L0000309    , L0000310    ,
                 L0000311    , L0000312    , L0000313    , L0000314    , L0000315
 , L0000316    , L0000317    ,  . . .      ,
```

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

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

X-COORD (M)	Y-COORD (M)	CONC (YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC (YYMMDDHH)
446398.16	3749030.75	0.00777c (12121708)	446412.02	3749033.12	0.00807c (12121708)
446418.14	3749034.53	0.00823c (12121708)	446423.79	3749057.48	0.00994c (12121708)
446420.60	3749030.38	0.00802c (12121708)	446392.07	3749046.15	0.00861c (12121708)
446399.10	3749048.66	0.00889c (12121708)	446382.04	3749042.82	0.00826c (12121708)
446380.74	3749024.73	0.00725c (12121708)	446384.77	3749025.87	0.00736c (12121708)
446386.66	3749031.14	0.00765c (12121708)	446393.40	3749033.41	0.00786c (12121708)
446395.01	3749029.57	0.00767c (12121708)	446418.16	3749054.95	0.00964c (12121708)
446391.41	3749039.11	0.00816c (12121708)	446389.75	3749042.95	0.00838c (12121708)
446377.36	3749033.44	0.00766c (12121708)	446401.65	3749042.38	0.00850c (12121708)
446393.02	3749043.80	0.00847c (12121708)	446397.05	3749034.69	0.00798c (12121708)
446408.79	3749045.79	0.00882c (12121708)	446379.31	3749028.98	0.00745c (12121708)
446383.06	3749029.83	0.00754c (12121708)	446387.95	3749027.55	0.00748c (12121708)
446389.98	3749032.39	0.00776c (12121708)	446416.22	3749030.11	0.00795c (12121708)
446419.40	3749047.72	0.00911c (12121708)	446413.99	3749053.46	0.00946c (12121708)
446375.19	3749038.32	0.00790c (12121708)	446396.25	3749045.62	0.00864c (12121708)
446394.44	3749039.79	0.00824c (12121708)	446401.75	3749031.82	0.00787c (12121708)
446380.74	3749035.49	0.00781c (12121708)	446388.47	3749037.63	0.00804c (12121708)
446391.64	3749028.38	0.00757c (12121708)	446407.35	3749035.49	0.00815c (12121708)
446416.22	3749035.49	0.00826c (12121708)	446418.22	3749044.94	0.00890c (12121708)
446412.00	3749051.65	0.00929c (12121708)	446415.77		

```
 3749044.35         0.00882c (12121708)
       446413.80   3749037.32        0.00834c (12121708)                446404.78
 3749033.64         0.00801c (12121708)
       446410.66   3749028.36        0.00779c (12121708)                446400.04
 3749035.78         0.00808c (12121708)
       446378.02   3749041.71        0.00814c (12121708)                446379.40
 3749039.20         0.00801c (12121708)
       446386.33   3749042.01        0.00827c (12121708)                446398.48
 3749040.87         0.00836c (12121708)
       446407.35   3749040.87        0.00848c (12121708)                446416.22
 3749040.87         0.00860c (12121708)
       446411.77   3749044.90        0.00880c (12121708)                446409.96
 3749048.55         0.00903c (12121708)
       446420.71   3749053.97        0.00960c (12121708)                446411.76
 3749040.28         0.00850c (12121708)
       446403.50   3749037.03        0.00819c (12121708)                446421.99
 3749035.45         0.00833c (12121708)
       446424.71   3749054.30        0.00969c (12121708)                446382.91
 3749040.90         0.00816c (12121708)
       446384.08   3749037.05        0.00795c (12121708)                446399.90
 3749046.40         0.00874c (12121708)
       446405.79   3749047.06        0.00887c (12121708)                446416.22
 3749046.25         0.00896c (12121708)
       446422.29   3749050.01        0.00932c (12121708)                446416.08
 3749054.20         0.00955c (12121708)
       446416.69   3749051.94        0.00938c (12121708)                446416.16
 3749038.36         0.00844c (12121708)
       446421.97   3749040.46        0.00865c (12121708)                446420.08
 3749055.93         0.00975c (12121708)
 *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
TOGDSL\15670 TOGDSL.ISC         ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                        ***        15:43:13

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

                                                 *** THE SUMMARY OF HIGHEST  1-HR
RESULTS ***


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

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

ALL   HIGH   1ST HIGH VALUE IS   0.01268 ON 13041207: AT (446423.79,
3749057.48,   196.50,   196.50,   0.00) DC

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

 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

                                                *** THE SUMMARY OF HIGHEST 8-HR
RESULTS ***

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

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

ALL   HIGH   1ST HIGH VALUE IS   0.00994c ON 12121708: AT (446423.79,
3749057.48,   196.50,   196.50,   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            2 Warning Message(s)
 A Total of         1638 Informational Message(s)

 A Total of        43848 Hours Were Processed

 A Total of         1039 Calm Hours Identified

 A Total of          599 Missing Hours Identified (  1.37 Percent)


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


    ********   WARNING MESSAGES   ********
 ME W186     225       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187     225       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


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

**
**************************************
**
** AERMOD INPUT PRODUCED BY:
** AERMOD VIEW VER. 12.0.0
** LAKES ENVIRONMENTAL SOFTWARE INC.
** DATE: 1/19/2024
** FILE: C:\LAKES\AERMOD VIEW\15670 HRA\15670 TOGGAS\15670 TOGGAS.ADI
**
**************************************
**
**
**************************************
** AERMOD CONTROL PATHWAY
**************************************
**
**
CO STARTING
   TITLEONE C:\LAKES\AERMOD VIEW\15670 HRA\15670 TOGGAS\15670 TOGGAS.ISC
   MODELOPT DFAULT CONC
   AVERTIME 1 8 ANNUAL
   URBANOPT 2189641
   POLLUTID TOGGAS
   RUNORNOT RUN
```

```
   ERRORFIL "15670 TOGGAS.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 91 EB
** PREFIX
** LENGTH OF SIDE = 32.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.000292
** VERTICAL DIMENSION = 6.99
** SZINIT = 3.25
** NODES = 2
** 446149.796, 3749188.513, 197.76, 3.49, 14.88
** 447179.945, 3749035.478, 191.42, 3.49, 14.88
** ------------------------------------------------------------------
   LOCATION L0000290     VOLUME   446165.623 3749186.162 196.79
   LOCATION L0000291     VOLUME   446197.275 3749181.460 196.83
   LOCATION L0000292     VOLUME   446228.928 3749176.757 196.01
   LOCATION L0000293     VOLUME   446260.581 3749172.055 196.14
   LOCATION L0000294     VOLUME   446292.233 3749167.353 196.30
   LOCATION L0000295     VOLUME   446323.886 3749162.651 196.38
   LOCATION L0000296     VOLUME   446355.539 3749157.949 196.00
   LOCATION L0000297     VOLUME   446387.191 3749153.246 195.74
   LOCATION L0000298     VOLUME   446418.844 3749148.544 195.00
   LOCATION L0000299     VOLUME   446450.497 3749143.842 195.00
   LOCATION L0000300     VOLUME   446482.149 3749139.140 195.00
   LOCATION L0000301     VOLUME   446513.802 3749134.438 195.00
   LOCATION L0000302     VOLUME   446545.454 3749129.735 195.00
   LOCATION L0000303     VOLUME   446577.107 3749125.033 195.00
   LOCATION L0000304     VOLUME   446608.760 3749120.331 195.00
   LOCATION L0000305     VOLUME   446640.412 3749115.629 195.00
   LOCATION L0000306     VOLUME   446672.065 3749110.927 195.00
   LOCATION L0000307     VOLUME   446703.718 3749106.224 195.00
   LOCATION L0000308     VOLUME   446735.370 3749101.522 195.00
   LOCATION L0000309     VOLUME   446767.023 3749096.820 195.33
   LOCATION L0000310     VOLUME   446798.675 3749092.118 195.20
   LOCATION L0000311     VOLUME   446830.328 3749087.416 195.00
   LOCATION L0000312     VOLUME   446861.981 3749082.713 195.00
   LOCATION L0000313     VOLUME   446893.633 3749078.011 195.00
   LOCATION L0000314     VOLUME   446925.286 3749073.309 194.89
```

```
   LOCATION L0000315     VOLUME   446956.939 3749068.607 194.69
   LOCATION L0000316     VOLUME   446988.591 3749063.905 195.08
   LOCATION L0000317     VOLUME   447020.244 3749059.202 195.06
   LOCATION L0000318     VOLUME   447051.897 3749054.500 195.00
   LOCATION L0000319     VOLUME   447083.549 3749049.798 194.90
   LOCATION L0000320     VOLUME   447115.202 3749045.096 194.63
   LOCATION L0000321     VOLUME   447146.854 3749040.394 193.31
   LOCATION L0000322     VOLUME   447178.507 3749035.691 191.48
** END OF LINE VOLUME SOURCE ID = SLINE1
** ----------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE2
** DESCRSRC 91 WB
** PREFIX
** LENGTH OF SIDE = 32.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.00043
** VERTICAL DIMENSION = 6.99
** SZINIT = 3.25
** NODES = 2
** 446153.936, 3749222.959, 196.45, 3.49, 14.88
** 447172.188, 3749092.095, 193.64, 3.49, 14.88
** ----------------------------------------------------------------
   LOCATION L0000323     VOLUME   446169.806 3749220.920 195.99
   LOCATION L0000324     VOLUME   446201.545 3749216.841 195.65
   LOCATION L0000325     VOLUME   446233.284 3749212.761 195.68
   LOCATION L0000326     VOLUME   446265.023 3749208.682 194.98
   LOCATION L0000327     VOLUME   446296.762 3749204.603 195.05
   LOCATION L0000328     VOLUME   446328.501 3749200.524 195.19
   LOCATION L0000329     VOLUME   446360.240 3749196.445 195.33
   LOCATION L0000330     VOLUME   446391.979 3749192.366 195.04
   LOCATION L0000331     VOLUME   446423.718 3749188.287 194.60
   LOCATION L0000332     VOLUME   446455.457 3749184.208 194.59
   LOCATION L0000333     VOLUME   446487.196 3749180.129 194.66
   LOCATION L0000334     VOLUME   446518.935 3749176.050 195.00
   LOCATION L0000335     VOLUME   446550.673 3749171.971 195.00
   LOCATION L0000336     VOLUME   446582.412 3749167.892 194.45
   LOCATION L0000337     VOLUME   446614.151 3749163.813 194.41
   LOCATION L0000338     VOLUME   446645.890 3749159.734 194.55
   LOCATION L0000339     VOLUME   446677.629 3749155.655 194.39
   LOCATION L0000340     VOLUME   446709.368 3749151.576 194.64
   LOCATION L0000341     VOLUME   446741.107 3749147.497 194.87
   LOCATION L0000342     VOLUME   446772.846 3749143.418 194.99
   LOCATION L0000343     VOLUME   446804.585 3749139.339 194.29
   LOCATION L0000344     VOLUME   446836.324 3749135.260 193.44
   LOCATION L0000345     VOLUME   446868.063 3749131.181 192.72
   LOCATION L0000346     VOLUME   446899.802 3749127.102 192.42
   LOCATION L0000347     VOLUME   446931.541 3749123.023 192.55
   LOCATION L0000348     VOLUME   446963.280 3749118.944 192.64
   LOCATION L0000349     VOLUME   446995.019 3749114.865 193.61
```

```
   LOCATION L0000350     VOLUME   447026.758 3749110.786 193.78
   LOCATION L0000351     VOLUME   447058.497 3749106.707 193.20
   LOCATION L0000352     VOLUME   447090.236 3749102.627 193.36
   LOCATION L0000353     VOLUME   447121.975 3749098.548 193.01
   LOCATION L0000354     VOLUME   447153.714 3749094.469 193.76
** END OF LINE VOLUME SOURCE ID = SLINE2
** SOURCE PARAMETERS **
** LINE VOLUME SOURCE ID = SLINE1
   SRCPARAM L0000290     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000291     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000292     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000293     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000294     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000295     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000296     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000297     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000298     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000299     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000300     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000301     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000302     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000303     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000304     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000305     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000306     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000307     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000308     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000309     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000310     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000311     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000312     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000313     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000314     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000315     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000316     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000317     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000318     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000319     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000320     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000321     0.000008848      3.49     14.88      3.25
   SRCPARAM L0000322     0.000008848      3.49     14.88      3.25
** ----------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE2
   SRCPARAM L0000323     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000324     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000325     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000326     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000327     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000328     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000329     0.0000134375      3.49     14.88      3.25
```

```
   SRCPARAM L0000330     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000331     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000332     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000333     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000334     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000335     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000336     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000337     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000338     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000339     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000340     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000341     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000342     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000343     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000344     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000345     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000346     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000347     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000348     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000349     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000350     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000351     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000352     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000353     0.0000134375      3.49     14.88      3.25
   SRCPARAM L0000354     0.0000134375      3.49     14.88      3.25
** ------------------------------------------------------------------
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD RECEPTOR PATHWAY
**************************************
**
**
RE STARTING
   INCLUDED "15670 TOGGAS.ROU"
RE FINISHED
**
**************************************
** AERMOD METEOROLOGY PATHWAY
**************************************
**
**
ME STARTING
   SURFFILE "..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.SFC"
   PROFFILE "..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.PFL"
   SURFDATA 3171 2012
   UAIRDATA 3190 2012
   PROFBASE 245.0 METERS
```

```
ME FINISHED
**
**************************************
** AERMOD OUTPUT PATHWAY
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
   RECTABLE 8 1ST
** AUTO-GENERATED PLOTFILES
   PLOTFILE   1 ALL 1ST "15670 TOGGAS.AD\01H1GALL.PLT" 31
   PLOTFILE   8 ALL 1ST "15670 TOGGAS.AD\08H1GALL.PLT" 32
   PLOTFILE   ANNUAL ALL "15670 TOGGAS.AD\AN00GALL.PLT" 33
   SUMMFILE "15670 TOGGAS.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     225       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187     225       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


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

↟ *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
TOGGAS\15670 TOGGAS.ISC         ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                         ***        14:43:19

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

```
                                                    ***     MODEL SETUP OPTIONS SUMMARY
 ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -

 ** Model Options Selected:
      * Model Uses Regulatory DEFAULT Options
      * Model Is Setup For Calculation of Average CONCentration Values.
      * NO GAS DEPOSITION Data Provided.
      * NO PARTICLE DEPOSITION Data Provided.
      * Model Uses NO DRY DEPLETION. DDPLETE  =  F
      * Model Uses NO WET DEPLETION. WETDPLT  =  F
      * Stack-tip Downwash.
      * Model Accounts for ELEVated Terrain Effects.
      * Use Calms Processing Routine.
      * Use Missing Data Processing Routine.
      * No Exponential Decay.
      * Model Uses URBAN Dispersion Algorithm for the SBL for    65 Source(s),
        for Total of    1 Urban Area(s):
   Urban Population =   2189641.0 ;  Urban Roughness Length =  1.000 m
      * Urban Roughness Length of 1.0 Meter Used.
      * ADJ_U*   - Use ADJ_U* option for SBL in AERMET
      * CCVR_Sub - Meteorological data includes CCVR substitutions
      * TEMP_Sub - Meteorological data includes TEMP substitutions
      * Model Assumes No FLAGPOLE Receptor Heights.
      * The User Specified a Pollutant Type of: TOGGAS

 **Model Calculates  2 Short Term Average(s) of:   1-HR   8-HR
     and Calculates ANNUAL Averages

 **This Run Includes:     65 Source(s);       1 Source Group(s); and      68
Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                 and:     65 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)
                 and:      0 SWPOINT source(s)


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

 **The AERMET Input Meteorological Data Version Date:  16216

 **Output Options Selected:
          Model Outputs Tables of ANNUAL Averages by Receptor
```

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

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

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =   245.00 ;  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:   15670 TOGGAS.ERR

 **File for Summary of Results:   15670 TOGGAS.SUM

 *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
TOGGAS\15670 TOGGAS.ISC         ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                        ***        14:43:19

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


                                                *** VOLUME SOURCE DATA ***

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

L0000290	0	0.88480E-05	446165.6	3749186.2	196.8	3.49	14.88	
3.25	YES		NO					
L0000291	0	0.88480E-05	446197.3	3749181.5	196.8	3.49	14.88	
3.25	YES		NO					
L0000292	0	0.88480E-05	446228.9	3749176.8	196.0	3.49	14.88	
3.25	YES		NO					
L0000293	0	0.88480E-05	446260.6	3749172.1	196.1	3.49	14.88	
3.25	YES		NO					
L0000294	0	0.88480E-05	446292.2	3749167.4	196.3	3.49	14.88	
3.25	YES		NO					
L0000295	0	0.88480E-05	446323.9	3749162.7	196.4	3.49	14.88	
3.25	YES		NO					
L0000296	0	0.88480E-05	446355.5	3749157.9	196.0	3.49	14.88	
3.25	YES		NO					
L0000297	0	0.88480E-05	446387.2	3749153.2	195.7	3.49	14.88	
3.25	YES		NO					
L0000298	0	0.88480E-05	446418.8	3749148.5	195.0	3.49	14.88	
3.25	YES		NO					
L0000299	0	0.88480E-05	446450.5	3749143.8	195.0	3.49	14.88	
3.25	YES		NO					
L0000300	0	0.88480E-05	446482.1	3749139.1	195.0	3.49	14.88	
3.25	YES		NO					
L0000301	0	0.88480E-05	446513.8	3749134.4	195.0	3.49	14.88	
3.25	YES		NO					
L0000302	0	0.88480E-05	446545.5	3749129.7	195.0	3.49	14.88	
3.25	YES		NO					
L0000303	0	0.88480E-05	446577.1	3749125.0	195.0	3.49	14.88	
3.25	YES		NO					
L0000304	0	0.88480E-05	446608.8	3749120.3	195.0	3.49	14.88	
3.25	YES		NO					
L0000305	0	0.88480E-05	446640.4	3749115.6	195.0	3.49	14.88	
3.25	YES		NO					
L0000306	0	0.88480E-05	446672.1	3749110.9	195.0	3.49	14.88	
3.25	YES		NO					
L0000307	0	0.88480E-05	446703.7	3749106.2	195.0	3.49	14.88	
3.25	YES		NO					
L0000308	0	0.88480E-05	446735.4	3749101.5	195.0	3.49	14.88	
3.25	YES		NO					
L0000309	0	0.88480E-05	446767.0	3749096.8	195.3	3.49	14.88	
3.25	YES		NO					
L0000310	0	0.88480E-05	446798.7	3749092.1	195.2	3.49	14.88	
3.25	YES		NO					
L0000311	0	0.88480E-05	446830.3	3749087.4	195.0	3.49	14.88	
3.25	YES		NO					
L0000312	0	0.88480E-05	446862.0	3749082.7	195.0	3.49	14.88	
3.25	YES		NO					
L0000313	0	0.88480E-05	446893.6	3749078.0	195.0	3.49	14.88	
3.25	YES		NO					
L0000314	0	0.88480E-05	446925.3	3749073.3	194.9	3.49	14.88	
3.25	YES		NO					

```
 L0000315         0   0.88480E-05  446956.9 3749068.6   194.7     3.49    14.88
3.25     YES                    NO
 L0000316         0   0.88480E-05  446988.6 3749063.9   195.1     3.49    14.88
3.25     YES                    NO
 L0000317         0   0.88480E-05  447020.2 3749059.2   195.1     3.49    14.88
3.25     YES                    NO
 L0000318         0   0.88480E-05  447051.9 3749054.5   195.0     3.49    14.88
3.25     YES                    NO
 L0000319         0   0.88480E-05  447083.5 3749049.8   194.9     3.49    14.88
3.25     YES                    NO
 L0000320         0   0.88480E-05  447115.2 3749045.1   194.6     3.49    14.88
3.25     YES                    NO
 L0000321         0   0.88480E-05  447146.9 3749040.4   193.3     3.49    14.88
3.25     YES                    NO
 L0000322         0   0.88480E-05  447178.5 3749035.7   191.5     3.49    14.88
3.25     YES                    NO
 L0000323         0   0.13438E-04  446169.8 3749220.9   196.0     3.49    14.88
3.25     YES                    NO
 L0000324         0   0.13438E-04  446201.5 3749216.8   195.7     3.49    14.88
3.25     YES                    NO
 L0000325         0   0.13438E-04  446233.3 3749212.8   195.7     3.49    14.88
3.25     YES                    NO
 L0000326         0   0.13438E-04  446265.0 3749208.7   195.0     3.49    14.88
3.25     YES                    NO
 L0000327         0   0.13438E-04  446296.8 3749204.6   195.1     3.49    14.88
3.25     YES                    NO
 L0000328         0   0.13438E-04  446328.5 3749200.5   195.2     3.49    14.88
3.25     YES                    NO
 L0000329         0   0.13438E-04  446360.2 3749196.4   195.3     3.49    14.88
3.25     YES                    NO
♠ *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
TOGGAS\15670 TOGGAS.ISC         ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                       ***        14:43:19

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


                                                    *** VOLUME SOURCE DATA ***

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

L0000330	0	0.13438E-04	446392.0	3749192.4	195.0	3.49	14.88	
3.25	YES		NO					
L0000331	0	0.13438E-04	446423.7	3749188.3	194.6	3.49	14.88	
3.25	YES		NO					
L0000332	0	0.13438E-04	446455.5	3749184.2	194.6	3.49	14.88	
3.25	YES		NO					
L0000333	0	0.13438E-04	446487.2	3749180.1	194.7	3.49	14.88	
3.25	YES		NO					
L0000334	0	0.13438E-04	446518.9	3749176.0	195.0	3.49	14.88	
3.25	YES		NO					
L0000335	0	0.13438E-04	446550.7	3749172.0	195.0	3.49	14.88	
3.25	YES		NO					
L0000336	0	0.13438E-04	446582.4	3749167.9	194.5	3.49	14.88	
3.25	YES		NO					
L0000337	0	0.13438E-04	446614.2	3749163.8	194.4	3.49	14.88	
3.25	YES		NO					
L0000338	0	0.13438E-04	446645.9	3749159.7	194.6	3.49	14.88	
3.25	YES		NO					
L0000339	0	0.13438E-04	446677.6	3749155.7	194.4	3.49	14.88	
3.25	YES		NO					
L0000340	0	0.13438E-04	446709.4	3749151.6	194.6	3.49	14.88	
3.25	YES		NO					
L0000341	0	0.13438E-04	446741.1	3749147.5	194.9	3.49	14.88	
3.25	YES		NO					
L0000342	0	0.13438E-04	446772.8	3749143.4	195.0	3.49	14.88	
3.25	YES		NO					
L0000343	0	0.13438E-04	446804.6	3749139.3	194.3	3.49	14.88	
3.25	YES		NO					
L0000344	0	0.13438E-04	446836.3	3749135.3	193.4	3.49	14.88	
3.25	YES		NO					
L0000345	0	0.13438E-04	446868.1	3749131.2	192.7	3.49	14.88	
3.25	YES		NO					
L0000346	0	0.13438E-04	446899.8	3749127.1	192.4	3.49	14.88	
3.25	YES		NO					
L0000347	0	0.13438E-04	446931.5	3749123.0	192.6	3.49	14.88	
3.25	YES		NO					
L0000348	0	0.13438E-04	446963.3	3749118.9	192.6	3.49	14.88	
3.25	YES		NO					
L0000349	0	0.13438E-04	446995.0	3749114.9	193.6	3.49	14.88	
3.25	YES		NO					
L0000350	0	0.13438E-04	447026.8	3749110.8	193.8	3.49	14.88	
3.25	YES		NO					
L0000351	0	0.13438E-04	447058.5	3749106.7	193.2	3.49	14.88	
3.25	YES		NO					
L0000352	0	0.13438E-04	447090.2	3749102.6	193.4	3.49	14.88	
3.25	YES		NO					
L0000353	0	0.13438E-04	447122.0	3749098.5	193.0	3.49	14.88	
3.25	YES		NO					
L0000354	0	0.13438E-04	447153.7	3749094.5	193.8	3.49	14.88	
3.25	YES		NO					

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ALL	L0000290 , L0000291 , L0000292 , L0000293 , L0000294 , L0000295 , L0000296 , L0000297 , L0000298 , L0000299 , L0000300 , L0000301 , L0000302 , L0000303 , L0000304 , L0000305 , L0000306 , L0000307 , L0000308 , L0000309 , L0000310 , L0000311 , L0000312 , L0000313 , L0000314 , L0000315 , L0000316 , L0000317 , L0000318 , L0000319 , L0000320 , L0000321 , L0000322 , L0000323 , L0000324 , L0000325 , L0000326 , L0000327 , L0000328 , L0000329 , L0000330 , L0000331 , L0000332 , L0000333 , L0000334 , L0000335 , L0000336 , L0000337 , L0000338 , L0000339 , L0000340 , L0000341 , L0000342 , L0000343 , L0000344 , L0000345 , L0000346 , L0000347 , L0000348 , L0000349 , L0000350 , L0000351 , L0000352 , L0000353 , L0000354 ,

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

URBAN ID	URBAN POP	SOURCE IDs
	2189641.	L0000290 , L0000291 , L0000292 , L0000293 , L0000294 , L0000295 , L0000296 , L0000297 ,
		L0000298 , L0000299 , L0000300 , L0000301 , L0000302 , L0000303 , L0000304 , L0000305 ,
		L0000306 , L0000307 , L0000308 , L0000309 , L0000310 , L0000311 , L0000312 , L0000313 ,
		L0000314 , L0000315 , L0000316 , L0000317 , L0000318 , L0000319 , L0000320 , L0000321 ,
		L0000322 , L0000323 , L0000324 , L0000325 , L0000326 , L0000327 , L0000328 , L0000329 ,
		L0000330 , L0000331 , L0000332 , L0000333 , L0000334 , L0000335 , L0000336 , L0000337 ,
		L0000338 , L0000339 , L0000340 , L0000341 , L0000342 , L0000343 , L0000344 , L0000345 ,
		L0000346 , L0000347 , L0000348 , L0000349 , L0000350 , L0000351 , L0000352 , L0000353 ,
		L0000354 ,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

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

(446398.2, 3749030.8, 197.3, 197.3, 0.0); (446412.0, 3749033.1, 197.0, 197.0, 0.0);
(446418.1, 3749034.5, 196.9, 196.9, 0.0); (446423.8, 3749057.5, 196.5, 196.5, 0.0);
(446420.6, 3749030.4, 197.0, 197.0, 0.0); (446392.1,

```
3749046.1,     197.2,     197.2,       0.0);
     ( 446399.1, 3749048.7,     197.1,     197.1,       0.0);         ( 446382.0,
3749042.8,     197.4,     197.4,       0.0);
     ( 446380.7, 3749024.7,     198.0,     198.0,       0.0);         ( 446384.8,
3749025.9,     197.8,     197.8,       0.0);
     ( 446386.7, 3749031.1,     197.6,     197.6,       0.0);         ( 446393.4,
3749033.4,     197.4,     197.4,       0.0);
     ( 446395.0, 3749029.6,     197.4,     197.4,       0.0);         ( 446418.2,
3749054.9,     196.7,     196.7,       0.0);
     ( 446391.4, 3749039.1,     197.3,     197.3,       0.0);         ( 446389.8,
3749042.9,     197.3,     197.3,       0.0);
     ( 446377.4, 3749033.4,     197.8,     197.8,       0.0);         ( 446401.6,
3749042.4,     197.1,     197.1,       0.0);
     ( 446393.0, 3749043.8,     197.2,     197.2,       0.0);         ( 446397.0,
3749034.7,     197.3,     197.3,       0.0);
     ( 446408.8, 3749045.8,     197.0,     197.0,       0.0);         ( 446379.3,
3749029.0,     197.9,     197.9,       0.0);
     ( 446383.1, 3749029.8,     197.8,     197.8,       0.0);         ( 446388.0,
3749027.5,     197.7,     197.7,       0.0);
     ( 446390.0, 3749032.4,     197.5,     197.5,       0.0);         ( 446416.2,
3749030.1,     197.0,     197.0,       0.0);
     ( 446419.4, 3749047.7,     196.8,     196.8,       0.0);         ( 446414.0,
3749053.5,     196.9,     196.9,       0.0);
     ( 446375.2, 3749038.3,     197.7,     197.7,       0.0);         ( 446396.2,
3749045.6,     197.2,     197.2,       0.0);
     ( 446394.4, 3749039.8,     197.3,     197.3,       0.0);         ( 446401.8,
3749031.8,     197.2,     197.2,       0.0);
     ( 446380.7, 3749035.5,     197.7,     197.7,       0.0);         ( 446388.5,
3749037.6,     197.4,     197.4,       0.0);
     ( 446391.6, 3749028.4,     197.6,     197.6,       0.0);         ( 446407.3,
3749035.5,     197.1,     197.1,       0.0);
     ( 446416.2, 3749035.5,     196.9,     196.9,       0.0);         ( 446418.2,
3749044.9,     196.8,     196.8,       0.0);
     ( 446412.0, 3749051.6,     196.9,     196.9,       0.0);         ( 446415.8,
3749044.3,     196.9,     196.9,       0.0);
     ( 446413.8, 3749037.3,     197.0,     197.0,       0.0);         ( 446404.8,
3749033.6,     197.1,     197.1,       0.0);
     ( 446410.7, 3749028.4,     197.0,     197.0,       0.0);         ( 446400.0,
3749035.8,     197.2,     197.2,       0.0);
     ( 446378.0, 3749041.7,     197.5,     197.5,       0.0);         ( 446379.4,
3749039.2,     197.6,     197.6,       0.0);
     ( 446386.3, 3749042.0,     197.4,     197.4,       0.0);         ( 446398.5,
3749040.9,     197.2,     197.2,       0.0);
     ( 446407.3, 3749040.9,     197.0,     197.0,       0.0);         ( 446416.2,
3749040.9,     196.9,     196.9,       0.0);
     ( 446411.8, 3749044.9,     197.0,     197.0,       0.0);         ( 446410.0,
3749048.5,     197.0,     197.0,       0.0);
     ( 446420.7, 3749054.0,     196.7,     196.7,       0.0);         ( 446411.8,
3749040.3,     197.0,     197.0,       0.0);
     ( 446403.5, 3749037.0,     197.1,     197.1,       0.0);         ( 446422.0,
```

```
3749035.4,     196.9,     196.9,       0.0);
     ( 446424.7, 3749054.3,     196.5,     196.5,       0.0);         ( 446382.9,
3749040.9,     197.5,     197.5,       0.0);
     ( 446384.1, 3749037.0,     197.5,     197.5,       0.0);         ( 446399.9,
3749046.4,     197.1,     197.1,       0.0);
     ( 446405.8, 3749047.1,     197.0,     197.0,       0.0);         ( 446416.2,
3749046.2,     196.9,     196.9,       0.0);
     ( 446422.3, 3749050.0,     196.7,     196.7,       0.0);         ( 446416.1,
3749054.2,     196.8,     196.8,       0.0);
     ( 446416.7, 3749051.9,     196.8,     196.8,       0.0);         ( 446416.2,
3749038.4,     196.9,     196.9,       0.0);
     ( 446422.0, 3749040.5,     196.8,     196.8,       0.0);         ( 446420.1,
3749055.9,     196.7,     196.7,       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 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)
```

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

   Surface file: ..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.SFC
                 Met Version: 16216
   Profile file: ..\..\15669 HRA\KRAL_V9_ADJU\KRAL_V9.PFL

   Surface format: FREE

   Profile format: FREE

   Surface station no.:   3171   Upper air station no.:   3190
                 Name: UNKNOWN   Name: UNKNOWN

                 Year: 2012   Year: 2012

 First 24 hours of scalar data
 YR MO DY JDY HR   H0   U*   W* DT/DZ ZICNV ZIMCH M-O LEN   Z0 BOWEN
ALBEDO REF WS   WD   HT REF TA   HT
- -
- - - - - - - - - - - - - - - - - - -
 12 01 01   1 01 -25.6 0.266 -9.000 -9.000 -999. 330.   77.9 0.15   2.40
1.00   2.93   55.   10.1 288.1   2.0
 12 01 01   1 02 -26.8 0.277 -9.000 -9.000 -999. 351.   84.7 0.15   2.40
1.00   3.05   55.   10.1 287.0   2.0
 12 01 01   1 03 -21.5 0.221 -9.000 -9.000 -999. 250.   53.5 0.15   2.40
1.00   2.45   74.   10.1 284.2   2.0
 12 01 01   1 04 -22.0 0.227 -9.000 -9.000 -999. 260.   56.8 0.15   2.40
1.00   2.52   77.   10.1 285.9   2.0
 12 01 01   1 05 -20.0 0.206 -9.000 -9.000 -999. 225.   46.8 0.15   2.40
1.00   2.30   80.   10.1 285.4   2.0
 12 01 01   1 06 -14.4 0.171 -9.000 -9.000 -999. 170.   32.1 0.15   2.40
1.00   1.93   79.   10.1 287.0   2.0
 12 01 01   1 07 -14.9 0.174 -9.000 -9.000 -999. 174.   33.2 0.15   2.40
1.00   1.96   77.   10.1 284.2   2.0
 12 01 01   1 08 -11.9 0.169 -9.000 -9.000 -999. 167.   36.1 0.15   2.40
0.53   1.89   77.   10.1 288.1   2.0
 12 01 01   1 09   40.4 0.234 0.359 0.006   40. 272.   -28.1 0.15   2.40
0.31   2.10   81.   10.1 289.2   2.0
 12 01 01   1 10 112.6 0.246 0.742 0.005 129. 293.   -11.8 0.15   2.40

```
0.24    1.99  101.   10.1  296.4    2.0
 12 01 01   1 11  161.0  0.402  1.188  0.005  369.  611.    -35.6  0.15   2.40
0.21    3.68   78.   10.1  298.8    2.0
 12 01 01   1 12  184.7  0.337  1.516  0.005  668.  473.    -18.4  0.15   2.40
0.20    2.89   68.   10.1  300.4    2.0
 12 01 01   1 13  183.9  0.310  1.809  0.005 1139.  414.    -14.2  0.15   2.40
0.20    2.57   64.   10.1  302.5    2.0
 12 01 01   1 14  156.6  0.374  1.852  0.005 1434.  549.    -29.5  0.15   2.40
0.22    3.37   63.   10.1  303.1    2.0
 12 01 01   1 15  104.3  0.382  1.658  0.005 1546.  567.    -47.2  0.15   2.40
0.25    3.59   62.   10.1  302.5    2.0
 12 01 01   1 16   31.8  0.374  1.123  0.005 1573.  550.   -145.8  0.15   2.40
0.34    3.76   69.   10.1  300.9    2.0
 12 01 01   1 17  -23.3  0.276 -9.000 -9.000 -999.  354.     84.0  0.15   2.40
0.62    3.03   59.   10.1  297.5    2.0
 12 01 01   1 18  -21.5  0.229 -9.000 -9.000 -999.  264.     57.8  0.15   2.40
1.00    2.54   54.   10.1  295.4    2.0
 12 01 01   1 19  -19.3  0.204 -9.000 -9.000 -999.  221.     45.6  0.15   2.40
1.00    2.27   79.   10.1  292.0    2.0
 12 01 01   1 20  -20.7  0.218 -9.000 -9.000 -999.  244.     52.2  0.15   2.40
1.00    2.42   79.   10.1  292.5    2.0
 12 01 01   1 21  -19.7  0.206 -9.000 -9.000 -999.  225.     46.9  0.15   2.40
1.00    2.30   95.   10.1  290.9    2.0
 12 01 01   1 22  -17.6  0.190 -9.000 -9.000 -999.  199.     39.8  0.15   2.40
1.00    2.13   78.   10.1  290.4    2.0
 12 01 01   1 23  -20.3  0.211 -9.000 -9.000 -999.  233.     49.0  0.15   2.40
1.00    2.35   52.   10.1  289.2    2.0
 12 01 01   1 24  -16.4  0.183 -9.000 -9.000 -999.  189.     37.0  0.15   2.40
1.00    2.06   75.   10.1  288.8    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 12 01 01 01   10.1 1   55.    2.93   288.2   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
↑ *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
TOGGAS\15670 TOGGAS.ISC         ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                       ***        14:43:19

                                  PAGE   9
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     L0000290    , L0000291
 , L0000292    , L0000293    , L0000294    ,
                 L0000295    , L0000296    , L0000297    , L0000298    , L0000299
 , L0000300    , L0000301    , L0000302    ,
```

L0000303 , L0000304 , L0000305 , L0000306 , L0000307
, L0000308 , L0000309 , L0000310 ,
L0000311 , L0000312 , L0000313 , L0000314 , L0000315
, L0000316 , L0000317 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

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

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
446398.16	3749030.75	0.00939	446412.02	3749033.12	0.00979
446418.14	3749034.53	0.00999	446423.79	3749057.48	0.01229
446420.60	3749030.38	0.00972	446392.07	3749046.15	0.01050
446399.10	3749048.66	0.01085	446382.04	3749042.82	0.01003
446380.74	3749024.73	0.00875	446384.77	3749025.87	0.00889
446386.66	3749031.14	0.00925	446393.40	3749033.41	0.00951
446395.01	3749029.57	0.00927	446418.16	3749054.95	0.01188
446391.41	3749039.11	0.00990	446389.75	3749042.95	0.01018
446377.36	3749033.44	0.00927	446401.65	3749042.38	0.01035
446393.02	3749043.80	0.01031	446397.05	3749034.69	0.00966
446408.79	3749045.79	0.01078	446379.31	3749028.98	0.00900
446383.06	3749029.83	0.00912	446387.95	3749027.55	0.00903
446389.98	3749032.39	0.00938	446416.22	3749030.11	0.00963
446419.40	3749047.72	0.01116	446413.99	3749053.46	0.01163
446375.19	3749038.32	0.00958	446396.25	3749045.62	0.01053
446394.44	3749039.79	0.01001	446401.75	3749031.82	0.00953
446380.74	3749035.49	0.00947	446388.47	3749037.63	0.00974
446391.64	3749028.38	0.00913	446407.35		

```
3749035.49        0.00989
         446416.22    3749035.49        0.01004                       446418.22
3749044.94        0.01088
         446412.00    3749051.65        0.01140                       446415.77
3749044.35        0.01078
         446413.80    3749037.32        0.01014                       446404.78
3749033.64        0.00971
         446410.66    3749028.36        0.00942                       446400.04
3749035.78        0.00979
         446378.02    3749041.71        0.00988                       446379.40
3749039.20        0.00971
         446386.33    3749042.01        0.01004                       446398.48
3749040.87        0.01017
         446407.35    3749040.87        0.01032                       446416.22
3749040.87        0.01048
         446411.77    3749044.90        0.01075                       446409.96
3749048.55        0.01105
         446420.71    3749053.97        0.01183                       446411.76
3749040.28        0.01035
         446403.50    3749037.03        0.00995                       446421.99
3749035.45        0.01013
         446424.71    3749054.30        0.01195                       446382.91
3749040.90        0.00990
         446384.08    3749037.05        0.00962                       446399.90
3749046.40        0.01066
         446405.79    3749047.06        0.01083                       446416.22
3749046.25        0.01096
         446422.29    3749050.01        0.01145                       446416.08
3749054.20        0.01175
         446416.69    3749051.94        0.01153                       446416.16
3749038.36        0.01027
         446421.97    3749040.46        0.01055                       446420.08
3749055.93        0.01203
 *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
TOGGAS\15670 TOGGAS.ISC         ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                       ***        14:43:19

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

                             *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                INCLUDING SOURCE(S):     L0000290    , L0000291
 , L0000292    , L0000293    , L0000294    ,
                 L0000295    , L0000296    , L0000297    , L0000298    , L0000299
 , L0000300    , L0000301    , L0000302    ,
                 L0000303    , L0000304    , L0000305    , L0000306    , L0000307
 , L0000308    , L0000309    , L0000310    ,
                 L0000311    , L0000312    , L0000313    , L0000314    , L0000315
```

, L0000316 , L0000317 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

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

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
446398.16	3749030.75	0.02856	(13041207)	446412.02	3749033.12	0.02955	(13041207)
446418.14	3749034.53	0.03007	(13041207)	446423.79	3749057.48	0.03694	(13041207)
446420.60	3749030.38	0.02918	(13041207)	446392.07	3749046.15	0.03210	(13041207)
446399.10	3749048.66	0.03306	(13041207)	446382.04	3749042.82	0.03083	(13041207)
446380.74	3749024.73	0.02672	(13041207)	446384.77	3749025.87	0.02708	(13041207)
446386.66	3749031.14	0.02825	(13041207)	446393.40	3749033.41	0.02899	(13041207)
446395.01	3749029.57	0.02819	(13041207)	446418.16	3749054.95	0.03580	(13041207)
446391.41	3749039.11	0.03026	(13041207)	446389.75	3749042.95	0.03116	(13041207)
446377.36	3749033.44	0.02843	(13041207)	446401.65	3749042.38	0.03145	(13041207)
446393.02	3749043.80	0.03150	(13041207)	446397.05	3749034.69	0.02941	(13041207)
446408.79	3749045.79	0.03263	(13041207)	446379.31	3749028.98	0.02753	(13041207)
446383.06	3749029.83	0.02784	(13041207)	446387.95	3749027.55	0.02753	(13041207)
446389.98	3749032.39	0.02864	(13041207)	446416.22	3749030.11	0.02899	(13041207)
446419.40	3749047.72	0.03361	(13041207)	446413.99	3749053.46	0.03512	(13041207)
446375.19	3749038.32	0.02947	(13041207)	446396.25	3749045.62	0.03211	(13041207)
446394.44	3749039.79	0.03053	(13041207)	446401.75	3749031.82	0.02891	(13041207)
446380.74	3749035.49	0.02901	(13041207)	446388.47	3749037.63	0.02979	(13041207)
446391.64	3749028.38	0.02783	(13041207)	446407.35	3749035.49	0.02995	(13041207)
446416.22	3749035.49	0.03024	(13041207)	446418.22	3749044.94	0.03277	(13041207)

```
       446412.00   3749051.65        0.03446  (13041207)               446415.77
 3749044.35        0.03251  (13041207)
       446413.80   3749037.32        0.03061  (13041207)               446404.78
 3749033.64        0.02943  (13041207)
       446410.66   3749028.36        0.02845  (13041207)               446400.04
 3749035.78        0.02976  (13041207)
       446378.02   3749041.71        0.03040  (13041207)               446379.40
 3749039.20        0.02983  (13041207)
       446386.33   3749042.01        0.03079  (13041207)               446398.48
 3749040.87        0.03095  (13041207)
       446407.35   3749040.87        0.03127  (13041207)               446416.22
 3749040.87        0.03159  (13041207)
       446411.77   3749044.90        0.03250  (13041207)               446409.96
 3749048.55        0.03345  (13041207)
       446420.71   3749053.97        0.03560  (13041207)               446411.76
 3749040.28        0.03128  (13041207)
       446403.50   3749037.03        0.03018  (13041207)               446421.99
 3749035.45        0.03042  (13041207)
       446424.71   3749054.30        0.03590  (13041207)               446382.91
 3749040.90        0.03038  (13041207)
       446384.08   3749037.05        0.02949  (13041207)               446399.90
 3749046.40        0.03246  (13041207)
       446405.79   3749047.06        0.03287  (13041207)               446416.22
 3749046.25        0.03306  (13041207)
       446422.29   3749050.01        0.03442  (13041207)               446416.08
 3749054.20        0.03546  (13041207)
       446416.69   3749051.94        0.03477  (13041207)               446416.16
 3749038.36        0.03095  (13041207)
       446421.97   3749040.46        0.03169  (13041207)               446420.08
 3749055.93        0.03622  (13041207)
 *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
TOGGAS\15670 TOGGAS.ISC         ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                       ***        14:43:19

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

                              *** THE   1ST HIGHEST  8-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     L0000290    , L0000291
 , L0000292    , L0000293    , L0000294    ,
                  L0000295    , L0000296    , L0000297    , L0000298    , L0000299
 , L0000300    , L0000301    , L0000302    ,
                  L0000303    , L0000304    , L0000305    , L0000306    , L0000307
 , L0000308    , L0000309    , L0000310    ,
                  L0000311    , L0000312    , L0000313    , L0000314    , L0000315
 , L0000316    , L0000317    ,  . . .      ,

                                          *** DISCRETE CARTESIAN RECEPTOR POINTS
```

***

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

X-COORD (M)	Y-COORD (M)	CONC (YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC (YYMMDDHH)
446398.16	3749030.75	0.02263c (12121708)	446412.02	3749033.12	0.02350c (12121708)
446418.14	3749034.53	0.02396c (12121708)	446423.79	3749057.48	0.02896c (12121708)
446420.60	3749030.38	0.02334c (12121708)	446392.07	3749046.15	0.02509c (12121708)
446399.10	3749048.66	0.02588c (12121708)	446382.04	3749042.82	0.02406c (12121708)
446380.74	3749024.73	0.02113c (12121708)	446384.77	3749025.87	0.02143c (12121708)
446386.66	3749031.14	0.02228c (12121708)	446393.40	3749033.41	0.02289c (12121708)
446395.01	3749029.57	0.02233c (12121708)	446418.16	3749054.95	0.02808c (12121708)
446391.41	3749039.11	0.02377c (12121708)	446389.75	3749042.95	0.02439c (12121708)
446377.36	3749033.44	0.02231c (12121708)	446401.65	3749042.38	0.02476c (12121708)
446393.02	3749043.80	0.02468c (12121708)	446397.05	3749034.69	0.02323c (12121708)
446408.79	3749045.79	0.02570c (12121708)	446379.31	3749028.98	0.02169c (12121708)
446383.06	3749029.83	0.02195c (12121708)	446387.95	3749027.55	0.02178c (12121708)
446389.98	3749032.39	0.02260c (12121708)	446416.22	3749030.11	0.02315c (12121708)
446419.40	3749047.72	0.02653c (12121708)	446413.99	3749053.46	0.02755c (12121708)
446375.19	3749038.32	0.02301c (12121708)	446396.25	3749045.62	0.02516c (12121708)
446394.44	3749039.79	0.02401c (12121708)	446401.75	3749031.82	0.02293c (12121708)
446380.74	3749035.49	0.02276c (12121708)	446388.47	3749037.63	0.02340c (12121708)
446391.64	3749028.38	0.02203c (12121708)	446407.35	3749035.49	0.02374c (12121708)
446416.22	3749035.49	0.02406c (12121708)	446418.22	3749044.94	0.02591c (12121708)
446412.00	3749051.65	0.02706c (12121708)	446415.77	3749044.35	0.02569c (12121708)
446413.80	3749037.32	0.02429c (12121708)	446404.78		

```
 3749033.64         0.02333c (12121708)
       446410.66   3749028.36         0.02268c (12121708)                446400.04
 3749035.78         0.02352c (12121708)
       446378.02   3749041.71         0.02370c (12121708)                446379.40
 3749039.20         0.02332c (12121708)
       446386.33   3749042.01         0.02409c (12121708)                446398.48
 3749040.87         0.02436c (12121708)
       446407.35   3749040.87         0.02470c (12121708)                446416.22
 3749040.87         0.02504c (12121708)
       446411.77   3749044.90         0.02564c (12121708)                446409.96
 3749048.55         0.02631c (12121708)
       446420.71   3749053.97         0.02797c (12121708)                446411.76
 3749040.28         0.02476c (12121708)
       446403.50   3749037.03         0.02386c (12121708)                446421.99
 3749035.45         0.02426c (12121708)
       446424.71   3749054.30         0.02823c (12121708)                446382.91
 3749040.90         0.02375c (12121708)
       446384.08   3749037.05         0.02314c (12121708)                446399.90
 3749046.40         0.02546c (12121708)
       446405.79   3749047.06         0.02583c (12121708)                446416.22
 3749046.25         0.02609c (12121708)
       446422.29   3749050.01         0.02714c (12121708)                446416.08
 3749054.20         0.02781c (12121708)
       446416.69   3749051.94         0.02733c (12121708)                446416.16
 3749038.36         0.02457c (12121708)
       446421.97   3749040.46         0.02518c (12121708)                446420.08
 3749055.93         0.02840c (12121708)
 *** AERMOD - VERSION 23132  ***   *** C:\LAKES\AERMOD VIEW\15670 HRA\15670
TOGGAS\15670 TOGGAS.ISC         ***        01/19/24
 *** AERMET - VERSION  16216 ***   ***
                        ***        14:43:19

                                   PAGE  12
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN  ADJ_U*

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


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


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

ALL       1ST HIGHEST VALUE IS       0.01229 AT (  446423.79,  3749057.48,
```

196.50,   196.50,   0.00) DC
          2ND HIGHEST VALUE IS   0.01203 AT (446420.08, 3749055.93,
196.65,   196.65,   0.00) DC
          3RD HIGHEST VALUE IS   0.01195 AT (446424.71, 3749054.30,
196.52,   196.52,   0.00) DC
          4TH HIGHEST VALUE IS   0.01188 AT (446418.16, 3749054.95,
196.72,   196.72,   0.00) DC
          5TH HIGHEST VALUE IS   0.01183 AT (446420.71, 3749053.97,
196.65,   196.65,   0.00) DC
          6TH HIGHEST VALUE IS   0.01175 AT (446416.08, 3749054.20,
196.79,   196.79,   0.00) DC
          7TH HIGHEST VALUE IS   0.01163 AT (446413.99, 3749053.46,
196.86,   196.86,   0.00) DC
          8TH HIGHEST VALUE IS   0.01153 AT (446416.69, 3749051.94,
196.79,   196.79,   0.00) DC
          9TH HIGHEST VALUE IS   0.01145 AT (446422.29, 3749050.01,
196.66,   196.66,   0.00) DC
         10TH HIGHEST VALUE IS   0.01140 AT (446412.00, 3749051.65,
196.93,   196.93,   0.00) DC

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

 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

                                                *** THE SUMMARY OF HIGHEST 1-HR
RESULTS ***

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

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

ALL   HIGH   1ST HIGH VALUE IS   0.03694 ON 13041207: AT (446423.79,
3749057.48,   196.50,   196.50,   0.00) DC

*** THE SUMMARY OF HIGHEST 8-HR RESULTS ***

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

GROUP ID	AVERAGE	NETWORK CONC OF TYPE	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	GRID-ID
ALL	HIGH 1ST HIGH	VALUE IS 0.02896c	ON 12121708:	AT (446423.79, 3749057.48, 196.50, 196.50, 0.00)	DC

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

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

A Total of   0 Fatal Error Message(s)
A Total of   2 Warning Message(s)
A Total of   1638 Informational Message(s)

```
A Total of        43848 Hours Were Processed

A Total of         1039 Calm Hours Identified

A Total of          599 Missing Hours Identified (  1.37 Percent)


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


   ********   WARNING MESSAGES   ********
ME W186     225       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
     0.50
ME W187     225       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


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

APPENDIX 5.1:

RISK CALCULATION WORKSHEETS

This page intentionally left blank

NO2 Conversion

1	3.6	0.00191

CO Conversion

1	17.78	0.01553
8	13.89	0.01213

Table A1
Quantification of Carcinogenic Risks and Noncarcinogenic Hazards
30 Year Exposure Scenario / Maximum Residential Receptor

Source	Concentration		Weight Fraction	Contaminant	Carcinogenic Risk			Noncarcinogenic Hazards / Toxicological Endpoints*								
					URF	CPF	RISK	REL	RfD	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
	(ug/m3)	(mg/m3)			(ug/m3)	(mg/kg/day)		(ug/m3)	(mg/kg/day)								
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
Freeway	0.01229	1.2E-05	4.67E-01	Benzene	2.9E-05	1.0E-01	6.8E-08	3.0E+00	8.6E-04			1.8E-03					
			3.28E-01	Formaldehyde	6.0E-06	2.1E-02	9.9E-09	9.0E+00	2.6E-03	4.3E-04							
			1.06E-01	1,3-Butadiene	1.7E-04	6.0E-01	9.1E-08	2.0E+00	5.7E-04							6.2E-04	
			7.40E-02	Acetaldehyde	2.7E-06	1.0E-02	1.1E-09	1.4E+02	4.0E-02	6.2E-06							
			2.50E-02	Acrolein				3.5E-01	1.0E-04	8.4E-04							
	0.00514	5.1E-06	1.00E+00	Diesel Particulates	3.0E-04	1.1E+00	6.3E-07	5.0E+00	1.4E-03	9.8E-04							
Total							8.04E-07			2.3E-03	0.0E+00	1.8E-03	0.0E+00	0.0E+00	0.0E+00	6.2E-04	0.0E+00

* Key to Toxocological 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)	30
inhalation rate (m3/day)	20
average body weight (kg)	70
averaging time$_{(cancer)}$ (days)	25550
averaging time$_{(noncancer)}$ (days)	10950

Table A2
Quantification of Noncarcinogenic Acute Hazards
1-Hour Exposure Scenario / Maximum Exposed Receptor

Source	Concentration (ug/m3)	Weight Fraction	Contaminant	Noncarcinogenic Hazards / Toxicological Endpoints*								
				REL (ug/m3)	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)
Freeway	0.03694	4.67E-01	Benzene	2.7E+01			6.4E-04	6.4E-04			6.4E-04	
TOG		3.28E-01	Formaldehyde	5.5E+01								2.2E-04
		1.06E-01	1,3-Butadiene	6.6E+02							5.9E-06	
		7.40E-02	Acetaldehyde	4.7E+02	5.8E-06							5.8E-06
		2.50E-02	Acrolein	2.5E+00	3.7E-04							3.7E-04
Freeway	0.02015	8.20E-02	Benzene	2.7E+01			6.1E-05	6.1E-05			6.1E-05	
Diesel/TOG		6.07E-01	Formaldehyde	5.5E+01								2.2E-04
		8.00E-03	1,3-Butadiene	6.6E+02							2.4E-07	
		3.03E-01	Acetaldehyde	4.7E+02	1.3E-05							1.3E-05
Total					3.9E-04	0.0E+00	7.0E-04	7.0E-04	0.0E+00	0.0E+00	7.1E-04	8.3E-04

* Key to Toxocological 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

Table A3
Quantification of Noncarcinogenic Acute Hazards
8-Hour Exposure Scenario / Maximum Exposed Receptor

Source	Concentration (ug/m3)	Weight Fraction	Contaminant	Noncarcinogenic Hazards / Toxicological Endpoints*								
				REL (ug/m3)	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)
Freeway	0.02896	3.28E-01	Formaldehyde	9.0E+00	1.1E-03							
TOG		1.06E-01	1,3-Butadiene	9.0E+00							3.4E-04	
		7.40E-02	Acetaldehyde	3.0E+02	7.1E-06							
		2.50E-02	Acrolein	7.0E-01	1.0E-03							
Freeway	0.01591	6.07E-01	Formaldehyde	9.0E+00	1.1E-03							
Diesel/TOG		8.00E-03	1,3-Butadiene	9.0E+00							1.4E-05	
		3.03E-01	Acetaldehyde	3.0E+02	1.6E-05							
Total					3.2E-03	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	3.6E-04	0.0E+00

* Key to Toxocological 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