Appendix B:
Health Risk Assessment

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Legacy Anaheim

DIESEL PARTICULATE MATTER (DPM) AND PARTICULATE MATTER HEALTH RISK ASSESSMENT
CITY OF ANAHEIM

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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
OLM	Ozone Limiting
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	Legacy Anaheim
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 in 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-IV 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-IV 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 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 IV 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 7.88 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 and are therefore within acceptable limits and a less than significant impact would occur.

For PM10, a maximum 24-hour average concentration of 1.11 μg/m3 and a maximum annual average concentration of 0.78 μg/m3 was predicted. These values do not exceed the identified significance thresholds of 2.5 μg/m3 (24-hour) or 1.0 μg/m3 (annual average).

For PM2.5, a maximum 24-hour average concentration of 0.55 μg/m3 was predicted. This value does not exceed the identified significance threshold of 2.5 μg/m3.

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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 Legacy Anaheim (referred to as "Project).

1.1 PROJECT LOCATION

The proposed project is located at 200 West Midway Drive, Anaheim, Orange County, California, as shown on Exhibit 1-A. The 6.4-acre project site consists of Assessor's Parcel Numbers (APNs) 082-185-26 through -31, 082-185-35, 082-185-39, 082-185-40, 082-185-041, 082-185-51, 082-185-01, and 082-185-58. The project site is located in the south-central portion of the City of Anaheim, immediately east of Interstate 5 (I-5), and 300 feet west of South Anaheim Boulevard.

1.2 PROPOSED PROJECT

The proposed project would include the demolition of all existing structures on site and the development of 156 residential townhomes in 21 structures, as shown on Exhibit 1-B. The proposed density would be 24 du/ac. The proposed project meets the development standards of the RM-4 Zone with the exception of a requested reduction in the required side yard setback, building-to-building setback reduction, and building-to-southern property line setback reduction. The Code permits Applicants to request such modifications as part of a Residential Planned Unit Development through the approval of a conditional use permit. The proposed development would include three-bedroom units with either three-car garages or two-car tandem or side-by-side garages. The proposed project would provide resident amenities such as a swimming pool, an outdoor lounging area, and a dog run. The proposed project would locate surface parking in the southwestern, center, and eastern portions of the project site.

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. (1)[1].

1 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).

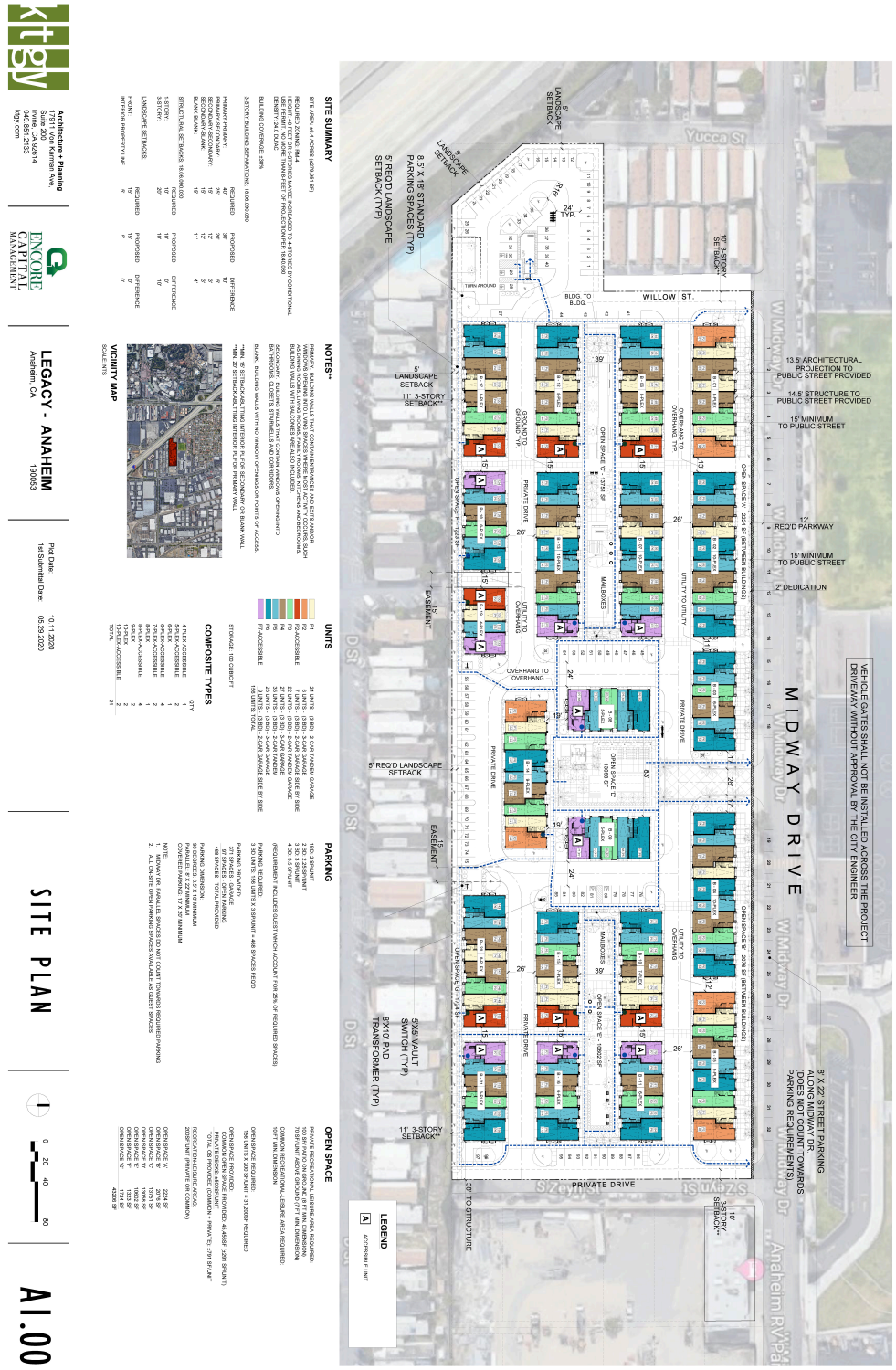
EXHIBIT 1-A: LOCATION MAP

LEGEND:

N

Site Boundary

EXHIBIT 1-B: SITE PLAN



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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 annual average daily traffic volumes (AADT) for the freeway segment considered in the assessment.

TABLE 2-1 FREEWAY TRAFFIC VOLUMES

Roadway Segment	AADT	Vehicles Per Hour (ALL)	Vehicles Per Hour (gas)	Vehicles Per Hour (diesel)
I-5 Freeway	264,800	11,033	10,599	434

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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 EMFAC2017 emission factor model. EMFAC2017 was utilized to identify pollutant emission rates for total organic gases (TOG), diesel particulates, particulates (PM10 and PM2.5), carbon monoxide (CO) and nitrogen oxide (NOx) compounds (2). To produce a representative vehicle fleet distribution, the assessment utilized ARB's Orange County population estimates for the 2022 calendar year. 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 population profiles noted above, discrete traffic counts were identified for each roadway segment. Diesel vehicles account for 3.94 percent of the total on-road mobile fleet. For chronic (long term) exposures, AADT values were averaged to produce representative hourly traffic volumes.

An average observed route speed of 65 miles per hour was assumed for vehicles traversing the main highway link (I-5).

The focus of this HRA is on DPM associated with vehicular activity traversing I-5. Appendix 3.1 presents the on-road emission rate calculation worksheets for the freeway segment considered in the assessment.

TABLE 3-1: VEHICLE FLEET MIX PROFILE

Vehicle class	Orange County		
	Fuel	Population	Percent
LDA	Diesel	11,165	0.43
LDA	Gas	1,247,860	51.75
LDT1	Diesel	56	0.00
LDT1	Gas	134,019	5.46
LDT2	Diesel	2,427	0.07
LDT2	Gas	447,358	16.58
LHD1	Diesel	21,630	1.54
LHD1	Gas	36,819	1.59
LHD2	Diesel	8,344	0.58
LHD2	Gas	6,427	0.22
MCY	Gas	55,869	2.69
MDV	Diesel	6,029	0.25
MDV	Gas	312,580	15.17
MH	Diesel	2,902	0.20
MH	Gas	7,043	0.55
T6	Diesel	27,487	1.17
T6	Gas	7,555	0.12
T7	Diesel	10,494	1.42
T7	Gas	10	0.00
OBUS	Diesel	618	0.02
OBUS	Gas	996	0.04
SBUS	Diesel	1,330	0.08
SBUS	Gas	478	0.04
UBUS	Diesel	0	0.00
UBUS	Gas	210	0.02

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

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4 EXPOSURE QUANTIFICATION

In order to assess the impact of emitted compounds on individuals who reside at the proposed townhome complex, air quality modeling utilizing the AMS/EPA Regulatory Model AERMOD was performed to assess the downwind extent of mobile source emissions. 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.

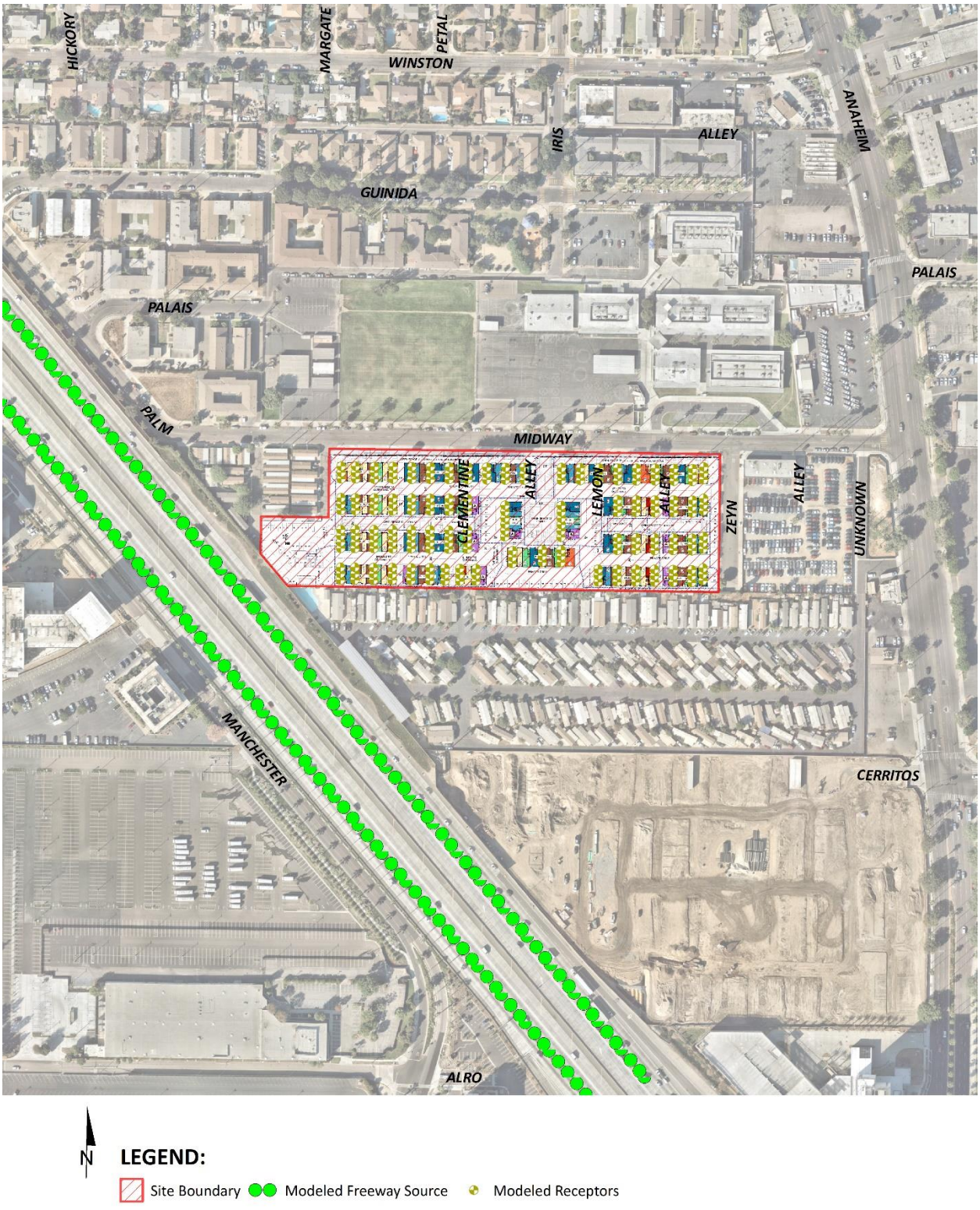
The model offers additional flexibility by allowing the user to assign initial vertical and lateral dispersion parameters for sources representative of a localized mobile fleet. For this assessment, the volume source algorithm was utilized to model the emissions generated from on-road mobile source activity.

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 John Wayne Airport Meteorological Data Station (Source Receptor Area 18), was used to represent local weather conditions and prevailing winds. Five years (2012-2016) of available AERMOD meteorological data was utilized in the modeling.

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 dispersion model input summary table is provided in Appendix 4.1. A complete listing of model input/output files are provided in electronic format in Appendix 4.2.

EXHIBIT 4-A: SOURCE RECEPTOR GRID NETWORK



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 ((3), 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 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." 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.

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 ($\mu g/m^3$)

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., 95th 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.

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 3.2, 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[2]

For carcinogenic exposures resulting from exposure to toxics from the freeway, the summation of risk for the maximum exposed residential receptor totaled 7.88 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 and are therefore within acceptable limits and a less than significant impact would occur.

For PM10, a maximum 24-hour average concentration of 1.11 μg/m3 and a maximum annual average concentration of 0.78 μg/m3 was predicted. These values do not exceed the identified significance thresholds of 2.5 μg/m3 (24-hour) or 1.0 μg/m3 (annual average).

For PM2.5, a maximum 24-hour average concentration of 0.55 μg/m3 was predicted. This value does not exceed the identified significance threshold of 2.5 μg/m3.

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

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6 REFERENCES

1. **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.
2. **California Department of Transportation.** EMFAC Software. [Online] http://www.dot.ca.gov/hq/env/air/pages/emfac.htm.
3. **South Coast Air Quality Managment District.** Mobile Source Toxics Analysis. [Online] 2003. http://www.aqmd.gov/ceqa/handbook/mobile_toxic/mobile_toxic.html.

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7 CERTIFICATION

The contents of this HRA represent an accurate depiction of the potential impacts to the proposed Legacy Anaheim Project. The information contained in this HRA 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.

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EDUCATION

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

Bachelor of Arts in Environmental Analysis and Design
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PROFESSIONAL AFFILIATIONS

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

PROFESSIONAL CERTIFICATIONS

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

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APPENDIX 3.1:

EMISSION RATE CALCULATION WORKSHEETS

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Running Rate Emission Summary

Criteria	65 mph
PM10	0.0034
PM2.5	0.0032

DSL Particulate	0.050

TW/BW Emission Summary

	Total
PM10	0.047
PM2.5	0.019

EMFAC2017
Worksheet
(65 mph)

EMFAC2017 Emission Rates
Region Type: County
Region: ORANGE
Calendar Year: 2022
Season: Annual
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)	PM10_PMTW (gms/mile)	PM10_PMTW_AVE (gms/mile)	PM10_PMBW (gms/mile)	PM10_PMBW_AVE (gms/mile)
ORANGE	2022	Annual	LDA	DSL	Aggregated	65	11164.903	0.0048	0.1576780	0.00074923	0.0868281	0.00041257	0.0082320	0.00003912	0.0080	0.00003801	0.03675	0.000174622
ORANGE	2022	Annual	LDA	GAS	Aggregated	65	1247860.077	0.5311	0.5131502	0.27251912	0.0438778	0.02330222	0.0014267	0.00075769	0.0080	0.00424857	0.03675	0.019516854
ORANGE	2022	Annual	LDT1	DSL	Aggregated	65	55.819	0.0000	1.8674899	0.00004436	1.3902125	0.00003303	0.1898617	0.00000451	0.0080	0.00000019	0.03675	0.000000873
ORANGE	2022	Annual	LDT1	GAS	Aggregated	65	134019.271	0.0570	1.0208223	0.05822426	0.1234590	0.00704169	0.0020130	0.00011482	0.0080	0.00045629	0.03675	0.002096096
ORANGE	2022	Annual	LDT2	DSL	Aggregated	65	2427.176	0.0010	0.0729230	0.00007533	0.0357127	0.00003689	0.0045846	0.00000474	0.0080	0.00000826	0.03675	0.000037962
ORANGE	2022	Annual	LDT2	GAS	Aggregated	65	447357.582	0.1904	0.6886944	0.13111970	0.0859344	0.01636095	0.0013986	0.00026629	0.0080	0.00152311	0.03675	0.006996788
ORANGE	2022	Annual	LHDT1	DSL	Aggregated	65	21629.925	0.0092	0.5292682	0.00487211	2.2226139	0.02046000	0.0169925	0.00015642	0.0120	0.00011046	0.07644	0.000703659
ORANGE	2022	Annual	LHDT1	GAS	Aggregated	65	36819.260	0.0157	0.8630355	0.01352354	0.2146306	0.00336320	0.0010699	0.00001676	0.0080	0.00012536	0.07644	0.001197794
ORANGE	2022	Annual	LHDT2	DSL	Aggregated	65	8343.637	0.0036	0.4462804	0.00158471	1.8266933	0.00648646	0.0162931	0.00005786	0.0120	0.00004261	0.08918	0.000316672
ORANGE	2022	Annual	LHDT2	GAS	Aggregated	65	6427.420	0.0027	0.5119900	0.00140051	0.2149770	0.00058805	0.0009178	0.00000251	0.0080	0.00002188	0.08918	0.000243944
ORANGE	2022	Annual	MCY	GAS	Aggregated	65	55868.871	0.0238	23.7251412	0.56411192	1.2028594	0.02860035	0.0018872	0.00004487	0.0040	0.00009511	0.01176	0.000279617
ORANGE	2022	Annual	MDV	DSL	Aggregated	65	6028.952	0.0026	0.1265906	0.00032481	0.0591852	0.00015186	0.0048780	0.00001252	0.0080	0.00002053	0.03675	0.000094294
ORANGE	2022	Annual	MDV	GAS	Aggregated	65	312579.715	0.1330	0.9627388	0.12807249	0.1229682	0.01635837	0.0014811	0.00019704	0.0080	0.00106423	0.03675	0.004888827
ORANGE	2022	Annual	MH	DSL	Aggregated	65	2901.594	0.0012	0.2650886	0.00032735	3.6428042	0.00449841	0.1460253	0.00018032	0.0160	0.00001976	0.13034	0.000160954
ORANGE	2022	Annual	MH	GAS	Aggregated	65	7043.392	0.0030	2.2246649	0.00666857	0.4283714	0.00128407	0.0012950	0.00000388	0.0120	0.00003597	0.13034	0.000390702
ORANGE	2022	Annual	MHDT	DSL	Aggregated	65	27487.170	0.0117	0.3870657	0.00452795	2.5404975	0.02971908	0.0975440	0.00114108	0.0120	0.00014038	0.13034	0.001524735
ORANGE	2022	Annual	MHDT	GAS	Aggregated	65	7554.979	0.0032	0.9441306	0.00303565	0.3448827	0.00110890	0.0007712	0.00000248	0.0120	0.00003858	0.13034	0.000419081
ORANGE	2022	Annual	HHDT	DSL	Aggregated	65	10494.469	0.0045	0.3731136	0.00166643	4.0257130	0.01798001	0.0808631	0.00036116	0.0360	0.00016079	0.06174	0.000275749
ORANGE	2022	Annual	HHDT	GAS	Aggregated	65	10.178	0.0000	24.2851878	0.00010520	5.5044337	0.00002384	0.0012867	0.00000001	0.0200	0.00000009	0.06174	0.000000267
ORANGE	2022	Annual	OBUS	DSL	Aggregated	65	617.692	0.0003	0.5133360	0.00013495	3.8917273	0.00102306	0.1074946	0.00002826	0.0120	0.00000315	0.13034	0.000034264
ORANGE	2022	Annual	OBUS	GAS	Aggregated	65	995.682	0.0004	1.4501108	0.00061448	0.5132142	0.00021747	0.0007231	0.00000031	0.0120	0.00000508	0.13034	0.000055231
ORANGE	2022	Annual	SBUS	DSL	Aggregated	65	1330.412	0.0006	0.0000000	0.00000000	0.0000000	0.00000000	0.0000000	0.00000000	0.0120	0.00000679	0.74480	0.000421708
ORANGE	2022	Annual	SBUS	GAS	Aggregated	65	477.537	0.0002	0.0000000	0.00000000	0.0000000	0.00000000	0.0000000	0.00000000	0.0080	0.00000163	0.74480	0.000151368
ORANGE	2022	Annual	UBUS	DSL	Aggregated	65	0.000	0.0000	0.0000000	0.00000000	0.0000000	0.00000000	0.0000000	0.00000000	0.0000	0.00000000	0.0000	0.000000000
ORANGE	2022	Annual	UBUS	GAS	Aggregated	65	209.765	0.0001	0.2433834	0.00002173	0.3161702	0.00002823	0.0002009	0.00000002	0.0120	0.00000107	0.13035	0.000011637
							2349705	1.0		1.194		0.179		0.0034		0.008		0.040

EMFAC2017 Emission Rates
Region Type: County
Region: Orange (SC)
Calendar Year: 2020
Season: Annual
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)
ORANGE	2020	Annual	LDA	DSL	Aggregated	65	11164.903	0.1207	0.0082320	0.0010
ORANGE	2020	Annual	LDT1	DSL	Aggregated	65	55.819	0.0006	0.1898617	0.0001
ORANGE	2020	Annual	LDT2	DSL	Aggregated	65	2427.176	0.0262	0.0045846	0.0001
ORANGE	2020	Annual	LHDT1	DSL	Aggregated	65	21629.925	0.2339	0.0169925	0.0040
ORANGE	2020	Annual	LHDT2	DSL	Aggregated	65	8343.637	0.0902	0.0162931	0.0015
ORANGE	2020	Annual	MDV	DSL	Aggregated	65	6028.952	0.0652	0.0048780	0.0003
ORANGE	2020	Annual	MH	DSL	Aggregated	65	2901.594	0.0314	0.1460253	0.0046
ORANGE	2020	Annual	MHDT	DSL	Aggregated	65	27487.170	0.2972	0.0975440	0.0290
ORANGE	2020	Annual	HHDT	DSL	Aggregated	65	10494.469	0.1135	0.0808631	0.0092
ORANGE	2020	Annual	OBUS	DSL	Aggregated	65	617.692	0.0067	0.1074946	0.0007
ORANGE	2020	Annual	SBUS	DSL	Aggregated	65	1330.412	0.0144	0.0000000	0.0000
ORANGE	2020	Annual	UBUS	DSL	Aggregated	65	0.000	0.0000	0.0000000	0.0000
							92482	1.0		0.050

EMFAC2017
Worksheet
(65 mph)

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)
0.0078759	0.000037423	0.0020	0.000009503	0.01575	0.000074838
0.0013119	0.000696685	0.0020	0.001062142	0.01575	0.008364366
0.1816483	0.000004315	0.0020	0.000000048	0.01575	0.000000374
0.0018511	0.000105579	0.0020	0.000114073	0.01575	0.000898327
0.0043863	0.000004531	0.0020	0.000002066	0.01575	0.000016269
0.0012861	0.000244850	0.0020	0.000380778	0.01575	0.002998623
0.0162574	0.000149655	0.0030	0.000027616	0.03276	0.000301568
0.0009842	0.000015422	0.0020	0.000031339	0.03276	0.000513340
0.0155883	0.000055353	0.0030	0.000010653	0.03822	0.000135716
0.0008438	0.000002308	0.0020	0.000005471	0.03822	0.000104548
0.0017678	0.000042032	0.0010	0.000023777	0.00504	0.000119836
0.0046670	0.000011975	0.0020	0.000005132	0.01575	0.000040412
0.0013630	0.000181322	0.0020	0.000266059	0.01575	0.002095212
0.1397083	0.000172522	0.0040	0.000004940	0.05586	0.000068980
0.0011917	0.000003572	0.0030	0.000008993	0.05586	0.000167444
0.0933243	0.001091720	0.0030	0.000035094	0.05586	0.000653458
0.0007091	0.000002280	0.0030	0.000009646	0.05586	0.000179606
0.0773650	0.000345535	0.0090	0.000040197	0.02646	0.000118178
0.0011830	0.000000005	0.0050	0.000000022	0.02646	0.000000115
0.1028444	0.000027036	0.0030	0.000000789	0.05586	0.000014684
0.0006651	0.000000282	0.0030	0.000001271	0.05586	0.000023671
0.0000000	0.000000000	0.0030	0.000001699	0.3192	0.000180732
0.0000000	0.000000000	0.0020	0.000000406	0.31920	0.000064872
0.0000000	0.000000000	0.0000	0.000000000	0.0000	0.000000000
0.0001847	0.000000016	0.0030	0.000000268	0.05587	0.000004987
	0.0032		0.002		0.017

On-Road Mobile Sources
Emission Rate Computation

Interstate 5 Mainline

PM10 Emissions

Number of Sources	15
Link Length (meters)	881
Volume/Baseline (VPH)	11033
Particle Size Multiplier (g/mi)	1.0
Road Surface Silt Loading (g/m2)	0.02
Average Vehicle Weight (tons)	2.4
Emfac2017 Emissions Run (g/mi)	0.0034
Emfac2017 Emissions TW/BW (g/mi)	0.047
PM10 Reentrainment Mass Emission Rate (gr/mi)	0.120

For PM10 Reentrainment: Mass Emission Rate (gr/mile) = ((Particulate PM10 Base Emission Factor) x (Road Surface Silt Loading)$^{0.91}$ x (Gross Vehicle Weight)$^{1.02}$) + (Emfac2017 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)	0.200993
PM10 Reentrainment Emission Rate (gr/sec/source)	1.34E-02

On-Road Mobile Sources
Emission Rate Computation

Interstate 5 Mainline

PM2.5 Emissions

Number of Sources	15
Link Length (meters)	881
Volume/Baseline (VPH)	11033
Particle Size Multiplier (g/mi)	0.25
Road Surface Silt Loading (g/m2)	0.02
Average Vehicle Weight (tons)	2.4
Emfac2017 Emissions Run (g/mi)	0.0032
Emfac2017 Emissions TW/BW (g/mi)	0.019
PM2.5 Reentrainment Mass Emission Rate (gr/mi)	0.040

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)$^{1.02}$) + (Emfac2017 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)	0.066346
PM2.5 Reentrainment Emission Rate (gr/sec/source)	4.42E-03

On-Road Mobile Sources
Emission Rate Computation

Interstate 5 Mainline

DSL Particulate Emissions

Number of Sources	15
Link Length (meters)	881
Volume/Baseline (VPH)	434
Pollutant Mass Emission Rate (gr/mi)	0.050

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)	0.00330
Pollutant Emission Rate (gr/sec/source)	2.20E-04

APPENDIX 3.2:

RISK CALCULATION WORKSHEETS

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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	0.06390	6.4E-05	1.00E+00	Diesel Particulates	3.0E-04	1.1E+00	7.9E-06	5.0E+00	1.4E-03	1.2E-02							
Total							7.88E-06			1.2E-02	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	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

APPENDIX 4.1:

AERMOD MODEL OUTPUT SUMMARY FILE

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```
** Lakes Environmental AERMOD MPI
**
**************************************
**
** AERMOD INPUT PRODUCED BY:
** AERMOD VIEW VER. 9.9.0
** LAKES ENVIRONMENTAL SOFTWARE INC.
** DATE: 1/11/2021
** FILE: C:\LAKES\AERMOD VIEW\13839 HRA\DPM\DPM.ADI
**
**************************************
**
**
**************************************
** AERMOD CONTROL PATHWAY
**************************************
**
**
CO STARTING
   TITLEONE C:\LAKES\AERMOD VIEW\13839 HRA\DPM\DPM.ISC
   MODELOPT DFAULT CONC
   AVERTIME ANNUAL
   URBANOPT 3010232
   POLLUTID DPM
   RUNORNOT RUN
   ERRORFIL 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 I-5 FREEWAY
** PREFIX
** LENGTH OF SIDE = 57.91
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.0033
** VERTICAL DIMENSION = 6.99
** SZINIT = 3.53
** NODES = 2
** 415930.405, 3741311.396, 32.00, 0.00, 26.94
** 415359.391, 3741981.629, 32.00, 0.00, 26.94
** ------------------------------------------------------------------
```

```
   LOCATION L0000001     VOLUME   415911.627 3741333.437 32.00
   LOCATION L0000002     VOLUME   415874.070 3741377.520 32.00
   LOCATION L0000003     VOLUME   415836.513 3741421.602 32.00
   LOCATION L0000004     VOLUME   415798.956 3741465.685 32.00
   LOCATION L0000005     VOLUME   415761.399 3741509.768 32.00
   LOCATION L0000006     VOLUME   415723.843 3741553.850 32.00
   LOCATION L0000007     VOLUME   415686.286 3741597.933 32.00
   LOCATION L0000008     VOLUME   415648.729 3741642.016 32.00
   LOCATION L0000009     VOLUME   415611.172 3741686.099 32.00
   LOCATION L0000010     VOLUME   415573.615 3741730.181 32.00
   LOCATION L0000011     VOLUME   415536.058 3741774.264 32.00
   LOCATION L0000012     VOLUME   415498.502 3741818.347 32.00
   LOCATION L0000013     VOLUME   415460.945 3741862.429 32.00
   LOCATION L0000014     VOLUME   415423.388 3741906.512 32.00
   LOCATION L0000015     VOLUME   415385.831 3741950.595 32.00
** END OF LINE VOLUME SOURCE ID = SLINE1
** SOURCE PARAMETERS **
** LINE VOLUME SOURCE ID = SLINE1
   SRCPARAM L0000001       0.00022      0.00     26.94      3.53
   SRCPARAM L0000002       0.00022      0.00     26.94      3.53
   SRCPARAM L0000003       0.00022      0.00     26.94      3.53
   SRCPARAM L0000004       0.00022      0.00     26.94      3.53
   SRCPARAM L0000005       0.00022      0.00     26.94      3.53
   SRCPARAM L0000006       0.00022      0.00     26.94      3.53
   SRCPARAM L0000007       0.00022      0.00     26.94      3.53
   SRCPARAM L0000008       0.00022      0.00     26.94      3.53
   SRCPARAM L0000009       0.00022      0.00     26.94      3.53
   SRCPARAM L0000010       0.00022      0.00     26.94      3.53
   SRCPARAM L0000011       0.00022      0.00     26.94      3.53
   SRCPARAM L0000012       0.00022      0.00     26.94      3.53
   SRCPARAM L0000013       0.00022      0.00     26.94      3.53
   SRCPARAM L0000014       0.00022      0.00     26.94      3.53
   SRCPARAM L0000015       0.00022      0.00     26.94      3.53
** ----------------------------------------------------------------------
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD RECEPTOR PATHWAY
**************************************
**
**
RE STARTING
   INCLUDED DPM.ROU
RE FINISHED
**
**************************************
** AERMOD METEOROLOGY PATHWAY
**************************************
```

```
**
**
ME STARTING
   SURFFILE KSNA_V9_ADJU\KSNA_V9.SFC
   PROFFILE KSNA_V9_ADJU\KSNA_V9.PFL
   SURFDATA 93184 2012
   UAIRDATA 3190 2012
   PROFBASE 17.0 METERS
ME FINISHED
**
**************************************
** AERMOD OUTPUT PATHWAY
**************************************
**
**
OU STARTING
** AUTO-GENERATED PLOTFILES
   PLOTFILE   ANNUAL ALL DPM.AD\AN00GALL.PLT 31
   SUMMFILE 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     108       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187     108       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


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

⬘ *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13839 HRA\DPM\DPM.ISC
                           ***        01/11/21
 *** AERMET - VERSION  16216 ***   ***
                         ***       10:29:42
```

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** MODEL SETUP OPTIONS SUMMARY ***

- -

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

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

**Model Uses URBAN Dispersion Algorithm for the SBL for 15 Source(s),
for Total of 1 Urban Area(s):
Urban Population = 3010232.0 ; Urban Roughness Length = 1.000 m

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

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

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of: DPM

**Model Calculates ANNUAL Averages Only

**This Run Includes: 15 Source(s); 1 Source Group(s); and 221 Receptor(s)

with: 0 POINT(s), including
0 POINTCAP(s) and 0 POINTHOR(s)
and: 15 VOLUME source(s)
and: 0 AREA type source(s)
and: 0 LINE source(s)
and: 0 RLINE/RLINEXT source(s)
and: 0 OPENPIT source(s)
and: 0 BUOYANT LINE source(s) with 0 line(s)

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

 **The AERMET Input Meteorological Data Version Date:  16216

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

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

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =    17.00 ;  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:   DPM.ERR

 **File for Summary of Results:   DPM.SUM

 *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13839 HRA\DPM\DPM.ISC
                           ***        01/11/21
 *** AERMET - VERSION  16216 ***   ***
                          ***       10:29:42

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


                                                  *** VOLUME SOURCE DATA ***

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

```
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - -

 L0000001         0   0.22000E-03  415911.6 3741333.4    32.0     0.00    26.94
3.53     YES
 L0000002         0   0.22000E-03  415874.1 3741377.5    32.0     0.00    26.94
3.53     YES
 L0000003         0   0.22000E-03  415836.5 3741421.6    32.0     0.00    26.94
3.53     YES
 L0000004         0   0.22000E-03  415799.0 3741465.7    32.0     0.00    26.94
3.53     YES
 L0000005         0   0.22000E-03  415761.4 3741509.8    32.0     0.00    26.94
3.53     YES
 L0000006         0   0.22000E-03  415723.8 3741553.8    32.0     0.00    26.94
3.53     YES
 L0000007         0   0.22000E-03  415686.3 3741597.9    32.0     0.00    26.94
3.53     YES
 L0000008         0   0.22000E-03  415648.7 3741642.0    32.0     0.00    26.94
3.53     YES
 L0000009         0   0.22000E-03  415611.2 3741686.1    32.0     0.00    26.94
3.53     YES
 L0000010         0   0.22000E-03  415573.6 3741730.2    32.0     0.00    26.94
3.53     YES
 L0000011         0   0.22000E-03  415536.1 3741774.3    32.0     0.00    26.94
3.53     YES
 L0000012         0   0.22000E-03  415498.5 3741818.3    32.0     0.00    26.94
3.53     YES
 L0000013         0   0.22000E-03  415460.9 3741862.4    32.0     0.00    26.94
3.53     YES
 L0000014         0   0.22000E-03  415423.4 3741906.5    32.0     0.00    26.94
3.53     YES
 L0000015         0   0.22000E-03  415385.8 3741950.6    32.0     0.00    26.94
3.53     YES
 *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13839 HRA\DPM\DPM.ISC
                          ***        01/11/21
 *** AERMET - VERSION  16216 ***   ***
                          ***       10:29:42

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


                                          *** SOURCE IDs DEFINING SOURCE GROUPS
***

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

```
  ALL        L0000001    , L0000002    , L0000003    , L0000004    , L0000005    ,
L0000006    , L0000007    , L0000008    ,

             L0000009    , L0000010    , L0000011    , L0000012    , L0000013    ,
L0000014    , L0000015    ,
 *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13839 HRA\DPM\DPM.ISC
                          ***        01/11/21
 *** AERMET - VERSION  16216 ***   ***
                          ***       10:29:42

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


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

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


              3010232.   L0000001    , L0000002    , L0000003    , L0000004    ,
L0000005    , L0000006    , L0000007    ,
 L0000008    ,

             L0000009    , L0000010    , L0000011    , L0000012    , L0000013    ,
L0000014    , L0000015    ,
 *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13839 HRA\DPM\DPM.ISC
                          ***        01/11/21
 *** AERMET - VERSION  16216 ***   ***
                          ***       10:29:42

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

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

     ( 415738.2, 3741653.1,      32.0,      32.0,       0.0);         ( 415747.8,
3741653.1,      32.0,      32.0,       0.0);
     ( 415760.2, 3741653.1,      32.0,      32.0,       0.0);         ( 415772.6,
3741653.1,      32.0,      32.0,       0.0);
     ( 415785.0, 3741653.1,      32.0,      32.0,       0.0);         ( 415797.5,
3741653.1,      32.0,      32.0,       0.0);
     ( 415807.5, 3741652.8,      32.0,      32.0,       0.0);         ( 415817.4,
3741652.8,      32.0,      32.0,       0.0);
     ( 415828.2, 3741652.7,      32.0,      32.0,       0.0);         ( 415909.3,
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3741653.1,      32.0,      32.0,       0.0);
     ( 415921.8, 3741653.1,      32.0,      32.0,       0.0);         ( 415934.2,
3741653.1,      32.0,      32.0,       0.0);
     ( 415946.6, 3741653.1,      32.0,      32.0,       0.0);         ( 415959.1,
3741653.1,      32.0,      32.0,       0.0);
     ( 415971.5, 3741653.1,      32.0,      32.0,       0.0);         ( 415978.8,
3741654.3,      32.0,      32.0,       0.0);
     ( 415738.2, 3741657.2,      32.0,      32.0,       0.0);         ( 415747.8,
3741657.2,      32.0,      32.0,       0.0);
     ( 415760.2, 3741657.2,      32.0,      32.0,       0.0);         ( 415772.6,
3741657.2,      32.0,      32.0,       0.0);
     ( 415785.0, 3741657.2,      32.0,      32.0,       0.0);         ( 415797.5,
3741657.2,      32.0,      32.0,       0.0);
     ( 415807.5, 3741657.0,      32.0,      32.0,       0.0);         ( 415817.4,
3741657.0,      32.0,      32.0,       0.0);
     ( 415828.2, 3741656.9,      32.0,      32.0,       0.0);         ( 415909.3,
3741657.2,      32.0,      32.0,       0.0);
     ( 415921.8, 3741657.2,      32.0,      32.0,       0.0);         ( 415934.2,
3741657.2,      32.0,      32.0,       0.0);
     ( 415946.6, 3741657.2,      32.0,      32.0,       0.0);         ( 415959.1,
3741657.2,      32.0,      32.0,       0.0);
     ( 415971.5, 3741657.2,      32.0,      32.0,       0.0);         ( 415978.8,
3741658.5,      32.0,      32.0,       0.0);
     ( 415738.2, 3741661.4,      32.0,      32.0,       0.0);         ( 415747.8,
3741661.4,      32.0,      32.0,       0.0);
     ( 415760.2, 3741661.4,      32.0,      32.0,       0.0);         ( 415772.6,
3741661.4,      32.0,      32.0,       0.0);
     ( 415785.0, 3741661.4,      32.0,      32.0,       0.0);         ( 415797.5,
3741661.4,      32.0,      32.0,       0.0);
     ( 415807.5, 3741661.2,      32.0,      32.0,       0.0);         ( 415817.4,
3741661.2,      32.0,      32.0,       0.0);
     ( 415828.2, 3741661.1,      32.0,      32.0,       0.0);         ( 415909.3,
3741661.4,      32.0,      32.0,       0.0);
     ( 415921.8, 3741661.4,      32.0,      32.0,       0.0);         ( 415934.2,
3741661.4,      32.0,      32.0,       0.0);
     ( 415946.6, 3741661.4,      32.0,      32.0,       0.0);         ( 415959.1,
3741661.4,      32.0,      32.0,       0.0);
     ( 415971.5, 3741661.4,      32.0,      32.0,       0.0);         ( 415978.8,
3741662.7,      32.0,      32.0,       0.0);
     ( 415852.3, 3741664.8,      32.0,      32.0,       0.0);         ( 415872.0,
3741665.6,      32.0,      32.0,       0.0);
     ( 415884.5, 3741665.6,      32.0,      32.0,       0.0);         ( 415852.3,
3741669.0,      32.0,      32.0,       0.0);
     ( 415872.0, 3741669.8,      32.0,      32.0,       0.0);         ( 415884.5,
3741669.8,      32.0,      32.0,       0.0);
     ( 415738.2, 3741674.0,      32.0,      32.0,       0.0);         ( 415747.8,
3741674.0,      32.0,      32.0,       0.0);
     ( 415760.2, 3741674.0,      32.0,      32.0,       0.0);         ( 415772.6,
3741674.0,      32.0,      32.0,       0.0);
     ( 415785.0, 3741674.0,      32.0,      32.0,       0.0);         ( 415797.5,
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3741674.0,   32.0,   32.0,   0.0);
     (415809.9, 3741674.0,   32.0,   32.0,   0.0);   (415822.3,
3741674.0,   32.0,   32.0,   0.0);
     (415852.3, 3741673.2,   32.0,   32.0,   0.0);   (415872.0,
3741674.0,   32.0,   32.0,   0.0);
     (415884.5, 3741674.0,   32.0,   32.0,   0.0);   (415921.8,
3741674.0,   32.0,   32.0,   0.0);
     (415934.2, 3741674.0,   32.0,   32.0,   0.0);   (415946.6,
3741674.0,   32.0,   32.0,   0.0);
     (415959.1, 3741674.0,   32.0,   32.0,   0.0);   (415971.5,
3741674.0,   32.0,   32.0,   0.0);
     (415978.8, 3741675.3,   32.0,   32.0,   0.0);   (415738.2,
3741678.2,   32.0,   32.0,   0.0);
     (415747.8, 3741678.2,   32.0,   32.0,   0.0);   (415760.2,
3741678.2,   32.0,   32.0,   0.0);
     (415772.6, 3741678.2,   32.0,   32.0,   0.0);   (415785.0,
3741678.2,   32.0,   32.0,   0.0);
     (415797.5, 3741678.2,   32.0,   32.0,   0.0);   (415809.9,
3741678.2,   32.0,   32.0,   0.0);
     (415822.3, 3741678.2,   32.0,   32.0,   0.0);   (415921.8,
3741678.2,   32.0,   32.0,   0.0);
     (415934.2, 3741678.2,   32.0,   32.0,   0.0);   (415946.6,
3741678.2,   32.0,   32.0,   0.0);
     (415959.1, 3741678.2,   32.0,   32.0,   0.0);   (415971.5,
3741678.2,   32.0,   32.0,   0.0);
     (415978.8, 3741679.5,   32.0,   32.0,   0.0);   (415738.2,
3741682.4,   32.0,   32.0,   0.0);
     (415747.8, 3741682.4,   32.0,   32.0,   0.0);   (415760.2,
3741682.4,   32.0,   32.0,   0.0);
     (415772.6, 3741682.4,   32.0,   32.0,   0.0);   (415785.0,
3741682.4,   32.0,   32.0,   0.0);

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

     (415797.5, 3741682.4,   32.0,   32.0,   0.0);   (415809.9,
3741682.4,   32.0,   32.0,   0.0);
     (415822.3, 3741682.4,   32.0,   32.0,   0.0);   (415847.2,
3741682.4,   32.0,   32.0,   0.0);
     (415884.5, 3741682.4,   32.0,   32.0,   0.0);   (415921.8,
3741682.4,   32.0,   32.0,   0.0);
     (415934.2, 3741682.4,   32.0,   32.0,   0.0);   (415946.6,

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3741682.4,      32.0,      32.0,       0.0);
     ( 415959.1, 3741682.4,      32.0,      32.0,       0.0);         ( 415971.5,
3741682.4,      32.0,      32.0,       0.0);
     ( 415978.8, 3741683.7,      32.0,      32.0,       0.0);         ( 415738.2,
3741686.6,      32.0,      32.0,       0.0);
     ( 415747.8, 3741686.6,      32.0,      32.0,       0.0);         ( 415760.2,
3741686.6,      32.0,      32.0,       0.0);
     ( 415772.6, 3741686.6,      32.0,      32.0,       0.0);         ( 415785.0,
3741686.6,      32.0,      32.0,       0.0);
     ( 415797.5, 3741686.6,      32.0,      32.0,       0.0);         ( 415809.9,
3741686.6,      32.0,      32.0,       0.0);
     ( 415822.3, 3741686.6,      32.0,      32.0,       0.0);         ( 415847.2,
3741686.6,      32.0,      32.0,       0.0);
     ( 415884.5, 3741686.6,      32.0,      32.0,       0.0);         ( 415847.2,
3741690.8,      32.0,      32.0,       0.0);
     ( 415884.5, 3741690.8,      32.0,      32.0,       0.0);         ( 415847.2,
3741695.0,      32.0,      32.0,       0.0);
     ( 415884.5, 3741695.0,      32.0,      32.0,       0.0);         ( 415738.2,
3741699.1,      32.0,      32.0,       0.0);
     ( 415747.8, 3741699.1,      32.0,      32.0,       0.0);         ( 415760.2,
3741699.1,      32.0,      32.0,       0.0);
     ( 415772.6, 3741699.1,      32.0,      32.0,       0.0);         ( 415785.0,
3741699.1,      32.0,      32.0,       0.0);
     ( 415797.5, 3741699.1,      32.0,      32.0,       0.0);         ( 415809.9,
3741699.1,      32.0,      32.0,       0.0);
     ( 415822.3, 3741699.1,      32.0,      32.0,       0.0);         ( 415847.2,
3741699.1,      32.0,      32.0,       0.0);
     ( 415884.5, 3741699.1,      32.0,      32.0,       0.0);         ( 415921.8,
3741699.1,      32.0,      32.0,       0.0);
     ( 415934.2, 3741699.1,      32.0,      32.0,       0.0);         ( 415946.6,
3741699.1,      32.0,      32.0,       0.0);
     ( 415959.1, 3741699.1,      32.0,      32.0,       0.0);         ( 415971.5,
3741699.1,      32.0,      32.0,       0.0);
     ( 415978.8, 3741700.4,      32.0,      32.0,       0.0);         ( 415738.2,
3741703.3,      32.0,      32.0,       0.0);
     ( 415747.8, 3741703.3,      32.0,      32.0,       0.0);         ( 415760.2,
3741703.3,      32.0,      32.0,       0.0);
     ( 415772.6, 3741703.3,      32.0,      32.0,       0.0);         ( 415785.0,
3741703.3,      32.0,      32.0,       0.0);
     ( 415797.5, 3741703.3,      32.0,      32.0,       0.0);         ( 415809.9,
3741703.3,      32.0,      32.0,       0.0);
     ( 415822.3, 3741703.3,      32.0,      32.0,       0.0);         ( 415847.2,
3741703.3,      32.0,      32.0,       0.0);
     ( 415884.5, 3741703.3,      32.0,      32.0,       0.0);         ( 415921.8,
3741703.3,      32.0,      32.0,       0.0);
     ( 415934.2, 3741703.3,      32.0,      32.0,       0.0);         ( 415946.6,
3741703.3,      32.0,      32.0,       0.0);
     ( 415959.1, 3741703.3,      32.0,      32.0,       0.0);         ( 415971.5,
3741703.3,      32.0,      32.0,       0.0);
     ( 415978.8, 3741704.6,      32.0,      32.0,       0.0);         ( 415738.2,
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3741707.5,   32.0,   32.0,   0.0);
     (415747.8, 3741707.5,   32.0,   32.0,   0.0);   (415760.2,
3741707.5,   32.0,   32.0,   0.0);
     (415772.6, 3741707.5,   32.0,   32.0,   0.0);   (415785.0,
3741707.5,   32.0,   32.0,   0.0);
     (415797.5, 3741707.5,   32.0,   32.0,   0.0);   (415809.9,
3741707.5,   32.0,   32.0,   0.0);
     (415822.3, 3741707.5,   32.0,   32.0,   0.0);   (415921.8,
3741707.5,   32.0,   32.0,   0.0);
     (415934.2, 3741707.5,   32.0,   32.0,   0.0);   (415946.6,
3741707.5,   32.0,   32.0,   0.0);
     (415959.1, 3741707.5,   32.0,   32.0,   0.0);   (415971.5,
3741707.5,   32.0,   32.0,   0.0);
     (415978.8, 3741708.8,   32.0,   32.0,   0.0);   (415738.2,
3741720.1,   32.0,   32.0,   0.0);
     (415747.8, 3741720.1,   32.0,   32.0,   0.0);   (415760.2,
3741720.1,   32.0,   32.0,   0.0);
     (415772.6, 3741720.1,   32.0,   32.0,   0.0);   (415785.0,
3741720.1,   32.0,   32.0,   0.0);
     (415797.5, 3741720.1,   32.0,   32.0,   0.0);   (415809.9,
3741720.1,   32.0,   32.0,   0.0);
     (415822.3, 3741720.1,   32.0,   32.0,   0.0);   (415834.8,
3741720.1,   32.0,   32.0,   0.0);
     (415847.2, 3741720.1,   32.0,   32.0,   0.0);   (415859.6,
3741720.1,   32.0,   32.0,   0.0);
     (415884.5, 3741720.1,   32.0,   32.0,   0.0);   (415896.9,
3741720.1,   32.0,   32.0,   0.0);
     (415909.3, 3741720.1,   32.0,   32.0,   0.0);   (415921.8,
3741720.1,   32.0,   32.0,   0.0);
     (415934.2, 3741720.1,   32.0,   32.0,   0.0);   (415946.6,
3741720.1,   32.0,   32.0,   0.0);
     (415959.1, 3741720.1,   32.0,   32.0,   0.0);   (415971.5,
3741720.1,   32.0,   32.0,   0.0);

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

     (415978.8, 3741721.4,   32.0,   32.0,   0.0);   (415738.2,
3741724.3,   32.0,   32.0,   0.0);
     (415747.8, 3741724.3,   32.0,   32.0,   0.0);   (415760.2,
3741724.3,   32.0,   32.0,   0.0);
     (415772.6, 3741724.3,   32.0,   32.0,   0.0);   (415785.0,

3741724.3,   32.0,   32.0,   0.0);
     (415797.5, 3741724.3,   32.0,   32.0,   0.0);   (415809.9,
3741724.3,   32.0,   32.0,   0.0);
     (415822.3, 3741724.3,   32.0,   32.0,   0.0);   (415834.8,
3741724.3,   32.0,   32.0,   0.0);
     (415847.2, 3741724.3,   32.0,   32.0,   0.0);   (415859.6,
3741724.3,   32.0,   32.0,   0.0);
     (415884.5, 3741724.3,   32.0,   32.0,   0.0);   (415896.9,
3741724.3,   32.0,   32.0,   0.0);
     (415909.3, 3741724.3,   32.0,   32.0,   0.0);   (415921.8,
3741724.3,   32.0,   32.0,   0.0);
     (415934.2, 3741724.3,   32.0,   32.0,   0.0);   (415946.6,
3741724.3,   32.0,   32.0,   0.0);
     (415959.1, 3741724.3,   32.0,   32.0,   0.0);   (415971.5,
3741724.3,   32.0,   32.0,   0.0);
     (415978.8, 3741725.6,   32.0,   32.0,   0.0);   (415738.2,
3741728.5,   32.0,   32.0,   0.0);
     (415747.8, 3741728.5,   32.0,   32.0,   0.0);   (415760.2,
3741728.5,   32.0,   32.0,   0.0);
     (415772.6, 3741728.5,   32.0,   32.0,   0.0);   (415785.0,
3741728.5,   32.0,   32.0,   0.0);
     (415797.5, 3741728.5,   32.0,   32.0,   0.0);   (415809.9,
3741728.5,   32.0,   32.0,   0.0);
     (415822.3, 3741728.5,   32.0,   32.0,   0.0);   (415834.8,
3741728.5,   32.0,   32.0,   0.0);
     (415847.2, 3741728.5,   32.0,   32.0,   0.0);   (415859.6,
3741728.5,   32.0,   32.0,   0.0);
     (415884.5, 3741728.5,   32.0,   32.0,   0.0);   (415896.9,
3741728.5,   32.0,   32.0,   0.0);
     (415909.3, 3741728.5,   32.0,   32.0,   0.0);   (415921.8,
3741728.5,   32.0,   32.0,   0.0);
     (415934.2, 3741728.5,   32.0,   32.0,   0.0);   (415946.6,
3741728.5,   32.0,   32.0,   0.0);
     (415959.1, 3741728.5,   32.0,   32.0,   0.0);   (415971.5,
3741728.5,   32.0,   32.0,   0.0);
     (415978.8, 3741729.8,   32.0,   32.0,   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
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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: KSNA_V9_ADJU\KSNA_V9.SFC
Met Version: 16216
Profile file: KSNA_V9_ADJU\KSNA_V9.PFL

Surface format: FREE

Profile format: FREE

Surface station no.:   93184   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	-4.5	0.082	-9.000	-9.000	-999.	56.	11.0	0.12	2.65	1.00	0.87	62.	5.8	283.8	2.0
12	01	01	1	02	-3.5	0.073	-9.000	-9.000	-999.	47.	9.9	0.12	2.65	1.00	0.77	27.	5.8	283.1	2.0
12	01	01	1	03	-3.5	0.073	-9.000	-9.000	-999.	47.	9.9	0.12	2.65	1.00	0.77	336.	5.8	283.1	2.0
12	01	01	1	04	-3.3	0.070	-9.000	-9.000	-999.	45.	9.7	0.12	2.65	1.00	0.74	34.	5.8	283.1	2.0
12	01	01	1	05	-3.0	0.068	-9.000	-9.000	-999.	42.	9.4	0.12	2.65	1.00	0.70	154.	5.8	282.5	2.0
12	01	01	1	06	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.12	2.65	1.00	0.00	0.	5.8	282.0	2.0
12	01	01	1	07	-2.0	0.059	-9.000	-9.000	-999.	34.	9.0	0.12	2.65	1.00	0.55	343.	5.8	281.4	2.0
12	01	01	1	08	-2.6	0.066	-9.000	-9.000	-999.	40.	9.7	0.12	2.65	0.53	0.69	25.	5.8	281.4	2.0
12	01	01	1	09	21.6	0.133	0.252	0.010	27.	116.	-9.9	0.12	2.65	0.31	1.03	344.	5.8	282.5	2.0
12	01	01	1	10	115.6	0.162	0.713	0.008	114.	156.	-3.3	0.12	2.65	0.24	1.06	233.	5.8	286.4	2.0
12	01	01	1	11	160.9	0.126	1.129	0.005	325.	108.	-1.1	0.12	2.65	0.21	0.67	261.	5.8	291.4	2.0
12	01	01	1	12	187.0	0.138	1.467	0.005	614.	123.	-1.3	0.12	2.65	0.20	0.75	252.	5.8	294.9	2.0
12	01	01	1	13	186.9	0.189	1.755	0.005	1051.	197.	-3.3	0.12	2.65	0.20	1.23	280.	5.8	297.5	2.0
12	01	01	1	14	168.3	0.247	1.857	0.005	1383.	295.	-8.1	0.12	2.65	0.21	1.86	268.	5.8	299.2	2.0
12	01	01	1	15	115.3	0.275	1.688	0.005	1517.	346.	-16.3	0.12	2.65	0.24	2.25	248.	5.8	298.1	2.0
12	01	01	1	16	41.5	0.262	1.211	0.005	1552.	322.	-39.2	0.12	2.65	0.33	2.32	227.	5.8	295.9	2.0
12	01	01	1	17	-17.9	0.217	-9.000	-9.000	-999.	244.	52.0	0.12	2.65	0.60	2.18	227.	5.8	292.5	2.0
12	01	01	1	18	-24.7	0.250	-9.000	-9.000	-999.	300.	68.7	0.12	2.65	1.00	2.50	219.	5.8	288.8	2.0
12	01	01	1	19	-5.2	0.088	-9.000	-9.000	-999.	91.	12.0	0.12	2.65	1.00	0.94	201.	5.8	287.5	2.0
12	01	01	1	20	-3.5	0.073	-9.000	-9.000	-999.	47.	10.0	0.12	2.65	1.00	0.77	259.	5.8	287.0	2.0
12	01	01	1	21	-2.6	0.064	-9.000	-9.000	-999.	39.	9.1	0.12	2.65	1.00	0.65	264.	5.8	286.4	2.0
12	01	01	1	22	-4.4	0.081	-9.000	-9.000	-999.	55.	10.9	0.12	2.65	1.00	0.86	211.	5.8	285.9	2.0
12	01	01	1	23	-4.2	0.079	-9.000	-9.000	-999.	53.	10.7	0.12	2.65						

```
1.00    0.84  247.    5.8  284.9    2.0
 12 01 01   1 24   -7.1  0.103 -9.000 -9.000 -999.   80.     14.1  0.12   2.65
1.00    1.09  236.    5.8  283.8    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 12 01 01 01    5.8 1   62.    0.87   283.8   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
↑ *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13839 HRA\DPM\DPM.ISC
                          ***        01/11/21
 *** AERMET - VERSION  16216 ***   ***
                        ***       10:29:42

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

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                 L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                 L0000014    , L0000015    ,

                                             *** 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
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - -
         415738.18    3741653.06       0.12777                          415747.75
3741653.06        0.11779
         415760.18    3741653.06       0.10689                          415772.61
3741653.06        0.09780
         415785.04    3741653.06       0.09007                          415797.47
3741653.06        0.08340
         415807.50    3741652.82       0.07873                          415817.42
3741652.82        0.07447
         415828.17    3741652.70       0.07032                          415909.34
3741653.06        0.04813
         415921.77    3741653.06       0.04571                          415934.20
3741653.06        0.04346
         415946.63    3741653.06       0.04135                          415959.06
3741653.06        0.03937
```

```
         415971.49    3741653.06        0.03751                    415978.84
3741654.33        0.03636
         415738.18    3741657.25        0.12391                    415747.75
3741657.25        0.11452
         415760.18    3741657.25        0.10420                    415772.61
3741657.25        0.09554
         415785.04    3741657.25        0.08814                    415797.47
3741657.25        0.08174
         415807.50    3741657.01        0.07724                    415817.42
3741657.01        0.07313
         415828.17    3741656.89        0.06912                    415909.34
3741657.25        0.04756
         415921.77    3741657.25        0.04519                    415934.20
3741657.25        0.04299
         415946.63    3741657.25        0.04093                    415959.06
3741657.25        0.03899
         415971.49    3741657.25        0.03717                    415978.84
3741658.52        0.03604
         415738.18    3741661.44        0.12027                    415747.75
3741661.44        0.11142
         415760.18    3741661.44        0.10164                    415772.61
3741661.44        0.09338
         415785.04    3741661.44        0.08630                    415797.47
3741661.44        0.08014
         415807.50    3741661.20        0.07581                    415817.42
3741661.20        0.07184
         415828.17    3741661.08        0.06796                    415909.34
3741661.44        0.04699
         415921.77    3741661.44        0.04468                    415934.20
3741661.44        0.04253
         415946.63    3741661.44        0.04051                    415959.06
3741661.44        0.03861
         415971.49    3741661.44        0.03683                    415978.84
3741662.71        0.03572
         415852.29    3741664.78        0.05960                    415872.05
3741665.63        0.05434
         415884.48    3741665.63        0.05150                    415852.29
3741668.97        0.05872
         415872.05    3741669.82        0.05361                    415884.48
3741669.82        0.05084
         415738.18    3741674.01        0.11059                    415747.75
3741674.01        0.10307
         415760.18    3741674.01        0.09465                    415772.61
3741674.01        0.08744
         415785.04    3741674.01        0.08119                    415797.47
3741674.01        0.07570
         415809.90    3741674.01        0.07084                    415822.33
3741674.01        0.06650
         415852.29    3741673.16        0.05787                    415872.05
3741674.01        0.05290
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         415884.48    3741674.01        0.05019                             415921.77
3741674.01        0.04322
         415934.20    3741674.01        0.04120                             415946.63
3741674.01        0.03930
         415959.06    3741674.01        0.03752                             415971.49
3741674.01        0.03584
         415978.84    3741675.28        0.03479                             415738.18
3741678.20        0.10770
         415747.75    3741678.20        0.10056                             415760.18
3741678.20        0.09253
         415772.61    3741678.20        0.08562                             415785.04
3741678.20        0.07961
         415797.47    3741678.20        0.07432                             415809.90
3741678.20        0.06962
         415822.33    3741678.20        0.06542                             415921.77
3741678.20        0.04275
```

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

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                 L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                 L0000014    , L0000015    ,

                                                     *** 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
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - -
         415934.20    3741678.20        0.04077                             415946.63
3741678.20        0.03892
         415959.06    3741678.20        0.03717                             415971.49
3741678.20        0.03552
         415978.84    3741679.47        0.03449                             415738.18
3741682.39        0.10497
         415747.75    3741682.39        0.09817                             415760.18
3741682.39        0.09050
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         415772.61    3741682.39        0.08388                    415785.04
3741682.39        0.07809
         415797.47    3741682.39        0.07299                    415809.90
3741682.39        0.06845
         415822.33    3741682.39        0.06438                    415847.19
3741682.39        0.05737
         415884.48    3741682.39        0.04895                    415921.77
3741682.39        0.04229
         415934.20    3741682.39        0.04035                    415946.63
3741682.39        0.03854
         415959.06    3741682.39        0.03682                    415971.49
3741682.39        0.03520
         415978.84    3741683.66        0.03420                    415738.18
3741686.58        0.10238
         415747.75    3741686.58        0.09589                    415760.18
3741686.58        0.08856
         415772.61    3741686.58        0.08220                    415785.04
3741686.58        0.07663
         415797.47    3741686.58        0.07170                    415809.90
3741686.58        0.06731
         415822.33    3741686.58        0.06336                    415847.19
3741686.58        0.05655
         415884.48    3741686.58        0.04835                    415847.19
3741690.77        0.05576
         415884.48    3741690.77        0.04776                    415847.19
3741694.96        0.05499
         415884.48    3741694.96        0.04719                    415738.18
3741699.15        0.09530
         415747.75    3741699.15        0.08964                    415760.18
3741699.15        0.08318
         415772.61    3741699.15        0.07753                    415785.04
3741699.15        0.07254
         415797.47    3741699.15        0.06809                    415809.90
3741699.15        0.06410
         415822.33    3741699.15        0.06050                    415847.19
3741699.15        0.05423
         415884.48    3741699.15        0.04662                    415921.77
3741699.15        0.04053
         415934.20    3741699.15        0.03875                    415946.63
3741699.15        0.03707
         415959.06    3741699.15        0.03549                    415971.49
3741699.15        0.03399
         415978.84    3741700.42        0.03305                    415738.18
3741703.34        0.09315
         415747.75    3741703.34        0.08774                    415760.18
3741703.34        0.08153
         415772.61    3741703.34        0.07608                    415785.04
3741703.34        0.07126
         415797.47    3741703.34        0.06696                    415809.90
3741703.34        0.06309
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         415822.33    3741703.34        0.05959                      415847.19
3741703.34        0.05350
         415884.48    3741703.34        0.04607                      415921.77
3741703.34        0.04011
         415934.20    3741703.34        0.03837                      415946.63
3741703.34        0.03672
         415959.06    3741703.34        0.03517                      415971.49
3741703.34        0.03370
         415978.84    3741704.61        0.03278                      415738.18
3741707.53        0.09110
         415747.75    3741707.53        0.08590                      415760.18
3741707.53        0.07993
         415772.61    3741707.53        0.07469                      415785.04
3741707.53        0.07003
         415797.47    3741707.53        0.06587                      415809.90
3741707.53        0.06211
         415822.33    3741707.53        0.05872                      415921.77
3741707.53        0.03970
         415934.20    3741707.53        0.03799                      415946.63
3741707.53        0.03638
         415959.06    3741707.53        0.03485                      415971.49
3741707.53        0.03341
 *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13839 HRA\DPM\DPM.ISC
                          ***       01/11/21
 *** AERMET - VERSION  16216 ***   ***
                       ***        10:29:42

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

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                   L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                   L0000014    , L0000015    ,

                                                *** 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
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - -
         415978.84    3741708.80        0.03251                      415738.18
3741720.10        0.08542
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         415747.75    3741720.10        0.08082                    415760.18
3741720.10        0.07549
         415772.61    3741720.10        0.07078                    415785.04
3741720.10        0.06656
         415797.47    3741720.10        0.06277                    415809.90
3741720.10        0.05934
         415822.33    3741720.10        0.05622                    415834.76
3741720.10        0.05336
         415847.19    3741720.10        0.05074                    415859.62
3741720.10        0.04831
         415884.48    3741720.10        0.04399                    415896.91
3741720.10        0.04204
         415909.34    3741720.10        0.04022                    415921.77
3741720.10        0.03851
         415934.20    3741720.10        0.03690                    415946.63
3741720.10        0.03538
         415959.06    3741720.10        0.03393                    415971.49
3741720.10        0.03257
         415978.84    3741721.37        0.03171                    415738.18
3741724.29        0.08367
         415747.75    3741724.29        0.07925                    415760.18
3741724.29        0.07412
         415772.61    3741724.29        0.06956                    415785.04
3741724.29        0.06548
         415797.47    3741724.29        0.06180                    415809.90
3741724.29        0.05847
         415822.33    3741724.29        0.05543                    415834.76
3741724.29        0.05265
         415847.19    3741724.29        0.05009                    415859.62
3741724.29        0.04772
         415884.48    3741724.29        0.04349                    415896.91
3741724.29        0.04158
         415909.34    3741724.29        0.03980                    415921.77
3741724.29        0.03812
         415934.20    3741724.29        0.03654                    415946.63
3741724.29        0.03505
         415959.06    3741724.29        0.03364                    415971.49
3741724.29        0.03229
         415978.84    3741725.56        0.03145                    415738.18
3741728.48        0.08199
         415747.75    3741728.48        0.07774                    415760.18
3741728.48        0.07278
         415772.61    3741728.48        0.06838                    415785.04
3741728.48        0.06442
         415797.47    3741728.48        0.06085                    415809.90
3741728.48        0.05761
         415822.33    3741728.48        0.05466                    415834.76
3741728.48        0.05195
         415847.19    3741728.48        0.04945                    415859.62
3741728.48        0.04714
```

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         415884.48    3741728.48        0.04300                      415896.91
3741728.48        0.04114
         415909.34    3741728.48        0.03939                      415921.77
3741728.48        0.03775
         415934.20    3741728.48        0.03620                      415946.63
3741728.48        0.03473
         415959.06    3741728.48        0.03334                      415971.49
3741728.48        0.03202
         415978.84    3741729.75        0.03120

 *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13839 HRA\DPM\DPM.ISC
                          ***       01/11/21
 *** AERMET - VERSION  16216 ***   ***
                          ***      10:29:42

                                   PAGE  13
 *** 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       0.12777 AT (  415738.18,  3741653.06,
32.00,    32.00,    0.00)  DC
          2ND HIGHEST VALUE IS       0.12391 AT (  415738.18,  3741657.25,
32.00,    32.00,    0.00)  DC
          3RD HIGHEST VALUE IS       0.12027 AT (  415738.18,  3741661.44,
32.00,    32.00,    0.00)  DC
          4TH HIGHEST VALUE IS       0.11779 AT (  415747.75,  3741653.06,
32.00,    32.00,    0.00)  DC
          5TH HIGHEST VALUE IS       0.11452 AT (  415747.75,  3741657.25,
32.00,    32.00,    0.00)  DC
          6TH HIGHEST VALUE IS       0.11142 AT (  415747.75,  3741661.44,
32.00,    32.00,    0.00)  DC
          7TH HIGHEST VALUE IS       0.11059 AT (  415738.18,  3741674.01,
32.00,    32.00,    0.00)  DC
          8TH HIGHEST VALUE IS       0.10770 AT (  415738.18,  3741678.20,
32.00,    32.00,    0.00)  DC
          9TH HIGHEST VALUE IS       0.10689 AT (  415760.18,  3741653.06,
32.00,    32.00,    0.00)  DC
```

```
        10TH HIGHEST VALUE IS       0.10497 AT (  415738.18,  3741682.39,
32.00,    32.00,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
 *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13839 HRA\DPM\DPM.ISC
                         ***        01/11/21
 *** AERMET - VERSION  16216 ***   ***
                       ***        10:29:42

                                  PAGE  14
 *** 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         1864 Informational Message(s)

 A Total of        43848 Hours Were Processed

 A Total of         1500 Calm Hours Identified

 A Total of          364 Missing Hours Identified (  0.83 Percent)


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


    ********   WARNING MESSAGES   ********
 ME W186     108       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187     108       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


    ***********************************
    *** AERMOD Finishes Successfully ***
    ***********************************
** Lakes Environmental AERMOD MPI
**
***************************************
**
** AERMOD INPUT PRODUCED BY:
** AERMOD VIEW VER. 9.9.0
```

```
** LAKES ENVIRONMENTAL SOFTWARE INC.
** DATE: 1/11/2021
** FILE: C:\LAKES\AERMOD VIEW\13839 HRA\PM10\PM10.ADI
**
**************************************
**
**
**************************************
** AERMOD CONTROL PATHWAY
**************************************
**
**
CO STARTING
   TITLEONE C:\LAKES\AERMOD VIEW\13839 HRA\PM10\PM10.ISC
   MODELOPT DFAULT CONC
   AVERTIME 24 ANNUAL
   URBANOPT 3010232
   POLLUTID PM_10
   RUNORNOT RUN
   ERRORFIL 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 I-5 FREEWAY
** PREFIX
** LENGTH OF SIDE = 57.91
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.200993
** VERTICAL DIMENSION = 6.99
** SZINIT = 3.53
** NODES = 2
** 415930.405, 3741311.396, 32.00, 0.00, 26.94
** 415359.391, 3741981.629, 32.00, 0.00, 26.94
** ------------------------------------------------------------------------
   LOCATION L0000001     VOLUME   415911.627 3741333.437 32.00
   LOCATION L0000002     VOLUME   415874.070 3741377.520 32.00
   LOCATION L0000003     VOLUME   415836.513 3741421.602 32.00
   LOCATION L0000004     VOLUME   415798.956 3741465.685 32.00
   LOCATION L0000005     VOLUME   415761.399 3741509.768 32.00
   LOCATION L0000006     VOLUME   415723.843 3741553.850 32.00
```

```
   LOCATION L0000007     VOLUME   415686.286 3741597.933 32.00
   LOCATION L0000008     VOLUME   415648.729 3741642.016 32.00
   LOCATION L0000009     VOLUME   415611.172 3741686.099 32.00
   LOCATION L0000010     VOLUME   415573.615 3741730.181 32.00
   LOCATION L0000011     VOLUME   415536.058 3741774.264 32.00
   LOCATION L0000012     VOLUME   415498.502 3741818.347 32.00
   LOCATION L0000013     VOLUME   415460.945 3741862.429 32.00
   LOCATION L0000014     VOLUME   415423.388 3741906.512 32.00
   LOCATION L0000015     VOLUME   415385.831 3741950.595 32.00
** END OF LINE VOLUME SOURCE ID = SLINE1
** SOURCE PARAMETERS **
** LINE VOLUME SOURCE ID = SLINE1
   SRCPARAM L0000001     0.0133995333      0.00     26.94      3.53
   SRCPARAM L0000002     0.0133995333      0.00     26.94      3.53
   SRCPARAM L0000003     0.0133995333      0.00     26.94      3.53
   SRCPARAM L0000004     0.0133995333      0.00     26.94      3.53
   SRCPARAM L0000005     0.0133995333      0.00     26.94      3.53
   SRCPARAM L0000006     0.0133995333      0.00     26.94      3.53
   SRCPARAM L0000007     0.0133995333      0.00     26.94      3.53
   SRCPARAM L0000008     0.0133995333      0.00     26.94      3.53
   SRCPARAM L0000009     0.0133995333      0.00     26.94      3.53
   SRCPARAM L0000010     0.0133995333      0.00     26.94      3.53
   SRCPARAM L0000011     0.0133995333      0.00     26.94      3.53
   SRCPARAM L0000012     0.0133995333      0.00     26.94      3.53
   SRCPARAM L0000013     0.0133995333      0.00     26.94      3.53
   SRCPARAM L0000014     0.0133995333      0.00     26.94      3.53
   SRCPARAM L0000015     0.0133995333      0.00     26.94      3.53
** ----------------------------------------------------------------
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD RECEPTOR PATHWAY
**************************************
**
**
RE STARTING
   INCLUDED PM10.ROU
RE FINISHED
**
**************************************
** AERMOD METEOROLOGY PATHWAY
**************************************
**
**
ME STARTING
   SURFFILE KSNA_V9_ADJU\KSNA_V9.SFC
   PROFFILE KSNA_V9_ADJU\KSNA_V9.PFL
   SURFDATA 93184 2012
```

```
   UAIRDATA 3190 2012
   PROFBASE 17.0 METERS
ME FINISHED
**
**************************************
** AERMOD OUTPUT PATHWAY
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 24 1ST
** AUTO-GENERATED PLOTFILES
   PLOTFILE   24 ALL 1ST PM10.AD\24H1GALL.PLT 31
   PLOTFILE   ANNUAL ALL PM10.AD\AN00GALL.PLT 32
   SUMMFILE 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     108       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187     108       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


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

↟ *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13839
HRA\PM10\PM10.ISC                        ***        01/11/21
 *** AERMET - VERSION  16216 ***   ***
                         ***        11:01:35

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

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

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

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

 **Model Uses URBAN Dispersion Algorithm for the SBL for    15 Source(s),
   for Total of    1 Urban Area(s):
   Urban Population =   3010232.0 ;  Urban Roughness Length =  1.000 m

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

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

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  PM_10

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

 **This Run Includes:     15 Source(s);       1 Source Group(s); and     221
Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                 and:     15 VOLUME source(s)
                 and:      0 AREA type source(s)
                 and:      0 LINE source(s)
                 and:      0 RLINE/RLINEXT source(s)
                 and:      0 OPENPIT source(s)
                 and:      0 BUOYANT LINE source(s) with      0 line(s)
```

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

 **The AERMET Input Meteorological Data Version Date:  16216

 **Output Options Selected:
          Model Outputs Tables of ANNUAL Averages by Receptor
          Model Outputs 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) =    17.00 ;  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:   PM10.ERR

 **File for Summary of Results:   PM10.SUM

↟ *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13839
HRA\PM10\PM10.ISC                         ***        01/11/21
 *** AERMET - VERSION  16216 ***   ***
                       ***        11:01:35

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


                                                  *** VOLUME SOURCE DATA ***

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

```
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - -

 L0000001         0   0.13400E-01  415911.6 3741333.4    32.0     0.00    26.94
3.53     YES
 L0000002         0   0.13400E-01  415874.1 3741377.5    32.0     0.00    26.94
3.53     YES
 L0000003         0   0.13400E-01  415836.5 3741421.6    32.0     0.00    26.94
3.53     YES
 L0000004         0   0.13400E-01  415799.0 3741465.7    32.0     0.00    26.94
3.53     YES
 L0000005         0   0.13400E-01  415761.4 3741509.8    32.0     0.00    26.94
3.53     YES
 L0000006         0   0.13400E-01  415723.8 3741553.8    32.0     0.00    26.94
3.53     YES
 L0000007         0   0.13400E-01  415686.3 3741597.9    32.0     0.00    26.94
3.53     YES
 L0000008         0   0.13400E-01  415648.7 3741642.0    32.0     0.00    26.94
3.53     YES
 L0000009         0   0.13400E-01  415611.2 3741686.1    32.0     0.00    26.94
3.53     YES
 L0000010         0   0.13400E-01  415573.6 3741730.2    32.0     0.00    26.94
3.53     YES
 L0000011         0   0.13400E-01  415536.1 3741774.3    32.0     0.00    26.94
3.53     YES
 L0000012         0   0.13400E-01  415498.5 3741818.3    32.0     0.00    26.94
3.53     YES
 L0000013         0   0.13400E-01  415460.9 3741862.4    32.0     0.00    26.94
3.53     YES
 L0000014         0   0.13400E-01  415423.4 3741906.5    32.0     0.00    26.94
3.53     YES
 L0000015         0   0.13400E-01  415385.8 3741950.6    32.0     0.00    26.94
3.53     YES
↟ *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13839
HRA\PM10\PM10.ISC                        ***        01/11/21
 *** AERMET - VERSION  16216 ***   ***
                       ***        11:01:35

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


                                          *** SOURCE IDs DEFINING SOURCE GROUPS
***

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

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

     (415738.2, 3741653.1,   32.0,   32.0,   0.0);   (415747.8,
3741653.1,   32.0,   32.0,   0.0);
     (415760.2, 3741653.1,   32.0,   32.0,   0.0);   (415772.6,
3741653.1,   32.0,   32.0,   0.0);
     (415785.0, 3741653.1,   32.0,   32.0,   0.0);   (415797.5,
3741653.1,   32.0,   32.0,   0.0);
     (415807.5, 3741652.8,   32.0,   32.0,   0.0);   (415817.4,
3741652.8,   32.0,   32.0,   0.0);
     (415828.2, 3741652.7,   32.0,   32.0,   0.0);   (415909.3,

```
3741653.1,      32.0,      32.0,       0.0);
     ( 415921.8, 3741653.1,      32.0,      32.0,       0.0);         ( 415934.2,
3741653.1,      32.0,      32.0,       0.0);
     ( 415946.6, 3741653.1,      32.0,      32.0,       0.0);         ( 415959.1,
3741653.1,      32.0,      32.0,       0.0);
     ( 415971.5, 3741653.1,      32.0,      32.0,       0.0);         ( 415978.8,
3741654.3,      32.0,      32.0,       0.0);
     ( 415738.2, 3741657.2,      32.0,      32.0,       0.0);         ( 415747.8,
3741657.2,      32.0,      32.0,       0.0);
     ( 415760.2, 3741657.2,      32.0,      32.0,       0.0);         ( 415772.6,
3741657.2,      32.0,      32.0,       0.0);
     ( 415785.0, 3741657.2,      32.0,      32.0,       0.0);         ( 415797.5,
3741657.2,      32.0,      32.0,       0.0);
     ( 415807.5, 3741657.0,      32.0,      32.0,       0.0);         ( 415817.4,
3741657.0,      32.0,      32.0,       0.0);
     ( 415828.2, 3741656.9,      32.0,      32.0,       0.0);         ( 415909.3,
3741657.2,      32.0,      32.0,       0.0);
     ( 415921.8, 3741657.2,      32.0,      32.0,       0.0);         ( 415934.2,
3741657.2,      32.0,      32.0,       0.0);
     ( 415946.6, 3741657.2,      32.0,      32.0,       0.0);         ( 415959.1,
3741657.2,      32.0,      32.0,       0.0);
     ( 415971.5, 3741657.2,      32.0,      32.0,       0.0);         ( 415978.8,
3741658.5,      32.0,      32.0,       0.0);
     ( 415738.2, 3741661.4,      32.0,      32.0,       0.0);         ( 415747.8,
3741661.4,      32.0,      32.0,       0.0);
     ( 415760.2, 3741661.4,      32.0,      32.0,       0.0);         ( 415772.6,
3741661.4,      32.0,      32.0,       0.0);
     ( 415785.0, 3741661.4,      32.0,      32.0,       0.0);         ( 415797.5,
3741661.4,      32.0,      32.0,       0.0);
     ( 415807.5, 3741661.2,      32.0,      32.0,       0.0);         ( 415817.4,
3741661.2,      32.0,      32.0,       0.0);
     ( 415828.2, 3741661.1,      32.0,      32.0,       0.0);         ( 415909.3,
3741661.4,      32.0,      32.0,       0.0);
     ( 415921.8, 3741661.4,      32.0,      32.0,       0.0);         ( 415934.2,
3741661.4,      32.0,      32.0,       0.0);
     ( 415946.6, 3741661.4,      32.0,      32.0,       0.0);         ( 415959.1,
3741661.4,      32.0,      32.0,       0.0);
     ( 415971.5, 3741661.4,      32.0,      32.0,       0.0);         ( 415978.8,
3741662.7,      32.0,      32.0,       0.0);
     ( 415852.3, 3741664.8,      32.0,      32.0,       0.0);         ( 415872.0,
3741665.6,      32.0,      32.0,       0.0);
     ( 415884.5, 3741665.6,      32.0,      32.0,       0.0);         ( 415852.3,
3741669.0,      32.0,      32.0,       0.0);
     ( 415872.0, 3741669.8,      32.0,      32.0,       0.0);         ( 415884.5,
3741669.8,      32.0,      32.0,       0.0);
     ( 415738.2, 3741674.0,      32.0,      32.0,       0.0);         ( 415747.8,
3741674.0,      32.0,      32.0,       0.0);
     ( 415760.2, 3741674.0,      32.0,      32.0,       0.0);         ( 415772.6,
3741674.0,      32.0,      32.0,       0.0);
     ( 415785.0, 3741674.0,      32.0,      32.0,       0.0);         ( 415797.5,
```

3741674.0,   32.0,   32.0,   0.0);
     (415809.9, 3741674.0,   32.0,   32.0,   0.0);   (415822.3,
3741674.0,   32.0,   32.0,   0.0);
     (415852.3, 3741673.2,   32.0,   32.0,   0.0);   (415872.0,
3741674.0,   32.0,   32.0,   0.0);
     (415884.5, 3741674.0,   32.0,   32.0,   0.0);   (415921.8,
3741674.0,   32.0,   32.0,   0.0);
     (415934.2, 3741674.0,   32.0,   32.0,   0.0);   (415946.6,
3741674.0,   32.0,   32.0,   0.0);
     (415959.1, 3741674.0,   32.0,   32.0,   0.0);   (415971.5,
3741674.0,   32.0,   32.0,   0.0);
     (415978.8, 3741675.3,   32.0,   32.0,   0.0);   (415738.2,
3741678.2,   32.0,   32.0,   0.0);
     (415747.8, 3741678.2,   32.0,   32.0,   0.0);   (415760.2,
3741678.2,   32.0,   32.0,   0.0);
     (415772.6, 3741678.2,   32.0,   32.0,   0.0);   (415785.0,
3741678.2,   32.0,   32.0,   0.0);
     (415797.5, 3741678.2,   32.0,   32.0,   0.0);   (415809.9,
3741678.2,   32.0,   32.0,   0.0);
     (415822.3, 3741678.2,   32.0,   32.0,   0.0);   (415921.8,
3741678.2,   32.0,   32.0,   0.0);
     (415934.2, 3741678.2,   32.0,   32.0,   0.0);   (415946.6,
3741678.2,   32.0,   32.0,   0.0);
     (415959.1, 3741678.2,   32.0,   32.0,   0.0);   (415971.5,
3741678.2,   32.0,   32.0,   0.0);
     (415978.8, 3741679.5,   32.0,   32.0,   0.0);   (415738.2,
3741682.4,   32.0,   32.0,   0.0);
     (415747.8, 3741682.4,   32.0,   32.0,   0.0);   (415760.2,
3741682.4,   32.0,   32.0,   0.0);
     (415772.6, 3741682.4,   32.0,   32.0,   0.0);   (415785.0,
3741682.4,   32.0,   32.0,   0.0);

 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

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

     (415797.5, 3741682.4,   32.0,   32.0,   0.0);   (415809.9,
3741682.4,   32.0,   32.0,   0.0);
     (415822.3, 3741682.4,   32.0,   32.0,   0.0);   (415847.2,
3741682.4,   32.0,   32.0,   0.0);
     (415884.5, 3741682.4,   32.0,   32.0,   0.0);   (415921.8,
3741682.4,   32.0,   32.0,   0.0);
     (415934.2, 3741682.4,   32.0,   32.0,   0.0);   (415946.6,

```
3741682.4,      32.0,      32.0,       0.0);
     ( 415959.1, 3741682.4,      32.0,      32.0,       0.0);         ( 415971.5,
3741682.4,      32.0,      32.0,       0.0);
     ( 415978.8, 3741683.7,      32.0,      32.0,       0.0);         ( 415738.2,
3741686.6,      32.0,      32.0,       0.0);
     ( 415747.8, 3741686.6,      32.0,      32.0,       0.0);         ( 415760.2,
3741686.6,      32.0,      32.0,       0.0);
     ( 415772.6, 3741686.6,      32.0,      32.0,       0.0);         ( 415785.0,
3741686.6,      32.0,      32.0,       0.0);
     ( 415797.5, 3741686.6,      32.0,      32.0,       0.0);         ( 415809.9,
3741686.6,      32.0,      32.0,       0.0);
     ( 415822.3, 3741686.6,      32.0,      32.0,       0.0);         ( 415847.2,
3741686.6,      32.0,      32.0,       0.0);
     ( 415884.5, 3741686.6,      32.0,      32.0,       0.0);         ( 415847.2,
3741690.8,      32.0,      32.0,       0.0);
     ( 415884.5, 3741690.8,      32.0,      32.0,       0.0);         ( 415847.2,
3741695.0,      32.0,      32.0,       0.0);
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3741699.1,      32.0,      32.0,       0.0);
     ( 415747.8, 3741699.1,      32.0,      32.0,       0.0);         ( 415760.2,
3741699.1,      32.0,      32.0,       0.0);
     ( 415772.6, 3741699.1,      32.0,      32.0,       0.0);         ( 415785.0,
3741699.1,      32.0,      32.0,       0.0);
     ( 415797.5, 3741699.1,      32.0,      32.0,       0.0);         ( 415809.9,
3741699.1,      32.0,      32.0,       0.0);
     ( 415822.3, 3741699.1,      32.0,      32.0,       0.0);         ( 415847.2,
3741699.1,      32.0,      32.0,       0.0);
     ( 415884.5, 3741699.1,      32.0,      32.0,       0.0);         ( 415921.8,
3741699.1,      32.0,      32.0,       0.0);
     ( 415934.2, 3741699.1,      32.0,      32.0,       0.0);         ( 415946.6,
3741699.1,      32.0,      32.0,       0.0);
     ( 415959.1, 3741699.1,      32.0,      32.0,       0.0);         ( 415971.5,
3741699.1,      32.0,      32.0,       0.0);
     ( 415978.8, 3741700.4,      32.0,      32.0,       0.0);         ( 415738.2,
3741703.3,      32.0,      32.0,       0.0);
     ( 415747.8, 3741703.3,      32.0,      32.0,       0.0);         ( 415760.2,
3741703.3,      32.0,      32.0,       0.0);
     ( 415772.6, 3741703.3,      32.0,      32.0,       0.0);         ( 415785.0,
3741703.3,      32.0,      32.0,       0.0);
     ( 415797.5, 3741703.3,      32.0,      32.0,       0.0);         ( 415809.9,
3741703.3,      32.0,      32.0,       0.0);
     ( 415822.3, 3741703.3,      32.0,      32.0,       0.0);         ( 415847.2,
3741703.3,      32.0,      32.0,       0.0);
     ( 415884.5, 3741703.3,      32.0,      32.0,       0.0);         ( 415921.8,
3741703.3,      32.0,      32.0,       0.0);
     ( 415934.2, 3741703.3,      32.0,      32.0,       0.0);         ( 415946.6,
3741703.3,      32.0,      32.0,       0.0);
     ( 415959.1, 3741703.3,      32.0,      32.0,       0.0);         ( 415971.5,
3741703.3,      32.0,      32.0,       0.0);
     ( 415978.8, 3741704.6,      32.0,      32.0,       0.0);         ( 415738.2,
```

3741707.5,   32.0,   32.0,   0.0);
     (415747.8, 3741707.5,   32.0,   32.0,   0.0);   (415760.2,
3741707.5,   32.0,   32.0,   0.0);
     (415772.6, 3741707.5,   32.0,   32.0,   0.0);   (415785.0,
3741707.5,   32.0,   32.0,   0.0);
     (415797.5, 3741707.5,   32.0,   32.0,   0.0);   (415809.9,
3741707.5,   32.0,   32.0,   0.0);
     (415822.3, 3741707.5,   32.0,   32.0,   0.0);   (415921.8,
3741707.5,   32.0,   32.0,   0.0);
     (415934.2, 3741707.5,   32.0,   32.0,   0.0);   (415946.6,
3741707.5,   32.0,   32.0,   0.0);
     (415959.1, 3741707.5,   32.0,   32.0,   0.0);   (415971.5,
3741707.5,   32.0,   32.0,   0.0);
     (415978.8, 3741708.8,   32.0,   32.0,   0.0);   (415738.2,
3741720.1,   32.0,   32.0,   0.0);
     (415747.8, 3741720.1,   32.0,   32.0,   0.0);   (415760.2,
3741720.1,   32.0,   32.0,   0.0);
     (415772.6, 3741720.1,   32.0,   32.0,   0.0);   (415785.0,
3741720.1,   32.0,   32.0,   0.0);
     (415797.5, 3741720.1,   32.0,   32.0,   0.0);   (415809.9,
3741720.1,   32.0,   32.0,   0.0);
     (415822.3, 3741720.1,   32.0,   32.0,   0.0);   (415834.8,
3741720.1,   32.0,   32.0,   0.0);
     (415847.2, 3741720.1,   32.0,   32.0,   0.0);   (415859.6,
3741720.1,   32.0,   32.0,   0.0);
     (415884.5, 3741720.1,   32.0,   32.0,   0.0);   (415896.9,
3741720.1,   32.0,   32.0,   0.0);
     (415909.3, 3741720.1,   32.0,   32.0,   0.0);   (415921.8,
3741720.1,   32.0,   32.0,   0.0);
     (415934.2, 3741720.1,   32.0,   32.0,   0.0);   (415946.6,
3741720.1,   32.0,   32.0,   0.0);
     (415959.1, 3741720.1,   32.0,   32.0,   0.0);   (415971.5,
3741720.1,   32.0,   32.0,   0.0);

 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

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

     (415978.8, 3741721.4,   32.0,   32.0,   0.0);   (415738.2,
3741724.3,   32.0,   32.0,   0.0);
     (415747.8, 3741724.3,   32.0,   32.0,   0.0);   (415760.2,
3741724.3,   32.0,   32.0,   0.0);
     (415772.6, 3741724.3,   32.0,   32.0,   0.0);   (415785.0,

```
3741724.3,      32.0,      32.0,       0.0);
     ( 415797.5, 3741724.3,      32.0,      32.0,       0.0);         ( 415809.9,
3741724.3,      32.0,      32.0,       0.0);
     ( 415822.3, 3741724.3,      32.0,      32.0,       0.0);         ( 415834.8,
3741724.3,      32.0,      32.0,       0.0);
     ( 415847.2, 3741724.3,      32.0,      32.0,       0.0);         ( 415859.6,
3741724.3,      32.0,      32.0,       0.0);
     ( 415884.5, 3741724.3,      32.0,      32.0,       0.0);         ( 415896.9,
3741724.3,      32.0,      32.0,       0.0);
     ( 415909.3, 3741724.3,      32.0,      32.0,       0.0);         ( 415921.8,
3741724.3,      32.0,      32.0,       0.0);
     ( 415934.2, 3741724.3,      32.0,      32.0,       0.0);         ( 415946.6,
3741724.3,      32.0,      32.0,       0.0);
     ( 415959.1, 3741724.3,      32.0,      32.0,       0.0);         ( 415971.5,
3741724.3,      32.0,      32.0,       0.0);
     ( 415978.8, 3741725.6,      32.0,      32.0,       0.0);         ( 415738.2,
3741728.5,      32.0,      32.0,       0.0);
     ( 415747.8, 3741728.5,      32.0,      32.0,       0.0);         ( 415760.2,
3741728.5,      32.0,      32.0,       0.0);
     ( 415772.6, 3741728.5,      32.0,      32.0,       0.0);         ( 415785.0,
3741728.5,      32.0,      32.0,       0.0);
     ( 415797.5, 3741728.5,      32.0,      32.0,       0.0);         ( 415809.9,
3741728.5,      32.0,      32.0,       0.0);
     ( 415822.3, 3741728.5,      32.0,      32.0,       0.0);         ( 415834.8,
3741728.5,      32.0,      32.0,       0.0);
     ( 415847.2, 3741728.5,      32.0,      32.0,       0.0);         ( 415859.6,
3741728.5,      32.0,      32.0,       0.0);
     ( 415884.5, 3741728.5,      32.0,      32.0,       0.0);         ( 415896.9,
3741728.5,      32.0,      32.0,       0.0);
     ( 415909.3, 3741728.5,      32.0,      32.0,       0.0);         ( 415921.8,
3741728.5,      32.0,      32.0,       0.0);
     ( 415934.2, 3741728.5,      32.0,      32.0,       0.0);         ( 415946.6,
3741728.5,      32.0,      32.0,       0.0);
     ( 415959.1, 3741728.5,      32.0,      32.0,       0.0);         ( 415971.5,
3741728.5,      32.0,      32.0,       0.0);
     ( 415978.8, 3741729.8,      32.0,      32.0,       0.0);

 *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13839
HRA\PM10\PM10.ISC                        ***        01/11/21
 *** AERMET - VERSION  16216 ***   ***
                         ***       11:01:35

                                  PAGE   8
 *** 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:   KSNA_V9_ADJU\KSNA_V9.SFC
                  Met Version:  16216
   Profile file:   KSNA_V9_ADJU\KSNA_V9.PFL

   Surface format: FREE

   Profile format: FREE

   Surface station no.:    93184                 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	-4.5	0.082	-9.000	-9.000	-999.	56.	11.0	0.12	2.65	1.00	0.87	62.	5.8	283.8	2.0
12	01	01	1	02	-3.5	0.073	-9.000	-9.000	-999.	47.	9.9	0.12	2.65	1.00	0.77	27.	5.8	283.1	2.0
12	01	01	1	03	-3.5	0.073	-9.000	-9.000	-999.	47.	9.9	0.12	2.65	1.00	0.77	336.	5.8	283.1	2.0
12	01	01	1	04	-3.3	0.070	-9.000	-9.000	-999.	45.	9.7	0.12	2.65	1.00	0.74	34.	5.8	283.1	2.0
12	01	01	1	05	-3.0	0.068	-9.000	-9.000	-999.	42.	9.4	0.12	2.65	1.00	0.70	154.	5.8	282.5	2.0
12	01	01	1	06	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.12	2.65	1.00	0.00	0.	5.8	282.0	2.0
12	01	01	1	07	-2.0	0.059	-9.000	-9.000	-999.	34.	9.0	0.12	2.65	1.00	0.55	343.	5.8	281.4	2.0
12	01	01	1	08	-2.6	0.066	-9.000	-9.000	-999.	40.	9.7	0.12	2.65	0.53	0.69	25.	5.8	281.4	2.0
12	01	01	1	09	21.6	0.133	0.252	0.010	27.	116.	-9.9	0.12	2.65	0.31	1.03	344.	5.8	282.5	2.0
12	01	01	1	10	115.6	0.162	0.713	0.008	114.	156.	-3.3	0.12	2.65	0.24	1.06	233.	5.8	286.4	2.0
12	01	01	1	11	160.9	0.126	1.129	0.005	325.	108.	-1.1	0.12	2.65	0.21	0.67	261.	5.8	291.4	2.0
12	01	01	1	12	187.0	0.138	1.467	0.005	614.	123.	-1.3	0.12	2.65	0.20	0.75	252.	5.8	294.9	2.0
12	01	01	1	13	186.9	0.189	1.755	0.005	1051.	197.	-3.3	0.12	2.65	0.20	1.23	280.	5.8	297.5	2.0
12	01	01	1	14	168.3	0.247	1.857	0.005	1383.	295.	-8.1	0.12	2.65	0.21	1.86	268.	5.8	299.2	2.0
12	01	01	1	15	115.3	0.275	1.688	0.005	1517.	346.	-16.3	0.12	2.65	0.24	2.25	248.	5.8	298.1	2.0
12	01	01	1	16	41.5	0.262	1.211	0.005	1552.	322.	-39.2	0.12	2.65	0.33	2.32	227.	5.8	295.9	2.0
12	01	01	1	17	-17.9	0.217	-9.000	-9.000	-999.	244.	52.0	0.12	2.65	0.60	2.18	227.	5.8	292.5	2.0
12	01	01	1	18	-24.7	0.250	-9.000	-9.000	-999.	300.	68.7	0.12	2.65	1.00	2.50	219.	5.8	288.8	2.0
12	01	01	1	19	-5.2	0.088	-9.000	-9.000	-999.	91.	12.0	0.12	2.65	1.00	0.94	201.	5.8	287.5	2.0
12	01	01	1	20	-3.5	0.073	-9.000	-9.000	-999.	47.	10.0	0.12	2.65	1.00	0.77	259.	5.8	287.0	2.0
12	01	01	1	21	-2.6	0.064	-9.000	-9.000	-999.	39.	9.1	0.12	2.65	1.00	0.65	264.	5.8	286.4	2.0
12	01	01	1	22	-4.4	0.081	-9.000	-9.000	-999.	55.	10.9	0.12	2.65	1.00	0.86	211.	5.8	285.9	2.0
12	01	01	1	23	-4.2	0.079	-9.000	-9.000	-999.	53.	10.7	0.12	2.65						

```
1.00    0.84  247.    5.8  284.9    2.0
 12 01 01   1 24   -7.1  0.103 -9.000 -9.000 -999.   80.     14.1  0.12   2.65
1.00    1.09  236.    5.8  283.8    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 12 01 01 01    5.8 1   62.    0.87   283.8   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
↑ *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13839
HRA\PM10\PM10.ISC                         ***        01/11/21
 *** AERMET - VERSION  16216 ***   ***
                        ***       11:01:35

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

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                 L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                 L0000014    , L0000015    ,

                                                ** 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
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - -
         415738.18    3741653.06       7.78194                         415747.75
3741653.06        7.17430
         415760.18    3741653.06       6.51053                         415772.61
3741653.06        5.95651
         415785.04    3741653.06       5.48585                         415797.47
3741653.06        5.07973
         415807.50    3741652.82       4.79513                         415817.42
3741652.82        4.53555
         415828.17    3741652.70       4.28289                         415909.34
3741653.06        2.93159
         415921.77    3741653.06       2.78413                         415934.20
3741653.06        2.64686
         415946.63    3741653.06       2.51855                         415959.06
3741653.06        2.39814
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         415971.49    3741653.06        2.28472                    415978.84
3741654.33        2.21462
         415738.18    3741657.25        7.54677                    415747.75
3741657.25        6.97482
         415760.18    3741657.25        6.34657                    415772.61
3741657.25        5.81890
         415785.04    3741657.25        5.36856                    415797.47
3741657.25        4.97860
         415807.50    3741657.01        4.70462                    415817.42
3741657.01        4.45420
         415828.17    3741656.89        4.21001                    415909.34
3741657.25        2.89651
         415921.77    3741657.25        2.75247                    415934.20
3741657.25        2.61826
         415946.63    3741657.25        2.49272                    415959.06
3741657.25        2.37482
         415971.49    3741657.25        2.26371                    415978.84
3741658.52        2.19497
         415738.18    3741661.44        7.32544                    415747.75
3741661.44        6.78622
         415760.18    3741661.44        6.19057                    415772.61
3741661.44        5.68744
         415785.04    3741661.44        5.25611                    415797.47
3741661.44        4.88134
         415807.50    3741661.20        4.61736                    415817.42
3741661.20        4.37563
         415828.17    3741661.08        4.13947                    415909.34
3741661.44        2.86221
         415921.77    3741661.44        2.72146                    415934.20
3741661.44        2.59022
         415946.63    3741661.44        2.46735                    415959.06
3741661.44        2.35190
         415971.49    3741661.44        2.24303                    415978.84
3741662.71        2.17561
         415852.29    3741664.78        3.62980                    415872.05
3741665.63        3.30996
         415884.48    3741665.63        3.13649                    415852.29
3741668.97        3.57664
         415872.05    3741669.82        3.26540                    415884.48
3741669.82        3.09633
         415738.18    3741674.01        6.73542                    415747.75
3741674.01        6.27766
         415760.18    3741674.01        5.76507                    415772.61
3741674.01        5.32583
         415785.04    3741674.01        4.94476                    415797.47
3741674.01        4.61051
         415809.90    3741674.01        4.31450                    415822.33
3741674.01        4.05016
         415852.29    3741673.16        3.52493                    415872.05
3741674.01        3.22196
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415884.48   3741674.01   3.05711   415921.77
3741674.01   2.63216
415934.20   3741674.01   2.50925   415946.63
3741674.01   2.39394
415959.06   3741674.01   2.28539   415971.49
3741674.01   2.18285
415978.84   3741675.28   2.11919   415738.18
3741678.20   6.55994
415747.75   3741678.20   6.12484   415760.18
3741678.20   5.63580
415772.61   3741678.20   5.21507   415785.04
3741678.20   4.84878
415797.47   3741678.20   4.52657   415809.90
3741678.20   4.24054
415822.33   3741678.20   3.98458   415921.77
3741678.20   2.60356

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE ANNUAL AVERAGE CONCENTRATION   VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: ALL   ***
INCLUDING SOURCE(S):   L0000001   , L0000002   , L0000003   , L0000004   , L0000005   ,
L0000006   , L0000007   , L0000008   , L0000009   , L0000010   , L0000011   , L0000012   , L0000013   ,
L0000014   , L0000015   ,

*** 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
- -
415934.20   3741678.20   2.48326   415946.63
3741678.20   2.37032
415959.06   3741678.20   2.26393   415971.49
3741678.20   2.16338
415978.84   3741679.47   2.10091   415738.18
3741682.39   6.39352
415747.75   3741682.39   5.97935   415760.18
3741682.39   5.51213

```
         415772.61    3741682.39        5.10870                    415785.04
3741682.39        4.75633
         415797.47    3741682.39        4.44551                    415809.90
3741682.39        4.16895
         415822.33    3741682.39        3.92099                    415847.19
3741682.39        3.49395
         415884.48    3741682.39        2.98136                    415921.77
3741682.39        2.57552
         415934.20    3741682.39        2.45774                    415946.63
3741682.39        2.34711
         415959.06    3741682.39        2.24282                    415971.49
3741682.39        2.14421
         415978.84    3741683.66        2.08289                    415738.18
3741686.58        6.23545
         415747.75    3741686.58        5.84058                    415760.18
3741686.58        5.39367
         415772.61    3741686.58        5.00644                    415785.04
3741686.58        4.66719
         415797.47    3741686.58        4.36716                    415809.90
3741686.58        4.09962
         415822.33    3741686.58        3.85929                    415847.19
3741686.58        3.44439
         415884.48    3741686.58        2.94477                    415847.19
3741690.77        3.39612
         415884.48    3741690.77        2.90900                    415847.19
3741694.96        3.34908
         415884.48    3741694.96        2.87400                    415738.18
3741699.15        5.80461
         415747.75    3741699.15        5.46000                    415760.18
3741699.15        5.06631
         415772.61    3741699.15        4.72202                    415785.04
3741699.15        4.41794
         415797.47    3741699.15        4.14710                    415809.90
3741699.15        3.90410
         415822.33    3741699.15        3.68465                    415847.19
3741699.15        3.30324
         415884.48    3741699.15        2.83976                    415921.77
3741699.15        2.46854
         415934.20    3741699.15        2.36015                    415946.63
3741699.15        2.25807
         415959.06    3741699.15        2.16163                    415971.49
3741699.15        2.07025
         415978.84    3741700.42        2.01325                    415738.18
3741703.34        5.67367
         415747.75    3741703.34        5.34368                    415760.18
3741703.34        4.96556
         415772.61    3741703.34        4.63397                    415785.04
3741703.34        4.34038
         415797.47    3741703.34        4.07832                    415809.90
3741703.34        3.84276
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         415822.33    3741703.34        3.62966                      415847.19
3741703.34        3.25853
         415884.48    3741703.34        2.80625                      415921.77
3741703.34        2.44301
         415934.20    3741703.34        2.33680                      415946.63
3741703.34        2.23671
         415959.06    3741703.34        2.14210                      415971.49
3741703.34        2.05242
         415978.84    3741704.61        1.99642                      415738.18
3741707.53        5.54833
         415747.75    3741707.53        5.23205                      415760.18
3741707.53        4.86859
         415772.61    3741707.53        4.54898                      415785.04
3741707.53        4.26534
         415797.47    3741707.53        4.01164                      415809.90
3741707.53        3.78318
         415822.33    3741707.53        3.57618                      415921.77
3741707.53        2.41795
         415934.20    3741707.53        2.31385                      415946.63
3741707.53        2.21570
         415959.06    3741707.53        2.12287                      415971.49
3741707.53        2.03483
 *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13839
HRA\PM10\PM10.ISC                     ***        01/11/21
 *** AERMET - VERSION  16216 ***   ***
                       ***        11:01:35

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

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                   L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                   L0000014    , L0000015    ,

                                                *** 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
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - -
         415978.84    3741708.80        1.97982                      415738.18
3741720.10        5.20237
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         415747.75    3741720.10        4.92242                    415760.18
3741720.10        4.59811
         415772.61    3741720.10        4.31078                    415785.04
3741720.10        4.05412
         415797.47    3741720.10        3.82324                    415809.90
3741720.10        3.61427
         415822.33    3741720.10        3.42407                    415834.76
3741720.10        3.25009
         415847.19    3741720.10        3.09023                    415859.62
3741720.10        2.94271
         415884.48    3741720.10        2.67900                    415896.91
3741720.10        2.56047
         415909.34    3741720.10        2.44953                    415921.77
3741720.10        2.34536
         415934.20    3741720.10        2.24727                    415946.63
3741720.10        2.15461
         415959.06    3741720.10        2.06685                    415971.49
3741720.10        1.98351
         415978.84    3741721.37        1.93131                    415738.18
3741724.29        5.09604
         415747.75    3741724.29        4.82680                    415760.18
3741724.29        4.51415
         415772.61    3741724.29        4.23648                    415785.04
3741724.29        3.98797
         415797.47    3741724.29        3.76402                    415809.90
3741724.29        3.56100
         415822.33    3741724.29        3.37596                    415834.76
3741724.29        3.20649
         415847.19    3741724.29        3.05058                    415859.62
3741724.29        2.90657
         415884.48    3741724.29        2.64878                    415896.91
3741724.29        2.53276
         415909.34    3741724.29        2.42410                    415921.77
3741724.29        2.32200
         415934.20    3741724.29        2.22579                    415946.63
3741724.29        2.13488
         415959.06    3741724.29        2.04872                    415971.49
3741724.29        1.96686
         415978.84    3741725.56        1.91555                    415738.18
3741728.48        4.99376
         415747.75    3741728.48        4.73462                    415760.18
3741728.48        4.43300
         415772.61    3741728.48        4.16453                    415785.04
3741728.48        3.92378
         415797.47    3741728.48        3.70646                    415809.90
3741728.48        3.50915
         415822.33    3741728.48        3.32906                    415834.76
3741728.48        3.16392
         415847.19    3741728.48        3.01184                    415859.62
3741728.48        2.87121
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       415971.49   3741653.06        3.44757  (14013124)              415978.84
3741654.33        3.36619  (14013124)
       415738.18   3741657.25       10.79368  (12120224)              415747.75
3741657.25       10.00596  (12120224)
       415760.18   3741657.25        9.12644  (12120224)              415772.61
3741657.25        8.37291  (12120224)
       415785.04   3741657.25        7.71425  (12120224)              415797.47
3741657.25        7.12757  (12120224)
       415807.50   3741657.01        6.70251  (12120224)              415817.42
3741657.01        6.33558c (14010624)
       415828.17   3741656.89        5.99915c (14010624)              415909.34
3741657.25        4.17442c (14010624)
       415921.77   3741657.25        3.97978  (14013124)              415934.20
3741657.25        3.82373  (14013124)
       415946.63   3741657.25        3.67854  (14013124)              415959.06
3741657.25        3.54313  (14013124)
       415971.49   3741657.25        3.41656  (14013124)              415978.84
3741658.52        3.33663  (14013124)
       415738.18   3741661.44       10.49033  (12120224)              415747.75
3741661.44        9.74487  (12120224)
       415760.18   3741661.44        8.90907  (12120224)              415772.61
3741661.44        8.18877  (12120224)
       415785.04   3741661.44        7.55567  (12120224)              415797.47
3741661.44        6.98928  (12120224)
       415807.50   3741661.20        6.57775  (12120224)              415817.42
3741661.20        6.22530c (14010624)
       415828.17   3741661.08        5.89989c (14010624)              415909.34
3741661.44        4.12503c (14010624)
       415921.77   3741661.44        3.93802  (14013124)              415934.20
3741661.44        3.78525  (14013124)
       415946.63   3741661.44        3.64299  (14013124)              415959.06
3741661.44        3.51021  (14013124)
       415971.49   3741661.44        3.38600  (14013124)              415978.84
3741662.71        3.30748  (14013124)
       415852.29   3741664.78        5.19425c (14010624)              415872.05
3741665.63        4.75053c (14010624)
       415884.48   3741665.63        4.50896c (14010624)              415852.29
3741668.97        5.11883c (14010624)
       415872.05   3741669.82        4.68695c (14010624)              415884.48
3741669.82        4.45144c (14010624)
       415738.18   3741674.01        9.68313  (12120224)              415747.75
3741674.01        9.04219  (12120224)
       415760.18   3741674.01        8.31595  (12120224)              415772.61
3741674.01        7.68098  (12120224)
       415785.04   3741674.01        7.11527  (12120224)              415797.47
3741674.01        6.60336  (12120224)
       415809.90   3741674.01        6.13463c (14010624)              415822.33
3741674.01        5.77046c (14010624)
       415852.29   3741673.16        5.04542c (14010624)              415872.05
3741674.01        4.62491c (14010624)
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       415884.48   3741674.01        4.39524c (14010624)               415921.77
 3741674.01        3.81729  (14013124)
       415934.20   3741674.01        3.67373  (14013124)               415946.63
 3741674.01        3.54320  (12042224)
       415959.06   3741674.01        3.42231  (12042224)               415971.49
 3741674.01        3.30454  (12042224)
       415978.84   3741675.28        3.22827  (12042224)               415738.18
 3741678.20        9.44056  (12120224)
       415747.75   3741678.20        8.83031  (12120224)               415760.18
 3741678.20        8.13545  (12120224)
       415772.61   3741678.20        7.52509  (12120224)               415785.04
 3741678.20        6.97916  (12120224)
       415797.47   3741678.20        6.48339  (12120224)               415809.90
 3741678.20        6.03069c (14010624)
       415822.33   3741678.20        5.67800c (14010624)               415921.77
 3741678.20        3.77847  (14013124)
 *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13839
HRA\PM10\PM10.ISC                      ***        01/11/21
 *** AERMET - VERSION  16216 ***   ***
                       ***        11:01:35

                                  PAGE  14
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN  ADJ_U*

                              *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                 L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                 L0000014    , L0000015    ,

                                       *** 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)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       415934.20   3741678.20        3.63780  (14013124)               415946.63
 3741678.20        3.51278  (12042224)
       415959.06   3741678.20        3.39437  (12042224)               415971.49
 3741678.20        3.27907  (12042224)
       415978.84   3741679.47        3.20438  (12042224)               415738.18
 3741682.39        9.21047  (12120224)
       415747.75   3741682.39        8.62859  (12120224)               415760.18
 3741682.39        7.96270  (12120224)
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       415772.61   3741682.39        7.37527  (12120224)               415785.04
3741682.39        6.84787  (12120224)
       415797.47   3741682.39        6.36741  (12120224)               415809.90
3741682.39        5.93003c (14010624)
       415822.33   3741682.39        5.58827c (14010624)               415847.19
3741682.39        4.99847c (14010624)
       415884.48   3741682.39        4.28662c (14010624)               415921.77
3741682.39        3.74032  (14013124)
       415934.20   3741682.39        3.60373  (12042224)               415946.63
3741682.39        3.48289  (12042224)
       415959.06   3741682.39        3.36689  (12042224)               415971.49
3741682.39        3.25398  (12042224)
       415978.84   3741683.66        3.18082  (12042224)               415738.18
3741686.58        8.99229  (12120224)
       415747.75   3741686.58        8.43618  (12120224)               415760.18
3741686.58        7.79720  (12120224)
       415772.61   3741686.58        7.23115  (12120224)               415785.04
3741686.58        6.72114  (12120224)
       415797.47   3741686.58        6.25520  (12120224)               415809.90
3741686.58        5.83248c (14010624)
       415822.33   3741686.58        5.50115c (14010624)               415847.19
3741686.58        4.92805c (14010624)
       415884.48   3741686.58        4.23411c (14010624)               415847.19
3741690.77        4.85942c (14010624)
       415884.48   3741690.77        4.18274c (14010624)               415847.19
3741694.96        4.79251c (14010624)
       415884.48   3741694.96        4.13247c (14010624)               415738.18
3741699.15        8.39691  (12120224)
       415747.75   3741699.15        7.90787  (12120224)               415760.18
3741699.15        7.33923  (12120224)
       415772.61   3741699.15        6.82961  (12120224)               415785.04
3741699.15        6.36627  (12120224)
       415797.47   3741699.15        5.94002  (12120224)               415809.90
3741699.15        5.55701c (14010624)
       415822.33   3741699.15        5.25425c (14010624)               415847.19
3741699.15        4.72724c (14010624)
       415884.48   3741699.15        4.08327c (14010624)               415921.77
3741699.15        3.59729  (12042224)
       415934.20   3741699.15        3.47991  (12042224)               415946.63
3741699.15        3.36837  (12042224)
       415959.06   3741699.15        3.26129  (12042224)               415971.49
3741699.15        3.15720  (12042224)
       415978.84   3741700.42        3.08969  (12042224)               415738.18
3741703.34        8.21595  (12120224)
       415747.75   3741703.34        7.74613  (12120224)               415760.18
3741703.34        7.19799  (12120224)
       415772.61   3741703.34        6.70517  (12120224)               415785.04
3741703.34        6.25575  (12120224)
       415797.47   3741703.34        5.84135  (12120224)               415809.90
3741703.34        5.47046c (14010624)
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       415822.33   3741703.34        5.17643c (14010624)               415847.19
 3741703.34        4.66356c (14010624)
       415884.48   3741703.34        4.03509c (14010624)               415921.77
 3741703.34        3.56540  (12042224)
       415934.20   3741703.34        3.45032  (12042224)               415946.63
 3741703.34        3.34093  (12042224)
       415959.06   3741703.34        3.23593  (12042224)               415971.49
 3741703.34        3.13387  (12042224)
       415978.84   3741704.61        3.06766  (12042224)               415738.18
 3741707.53        8.04218  (12120224)
       415747.75   3741707.53        7.59070  (12120224)               415760.18
 3741707.53        7.06196  (12120224)
       415772.61   3741707.53        6.58496  (12120224)               415785.04
 3741707.53        6.14871  (12120224)
       415797.47   3741707.53        5.74570  (12120224)               415809.90
 3741707.53        5.38634c (14010624)
       415822.33   3741707.53        5.10067c (14010624)               415921.77
 3741707.53        3.53409  (12042224)
       415934.20   3741707.53        3.42124  (12042224)               415946.63
 3741707.53        3.31395  (12042224)
       415959.06   3741707.53        3.21095  (12042224)               415971.49
 3741707.53        3.11088  (12042224)
 *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13839
HRA\PM10\PM10.ISC                      ***        01/11/21
 *** AERMET - VERSION  16216 ***   ***
                       ***        11:01:35

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

                              *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                L0000014    , L0000015    ,

                                           *** 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)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       415978.84   3741708.80        3.04593  (12042224)               415738.18
 3741720.10        7.56140  (12120224)
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       415747.75   3741720.10        7.15840  (12120224)               415760.18
3741720.10        6.68161  (12120224)
       415772.61   3741720.10        6.24714  (12120224)               415785.04
3741720.10        5.84712  (12120224)
       415797.47   3741720.10        5.47535  (12120224)               415809.90
3741720.10        5.14754c (14010624)
       415822.33   3741720.10        4.88498c (14010624)               415834.76
3741720.10        4.64463c (14010624)
       415847.19   3741720.10        4.42350c (14010624)               415859.62
3741720.10        4.21908c (14010624)
       415884.48   3741720.10        3.85196c (14010624)               415896.91
3741720.10        3.68575c (14010624)
       415909.34   3741720.10        3.55624  (12042224)               415921.77
3741720.10        3.44350  (12042224)
       415934.20   3741720.10        3.33697  (12042224)               415946.63
3741720.10        3.23561  (12042224)
       415959.06   3741720.10        3.13829  (12042224)               415971.49
3741720.10        3.04380  (12042224)
       415978.84   3741721.37        2.98243  (12042224)               415738.18
3741724.29        7.41340  (12120224)
       415747.75   3741724.29        7.02463  (12120224)               415760.18
3741724.29        6.56319  (12120224)
       415772.61   3741724.29        6.14153  (12120224)               415785.04
3741724.29        5.75270  (12120224)
       415797.47   3741724.29        5.39030  (12120224)               415809.90
3741724.29        5.07212c (14010624)
       415822.33   3741724.29        4.81668c (14010624)               415834.76
3741724.29        4.58254c (14010624)
       415847.19   3741724.29        4.36688c (14010624)               415859.62
3741724.29        4.16731c (14010624)
       415884.48   3741724.29        3.80842c (14010624)               415896.91
3741724.29        3.64573c (14010624)
       415909.34   3741724.29        3.52494  (12042224)               415921.77
3741724.29        3.41436  (12042224)
       415934.20   3741724.29        3.30982  (12042224)               415946.63
3741724.29        3.21033  (12042224)
       415959.06   3741724.29        3.11480  (12042224)               415971.49
3741724.29        3.02207  (12042224)
       415978.84   3741725.56        2.96182  (12042224)               415738.18
3741728.48        7.27096  (12120224)
       415747.75   3741728.48        6.89549  (12120224)               415760.18
3741728.48        6.44861  (12120224)
       415772.61   3741728.48        6.03941  (12120224)               415785.04
3741728.48        5.66100  (12120224)
       415797.47   3741728.48        5.30753  (12120224)               415809.90
3741728.48        4.99866c (14010624)
       415822.33   3741728.48        4.75005c (14010624)               415834.76
3741728.48        4.52189c (14010624)
       415847.19   3741728.48        4.31152c (14010624)               415859.62
3741728.48        4.11664c (14010624)
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*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS
AVERAGED OVER   5 YEARS ***

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

GROUP ID		NETWORK AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	GRID-ID
ALL	1ST HIGHEST VALUE IS	7.78194	AT (415738.18, 3741653.06, 32.00, 32.00, 0.00)	DC	
	2ND HIGHEST VALUE IS	7.54677	AT (415738.18, 3741657.25, 32.00, 32.00, 0.00)	DC	
	3RD HIGHEST VALUE IS	7.32544	AT (415738.18, 3741661.44, 32.00, 32.00, 0.00)	DC	
	4TH HIGHEST VALUE IS	7.17430	AT (415747.75, 3741653.06, 32.00, 32.00, 0.00)	DC	
	5TH HIGHEST VALUE IS	6.97482	AT (415747.75, 3741657.25, 32.00, 32.00, 0.00)	DC	
	6TH HIGHEST VALUE IS	6.78622	AT (415747.75, 3741661.44, 32.00, 32.00, 0.00)	DC	
	7TH HIGHEST VALUE IS	6.73542	AT (415738.18, 3741674.01, 32.00, 32.00, 0.00)	DC	
	8TH HIGHEST VALUE IS	6.55994	AT (415738.18, 3741678.20, 32.00, 32.00, 0.00)	DC	
	9TH HIGHEST VALUE IS	6.51053	AT (415760.18, 3741653.06, 32.00, 32.00, 0.00)	DC	

```
        10TH HIGHEST VALUE IS       6.39352 AT (  415738.18,  3741682.39,
32.00,    32.00,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
↑ *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13839
HRA\PM10\PM10.ISC                          ***        01/11/21
 *** AERMET - VERSION  16216 ***   ***
                        ***        11:01:35

                                   PAGE  17
 *** 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      11.11921  ON 12120224: AT (  415738.18,
3741653.06,    32.00,    32.00,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
↑ *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13839
HRA\PM10\PM10.ISC                          ***        01/11/21
 *** AERMET - VERSION  16216 ***   ***
                        ***        11:01:35

                                   PAGE  18
 *** 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         1864 Informational Message(s)

 A Total of        43848 Hours Were Processed

 A Total of         1500 Calm Hours Identified

 A Total of          364 Missing Hours Identified (  0.83 Percent)


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


    ********   WARNING MESSAGES   ********
 ME W186     108       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187     108       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


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

** Lakes Environmental AERMOD MPI
**
****************************************
**
** AERMOD INPUT PRODUCED BY:
** AERMOD VIEW VER. 9.9.0
** LAKES ENVIRONMENTAL SOFTWARE INC.
** DATE: 1/11/2021
** FILE: C:\LAKES\AERMOD VIEW\13839 HRA\PM25\PM25.ADI
**
****************************************
**
**
****************************************
** AERMOD CONTROL PATHWAY
****************************************
**
**
CO STARTING
   TITLEONE C:\LAKES\AERMOD VIEW\13839 HRA\PM25\PM25.ISC
   MODELOPT DFAULT CONC
   AVERTIME 24
   URBANOPT 3010232
   POLLUTID PM_2.5
   RUNORNOT RUN
```

```
   ERRORFIL 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 I-5 FREEWAY
** PREFIX
** LENGTH OF SIDE = 57.91
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.066346
** VERTICAL DIMENSION = 6.99
** SZINIT = 3.53
** NODES = 2
** 415930.405, 3741311.396, 32.00, 0.00, 26.94
** 415359.391, 3741981.629, 32.00, 0.00, 26.94
** ------------------------------------------------------------------
   LOCATION L0000001     VOLUME   415911.627 3741333.437 32.00
   LOCATION L0000002     VOLUME   415874.070 3741377.520 32.00
   LOCATION L0000003     VOLUME   415836.513 3741421.602 32.00
   LOCATION L0000004     VOLUME   415798.956 3741465.685 32.00
   LOCATION L0000005     VOLUME   415761.399 3741509.768 32.00
   LOCATION L0000006     VOLUME   415723.843 3741553.850 32.00
   LOCATION L0000007     VOLUME   415686.286 3741597.933 32.00
   LOCATION L0000008     VOLUME   415648.729 3741642.016 32.00
   LOCATION L0000009     VOLUME   415611.172 3741686.099 32.00
   LOCATION L0000010     VOLUME   415573.615 3741730.181 32.00
   LOCATION L0000011     VOLUME   415536.058 3741774.264 32.00
   LOCATION L0000012     VOLUME   415498.502 3741818.347 32.00
   LOCATION L0000013     VOLUME   415460.945 3741862.429 32.00
   LOCATION L0000014     VOLUME   415423.388 3741906.512 32.00
   LOCATION L0000015     VOLUME   415385.831 3741950.595 32.00
** END OF LINE VOLUME SOURCE ID = SLINE1
** SOURCE PARAMETERS **
** LINE VOLUME SOURCE ID = SLINE1
   SRCPARAM L0000001     0.0044230667      0.00     26.94      3.53
   SRCPARAM L0000002     0.0044230667      0.00     26.94      3.53
   SRCPARAM L0000003     0.0044230667      0.00     26.94      3.53
   SRCPARAM L0000004     0.0044230667      0.00     26.94      3.53
   SRCPARAM L0000005     0.0044230667      0.00     26.94      3.53
   SRCPARAM L0000006     0.0044230667      0.00     26.94      3.53
   SRCPARAM L0000007     0.0044230667      0.00     26.94      3.53
```

```
   SRCPARAM L0000008     0.0044230667      0.00     26.94      3.53
   SRCPARAM L0000009     0.0044230667      0.00     26.94      3.53
   SRCPARAM L0000010     0.0044230667      0.00     26.94      3.53
   SRCPARAM L0000011     0.0044230667      0.00     26.94      3.53
   SRCPARAM L0000012     0.0044230667      0.00     26.94      3.53
   SRCPARAM L0000013     0.0044230667      0.00     26.94      3.53
   SRCPARAM L0000014     0.0044230667      0.00     26.94      3.53
   SRCPARAM L0000015     0.0044230667      0.00     26.94      3.53
** ----------------------------------------------------------------------
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD RECEPTOR PATHWAY
**************************************
**
**
RE STARTING
   INCLUDED PM25.ROU
RE FINISHED
**
**************************************
** AERMOD METEOROLOGY PATHWAY
**************************************
**
**
ME STARTING
   SURFFILE KSNA_V9_ADJU\KSNA_V9.SFC
   PROFFILE KSNA_V9_ADJU\KSNA_V9.PFL
   SURFDATA 93184 2012
   UAIRDATA 3190 2012
   PROFBASE 17.0 METERS
ME FINISHED
**
**************************************
** AERMOD OUTPUT PATHWAY
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 24 1ST
** AUTO-GENERATED PLOTFILES
   PLOTFILE   24 ALL 1ST PM25.AD\24H1GALL.PLT 31
   SUMMFILE 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     108       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187     108       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


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

 *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13839
HRA\PM25\PM25.ISC                          ***        01/11/21
 *** AERMET - VERSION  16216 ***   ***
                       ***        10:35:17

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

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

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

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

 **Model Uses URBAN Dispersion Algorithm for the SBL for    15 Source(s),
   for Total of    1 Urban Area(s):
   Urban Population =   3010232.0 ;  Urban Roughness Length =  1.000 m

 **Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
```

```
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay.
         6. Urban Roughness Length of 1.0 Meter Assumed.

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

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  PM_2.5

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

 **This Run Includes:     15 Source(s);       1 Source Group(s); and     221
Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                 and:     15 VOLUME source(s)
                 and:      0 AREA type source(s)
                 and:      0 LINE source(s)
                 and:      0 RLINE/RLINEXT source(s)
                 and:      0 OPENPIT source(s)
                 and:      0 BUOYANT LINE source(s) with      0 line(s)


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

 **The AERMET Input Meteorological Data Version Date:  16216

 **Output Options Selected:
         Model Outputs Tables of 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) =    17.00 ;  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: PM25.ERR

**File for Summary of Results: PM25.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 BY	EMISSION RATE SCALAR VARY
L0000001	0	0.44231E-02	415911.6	3741333.4	32.0	0.00	26.94	3.53	YES	
L0000002	0	0.44231E-02	415874.1	3741377.5	32.0	0.00	26.94	3.53	YES	
L0000003	0	0.44231E-02	415836.5	3741421.6	32.0	0.00	26.94	3.53	YES	
L0000004	0	0.44231E-02	415799.0	3741465.7	32.0	0.00	26.94	3.53	YES	
L0000005	0	0.44231E-02	415761.4	3741509.8	32.0	0.00	26.94	3.53	YES	
L0000006	0	0.44231E-02	415723.8	3741553.8	32.0	0.00	26.94	3.53	YES	
L0000007	0	0.44231E-02	415686.3	3741597.9	32.0	0.00	26.94	3.53	YES	
L0000008	0	0.44231E-02	415648.7	3741642.0	32.0	0.00	26.94	3.53	YES	

```
 L0000009         0   0.44231E-02  415611.2 3741686.1    32.0     0.00    26.94
3.53     YES
 L0000010         0   0.44231E-02  415573.6 3741730.2    32.0     0.00    26.94
3.53     YES
 L0000011         0   0.44231E-02  415536.1 3741774.3    32.0     0.00    26.94
3.53     YES
 L0000012         0   0.44231E-02  415498.5 3741818.3    32.0     0.00    26.94
3.53     YES
 L0000013         0   0.44231E-02  415460.9 3741862.4    32.0     0.00    26.94
3.53     YES
 L0000014         0   0.44231E-02  415423.4 3741906.5    32.0     0.00    26.94
3.53     YES
 L0000015         0   0.44231E-02  415385.8 3741950.6    32.0     0.00    26.94
3.53     YES
 *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13839
HRA\PM25\PM25.ISC                        ***        01/11/21
 *** AERMET - VERSION  16216 ***   ***
                        ***        10:35:17

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


                                     *** SOURCE IDs DEFINING SOURCE GROUPS
***

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


  ALL        L0000001    , L0000002    , L0000003    , L0000004    , L0000005    ,
L0000006    , L0000007    , L0000008    ,

             L0000009    , L0000010    , L0000011    , L0000012    , L0000013    ,
L0000014    , L0000015    ,
 *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13839
HRA\PM25\PM25.ISC                        ***        01/11/21
 *** AERMET - VERSION  16216 ***   ***
                        ***        10:35:17

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


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

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

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

(415738.2, 3741653.1, 32.0, 32.0, 0.0); (415747.8,
3741653.1, 32.0, 32.0, 0.0);
(415760.2, 3741653.1, 32.0, 32.0, 0.0); (415772.6,
3741653.1, 32.0, 32.0, 0.0);
(415785.0, 3741653.1, 32.0, 32.0, 0.0); (415797.5,
3741653.1, 32.0, 32.0, 0.0);
(415807.5, 3741652.8, 32.0, 32.0, 0.0); (415817.4,
3741652.8, 32.0, 32.0, 0.0);
(415828.2, 3741652.7, 32.0, 32.0, 0.0); (415909.3,
3741653.1, 32.0, 32.0, 0.0);
(415921.8, 3741653.1, 32.0, 32.0, 0.0); (415934.2,
3741653.1, 32.0, 32.0, 0.0);
(415946.6, 3741653.1, 32.0, 32.0, 0.0); (415959.1,
3741653.1, 32.0, 32.0, 0.0);
(415971.5, 3741653.1, 32.0, 32.0, 0.0); (415978.8,
3741654.3, 32.0, 32.0, 0.0);
(415738.2, 3741657.2, 32.0, 32.0, 0.0); (415747.8,
3741657.2, 32.0, 32.0, 0.0);
(415760.2, 3741657.2, 32.0, 32.0, 0.0); (415772.6,
3741657.2, 32.0, 32.0, 0.0);
(415785.0, 3741657.2, 32.0, 32.0, 0.0); (415797.5,
3741657.2, 32.0, 32.0, 0.0);
(415807.5, 3741657.0, 32.0, 32.0, 0.0); (415817.4,
3741657.0, 32.0, 32.0, 0.0);
(415828.2, 3741656.9, 32.0, 32.0, 0.0); (415909.3,
3741657.2, 32.0, 32.0, 0.0);
(415921.8, 3741657.2, 32.0, 32.0, 0.0); (415934.2,
3741657.2, 32.0, 32.0, 0.0);
(415946.6, 3741657.2, 32.0, 32.0, 0.0); (415959.1,
3741657.2, 32.0, 32.0, 0.0);
(415971.5, 3741657.2, 32.0, 32.0, 0.0); (415978.8,

```
3741658.5,      32.0,      32.0,       0.0);
     ( 415738.2, 3741661.4,      32.0,      32.0,       0.0);         ( 415747.8,
3741661.4,      32.0,      32.0,       0.0);
     ( 415760.2, 3741661.4,      32.0,      32.0,       0.0);         ( 415772.6,
3741661.4,      32.0,      32.0,       0.0);
     ( 415785.0, 3741661.4,      32.0,      32.0,       0.0);         ( 415797.5,
3741661.4,      32.0,      32.0,       0.0);
     ( 415807.5, 3741661.2,      32.0,      32.0,       0.0);         ( 415817.4,
3741661.2,      32.0,      32.0,       0.0);
     ( 415828.2, 3741661.1,      32.0,      32.0,       0.0);         ( 415909.3,
3741661.4,      32.0,      32.0,       0.0);
     ( 415921.8, 3741661.4,      32.0,      32.0,       0.0);         ( 415934.2,
3741661.4,      32.0,      32.0,       0.0);
     ( 415946.6, 3741661.4,      32.0,      32.0,       0.0);         ( 415959.1,
3741661.4,      32.0,      32.0,       0.0);
     ( 415971.5, 3741661.4,      32.0,      32.0,       0.0);         ( 415978.8,
3741662.7,      32.0,      32.0,       0.0);
     ( 415852.3, 3741664.8,      32.0,      32.0,       0.0);         ( 415872.0,
3741665.6,      32.0,      32.0,       0.0);
     ( 415884.5, 3741665.6,      32.0,      32.0,       0.0);         ( 415852.3,
3741669.0,      32.0,      32.0,       0.0);
     ( 415872.0, 3741669.8,      32.0,      32.0,       0.0);         ( 415884.5,
3741669.8,      32.0,      32.0,       0.0);
     ( 415738.2, 3741674.0,      32.0,      32.0,       0.0);         ( 415747.8,
3741674.0,      32.0,      32.0,       0.0);
     ( 415760.2, 3741674.0,      32.0,      32.0,       0.0);         ( 415772.6,
3741674.0,      32.0,      32.0,       0.0);
     ( 415785.0, 3741674.0,      32.0,      32.0,       0.0);         ( 415797.5,
3741674.0,      32.0,      32.0,       0.0);
     ( 415809.9, 3741674.0,      32.0,      32.0,       0.0);         ( 415822.3,
3741674.0,      32.0,      32.0,       0.0);
     ( 415852.3, 3741673.2,      32.0,      32.0,       0.0);         ( 415872.0,
3741674.0,      32.0,      32.0,       0.0);
     ( 415884.5, 3741674.0,      32.0,      32.0,       0.0);         ( 415921.8,
3741674.0,      32.0,      32.0,       0.0);
     ( 415934.2, 3741674.0,      32.0,      32.0,       0.0);         ( 415946.6,
3741674.0,      32.0,      32.0,       0.0);
     ( 415959.1, 3741674.0,      32.0,      32.0,       0.0);         ( 415971.5,
3741674.0,      32.0,      32.0,       0.0);
     ( 415978.8, 3741675.3,      32.0,      32.0,       0.0);         ( 415738.2,
3741678.2,      32.0,      32.0,       0.0);
     ( 415747.8, 3741678.2,      32.0,      32.0,       0.0);         ( 415760.2,
3741678.2,      32.0,      32.0,       0.0);
     ( 415772.6, 3741678.2,      32.0,      32.0,       0.0);         ( 415785.0,
3741678.2,      32.0,      32.0,       0.0);
     ( 415797.5, 3741678.2,      32.0,      32.0,       0.0);         ( 415809.9,
3741678.2,      32.0,      32.0,       0.0);
     ( 415822.3, 3741678.2,      32.0,      32.0,       0.0);         ( 415921.8,
3741678.2,      32.0,      32.0,       0.0);
     ( 415934.2, 3741678.2,      32.0,      32.0,       0.0);         ( 415946.6,
```

3741678.2,   32.0,   32.0,   0.0);
     (415959.1, 3741678.2,   32.0,   32.0,   0.0);   (415971.5,
3741678.2,   32.0,   32.0,   0.0);
     (415978.8, 3741679.5,   32.0,   32.0,   0.0);   (415738.2,
3741682.4,   32.0,   32.0,   0.0);
     (415747.8, 3741682.4,   32.0,   32.0,   0.0);   (415760.2,
3741682.4,   32.0,   32.0,   0.0);
     (415772.6, 3741682.4,   32.0,   32.0,   0.0);   (415785.0,
3741682.4,   32.0,   32.0,   0.0);

 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

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

     (415797.5, 3741682.4,   32.0,   32.0,   0.0);   (415809.9,
3741682.4,   32.0,   32.0,   0.0);
     (415822.3, 3741682.4,   32.0,   32.0,   0.0);   (415847.2,
3741682.4,   32.0,   32.0,   0.0);
     (415884.5, 3741682.4,   32.0,   32.0,   0.0);   (415921.8,
3741682.4,   32.0,   32.0,   0.0);
     (415934.2, 3741682.4,   32.0,   32.0,   0.0);   (415946.6,
3741682.4,   32.0,   32.0,   0.0);
     (415959.1, 3741682.4,   32.0,   32.0,   0.0);   (415971.5,
3741682.4,   32.0,   32.0,   0.0);
     (415978.8, 3741683.7,   32.0,   32.0,   0.0);   (415738.2,
3741686.6,   32.0,   32.0,   0.0);
     (415747.8, 3741686.6,   32.0,   32.0,   0.0);   (415760.2,
3741686.6,   32.0,   32.0,   0.0);
     (415772.6, 3741686.6,   32.0,   32.0,   0.0);   (415785.0,
3741686.6,   32.0,   32.0,   0.0);
     (415797.5, 3741686.6,   32.0,   32.0,   0.0);   (415809.9,
3741686.6,   32.0,   32.0,   0.0);
     (415822.3, 3741686.6,   32.0,   32.0,   0.0);   (415847.2,
3741686.6,   32.0,   32.0,   0.0);
     (415884.5, 3741686.6,   32.0,   32.0,   0.0);   (415847.2,
3741690.8,   32.0,   32.0,   0.0);
     (415884.5, 3741690.8,   32.0,   32.0,   0.0);   (415847.2,
3741695.0,   32.0,   32.0,   0.0);
     (415884.5, 3741695.0,   32.0,   32.0,   0.0);   (415738.2,
3741699.1,   32.0,   32.0,   0.0);
     (415747.8, 3741699.1,   32.0,   32.0,   0.0);   (415760.2,
3741699.1,   32.0,   32.0,   0.0);
     (415772.6, 3741699.1,   32.0,   32.0,   0.0);   (415785.0,

```
3741699.1,      32.0,      32.0,       0.0);
     ( 415797.5, 3741699.1,      32.0,      32.0,       0.0);         ( 415809.9,
3741699.1,      32.0,      32.0,       0.0);
     ( 415822.3, 3741699.1,      32.0,      32.0,       0.0);         ( 415847.2,
3741699.1,      32.0,      32.0,       0.0);
     ( 415884.5, 3741699.1,      32.0,      32.0,       0.0);         ( 415921.8,
3741699.1,      32.0,      32.0,       0.0);
     ( 415934.2, 3741699.1,      32.0,      32.0,       0.0);         ( 415946.6,
3741699.1,      32.0,      32.0,       0.0);
     ( 415959.1, 3741699.1,      32.0,      32.0,       0.0);         ( 415971.5,
3741699.1,      32.0,      32.0,       0.0);
     ( 415978.8, 3741700.4,      32.0,      32.0,       0.0);         ( 415738.2,
3741703.3,      32.0,      32.0,       0.0);
     ( 415747.8, 3741703.3,      32.0,      32.0,       0.0);         ( 415760.2,
3741703.3,      32.0,      32.0,       0.0);
     ( 415772.6, 3741703.3,      32.0,      32.0,       0.0);         ( 415785.0,
3741703.3,      32.0,      32.0,       0.0);
     ( 415797.5, 3741703.3,      32.0,      32.0,       0.0);         ( 415809.9,
3741703.3,      32.0,      32.0,       0.0);
     ( 415822.3, 3741703.3,      32.0,      32.0,       0.0);         ( 415847.2,
3741703.3,      32.0,      32.0,       0.0);
     ( 415884.5, 3741703.3,      32.0,      32.0,       0.0);         ( 415921.8,
3741703.3,      32.0,      32.0,       0.0);
     ( 415934.2, 3741703.3,      32.0,      32.0,       0.0);         ( 415946.6,
3741703.3,      32.0,      32.0,       0.0);
     ( 415959.1, 3741703.3,      32.0,      32.0,       0.0);         ( 415971.5,
3741703.3,      32.0,      32.0,       0.0);
     ( 415978.8, 3741704.6,      32.0,      32.0,       0.0);         ( 415738.2,
3741707.5,      32.0,      32.0,       0.0);
     ( 415747.8, 3741707.5,      32.0,      32.0,       0.0);         ( 415760.2,
3741707.5,      32.0,      32.0,       0.0);
     ( 415772.6, 3741707.5,      32.0,      32.0,       0.0);         ( 415785.0,
3741707.5,      32.0,      32.0,       0.0);
     ( 415797.5, 3741707.5,      32.0,      32.0,       0.0);         ( 415809.9,
3741707.5,      32.0,      32.0,       0.0);
     ( 415822.3, 3741707.5,      32.0,      32.0,       0.0);         ( 415921.8,
3741707.5,      32.0,      32.0,       0.0);
     ( 415934.2, 3741707.5,      32.0,      32.0,       0.0);         ( 415946.6,
3741707.5,      32.0,      32.0,       0.0);
     ( 415959.1, 3741707.5,      32.0,      32.0,       0.0);         ( 415971.5,
3741707.5,      32.0,      32.0,       0.0);
     ( 415978.8, 3741708.8,      32.0,      32.0,       0.0);         ( 415738.2,
3741720.1,      32.0,      32.0,       0.0);
     ( 415747.8, 3741720.1,      32.0,      32.0,       0.0);         ( 415760.2,
3741720.1,      32.0,      32.0,       0.0);
     ( 415772.6, 3741720.1,      32.0,      32.0,       0.0);         ( 415785.0,
3741720.1,      32.0,      32.0,       0.0);
     ( 415797.5, 3741720.1,      32.0,      32.0,       0.0);         ( 415809.9,
3741720.1,      32.0,      32.0,       0.0);
     ( 415822.3, 3741720.1,      32.0,      32.0,       0.0);         ( 415834.8,
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3741720.1,   32.0,   32.0,   0.0);
     (415847.2, 3741720.1,   32.0,   32.0,   0.0);   (415859.6,
3741720.1,   32.0,   32.0,   0.0);
     (415884.5, 3741720.1,   32.0,   32.0,   0.0);   (415896.9,
3741720.1,   32.0,   32.0,   0.0);
     (415909.3, 3741720.1,   32.0,   32.0,   0.0);   (415921.8,
3741720.1,   32.0,   32.0,   0.0);
     (415934.2, 3741720.1,   32.0,   32.0,   0.0);   (415946.6,
3741720.1,   32.0,   32.0,   0.0);
     (415959.1, 3741720.1,   32.0,   32.0,   0.0);   (415971.5,
3741720.1,   32.0,   32.0,   0.0);

 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

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

     (415978.8, 3741721.4,   32.0,   32.0,   0.0);   (415738.2,
3741724.3,   32.0,   32.0,   0.0);
     (415747.8, 3741724.3,   32.0,   32.0,   0.0);   (415760.2,
3741724.3,   32.0,   32.0,   0.0);
     (415772.6, 3741724.3,   32.0,   32.0,   0.0);   (415785.0,
3741724.3,   32.0,   32.0,   0.0);
     (415797.5, 3741724.3,   32.0,   32.0,   0.0);   (415809.9,
3741724.3,   32.0,   32.0,   0.0);
     (415822.3, 3741724.3,   32.0,   32.0,   0.0);   (415834.8,
3741724.3,   32.0,   32.0,   0.0);
     (415847.2, 3741724.3,   32.0,   32.0,   0.0);   (415859.6,
3741724.3,   32.0,   32.0,   0.0);
     (415884.5, 3741724.3,   32.0,   32.0,   0.0);   (415896.9,
3741724.3,   32.0,   32.0,   0.0);
     (415909.3, 3741724.3,   32.0,   32.0,   0.0);   (415921.8,
3741724.3,   32.0,   32.0,   0.0);
     (415934.2, 3741724.3,   32.0,   32.0,   0.0);   (415946.6,
3741724.3,   32.0,   32.0,   0.0);
     (415959.1, 3741724.3,   32.0,   32.0,   0.0);   (415971.5,
3741724.3,   32.0,   32.0,   0.0);
     (415978.8, 3741725.6,   32.0,   32.0,   0.0);   (415738.2,
3741728.5,   32.0,   32.0,   0.0);
     (415747.8, 3741728.5,   32.0,   32.0,   0.0);   (415760.2,
3741728.5,   32.0,   32.0,   0.0);
     (415772.6, 3741728.5,   32.0,   32.0,   0.0);   (415785.0,
3741728.5,   32.0,   32.0,   0.0);
     (415797.5, 3741728.5,   32.0,   32.0,   0.0);   (415809.9,

```
3741728.5,      32.0,      32.0,       0.0);
     ( 415822.3, 3741728.5,      32.0,      32.0,       0.0);         ( 415834.8,
3741728.5,      32.0,      32.0,       0.0);
     ( 415847.2, 3741728.5,      32.0,      32.0,       0.0);         ( 415859.6,
3741728.5,      32.0,      32.0,       0.0);
     ( 415884.5, 3741728.5,      32.0,      32.0,       0.0);         ( 415896.9,
3741728.5,      32.0,      32.0,       0.0);
     ( 415909.3, 3741728.5,      32.0,      32.0,       0.0);         ( 415921.8,
3741728.5,      32.0,      32.0,       0.0);
     ( 415934.2, 3741728.5,      32.0,      32.0,       0.0);         ( 415946.6,
3741728.5,      32.0,      32.0,       0.0);
     ( 415959.1, 3741728.5,      32.0,      32.0,       0.0);         ( 415971.5,
3741728.5,      32.0,      32.0,       0.0);
     ( 415978.8, 3741729.8,      32.0,      32.0,       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 ***
```

 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

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

   Surface file: KSNA_V9_ADJU\KSNA_V9.SFC
                 Met Version: 16216
   Profile file: KSNA_V9_ADJU\KSNA_V9.PFL

   Surface format: FREE

   Profile format: FREE

   Surface station no.:   93184   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   -4.5 0.082 -9.000 -9.000 -999.   56.   11.0 0.12   2.65
1.00   0.87   62.   5.8 283.8   2.0
 12 01 01   1 02   -3.5 0.073 -9.000 -9.000 -999.   47.   9.9 0.12   2.65
1.00   0.77   27.   5.8 283.1   2.0
 12 01 01   1 03   -3.5 0.073 -9.000 -9.000 -999.   47.   9.9 0.12   2.65
1.00   0.77 336.   5.8 283.1   2.0
 12 01 01   1 04   -3.3 0.070 -9.000 -9.000 -999.   45.   9.7 0.12   2.65
1.00   0.74   34.   5.8 283.1   2.0
 12 01 01   1 05   -3.0 0.068 -9.000 -9.000 -999.   42.   9.4 0.12   2.65
1.00   0.70 154.   5.8 282.5   2.0
 12 01 01   1 06 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0 0.12   2.65
1.00   0.00   0.   5.8 282.0   2.0
 12 01 01   1 07   -2.0 0.059 -9.000 -9.000 -999.   34.   9.0 0.12   2.65
1.00   0.55 343.   5.8 281.4   2.0
 12 01 01   1 08   -2.6 0.066 -9.000 -9.000 -999.   40.   9.7 0.12   2.65
0.53   0.69   25.   5.8 281.4   2.0
 12 01 01   1 09   21.6 0.133 0.252 0.010   27. 116.   -9.9 0.12   2.65

```
0.31    1.03  344.    5.8  282.5    2.0
 12 01 01   1 10  115.6  0.162  0.713  0.008  114.  156.     -3.3  0.12   2.65
0.24    1.06  233.    5.8  286.4    2.0
 12 01 01   1 11  160.9  0.126  1.129  0.005  325.  108.     -1.1  0.12   2.65
0.21    0.67  261.    5.8  291.4    2.0
 12 01 01   1 12  187.0  0.138  1.467  0.005  614.  123.     -1.3  0.12   2.65
0.20    0.75  252.    5.8  294.9    2.0
 12 01 01   1 13  186.9  0.189  1.755  0.005 1051.  197.     -3.3  0.12   2.65
0.20    1.23  280.    5.8  297.5    2.0
 12 01 01   1 14  168.3  0.247  1.857  0.005 1383.  295.     -8.1  0.12   2.65
0.21    1.86  268.    5.8  299.2    2.0
 12 01 01   1 15  115.3  0.275  1.688  0.005 1517.  346.    -16.3  0.12   2.65
0.24    2.25  248.    5.8  298.1    2.0
 12 01 01   1 16   41.5  0.262  1.211  0.005 1552.  322.    -39.2  0.12   2.65
0.33    2.32  227.    5.8  295.9    2.0
 12 01 01   1 17  -17.9  0.217 -9.000 -9.000 -999.  244.     52.0  0.12   2.65
0.60    2.18  227.    5.8  292.5    2.0
 12 01 01   1 18  -24.7  0.250 -9.000 -9.000 -999.  300.     68.7  0.12   2.65
1.00    2.50  219.    5.8  288.8    2.0
 12 01 01   1 19   -5.2  0.088 -9.000 -9.000 -999.   91.     12.0  0.12   2.65
1.00    0.94  201.    5.8  287.5    2.0
 12 01 01   1 20   -3.5  0.073 -9.000 -9.000 -999.   47.     10.0  0.12   2.65
1.00    0.77  259.    5.8  287.0    2.0
 12 01 01   1 21   -2.6  0.064 -9.000 -9.000 -999.   39.      9.1  0.12   2.65
1.00    0.65  264.    5.8  286.4    2.0
 12 01 01   1 22   -4.4  0.081 -9.000 -9.000 -999.   55.     10.9  0.12   2.65
1.00    0.86  211.    5.8  285.9    2.0
 12 01 01   1 23   -4.2  0.079 -9.000 -9.000 -999.   53.     10.7  0.12   2.65
1.00    0.84  247.    5.8  284.9    2.0
 12 01 01   1 24   -7.1  0.103 -9.000 -9.000 -999.   80.     14.1  0.12   2.65
1.00    1.09  236.    5.8  283.8    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 12 01 01 01    5.8 1   62.    0.87   283.8   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
↑ *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13839
HRA\PM25\PM25.ISC                        ***        01/11/21
 *** AERMET - VERSION  16216 ***   ***
                        ***        10:35:17

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

                               *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
```

L0000006 , L0000007 , L0000008 , L0000009 , L0000010
, L0000011 , L0000012 , L0000013 ,
L0000014 , L0000015 ,

*** 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)
415738.18	3741653.06	3.67035	(12120224)	415747.75	3741653.06	3.39387	(12120224)
415760.18	3741653.06	3.08786	(12120224)	415772.61	3741653.06	2.82715	(12120224)
415785.04	3741653.06	2.60092	(12120224)	415797.47	3741653.06	2.40017	(12120224)
415807.50	3741652.82	2.25515	(12120224)	415817.42	3741652.82	2.12897c	(14010624)
415828.17	3741652.70	2.01409c	(14010624)	415909.34	3741653.06	1.39460c	(14010624)
415921.77	3741653.06	1.32774	(14013124)	415934.20	3741653.06	1.27511	(14013124)
415946.63	3741653.06	1.22619	(14013124)	415959.06	3741653.06	1.18060	(14013124)
415971.49	3741653.06	1.13801	(14013124)	415978.84	3741654.33	1.11115	(14013124)
415738.18	3741657.25	3.56290	(12120224)	415747.75	3741657.25	3.30288	(12120224)
415760.18	3741657.25	3.01256	(12120224)	415772.61	3741657.25	2.76382	(12120224)
415785.04	3741657.25	2.54640	(12120224)	415797.47	3741657.25	2.35275	(12120224)
415807.50	3741657.01	2.21244	(12120224)	415817.42	3741657.01	2.09132c	(14010624)
415828.17	3741656.89	1.98026c	(14010624)	415909.34	3741657.25	1.37794c	(14010624)
415921.77	3741657.25	1.31369	(14013124)	415934.20	3741657.25	1.26218	(14013124)
415946.63	3741657.25	1.21425	(14013124)	415959.06	3741657.25	1.16956	(14013124)
415971.49	3741657.25	1.12778	(14013124)	415978.84	3741658.52	1.10139	(14013124)
415738.18	3741661.44	3.46276	(12120224)	415747.75	3741661.44	3.21670	(12120224)
415760.18	3741661.44	2.94080	(12120224)	415772.61	3741661.44	2.70304	(12120224)

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       415785.04   3741661.44        2.49406  (12120224)              415797.47
 3741661.44        2.30710  (12120224)
       415807.50   3741661.20        2.17126  (12120224)              415817.42
 3741661.20        2.05492c (14010624)
       415828.17   3741661.08        1.94750c (14010624)              415909.34
 3741661.44        1.36164c (14010624)
       415921.77   3741661.44        1.29991  (14013124)              415934.20
 3741661.44        1.24948  (14013124)
       415946.63   3741661.44        1.20252  (14013124)              415959.06
 3741661.44        1.15869  (14013124)
       415971.49   3741661.44        1.11769  (14013124)              415978.84
 3741662.71        1.09177  (14013124)
       415852.29   3741664.78        1.71458c (14010624)              415872.05
 3741665.63        1.56811c (14010624)
       415884.48   3741665.63        1.48837c (14010624)              415852.29
 3741668.97        1.68968c (14010624)
       415872.05   3741669.82        1.54712c (14010624)              415884.48
 3741669.82        1.46938c (14010624)
       415738.18   3741674.01        3.19631  (12120224)              415747.75
 3741674.01        2.98475  (12120224)
       415760.18   3741674.01        2.74502  (12120224)              415772.61
 3741674.01        2.53542  (12120224)
       415785.04   3741674.01        2.34869  (12120224)              415797.47
 3741674.01        2.17971  (12120224)
       415809.90   3741674.01        2.02499c (14010624)              415822.33
 3741674.01        1.90478c (14010624)
       415852.29   3741673.16        1.66545c (14010624)              415872.05
 3741674.01        1.52664c (14010624)
       415884.48   3741674.01        1.45083c (14010624)              415921.77
 3741674.01        1.26005  (14013124)
       415934.20   3741674.01        1.21267  (14013124)              415946.63
 3741674.01        1.16958  (12042224)
       415959.06   3741674.01        1.12967  (12042224)              415971.49
 3741674.01        1.09080  (12042224)
       415978.84   3741675.28        1.06562  (12042224)              415738.18
 3741678.20        3.11625  (12120224)
       415747.75   3741678.20        2.91481  (12120224)              415760.18
 3741678.20        2.68544  (12120224)
       415772.61   3741678.20        2.48397  (12120224)              415785.04
 3741678.20        2.30376  (12120224)
       415797.47   3741678.20        2.14011  (12120224)              415809.90
 3741678.20        1.99068c (14010624)
       415822.33   3741678.20        1.87426c (14010624)              415921.77
 3741678.20        1.24724  (14013124)
 *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13839
HRA\PM25\PM25.ISC                        ***        01/11/21
 *** AERMET - VERSION  16216 ***   ***
                      ***        10:35:17

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*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 ,
L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 ,
L0000014 , L0000015 ,

*** 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)
415934.20	3741678.20	1.20080	(14013124)	415946.63	3741678.20	1.15954	(12042224)
415959.06	3741678.20	1.12045	(12042224)	415971.49	3741678.20	1.08239	(12042224)
415978.84	3741679.47	1.05774	(12042224)	415738.18	3741682.39	3.04029	(12120224)
415747.75	3741682.39	2.84822	(12120224)	415760.18	3741682.39	2.62842	(12120224)
415772.61	3741682.39	2.43451	(12120224)	415785.04	3741682.39	2.26042	(12120224)
415797.47	3741682.39	2.10182	(12120224)	415809.90	3741682.39	1.95745c	(14010624)
415822.33	3741682.39	1.84464c	(14010624)	415847.19	3741682.39	1.64995c	(14010624)
415884.48	3741682.39	1.41498c	(14010624)	415921.77	3741682.39	1.23465	(14013124)
415934.20	3741682.39	1.18956	(12042224)	415946.63	3741682.39	1.14967	(12042224)
415959.06	3741682.39	1.11138	(12042224)	415971.49	3741682.39	1.07411	(12042224)
415978.84	3741683.66	1.04996	(12042224)	415738.18	3741686.58	2.96827	(12120224)
415747.75	3741686.58	2.78471	(12120224)	415760.18	3741686.58	2.57379	(12120224)
415772.61	3741686.58	2.38694	(12120224)	415785.04	3741686.58	2.21859	(12120224)
415797.47	3741686.58	2.06478	(12120224)	415809.90	3741686.58	1.92525c	(14010624)
415822.33	3741686.58	1.81588c	(14010624)	415847.19	3741686.58	1.62671c	(14010624)

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       415884.48   3741686.58        1.39764c (14010624)              415847.19
3741690.77        1.60405c (14010624)
       415884.48   3741690.77        1.38069c (14010624)              415847.19
3741694.96        1.58196c (14010624)
       415884.48   3741694.96        1.36409c (14010624)              415738.18
3741699.15        2.77175  (12120224)
       415747.75   3741699.15        2.61032  (12120224)              415760.18
3741699.15        2.42261  (12120224)
       415772.61   3741699.15        2.25439  (12120224)              415785.04
3741699.15        2.10145  (12120224)
       415797.47   3741699.15        1.96075  (12120224)              415809.90
3741699.15        1.83432c (14010624)
       415822.33   3741699.15        1.73438c (14010624)              415847.19
3741699.15        1.56042c (14010624)
       415884.48   3741699.15        1.34785c (14010624)              415921.77
3741699.15        1.18743  (12042224)
       415934.20   3741699.15        1.14869  (12042224)              415946.63
3741699.15        1.11187  (12042224)
       415959.06   3741699.15        1.07652  (12042224)              415971.49
3741699.15        1.04217  (12042224)
       415978.84   3741700.42        1.01988  (12042224)              415738.18
3741703.34        2.71201  (12120224)
       415747.75   3741703.34        2.55693  (12120224)              415760.18
3741703.34        2.37599  (12120224)
       415772.61   3741703.34        2.21332  (12120224)              415785.04
3741703.34        2.06497  (12120224)
       415797.47   3741703.34        1.92818  (12120224)              415809.90
3741703.34        1.80575c (14010624)
       415822.33   3741703.34        1.70869c (14010624)              415847.19
3741703.34        1.53940c (14010624)
       415884.48   3741703.34        1.33195c (14010624)              415921.77
3741703.34        1.17691  (12042224)
       415934.20   3741703.34        1.13892  (12042224)              415946.63
3741703.34        1.10281  (12042224)
       415959.06   3741703.34        1.06815  (12042224)              415971.49
3741703.34        1.03446  (12042224)
       415978.84   3741704.61        1.01261  (12042224)              415738.18
3741707.53        2.65465  (12120224)
       415747.75   3741707.53        2.50562  (12120224)              415760.18
3741707.53        2.33109  (12120224)
       415772.61   3741707.53        2.17364  (12120224)              415785.04
3741707.53        2.02963  (12120224)
       415797.47   3741707.53        1.89660  (12120224)              415809.90
3741707.53        1.77798c (14010624)
       415822.33   3741707.53        1.68369c (14010624)              415921.77
3741707.53        1.16657  (12042224)
       415934.20   3741707.53        1.12932  (12042224)              415946.63
3741707.53        1.09391  (12042224)
       415959.06   3741707.53        1.05991  (12042224)              415971.49
3741707.53        1.02687  (12042224)
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*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 , L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 , L0000014 , L0000015 ,

*** 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)
415978.84	3741708.80	1.00543	(12042224)	415738.18	3741720.10	2.49595	(12120224)
415747.75	3741720.10	2.36292	(12120224)	415760.18	3741720.10	2.20554	(12120224)
415772.61	3741720.10	2.06213	(12120224)	415785.04	3741720.10	1.93008	(12120224)
415797.47	3741720.10	1.80736	(12120224)	415809.90	3741720.10	1.69916c	(14010624)
415822.33	3741720.10	1.61249c	(14010624)	415834.76	3741720.10	1.53315c	(14010624)
415847.19	3741720.10	1.46016c	(14010624)	415859.62	3741720.10	1.39268c	(14010624)
415884.48	3741720.10	1.27150c	(14010624)	415896.91	3741720.10	1.21663c	(14010624)
415909.34	3741720.10	1.17388	(12042224)	415921.77	3741720.10	1.13667	(12042224)
415934.20	3741720.10	1.10150	(12042224)	415946.63	3741720.10	1.06805	(12042224)
415959.06	3741720.10	1.03592	(12042224)	415971.49	3741720.10	1.00473	(12042224)
415978.84	3741721.37	0.98447	(12042224)	415738.18	3741724.29	2.44710	(12120224)
415747.75	3741724.29	2.31877	(12120224)	415760.18	3741724.29	2.16645	(12120224)

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       415772.61   3741724.29        2.02727  (12120224)               415785.04
 3741724.29        1.89892  (12120224)
       415797.47   3741724.29        1.77929  (12120224)               415809.90
 3741724.29        1.67426c (14010624)
       415822.33   3741724.29        1.58994c (14010624)               415834.76
 3741724.29        1.51265c (14010624)
       415847.19   3741724.29        1.44147c (14010624)               415859.62
 3741724.29        1.37559c (14010624)
       415884.48   3741724.29        1.25712c (14010624)               415896.91
 3741724.29        1.20342c (14010624)
       415909.34   3741724.29        1.16355  (12042224)               415921.77
 3741724.29        1.12705  (12042224)
       415934.20   3741724.29        1.09254  (12042224)               415946.63
 3741724.29        1.05970  (12042224)
       415959.06   3741724.29        1.02817  (12042224)               415971.49
 3741724.29        0.99756  (12042224)
       415978.84   3741725.56        0.97767  (12042224)               415738.18
 3741728.48        2.40008  (12120224)
       415747.75   3741728.48        2.27614  (12120224)               415760.18
 3741728.48        2.12863  (12120224)
       415772.61   3741728.48        1.99356  (12120224)               415785.04
 3741728.48        1.86865  (12120224)
       415797.47   3741728.48        1.75197  (12120224)               415809.90
 3741728.48        1.65001c (14010624)
       415822.33   3741728.48        1.56795c (14010624)               415834.76
 3741728.48        1.49264c (14010624)
       415847.19   3741728.48        1.42319c (14010624)               415859.62
 3741728.48        1.35887c (14010624)
       415884.48   3741728.48        1.24303c (14010624)               415896.91
 3741728.48        1.19147  (12042224)
       415909.34   3741728.48        1.15341  (12042224)               415921.77
 3741728.48        1.11760  (12042224)
       415934.20   3741728.48        1.08373  (12042224)               415946.63
 3741728.48        1.05149  (12042224)
       415959.06   3741728.48        1.02053  (12042224)               415971.49
 3741728.48        0.99048  (12042224)
       415978.84   3741729.75        0.97095  (12042224)

 *** AERMOD - VERSION  19191 ***   *** C:\LAKES\AERMOD VIEW\13839
HRA\PM25\PM25.ISC                      ***        01/11/21
 *** AERMET - VERSION  16216 ***   ***
                       ***        10:35:17

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 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN  ADJ_U*

                                                  *** THE SUMMARY OF HIGHEST 24-HR
RESULTS ***
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GROUP ID	AVERAGE	NETWORK CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)
ALL	1ST HIGH	VALUE IS	3.67035 ON 12120224:	AT (415738.18, 3741653.06, 32.00, 32.00, 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 1864 Informational Message(s)

A Total of 43848 Hours Were Processed

A Total of 1500 Calm Hours Identified

A Total of 364 Missing Hours Identified (0.83 Percent)

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

******** WARNING MESSAGES ********
ME W186 108 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
0.50
ME W187 108 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

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**********************************
*** AERMOD Finishes Successfully ***
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APPENDIX 4.2:

AERMOD MODEL INPUT/OUTPUT FILES (ELECTRONIC FORMAT, AVAILABLE ON REQUEST)