April 2016 | Health Risk Assessment

PANAMA STREET K-8 CHARTER SCHOOL

Ocean Charter Schools

Prepared for:

Ocean Charter Schools
Contact: Jim Bush, Advisor
12606 Culver Boulevard
Los Angeles, California 90066
916.846.1902

Prepared by:

PlaceWorks
Contact: Steve Bush, PE
Dr. Cathleen M. Fitzgerald, PE
9841 Airport Boulevard, Suite 1010
Los Angeles, California 90045
310.670.9221
info@placeworks.com
www.placeworks.com

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PLACEWORKS

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1. Introduction

Ocean Charter Schools proposes to construct a new charter school for Kindergarten through 8th grade students located at 12870 and 12908 Panama Street in the community of Del Rey in the City of Los Angeles, California 90066.

Regulations pertaining to the siting of new schools or the modernization of existing schools in California require compliance with the California Code of Regulations (CCR) Title 5 standards. For new schools, Title 5 studies must demonstrate that facilities with the potential to emit hazardous air pollutants within a quarter-mile radius of the school site will not constitute an actual or potential public health risk to students and staff that would attend and work at the school. This health risk assessment (HRA) involved conducting the following tasks:

- Emissions associated with vehicles and trucks traveling on State Route 90 (SR-90), which is approximately 700 feet south of the project boundary, were evaluated.

- Facilities within a quarter-mile (1,320-foot) radius of the project site that might reasonably emit hazardous or acutely hazardous air emissions were identified and evaluated.

- Air dispersion modeling, using the AERMOD computer model, was conducted to quantify maximum ground-level concentrations for students and staff at the project site. Meteorological data from the nearest South Coast Air Quality Management District (SCAQMD) monitoring station with similar meteorological conditions were used to represent local weather conditions and prevailing winds.

- Cancer and non-cancer risks to students and staff attending and working at the project site were determined, based on the results of the AERMOD modeling. The assessment considered exposure through the inhalation pathway. Unit Risk Factors (URFs) and Cancer Potency Factors (CPFs) were used to determine carcinogenic risk and Recommended Exposure Limits (RELs) were used to determine non-carcinogenic risk.

- A health risk assessment report has been prepared that compares the calculated risks with thresholds established by the SCAQMD and Office of Environmental Health Hazard Assessment (OEHHA).

The assessment and dispersion modeling methodologies used in the preparation of this report included all relevant and appropriate procedures developed by the US Environmental Protection Agency (USEPA) and the latest guidance on conducting health risk assessments from OEHHA (2015). These methodologies and assumptions were used to ensure that the assessment effectively quantified school-based impacts associated with emission sources.

1. Introduction

It should be noted that these health impacts were based on conservative (i.e., health protective) assumptions. The USEPA (2005) and OEHHA (2015) note that conservative assumptions used in a risk assessment are intended to ensure that the estimated risks do not underestimate the actual risks. Therefore, the estimated risks do not necessarily represent actual risks experienced by populations at or near a site. The use of conservative assumptions tends to produce upper-bound estimates of risk and usually overestimate exposure and thus risk. For this school-based risk assessment, the following conservative assumptions were used:

- It was assumed that maximum exposed children and adults stood outside at the site for 8 hours per day, 180 days/year for 9 years (students) or 250 days/year for 25 years (staff). In reality, students and staff are exposed to outdoor pollutant concentration levels only during nutrition, lunch, and PE class and are exposed to reduced indoor pollutant concentrations for the remaining school hours. This would result in lower estimated risk values.

- The calculated risk for children from 2-16 years is multiplied by a factor of 3 to account for early life exposure and uncertainty in child versus adult exposure impacts.

Thus, the estimated risks provided in this HRA are conservative.

2. Project Description

Ocean Charter School (OCS) is a LAUSD-approved charter school organization that serves grades K – 8 in several locations in Los Angeles. The proposed project consists of the construction and operation of a charter school for Kindergarten through 8th grades on an approximately 2.2-acre site. The site is located at 12870 and 12908 Panama Street in the community of Del Rey in the City of Los Angeles. The school campus would have 19 classrooms for 532 students in the classroom/administration building, along with a kitchen/multipurpose building, lunch shelters, a turf play field, and an underground parking lot.

The site currently houses Teledyne Microelectronics Technologies in a 17,400-square-foot one-story industrial building, four accessory buildings and several metal cargo containers and storage sheds. Most of the remainder of the site is asphalt surface parking lot. The surrounding land use includes residential and industrial/commercial/offices. The site is bordered by EZ Storage (a self-storage business) and Culver Boulevard to the southeast; by Panama Street and detached single-family residences to the northwest; Teledyne Reynolds, Inc., Teledyne Technologies Company, to the northeast; and two vacant industrial buildings to the southwest (former Teledyne Microelectronics Technologies in operation from the 1960s to 2013). The project site is about 700 feet (0.13 mile) north of State Route 90 (SR-90 or the Marina Freeway) and approximately 0.8 mile east of the Marina Del Rey small-boat harbor. Ballona Creek is about 0.25 mile southeast, and the Ballona Wetlands Ecological Reserve is about 0.3 mile south of the site.

The project site and vicinity are depicted in Figure 1.

2. Project Description

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Figure 1 - Site Location

Project Boundary City Boundary

0 1,000
Scale (Feet)

Base Map Source: Google Earth Pro, 2016

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2. Project Description

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3. Source Identification

The health risk assessment evaluated the impact of potential long-term (chronic) exposure to air toxic emissions generated by vehicles traveling along SR-90 (mile post 1.746). Properties within a quarter-mile radius (1,320 feet) were also surveyed to identify facilities that have the potential to generate hazardous and acutely hazardous air emissions. Additionally, information obtained through the SCAQMD Facility Information Detail (FIND) database was reviewed to assist in the identification of potential emission sources.

A summary of the emissions sources evaluated during this assessment is provided below in Table 1. The project site and emission sources are depicted in Figure 2.

Table 1 Emission Sources

Source	Address
AMV Digital Media LLC	12950 Culver Boulevard, Los Angeles, CA 90066
Teledyne Reynolds, Inc.	4935 McConnell Avenue, Los Angeles, CA 90066
Teledyne Reynolds, Inc.	5005 McConnell Avenue, Los Angeles, CA 90066
State Route 90	Mile Post 1.746

3. Source Identification

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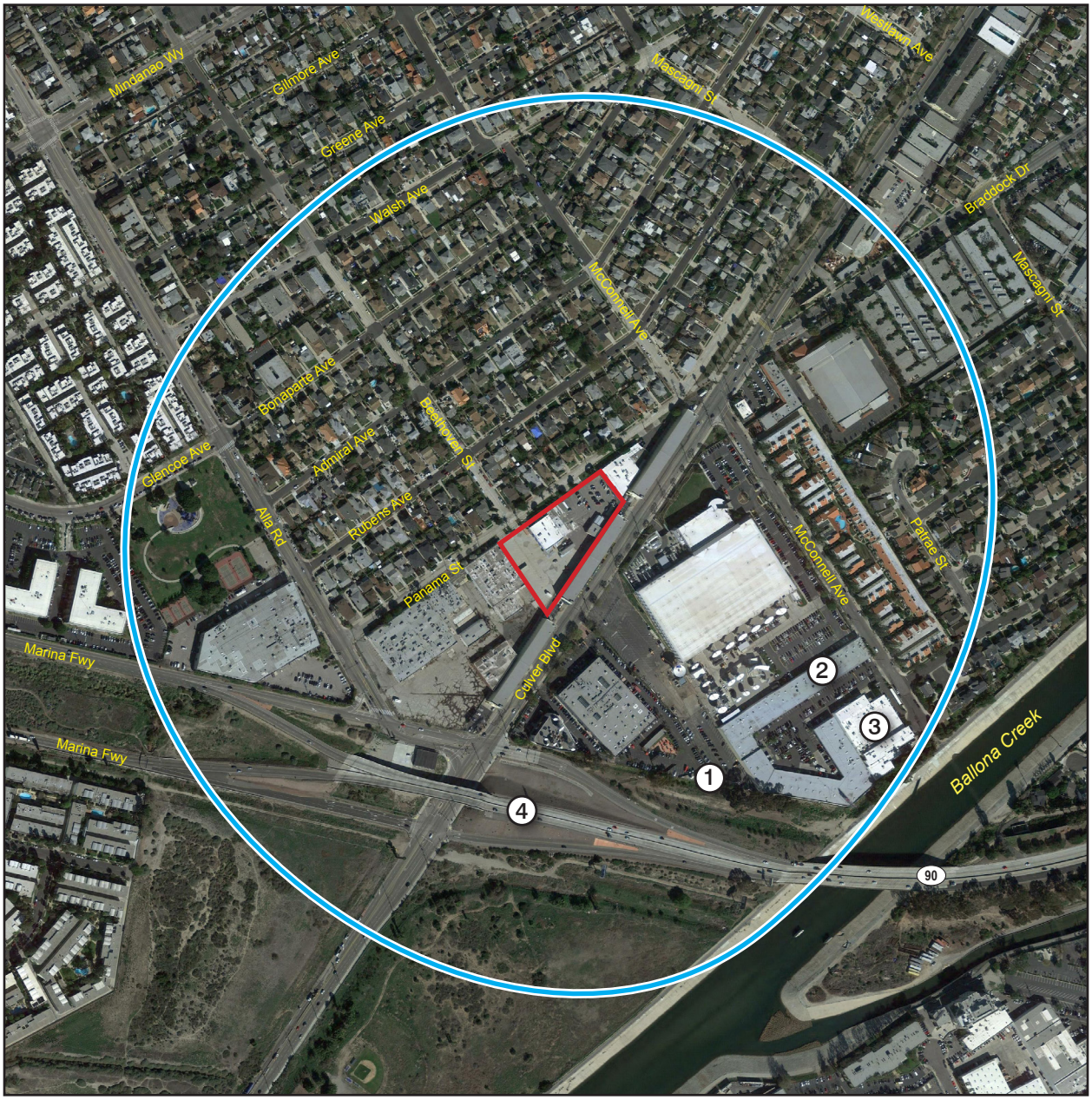
Figure 2 - Emission Sources



Project Boundary

1/4-Mile Radius

1 AMV Digital Media, LLC

2 Teledyne Reynolds, Inc.

3 Teledyne Reynolds, Inc.

4 State Route 90

0 700

Scale (Feet)

Base Map Source: Google Earth Pro, 2016

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3. Source Identification

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4. Source Characterization

4.1 STATIONARY SOURCES

Contaminant release information and associated chemical species were identified through a review of available documentation for each source referenced in Section 3. To the degree practical, all contaminant emissions generated from each source location were considered in the analysis. The limiting factor for the inclusion of a compound was the availability of published exposure factors and other toxicity data enabling risks to be quantified and, where appropriate, target organs identified. The compounds emitted from each stationary source are listed in Table 2.

Table 2 Compounds Emitted from Stationary Sources

Source	Contaminant
AMV Digital Media LLC	Diesel Particulate Exhaust
Teledyne Reynolds, Inc.	Isopropanol
Teledyne Reynolds, Inc.	Isopropanol, Methanol

4.2 MOBILE SOURCES

In urban communities, vehicle emissions contribute significantly to localized concentrations of air contaminants. Typically, emissions generated from these sources depend on vehicle mix, the percentage of heavy duty diesel trucks, the rate at which pollutants are generated during the course of travel, and the number of vehicles traveling along the roadway network.

To produce a representative vehicle fleet distribution of gasoline fueled and diesel fueled vehicles, the assessment utilized an estimate of vehicle mix based on annual traffic and truck traffic reports from the California Department of Transportation, Traffic Branch (Caltrans). Table 3 lists the identified peak hourly traffic volumes and diesel truck percentage considered in the assessment.

Table 3 Vehicle Fleet Mix

Roadway	Peak Hourly Vehicle Traffic (vehicles per hour)	Truck Percentage
SR-90 (Mile Post 1.746)	5,800	3.78

Source: Caltrans Traffic Census Website. http://traffic-counts.dot.ca.gov/.

The truck percentage for each evaluated roadway segment was used to estimate the number of diesel trucks traveling on each roadway. To determine hourly traffic volumes, the assessment used data available through the Caltrans Performance Measurement System (Caltrans PeMS, 2016). Additionally, the traffic data take into

4. Source Characterization

account projected traffic increases from the *2010 Congestion Management Plan* prepared by Los Angeles County Metropolitan Transportation Authority (MTA, 2010). To account for the emission standards representative of the California fleet, the Air Resources Board has developed the EMFAC2014 emission factor model. EMFAC2014 was used to identify pollutant emission rates for total organic gases (TOG) and diesel particulate matter (DPM). To quantify the toxic air contaminants (TACs) associated with the TOG fraction, the speciation profile provided by the Bay Area Air Quality Management District (2012) was used.

A list of emitted compounds for the mobile-source category is presented in Table 4. Appendix B contains a graphical representation of each emitting source. Appendix C presents the emission rate calculations for each source considered in the assessment.

Table 4 Compounds Emitted from Mobile Sources

Source	Contaminant
SR-90 (gasoline vehicles and diesel trucks)	Acetaldehyde, Acrolein, Benzene, 1,3-Butadiene, Ethylbenzene, Formaldehyde, Hexane, Methanol, Methyl Ethyl Ketone, Naphthalene, Propylene, Styrene, Toluene, Xylenes Diesel Particulate Matter (DPM)

5. Exposure Quantification

To assess the impact of emitted compounds on individuals who may work and/or attend classes at the proposed school facility, air quality modeling using the AERMOD atmospheric dispersion model was performed. The model is a steady state Gaussian plume model and is recommended by SCAQMD for estimating ground level impacts from point and fugitive sources in simple and complex terrain.

The model requires additional input parameters, including chemical emission data and local meteorology. Inputs for each emitting source were based on the characterizations referenced in Section 4. Meteorological data provided by SCAQMD for the LAX meteorological station (2007-2011) were used to represent local weather conditions and prevailing winds. According to the data from the LAX Monitoring Station, as presented in Appendix C, the prevailing wind direction in the area of the project site is to the northeast (NE).

The modeling analysis also considered the spatial distribution of each emitting source in relation to the project site. To accommodate the model's Cartesian grid format, direction-dependent calculations were obtained by identifying the Universal Transverse Mercator (UTM) coordinates for each source. In addition, digital elevation model (DEM) data for the area were obtained and included in the model runs to account for complex terrain.

For all modeling runs, a unit emission rate of 1 gram per second (g/s) was used. The unit emission rates were proportioned among the volume sources for mobile sources (e.g. SR-90). The maximum AERMOD concentrations from the output files were then multiplied by the emission rates calculated in Appendix C to obtain the maximum ground-level concentrations at the school site.

For mobile sources, two sets of volume sources were modeled in AERMOD. One set of volume sources representing motor vehicle traffic was used to characterize emissions of TOG. For this run, a release height of 0.60 meters was used (CARB, 2000). The second set of volume sources representing truck traffic was used to characterize emissions of DPM. For this set of sources, a release height of 4.15 m was used. Different emission factors were used to characterize TOG and DPM emissions from vehicle traffic traveling along SR-90 due to different exposure periods for adult staff and students. For the adult staff exposure scenario, a 25-year exposure period was used, as per the new OEHHA guidance for worker exposure. A 9-year exposure period was used for the student exposure scenario representing the school years for Kindergarten through 8th grade. The PM_{10} emission factor was used as the surrogate for DPM.

The AERMOD output for the emission sources is presented in Appendix D. The ground-level concentrations used in the risk calculation spreadsheets are provided in Tables E1 and E2 of Appendix E.

5. Exposure Quantification

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6. Risk Characterizations

6.1 CARCINOGENIC CHEMICAL RISK

Carcinogenic compounds are not considered to have "threshold" levels (i.e., dose levels below which there are no risks). Any exposure, therefore, will have some associated risk. The SCAQMD has established a maximum incremental cancer risk of 10 in a million (1.0E-05) for CEQA projects and the Office of Environmental Health Hazard Assessment (OEHHA) also sets a typical risk management level as 10 in a million (OEHHA, 2015). The maximum incremental cancer risk of 10 in a million is used as a "threshold" for the purposes of HRA evaluations.

Health risks associated with exposure to carcinogenic compounds at the proposed project site 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 cancer potency factor (CPF), a measure of the carcinogenic potential of a chemical when a dose is received through the inhalation pathway. It is an upper-limit 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 lifetime of 70 years.

Recent guidance from OEHHA recommends a refinement to the standard point estimate approach with the use of age-specific breathing rates and age sensitivity factors (ASFs) to assess risk for susceptible subpopulations such as children. For the inhalation pathway, the procedure requires the incorporation of several discrete variates to effectively quantify dose for each age group. Once determined, contaminant dose is multiplied by the cancer potency factor in units of inverse dose expressed in milligrams per kilogram per day $(mg/kg/day)^{-1}$ to derive the cancer risk estimate. Therefore, to accommodate the unique exposures associated with the proposed school population, the following dose algorithm was used.

$$\text{Dose}_{\text{AIR,per age group}} = (C_{air} \times EF \times [\frac{BR}{BW}] \times A \times CF)$$

Where:

Dose_{AIR}	=	dose by inhalation (mg/kg-day), per age group
C_{air}	=	concentration of contaminant in air ($\mu g/m^3$)
EF	=	exposure frequency (number of days/365 days)
BR/BW	=	daily breathing rate normalized to body weight (L/kg-day)
A	=	inhalation absorption factor (default = 1)
CF	=	conversion factor ($1x10^{-6}$, μg to mg, L to m^3)

The inhalation absorption factor (A) is a unitless factor that is only used if the cancer potency factor included a correction for absorption across the lung. For this assessment, the default value of 1 was used. To represent

the unique characteristics of the school population, the assessment employed the USEPA's guidance to develop viable dose estimates based on reasonable maximum exposure, defined as the "highest exposure that is reasonably expected to occur" for a given receptor population. Lifetime risk values for the student population were adjusted to account for an exposure of 180 days per year for 9 years (K through 8th grade). In addition, the calculated risk for students is multiplied by an ASF weighting factor of 3 (for children ages 5 to 14 years) to account for early life sensitivity to pollutant exposures (OEHHA, 2015). To assess staff-related risk, exposures were adjusted to account for an employment period of 250 days per year for 25 years. This timeline is considered appropriate for potential workplace exposures established by OEHHA (2015).

To calculate the overall cancer risk, the risk for each appropriate age group is calculated per the following equation:

$$\text{Cancer Risk}_{\text{AIR}} = \text{Dose}_{\text{AIR}} \times \text{CPF} \times \text{ASF} \times \frac{\text{ED}}{AT}$$

Where:

Dose_{AIR}	=	dose by inhalation (mg/kg-day), per age group
CPF	=	cancer potency factor, chemical-specific $(\text{mg/kg-day})^{-1}$
ASF	=	age sensitivity factor, per age group
ED	=	exposure duration (years)
AT	=	averaging time period over which exposure duration is averaged (always 70 years)

The CPFs used in the assessment were obtained from OEHHA guidance. The cancer risk is calculated separately for the students and staff, because of age differences in sensitivity to carcinogens and age differences in intake rates. The final step converts the cancer risk in scientific notation to a whole number that expresses the cancer risk in "chances per million" by multiplying the cancer risk by a factor of $1x10^6$ (i.e. 1 million).

CARB's Hotspots Analysis and Reporting Program (HARP), Risk Assessment Standalone Tool was used to calculate the cancer risk values (CARB, 2016). The determined cancer risks attributed to each chemical exposure and summation of those risks are presented in Appendix E, Table E3.

6.2 NON-CARCINOGENIC HAZARDS

An evaluation of the potential non-cancer effects of chronic and acute chemical exposures was also conducted. Under the point estimate approach, adverse health effects are evaluated by comparing the annual ground level concentration of each chemical compound with the appropriate Reference Exposure Level (REL). Available RELs promulgated by OEHHA were considered in the assessment. For compounds not listed in the OEHHA database, RELs from the U.S. EPA Integrated Risk Information System (IRIS) were utilized.

To quantify non-carcinogenic impacts, the hazard index approach was used. The hazard index assumes that chronic or acute sub-threshold exposures adversely affect a specific organ or organ system (toxicological endpoint). For each discrete chemical exposure, target organs presented in regulatory guidance were used. To

calculate the hazard index, each chemical 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, a health hazard is presumed to exist.

CARB's HARP, Risk Assessment Standalone Tool was used to calculate the chronic and acute health risk values (CARB, 2016). The determined non-cancer hazard quotient for identified compounds generated from each source and a summation for each toxicological endpoint are presented in Appendix E, Tables E3 and E4.

6.3 ACCIDENTAL RELEASES

Under the auspices of the California Accidental Release Prevention (CalARP) Program, should a stationary source use more than a threshold quantity of a regulated hazardous substance, a Risk Management Plan (RMP) which includes a risk assessment of accidental releases is required to be conducted pursuant to the provisions of the federal Accidental Release Prevention program (Title 40, Code of Federal Regulations, Part 68) Article 2, Chapter 6.95 of the Health and Safety Code.

A review of the available information collected during the source identification process (e.g., regulatory records review and interviews with business owner/operators) did not reveal the presence of any CalARP program facilities within 0.25 mile of the proposed site (Center of Effective Government, 2014). Therefore, this report did not warrant the need for the preparation of a RMP.

6. Risk Characterizations

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7. Conclusions

The following section summarizes the findings and conclusion for this HRA report.

7.1 CARCINOGENIC CHEMICAL RISK

This risk assessment assumed a maximum exposure scenario, i.e., students and staff are exposed to outdoor pollutant concentrations from mobile and stationary sources during the entire school day (8 hours). The results of the health risk assessment are provided in Table 5. The incremental cancer risk was calculated to be 0.03 per million for adult school staff and 0.09 per million for students. In comparison to the threshold level of 10 in a million, carcinogenic risks are well below the significance threshold value for both school staff and students.

7.2 NON-CARCINOGENIC HAZARDS

For non-carcinogenic effects, the hazard index identified for each toxicological endpoint totaled less than one for both school staff and students. Therefore, chronic non-carcinogenic hazards are below the significance threshold. Additionally, the acute non-carcinogenic hazards (1-hour) were below the significance thresholds (Table 5).

Table 5 Health Risk Assessment Results

Source	Cancer Risk (per million)		Chronic Hazard Index	Acute Hazard Index
	Staff Exposure	Student Exposure		
All Emission Sources	0.03	0.09	0.0003	0.001
SCAQMD Threshold	10	10	1.0	1.0
Exceeds Threshold	No	No	No	No

Source: Lakes AERMOD View, 9.1.0, 2015.

Based on a comparison to the carcinogenic and non-carcinogenic thresholds established by OEHHA and SCAQMD, hazardous air emissions generated from the stationary and mobile sources within a quarter-mile radius are not anticipated to pose an actual or potential endangerment to students and staff occupying the project site and no mitigation measures are required.

7. Conclusions

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8. References

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California Air Pollution Control Officers Association (CAPCOA). 2009. *Health Risk Assessments for Proposed Land Use Projects.*

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Center of Effective Government. 2014. The Right-to-Know Network accessed on March 22, 2016 at http://www.rtknet.org/db/rmp.

Office of Environmental Health Hazard Assessment (OEHHA). 2016. Toxicity Criteria Database. http://oehha.ca.gov/risk/chemicaldb/index.asp. Accessed April 5, 2016.

_____. 2015. *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments.* Dated February, 2015.

South Coast Air Quality Management District (SCAQMD). 2007-2011. *Meteorological Data Set for LAX Monitoring Station.*

United States Environmental Protection Agency (USEPA). 2005. *Guideline on Air Quality Models* (Revised). EPA-450/2-78-027R.

8. References

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Appendix A. Stationary Emission Sources

Appendix

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Stationary Emission Sources
Panama Street K-8 Charter School
Health Risk Assessment

No.	FACILITY	AQMD ID	ADDRESS			CITY, STATE	ZIP	NOTES
1	AMV Digital Media LLC	171160	12950	Culver	Blvd	Los Angeles	90066	Emergency generator
2	Teledyne Reynolds, Inc	148658	4935	McConnell	Ave	Los Angeles	90066	Cleaning solvent
3	Teledyne Reynolds, Inc	148559	5005	McConnell	Ave	Los Angeles	90066	Degreasing and cleaning solvent
Omitted Facilities								
	Century Computer Marketing	78020	4755	Alla	Rd	Marina Del Rey	90292	No Equipment listed
	Aurora Electronics	104824	4755	Alla	Rd	Marina Del Rey	90292	No Equipment Listed
	Direct TV Operations	115416	12800	Culver	Blvd	Los Angeles	90066	Equipment tested during non-school hours
	Elogic Corporation	146481	12910	Culver	Blvd	Los Angeles	90066	Inactive emergency generator
	Reynolds Ind Inc	51411	5005	McConnell	Ave	Los Angeles	90066	Inactive equipment
	Teledyne Reynolds, Inc	175971	12820	Panama	St	Los Angeles	90066	De minimis chemical usage
	Teledyne Microelectronic Technologies	800292	12930 & 12964	Panama	St	Los Angeles	90066	Vacant buildings; no longer in operation

Appendix

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Appendix B. Graphical Representations of Emitting Sources

Appendix

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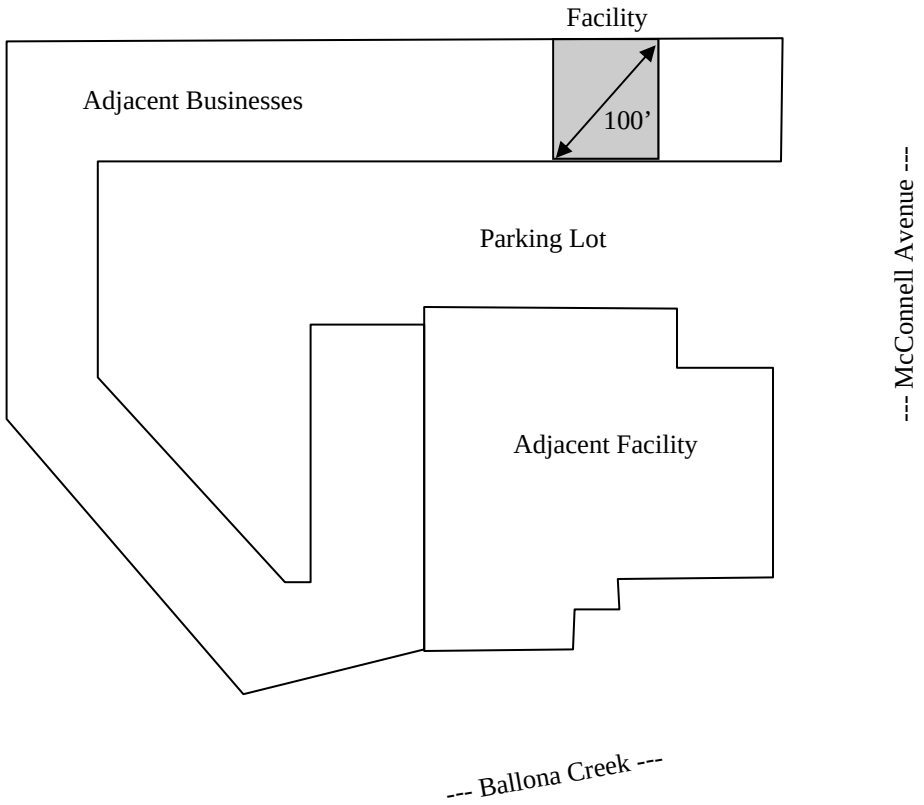
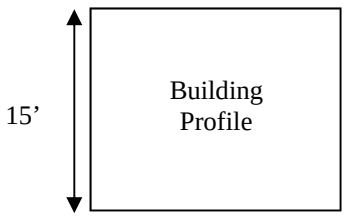
Source 2
Teledyne Reynolds, Inc.
4935 McConnell Avenue
Los Angeles, CA 90066
Monday - Friday: 8:00 AM - 5:00 PM

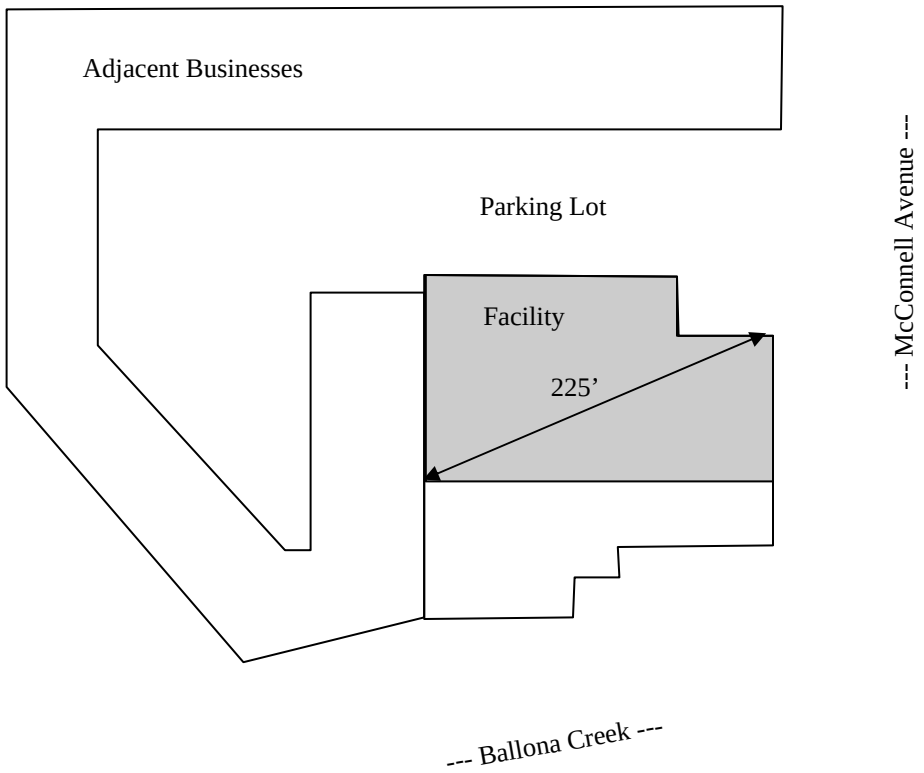
Chemical and Use Rate
Cleaning Solvent: 6.3 pounds of isopropanol per month

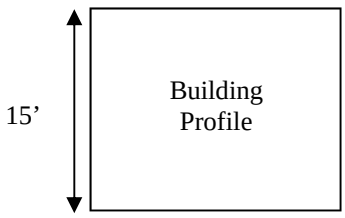




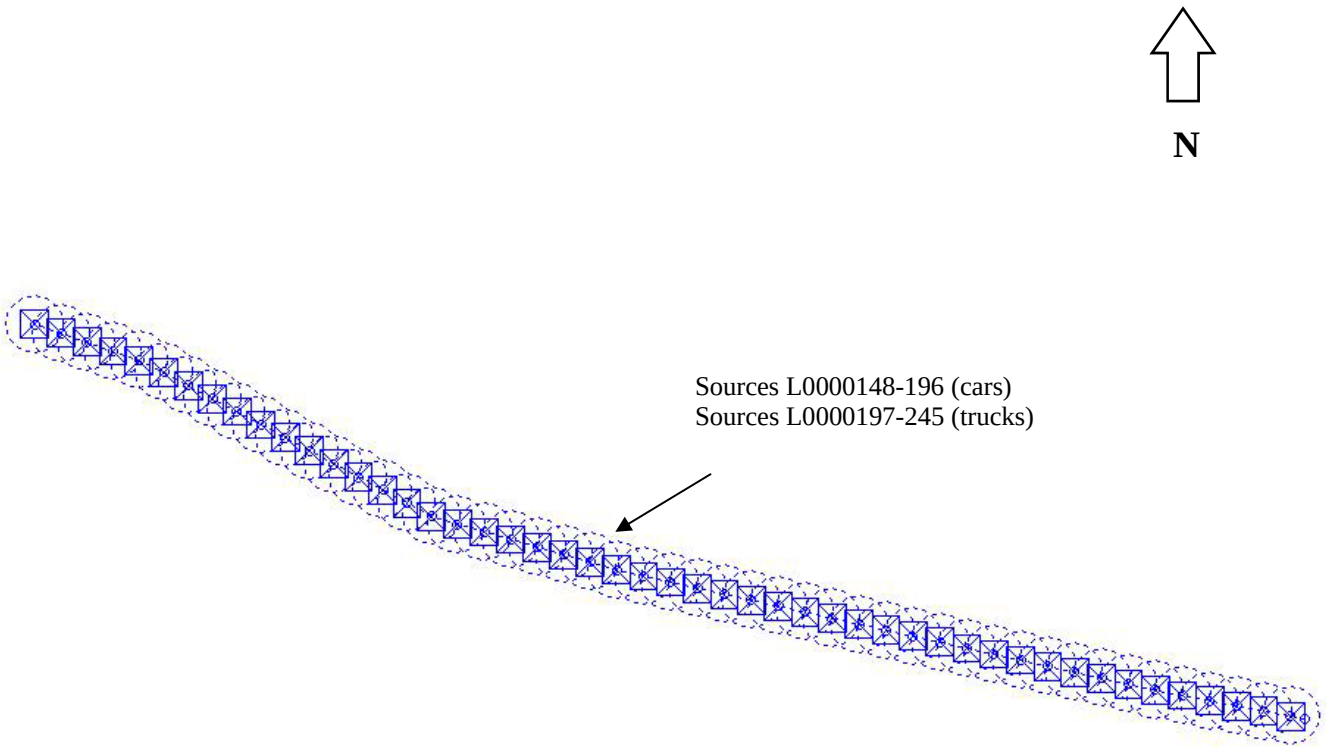
Source 3
Teledyne Reynolds, Inc.
5005 McConnell Avenue
Los Angeles, CA 90066
Monday - Friday: 8:00 AM - 5:00 PM

Chemical and Use Rate
Cleaning Solvent: 12.5 pounds per month
Degreaser: 12.5 pounds per month





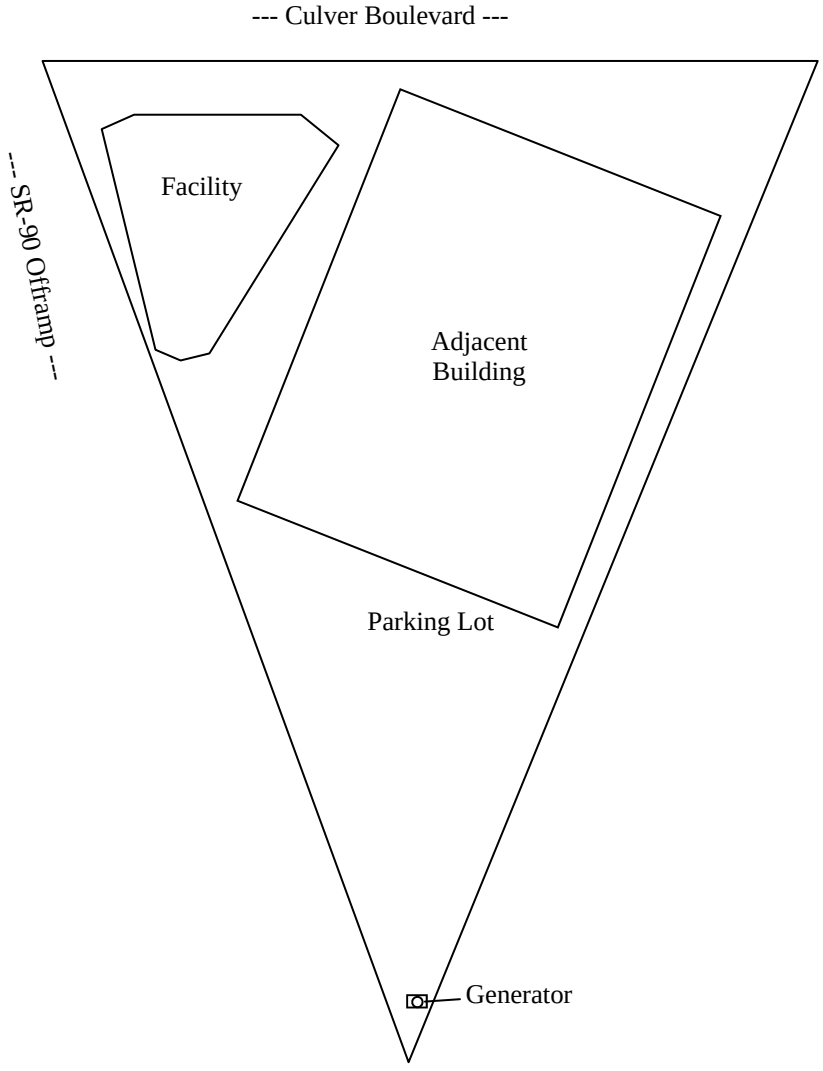
Source 4: State Route 90 (mile post 1.746)
Sources L0000148-196 (cars); Sources L0000197-245 (trucks)

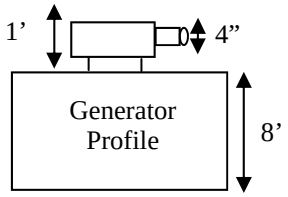


- Release height of 4.15 m and initial vertical dimension (δy) of 1.93 m is based upon California Air Resources Board's "Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles" (2000). Release of 0.6 m used for gasoline-fueled vehicles.

Source 1
AMV Digital Media LLC
12950 Culver Boulevard
Los Angeles, CA 90066

Chemical and Use Rate
Emergency Diesel Generator: 685 brake horsepower
Testing Frequency: 30 maximum maintenance and testing hours allowable from SCAQMD permit-to-operate (G18587)





Appendix C. Emission Rate Calculations

Source 1
AMV Digital Media, LLC
12950 Culver Boulevard
Los Angeles, CA 90066

Operation: Emergency Diesel Generator

Generator Testing Profile: [1]

hours	days	weeks
0.58	1	52

Equipment Specifications:

Equipment Used (#)	1
Brake Horsepower (bhp)	685
PM10 Emission Factor (g/bhp-hr) [2]	0.06
Load Factor (% / 100)	1

Emissions:	0.0114	g/s

Point Source Specifications (horizontal release): [2]

Stack Flowrate	3,597	cfm
Stack Temperature	622	K
Stack Diameter	4.0	in
Stack Height	9.0	ft

(1) Testing profile based on weekly testing of generator (30 hours per year, the maximum allowable from SCAQMD permit-to-operate, G18587).

(2) Generator PM emission factor and exhaust parameters for Cummins Model KTA19-G3 (from SCAQMD Certified ICE-Emergency Genetors list).

Source 2
Teledyne Reynolds, Inc.
4935 McConnell Avenue
Los Angeles, CA 90066

Operation: Cleaning solvent for wiring manufacturing

	hours	days	weeks
Temporal Profile:	9	5	52
	0	0	0

Emissions: (1)

Isopropanol	6.30	lbs/month
	0.032	lbs/hr
	4.07E-03	g/s

Volume Source Specifications:

Lateral Dimension	100	ft
Release Height	15	ft

Note: VOC = volatile organice compound

(1) VOC emissions from SCAQMD inspection report on 4/26/2011 of facility, and confirmed through facility phone call to facility EHS representative.

Source 3
Teledyne Reynolds, Inc.
5005 McConnell Avenue
Los Angeles, CA 90066

Operation: Cleaning solvent for high voltage cable connectors manufacturing

Temporal Profile:	hours	days	weeks
	9	5	52
	0	0	0

Emissions: [1]

VOC emissions	25.0	lbs/month
	0.128	lbs/hr
	1.62E-02	g/s

Speciation:		Compound Wt Fraction	Compound Emissions	Adjusted Wt Fraction
Degreaser [2]	Methanol	0.10	6.41E-03	0.05
	Other (NOS)	0.90	5.77E-02	0.45
Cleaning Solvent	Isopropanol	1.00	6.41E-02	0.50
	Total		0.128	1.00

Volume Source Specifications:

Lateral Dimension	225	ft
Release Height	15	ft

Note: VOC = volatile organice compound

(1) VOC emissions from SCAQMD inspection report on 9/05/2013 of facility, and confirmed through phone call to facility EHS representative. As the representative did not disclose the individual amount of degreaser or cleaning solvent used, a 50/50 split between degreaser and cleaning solvent emissions was assumed.

(2) Degreaser speciation from the MSDS for Rho-Tran 225.

Vehicle Mix Worksheet - Interstate 710

Table A: Peak Hourly Traffic Volumes

Route	Post Mile	CalTrans Data Year	Peak Hour Traffic (veh/hr)	Truck Percentage (%)	Buildout Year	Peak Hour Traffic (veh/hr)	Annual Increase in Traffic (%)
SR-90	1.746	2014	5,800	3.78%	2019	6,236	1.5%

Sources:

Peak hour traffic data from CalTrans, Traffic Data Branch (2014). Website: http://traffic-counts.dot.ca.gov.

Truck percentage from CalTrans, Traffic Data Branch (2014). Website: http://traffic-counts.dot.ca.gov.

Annual traffic increase based on projected growth rate of 1.5% per year from *2010 Congestion Management Program,* Los Angeles County Metropolitan Transportation Authority.

Table B: Highway Parameters

Link/Segment	Link length (m)	Width of roadway (m)	Source Separation (m)	Freeway Configuration	Mile Post
SR-90	729	15.0	15.0	above-grade	1.746

Table C: Segment Volumes

Link/Segment	Period Length (years)	Peak Hour All Vehicles	Peak Hour TOG Vehicles	Peak Hour Diesel Vehicles [4]
SR-90 2019 [1]	1	6,236	**6,000**	236
SR-90 2020 [1]	5	6,327	6,088	239
SR-90 2025 [1]	5	6,803	6,545	257
SR-90 2030 [1]	5	7,314	7,037	276
SR-90 2035 [1]	5	7,864	7,566	297
SR-90 2040-43 [1]	4	8,455	8,135	320
25-year weighted average [2]	25	7,264	**6,989**	**275**
9-year weighted average [3]	9	6,475	**6,231**	**245**

1 Increases in AADT based on projected traffic increase of 1.5% per year from *2010 Congestion Management Program* , Los Angeles County MTA.

2 Represents the 25-year (staff) weighted average traffic volumes, accounting for annual increases in projected traffic.

3 Represents the 9-year (students) weighted average traffic volumes, accounting for annual increases in projected traffic.

4 CalTrans truck percentage of 3.78% used to represent the diesel vehicle traffic along freeway segment, nearest the Project site.

Average Emission Factors
for School Based Receptors

Weighting Emission Factors

Adjusting the EMFAC2014 emission factors to account for reductions in factors over the exposure duration.

Risk Year	Modeling Year	Period	WF	Weighting Factor		45 mph - Emission Factors (g/mi)	
						TAC's	
				Period	Factor	TOG-gas	PM10-dsl
1	2019	1	0.040	2019	0.040	**0.0383**	0.0342
2	2020	1	0.040	2020-2024	0.200	0.0354	0.0256
3	2021	1	0.040				
4	2022	1	0.040				
5	2023	1	0.040				
6	2024	1	0.040				
7	2025	1	0.040	2025-2029	0.200	0.0261	0.0061
8	2026	1	0.040				
9	2027	1	0.040				
10	2028	1	0.040				
11	2029	1	0.040				
12	2030	1	0.040	2030-2034	0.200	0.0221	0.0049
13	2031	1	0.040				
14	2032	1	0.040				
15	2033	1	0.040				
16	2034	1	0.040				
17	2035	1	0.040	2035-2039	0.200	0.0197	0.0044
18	2036	1	0.040				
19	2037	1	0.040				
20	2038	1	0.040				
21	2039	1	0.040				
22-25	2040-2043	4	0.160	2040-2043	0.160	0.0185	0.0042
25-year average[1]		25	1.0		1.0	**0.0251**	**0.0102**
9-year average[2]		9				**0.0326**	**0.0200**

[1] Represent the 25-year (staff) weighted average emission factors for each TAC and vehicle speed.

[2] Represent the 9-year (K-8th grade) weighted average emission factors for each TAC and vehicle speed.

WF - period weighting factor

On-Road Mobile Sources
Emission Rate Computation

TOG Emissions

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

1 SR-90

Mile Post 1.746

Link Length (meters)	729

Chronic - Long-term Emissions

Peak Hour Volume/Baseline (VPH) - Staff	6,989
Emission Factor (gr/mi) - Staff	0.0251
Peak Hour Emission Rate (gr/sec) - Staff	**2.21E-02**
Peak Hour Volume/Baseline (VPH) - Students	6,231
Emission Factor (gr/mi) - Students	0.0326
Peak Hour Emission Rate (gr/sec) - Students	**2.56E-02**

Acute - Short-term Emissions

Peak Hour Volume/Baseline (VPH) - 2019	6,000
Emission Factor (gr/mi) - 2019	0.0383
Peak Hour Emission Rate (gr/sec) - 2019	**2.89E-02**

On-Road Mobile Sources
Emission Rate Computation

DPM Emissions

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

1 SR-90

Mile Post 1.746

Link Length (meters)	729
Peak Hour Volume/Baseline (VPH) - Staff	275
Emission Factor (gr/mi) - Staff	0.0102
Peak Hour Emission Rate (gr/sec) - Staff	**3.53E-04**
Peak Hour Volume/Baseline (VPH) - Students	245
Emission Factor (gr/mi) - Students	0.0200
Peak Hour Emission Rate (gr/sec) - Students	**6.17E-04**

Initial Sigma Computation

Vertical Sigma Calculations - At-Grade or Above Grade Roadway

Initial Horizontal Dispersion Parameter (Sigma Y)
SY = (source separation distance)/2.15

Initial Vertical Dispersion Parameter (Sigma Z)
$SZ = (1.8 + 0.11(TR)) \times (60/30)^{0.2}$
TR = W2/U

Where:
W2 = traveled way half width (m)
U = average wind speed (m/s)

SR-90
Mile Post 1.746

Width of Traveled Way (m)	15
Average Wind Speed (m/s)	2.96
Source Separation Distance (m)	15

SY = **6.98**
SZ = **2.39**

PeMS - 8/1/2015 - 10/31/2015: SR-90							Normalizing Factors HROFDAY Scalars [1]		
	All Vehicles VMT			Trucks VMT					
Hour	Southbound	Northbound	Total VMT	Southbound	Northbound	Total VMT	Hour	Vehicles	Trucks
0	51,771	27,682	79,453	5,023	1,721	6,744	1	0.192	0.285
1	32,400	16,025	48,426	4,294	852	5,145	2	0.117	0.218
2	24,715	12,702	37,417	3,770	659	4,429	3	0.090	0.187
3	19,535	14,049	33,584	3,515	962	4,478	4	0.081	0.190
4	24,656	26,781	51,437	3,569	2,340	5,909	5	0.124	0.250
5	56,936	63,744	120,680	5,222	5,121	10,343	6	0.292	0.438
6	119,495	110,312	229,807	7,567	7,875	15,442	7	0.555	0.654
7	193,834	162,785	356,620	11,093	10,149	21,243	8	0.862	0.899
8	**236,109**	**177,678**	**413,787**	**12,409**	11,216	**23,625**	9	1.000	1.000
9	196,388	176,399	372,788	11,182	**11,271**	22,453	10	0.901	0.950
10	169,428	148,085	317,513	10,209	10,329	20,538	11	0.767	0.869
11	170,456	139,728	310,184	9,922	9,567	19,489	12	0.750	0.825
12	179,266	143,079	322,345	10,654	9,175	19,829	13	0.779	0.839
13	188,901	139,197	328,097	10,562	9,039	19,601	14	0.793	0.830
14	208,368	132,584	340,952	10,847	8,196	19,043	15	0.824	0.806
15	211,867	131,583	343,450	9,845	7,168	17,013	16	0.830	0.720
16	211,887	135,844	347,731	9,603	7,156	16,759	17	0.840	0.709
17	221,669	148,197	369,866	10,397	7,471	17,868	**18**	**0.894**	**0.756**
18	218,580	146,546	365,127	10,545	7,883	18,428	19	0.882	0.780
19	204,874	128,939	333,813	9,425	7,282	16,707	20	0.807	0.707
20	174,615	106,441	281,056	8,391	6,388	14,779	21	0.679	0.626
21	145,425	95,501	240,926	7,384	5,715	13,099	22	0.582	0.554
22	124,755	77,385	202,140	6,789	4,684	11,472	23	0.489	0.486
23	88,456	50,871	139,327	5,833	3,075	8,908	24	0.337	0.377
Max	236,109	177,678	413,787	12,409	11,271	23,625			

[1] School Hours: 8:00 AM - 4:00 PM (Hour 9-16)

Peak Hour (CalTrans): Hour 8 (8AM - 9AM)
Peak Hour (AERMOD): Hour 9 (8AM - 9AM)

PeMS Report Description

Report	Aggregates>Time Series
Report link	http://pems.dot.ca.gov/?report_form=1&dnode=VDS&content=loops&statio
Report generated	3/29/2016 15:35
PeMS version	caltrans_pems-14.1.0

Report Parameters Westbound Segment

Parameter	Value
Quantity	Vehicle Miles Traveled (VMT)
Data	54,414 Lane Points
Data Quality	93.6% Observed
Segment Type	VDS
Segment Name	Mainline VDS 774301 - CENTINELA
start date	8/1/2015 0:00
end date	10/31/2015 23:59
Day of Week	Mo,Tu,We,Th,Fr
Granularity	hour

Report Parameters Eastbound Segment

Parameter	Value
Quantity	Vehicle Miles Traveled (VMT)
Data	72,556 Lane Points
Data Quality	74.1% Observed
Segment Type	VDS
Segment Name	Mainline VDS 774302 - CENTINELA
start date	8/1/2015 0:00
end date	10/31/2015 23:59
Day of Week	Mo,Tu,We,Th,Fr
Granularity	hour

Dist	Route	County		Postmile	Description	Back Peak Hour	Back Peak Month	Back AADT	Ahead Peak Hour	Ahead Peak Month	Ahead AADT
2	89	SHA		21.719	FOUR CORNERS, JCT. RTE. 299	240	2300	1600	250	2450	1650
2	89	SHA		30	LAKE BRITTON ROAD	200	1750	1200	200	1750	1200
2	89	SHA		38.777	COUNTY ROAD A 19/McARTHUR ROAD	200	1750	1200	250	2550	1500
2	89	SHA		43.345	SHASTA/SISKIYOU COUNTY LINE	250	2550	1500			
2	89	SIS		0	SHASTA/SISKIYOU COUNTY LINE				250	2550	1500
2	89	SIS		14.34	MILITARY PASS ROAD	250	2550	1500	240	2600	1600
2	89	SIS		24.75	BROADWAY/SOUTHERN AVENUE	370	3800	2500	390	3600	2650
2	89	SIS	R	34.622	JCT. RTE. 5	440	4050	3050			
7	90	LA		0.921	LOS ANGELES, JCT. RTE. 1				2700	34000	33000
7	90	LA		1.201	LOS ANGELES, MINDANAO WAY	2700	34000	33000	4700	59000	56000
7	90	LA		1.746	LOS ANGELES, CULVER BOULEVARD	4700	59000	56000	5800	74000	70000
7	90	LA	R	1.722	LOS ANGELES, CENTINELA AVENUE	5800	74000	70000	6900	88000	84000
7	90	LA		2.65	CULVER CITY, JCT. RTE. 405	6900	88000	84000	2800	36000	34000
7	90	LA	T	3.278	CULVER CITY, SLAUSON AVENUE	2800	36000	34000			
12	90	ORA		0.5	LA HABRA, JCT. RTE. 39				3450	47000	45700
12	90	ORA		1.76	LA HABRA, EUCLID STREET	3450	47000	45700	3550	48500	46900
12	90	ORA		2.497	LA HABRA, HARBOR BOULEVARD	3550	48500	46900	3500	47000	45700
12	90	ORA		4.391	BREA, BREA BOULEVARD	3500	47000	45700	4900	66000	63700
12	90	ORA		5.191	BREA, STATE COLLEGE BOULEVARD	4900	66000	63700	6000	71000	67600
12	90	ORA	R	5.453	BREA, JCT. RTE. 57	6000	71000	67600	4300	51000	48200
12	90	ORA		6.576	WEST OF JCT. RTE. 142	3850	45000	42900	3850	45000	42900
12	90	ORA		7.271	BREA, JCT. RTE. 142 NORTHEAST	5400	62000	59200	4300	51000	48600
12	90	ORA		11.147	YORBA LINDA, ORCHARD/ KELLOGG DRIVES	4400	52000	49800	3050	45500	44900
12	90	ORA		12.03	BREAK IN ROUTE	2650	39000	38700	2650	39000	38700
12	90	ORA		12.275	ANAHEIM, ORANGETHORPE AVENUE	2650	39000	38700	4050	59000	57900
12	90	ORA		12.462	ANAHEIM, LA PALMA AVENUE	4050	59000	57900	4450	64000	63000
12	90	ORA		12.828	ANAHEIM, JCT. RTE. 91	4450	64000	63000			
7	91	LA		6.012	LOS ANGELES, VERMONT AVENUE				4600	56000	54500
7	91	LA	R	6.344	LOS ANGELES, JCT. RTE. 110	4600	56000	54500	16000	187000	181500
7	91	LA	R	7.426	CARSON, AVALON BOULEVARD	16400	192000	186000	17700	207000	200000
7	91	LA	R	8.435	COMPTON, CENTRAL AVENUE	17700	207000	200000	18000	211000	204000

RTE	DIST	CNTY	POST MILE	LEG	DESCRIPTION	VEHICLE AADT TOTAL	TRUCK AADT TOTAL	TRUCK % TOT VEH	TRUCK 2	TRUCK 3	AADT Axle 4	TOTAL 5+	% 2	% 3	TRUCK 4	TRUCK 5+	EAL 2-WAY (1000)	YEAR VER/ EST
089	02	TEH	R0.01	A	JCT. RTE. 36	350	4	1.14	3	1	0	0	66.67	33.33	0.00	0.00	0	13E
089	02	TEH	4.403	B	JCT. RTE. 44, LASSEN NATIONAL PARK	350	3	0.86	2	1	0	0	51.63	48.37	0.00	0.00	0	13E
089	02	SHA	0	A	JCT. RTE. 44, LASSEN NATIONAL PARK	1,500	338	22.53	28	44	11	255	8.28	13.02	3.25	75.44	95	13V
089	02	SHA	21.719	B	FOUR CORNERS, JCT. RTE. 299	1,600	312	19.50	27	30	11	244	8.65	9.62	3.53	78.21	90	14V
089	02	SHA	21.719	A	FOUR CORNERS, JCT. RTE. 299	1,650	390	23.64	43	68	13	266	11.03	17.44	3.33	68.21	101	14V
089	02	SHA	30	O	LAKE BRITTON RD	1,200	310	25.83	26	62	9	213	8.50	20.00	3.00	68.50	81	14E
089	02	SHA	43.345	B	SHASTA/SISKIYOU COUNTY LINE	1,500	278	18.53	23	54	9	192	8.27	19.42	3.24	69.06	73	14V
089	02	SIS	14.34	A	MILITARY PASS RD	1,600	260	16.25	14	50	9	187	5.38	19.23	3.46	71.92	71	14V
089	02	SIS	24.75	B	BROADWAY/SOUTHERN AVE	2,500	381	15.24	51	71	11	248	13.39	18.64	2.89	65.09	95	14V
089	02	SIS	R34.622	B	JCT. RTE. 5	3,050	509	16.69	84	113	14	298	16.50	22.20	2.75	58.55	118	14V
090	07	LA	0.921	A	LOS ANGELES, JCT. RTE. 1, LINCOLN BLVD	33,000	1,100	3.33	682	117	36	265	62.05	10.61	3.27	24.07	131	06E
090	07	LA	1.746	A	LOS ANGELES, CULVER BLVD	70,000	2,647	3.78	1,642	281	87	637	62.05	10.61	3.27	24.07	316	06V
090	07	LA	2.65	B	CULVER CITY, JCT. RTE. 405	84,000	3,175	3.78	1,970	337	104	764	62.05	10.61	3.27	24.07	379	06E
090	07	LA	2.65	A	CULVER CITY, JCT. RTE. 405	34,000	826	2.43	648	62	5	111	78.44	7.48	0.61	13.47	67	06V
090	07	LA	T3.278	B	CULVER CITY, SLAUSON AVE	34,000	826	2.43	648	62	5	111	78.44	7.48	0.61	13.47	67	06V
090	12	ORA	0.5	A	LA HABRA, JCT. RTE. 39	45,700	2,971	6.50	1,483	264	95	1,129	49.91	8.90	3.19	38.01	480	89V

EMISSION FACTOR CALCULATIONS
EMFAC 2014

EMFAC2014 (v1.0.7) Emission Rates
Region Type: County
Region: Los Angeles
Calendar Year: 2019
Season: Annual
Vehicle Classification: EMFAC2007 Categories

TOTAL EMISSION RATES (g/mi)

45 mph - Freeway Running Emission Rates

	TOG	PM10
Gas	**0.0383**	
DSL		**0.0342**

		45 MPH					
		Fleet Mix Percentage	VMT (Mi/day)	TOG (g/mi)	TOG Weighted	PM10 (g/mi)	PM10 Weighted
HHDT	GAS		6641	0.48865	3245	0.000591	4
HHDT	DSL	0.439	554069	0.147599	81780	0.021307	11806
LDA	GAS		8706554	0.017491	152286	0.001386	12065
LDA	DSL	0.064	81188	0.026907	2185	0.016248	1319
LDT1	GAS		745643	0.052074	38828	0.002585	1928
LDT1	DSL	0.001	887	0.150637	134	0.100174	89
LDT2	GAS		3261809	0.022814	74416	0.00136	4436
LDT2	DSL	0.005	5713	0.012734	73	0.004975	28
LHDT1	GAS		189634	0.077612	14718	0.001157	219
LHDT1	DSL	0.096	121000	0.078456	9493	0.016989	2056
LHDT2	GAS		46262	0.033646	1557	0.000813	38
LHDT2	DSL	0.046	57948	0.060261	3492	0.013794	799
MCY	GAS		80887	2.174589	175895	0.001494	121
MDV	GAS		1994144	0.053602	106889	0.001534	3060
MDV	DSL	0.027	33985	0.012486	424	0.006402	218
MH	GAS		17314	0.184261	3190	0.001662	29
MH	DSL	0.003	4008	0.063987	256	0.091715	368
MHDT	GAS		61958	0.107246	6645	0.00076	47
MHDT	DSL	0.288	363680	0.115299	41932	0.069321	25211
OBUS	GAS		24805	0.051533	1278	0.000592	15
OBUS	DSL	0.022	27875	0.075279	2098	0.018164	506
SBUS	GAS		2861	0.070398	201	0.000709	2
SBUS	DSL	0.005	6645	0.059857	398	0.028077	187
UBUS	GAS		2000	0.597276	1195	0.001183	2
UBUS	DSL	0.004	5326	1.520449	8097	0.116778	622
	Gas Total		15140511		580343		21965
	DSL Total	1.00	1262326		150363		43208

Note: Total Emission Rate (g/mi)=Sum of Weighted Emission Rates(g/day)/Sum of VMTs(mi/day)

EMISSION FACTOR CALCULATIONS
EMFAC 2014

EMFAC2014 (v1.0.7) Emission Rates
Region Type: County
Region: Los Angeles
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2007 Categories

TOTAL EMISSION RATES (g/mi)

45 mph - Freeway Running Emission Rates

	TOG	PM10
Gas	**0.0354**	
DSL		**0.0256**

		45 MPH					
		Fleet Mix Percentage	VMT (Mi/day)	TOG (g/mi)	TOG Weighted	PM10 (g/mi)	PM10 Weighted
HHDT	GAS		6814	0.445254	3034	0.000597	4
HHDT	DSL	0.438	574134	0.141114	81018	0.01818	10438
LDA	GAS		8706852	0.015663	136372	0.001372	11942
LDA	DSL	0.065	85906	0.024136	2073	0.014389	1236
LDT1	GAS		747408	0.045487	33998	0.002441	1825
LDT1	DSL	0.001	841	0.14237	120	0.0947	80
LDT2	GAS		3310915	0.019872	65794	0.001351	4474
LDT2	DSL	0.005	6118	0.012377	76	0.004757	29
LHDT1	GAS		177583	0.07082	12576	0.00111	197
LHDT1	DSL	0.095	124421	0.07305	9089	0.016002	1991
LHDT2	GAS		45402	0.027909	1267	0.000784	36
LHDT2	DSL	0.046	60416	0.055468	3351	0.01293	781
MCY	GAS		83095	2.156478	179192	0.001535	128
MDV	GAS		1987455	0.047381	94168	0.001506	2993
MDV	DSL	0.028	36815	0.012065	444	0.006098	224
MH	GAS		17048	0.151466	2582	0.001459	25
MH	DSL	0.003	4044	0.060618	245	0.084702	343
MHDT	GAS		61930	0.089678	5554	0.000743	46
MHDT	DSL	0.288	378231	0.077374	29265	0.045597	17246
OBUS	GAS		25148	0.04408	1109	0.000619	16
OBUS	DSL	0.022	29045	0.070684	2053	0.016245	472
SBUS	GAS		3018	0.061935	187	0.000682	2
SBUS	DSL	0.005	6647	0.057686	383	0.026271	175
UBUS	GAS		2055	0.540731	1111	0.0011	2
UBUS	DSL	0.004	5011	1.46814	7357	0.108809	545
Gas Total			15174725		536944		21689
DSL Total		1.00	1311630		135475		33560

Note: Total Emission Rate (g/mi)=Sum of Weighted Emission Rates(g/day)/Sum of VMTs(mi/day)

EMISSION FACTOR CALCULATIONS
EMFAC 2014

EMFAC2014 (v1.0.7) Emission Rates
Region Type: County
Region: Los Angeles
Calendar Year: 2025
Season: Annual
Vehicle Classification: EMFAC2007 Categories

TOTAL EMISSION RATES (g/mi)

45 mph - Freeway Running Emission Rates

	TOG	PM10
Gas	**0.0261**	
DSL		**0.0061**

		45 MPH					
		Fleet Mix Percentage	VMT (Mi/day)	TOG (g/mi)	TOG Weighted	PM10 (g/mi)	PM10 Weighted
HHDT	GAS		7799	0.340532	2656	0.000721	6
HHDT	DSL	0.440	668073	0.098296	65669	0.005813	3883
LDA	GAS		8459923	0.009927	83985	0.001315	11128
LDA	DSL	0.067	101528	0.01141	1158	0.006285	638
LDT1	GAS		756548	0.026407	19978	0.001872	1416
LDT1	DSL	0.000	664	0.100896	67	0.066995	44
LDT2	GAS		3527261	0.01272	44867	0.001327	4680
LDT2	DSL	0.005	7467	0.011383	85	0.004165	31
LHDT1	GAS		136003	0.038856	5285	0.000965	131
LHDT1	DSL	0.093	141139	0.053046	7487	0.011859	1674
LHDT2	GAS		43364	0.011973	519	0.00076	33
LHDT2	DSL	0.047	71268	0.040058	2855	0.009805	699
MCY	GAS		89730	2.101974	188610	0.001657	149
MDV	GAS		1958513	0.022382	43835	0.001342	2629
MDV	DSL	0.031	46975	0.007611	358	0.003462	163
MH	GAS		16310	0.055627	907	0.000984	16
MH	DSL	0.003	4184	0.047313	198	0.054977	230
MHDT	GAS		63107	0.034333	2167	0.000755	48
MHDT	DSL	0.285	433395	0.024711	10710	0.002901	1257
OBUS	GAS		26583	0.021468	571	0.000738	20
OBUS	DSL	0.022	33632	0.037181	1250	0.003823	129
SBUS	GAS		3734	0.030733	115	0.000648	2
SBUS	DSL	0.004	6656	0.048472	323	0.018928	126
UBUS	GAS		2315	0.319684	740	0.000978	2
UBUS	DSL	0.003	4019	1.134029	4557	0.079772	321

Gas Total		15091190	394234		20260
DSL Total	1.00	1519000	94717		9195

Note: Total Emission Rate (g/mi)=Sum of Weighted Emission Rates(g/day)/Sum of VMTs(mi/day)

EMISSION FACTOR CALCULATIONS
EMFAC 2014

EMFAC2014 (v1.0.7) Emission Rates
Region Type: County
Region: Los Angeles
Calendar Year: 2030
Season: Annual
Vehicle Classification: EMFAC2007 Categories

TOTAL EMISSION RATES (g/mi)

45 mph - Freeway Running Emission Rates

	TOG	PM10
Gas	**0.0221**	
DSL		**0.0049**

		45 MPH					
		Fleet Mix Percentage	VMT (Mi/day)	TOG (g/mi)	TOG Weighted	PM10 (g/mi)	PM10 Weighted
HHDT	GAS		8377	0.329505	2760	0.000808	7
HHDT	DSL	0.449	740491	0.096373	71363	0.005444	4031
LDA	GAS		8292495	0.007025	58252	0.001013	8401
LDA	DSL	0.066	108096	0.004994	540	0.001797	194
LDT1	GAS		770264	0.015831	12194	0.001339	1032
LDT1	DSL	0.000	474	0.032555	15	0.016287	8
LDT2	GAS		3678374	0.009075	33382	0.001042	3834
LDT2	DSL	0.005	7997	0.010765	86	0.003746	30
LHDT1	GAS		112100	0.017731	1988	0.000886	99
LHDT1	DSL	0.091	149343	0.041656	6221	0.00895	1337
LHDT2	GAS		42221	0.006083	257	0.000803	34
LHDT2	DSL	0.046	76512	0.033418	2557	0.008048	616
MCY	GAS		93176	2.078272	193645	0.001722	160
MDV	GAS		1977129	0.014511	28689	0.001077	2130
MDV	DSL	0.032	52513	0.005263	276	0.001867	98
MH	GAS		16056	0.017811	286	0.000834	13
MH	DSL	0.003	4259	0.038037	162	0.033293	142
MHDT	GAS		63891	0.016962	1084	0.000805	51
MHDT	DSL	0.281	463619	0.024722	11462	0.002851	1322
OBUS	GAS		27150	0.013623	370	0.000808	22
OBUS	DSL	0.022	36269	0.035886	1302	0.003689	134
SBUS	GAS		4312	0.014366	62	0.000693	3
SBUS	DSL	0.004	6665	0.037553	250	0.011398	76
UBUS	GAS		2433	0.050699	123	0.000822	2
UBUS	DSL	0.002	3268	0.843224	2755	0.038579	126

Gas Total		15087977	333091		15788
DSL Total	1.00	1649506	96989		8113

Note: Total Emission Rate (g/mi)=Sum of Weighted Emission Rates(g/day)/Sum of VMTs(mi/day)

EMISSION FACTOR CALCULATIONS
EMFAC 2014

EMFAC2014 (v1.0.7) Emission Rates
Region Type: County
Region: Los Angeles
Calendar Year: 2035
Season: Annual
Vehicle Classification: EMFAC2007 Categories

TOTAL EMISSION RATES (g/mi)

45 mph - Freeway Running Emission Rates

	TOG	PM10
Gas	**0.0197**	
DSL		**0.0044**

		45 MPH					
		Fleet Mix Percentage	VMT (Mi/day)	TOG (g/mi)	TOG Weighted	PM10 (g/mi)	PM10 Weighted
HHDT	GAS		8741	0.336988	2946	0.000843	7
HHDT	DSL	0.456	804410	0.094377	75918	0.005157	4148
LDA	GAS		8318487	0.00513	42670	0.000754	6273
LDA	DSL	0.064	112921	0.003706	418	0.001013	114
LDT1	GAS		791290	0.008427	6668	0.000878	695
LDT1	DSL	0.000	457	0.016829	8	0.007267	3
LDT2	GAS		3810164	0.006753	25732	0.000769	2931
LDT2	DSL	0.005	8328	0.010717	89	0.003735	31
LHDT1	GAS		103543	0.007496	776	0.000832	86
LHDT1	DSL	0.089	157397	0.036077	5678	0.007078	1114
LHDT2	GAS		43205	0.003963	171	0.000833	36
LHDT2	DSL	0.046	80768	0.031286	2527	0.007039	568
MCY	GAS		96667	2.067864	199893	0.001757	170
MDV	GAS		2043595	0.010464	21385	0.000824	1683
MDV	DSL	0.032	56417	0.004363	246	0.001278	72
MH	GAS		16383	0.012472	204	0.000824	14
MH	DSL	0.002	4388	0.033536	147	0.022063	97
MHDT	GAS		65526	0.011936	782	0.000836	55
MHDT	DSL	0.277	488794	0.024415	11934	0.002781	1359
OBUS	GAS		27834	0.011311	315	0.000839	23
OBUS	DSL	0.022	38848	0.033647	1307	0.003416	133
SBUS	GAS		4741	0.009251	44	0.000766	4
SBUS	DSL	0.004	6670	0.028185	188	0.005119	34
UBUS	GAS		2567	0.027241	70	0.000819	2
UBUS	DSL	0.002	2983	0.640353	1910	0.010846	32

Gas Total		15332743	301656	11978
DSL Total	1.00	1762382	100370	7707

Note: Total Emission Rate (g/mi)=Sum of Weighted Emission Rates(g/day)/Sum of VMTs(mi/day)

EMISSION FACTOR CALCULATIONS
EMFAC 2014

EMFAC2014 (v1.0.7) Emission Rates
Region Type: County
Region: Los Angeles
Calendar Year: 2040
Season: Annual
Vehicle Classification: EMFAC2007 Categories

TOTAL EMISSION RATES (g/mi)

45 mph - Freeway Running Emission Rates

	TOG	PM10
Gas	**0.0185**	
DSL		**0.0042**

		45 MPH					
		Fleet Mix Percentage	VMT (Mi/day)	TOG (g/mi)	TOG Weighted	PM10 (g/mi)	PM10 Weighted
HHDT	GAS		8902	0.342696	3051	0.000854	8
HHDT	DSL	0.467	875228	0.092988	81385	0.005099	4462
LDA	GAS		8307550	0.004195	34846	0.00059	4902
LDA	DSL	0.061	114727	0.003281	376	0.000735	84
LDT1	GAS		803010	0.005653	4539	0.000665	534
LDT1	DSL	0.000	458	0.013566	6	0.005419	2
LDT2	GAS		3855521	0.005434	20949	0.00059	2277
LDT2	DSL	0.005	8458	0.010716	91	0.003742	32
LHDT1	GAS		99627	0.004111	410	0.000831	83
LHDT1	DSL	0.086	161836	0.033382	5402	0.005964	965
LHDT2	GAS		43627	0.003442	150	0.000849	37
LHDT2	DSL	0.044	82548	0.030678	2532	0.006453	533
MCY	GAS		98475	2.06333	203185	0.001776	175
MDV	GAS		2078235	0.007976	16576	0.000652	1354
MDV	DSL	0.031	58238	0.003881	226	0.000943	55
MH	GAS		16674	0.010159	169	0.000836	14
MH	DSL	0.002	4497	0.031802	143	0.017423	78
MHDT	GAS		66437	0.010368	689	0.000849	56
MHDT	DSL	0.275	515769	0.024071	12415	0.002722	1404
OBUS	GAS		28214	0.010739	303	0.000851	24
OBUS	DSL	0.022	41249	0.033693	1390	0.003415	141
SBUS	GAS		5002	0.009201	46	0.000827	4
SBUS	DSL	0.004	6673	0.023248	155	0.002658	18
UBUS	GAS		2651	0.015968	42	0.000832	2
UBUS	DSL	0.002	2880	0.536285	1545	0.004954	14

Gas Total		15413924	284956		9470
DSL Total	1.00	1872560	105667		7789

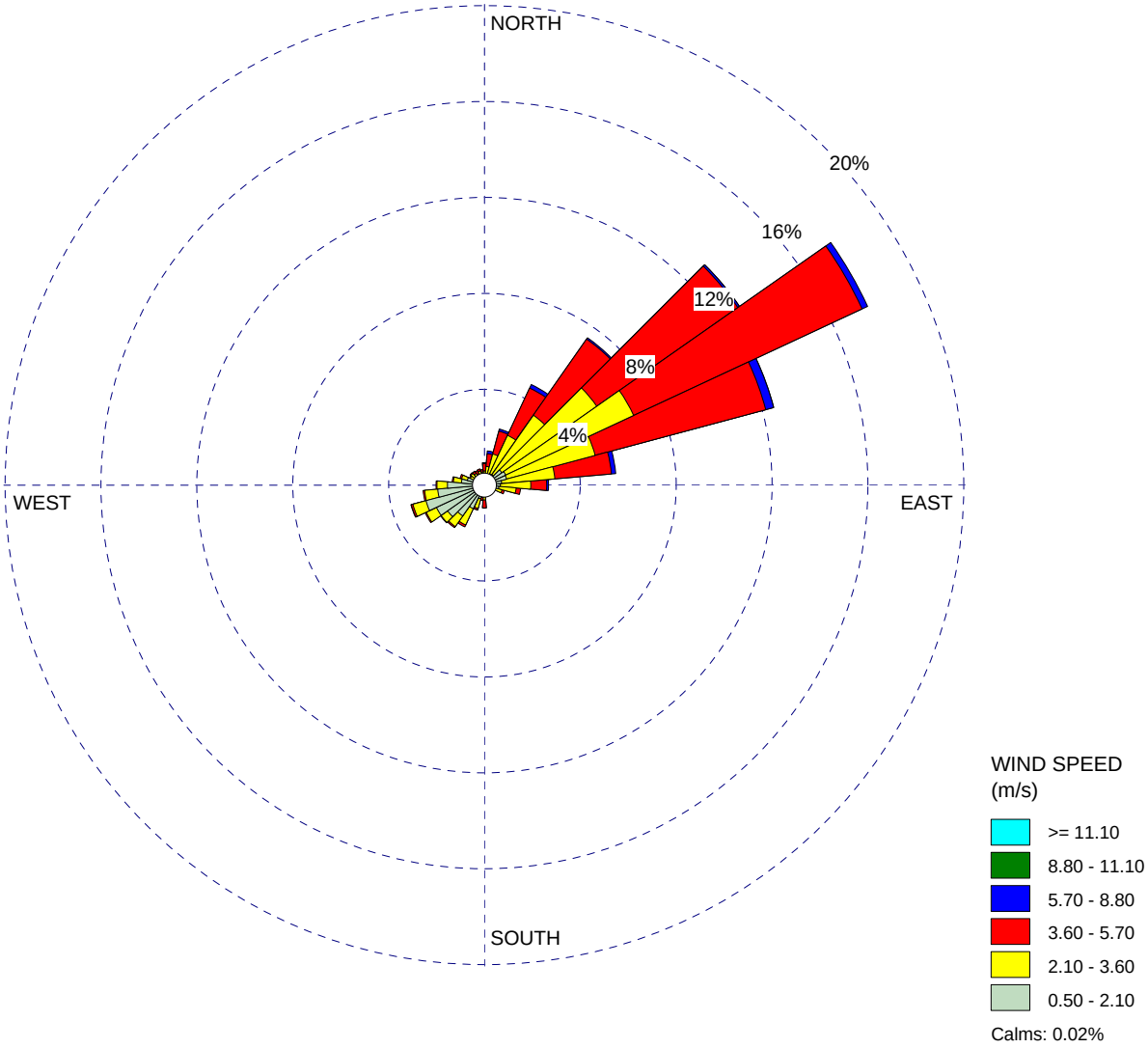
Note: Total Emission Rate (g/mi)=Sum of Weighted Emission Rates(g/day)/Sum of VMTs(mi/day)

WIND ROSE PLOT:

LAX Monitoring Station
2007-2011

DISPLAY:

Wind Speed
Flow Vector (blowing to)



COMMENTS: School Hours (8AM-4PM)	DATA PERIOD: **Start Date: 1/1/2007 - 08:00** **End Date: 12/31/2011 - 15:00**	COMPANY NAME:	
		MODELER:	
	CALM WINDS: **0.02%**	TOTAL COUNT: **14426 hrs.**	
	AVG. WIND SPEED: **2.96 m/s**	DATE: **3/30/2016**	PROJECT NO.: **OCCD-04.1**

WRPLOT View - Lakes Environmental Software

Appendix D. AERMOD Output Files

Appendix

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Results Summary

Panama St K-8 Charter
HRA

Concentration - Source Group: 1 - AMV Digital Media LLC

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	12.52208	ug/m^3	368189.51	3761282.23	5.32	0.00	5.32	1/18/2010, 11
PERIOD		0.00428	ug/m^3	368159.51	3761242.23	5.32	0.00	5.32	

Concentration - Source Group: 2 - Teledyne Reynolds Inc.

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	109.16018	ug/m^3	368209.51	3761312.23	5.32	0.00	5.32	1/23/2009, 16
PERIOD		0.30739	ug/m^3	368169.51	3761252.23	5.32	0.00	5.32	

Concentration - Source Group: 3 - Teledyne Reynolds Inc.

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	65.23243	ug/m^3	368179.51	3761272.23	5.32	0.00	5.32	1/23/2009, 16
PERIOD		0.18107	ug/m^3	368169.51	3761252.23	5.32	0.00	5.32	

Results Summary

Panama St K-8 Charter
HRA

Concentration - Source Group: 4A - SR-90 Cars

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	24.81824	ug/m^3	368149.51	3761242.23	5.32	0.00	5.32	10/5/2010, 16
PERIOD		1.00551	ug/m^3	368149.51	3761242.23	5.32	0.00	5.32	

Concentration - Source Group: 4B - SR-90 Trucks

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	21.61281	ug/m^3	368149.51	3761242.23	5.32	0.00	5.32	10/5/2010, 16
PERIOD		1.00980	ug/m^3	368149.51	3761242.23	5.32	0.00	5.32	

```
*** AERMOD - VERSION  15181 ***   *** Panama St K-8 Charter                                    ***        04/06/16
*** AERMET - VERSION  14134 ***   *** HRA                                                      ***        15:17:26
                                                                                                         PAGE   1
**MODELOPTs:   NonDFAULT CONC      ELEV      BETA      URBAN

                                        ***     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   101 Source(s),
  for Total of    1 Urban Area(s):
  Urban Population =     28010.0 ;  Urban Roughness Length =  1.000 m

**Model Allows User-Specified 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 Used.
       7. Option for Capped & Horiz Stacks Selected With:
              0 Capped Stack(s); and      1 Horizontal Stack(s)

**Other Options Specified:
       TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of:  OTHER

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

**This Run Includes:    101 Source(s);       5 Source Group(s); and      89 Receptor(s)

               with:      1 POINT(s), including
                          0 POINTCAP(s) and      1 POINTHOR(s)
                and:    100 VOLUME source(s)
                and:      0 AREA type source(s)
                and:      0 LINE source(s)
                and:      0 OPENPIT source(s)


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

```
**The AERMET Input Meteorological Data Version Date:  14134

**Output Options Selected:
         Model Outputs Tables of PERIOD 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) =    42.00 ;  Decay Coef. =    0.000     ;  Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                                 ;  Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Approximate Storage Requirements of Model =      3.7 MB of RAM.

**Detailed Error/Message File:   panama.err
**File for Summary of Results:   panama.sum
```

Model Input
Unit Emission Rates (1 g/s)

**MODELOPTs: NonDFAULT CONC   ELEV   BETA   URBAN

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BLDG EXISTS	URBAN SOURCE	CAP/ HOR	EMIS RATE SCALAR VARY BY
1	0	0.10000E+01	368333.7	3761049.4	5.6	2.74	622.00	209.81	0.10	NO	YES	HOR	HRDOW7

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
2	0	0.10000E+01	368471.5	3761172.9	5.3	4.57	7.09	2.13	YES	HRDOW
3	0	0.10000E+01	368499.8	3761105.7	5.3	4.57	15.95	31.90	YES	HRDOW
L0000148	0	0.20408E-01	368418.1	3760954.3	14.0	0.60	6.98	2.39	YES	HRDOW
L0000149	0	0.20408E-01	368403.3	3760957.1	14.0	0.60	6.98	2.39	YES	HRDOW
L0000150	0	0.20408E-01	368388.6	3760959.9	14.0	0.60	6.98	2.39	YES	HRDOW
L0000151	0	0.20408E-01	368373.9	3760962.8	14.0	0.60	6.98	2.39	YES	HRDOW
L0000152	0	0.20408E-01	368359.1	3760965.6	14.0	0.60	6.98	2.39	YES	HRDOW
L0000153	0	0.20408E-01	368344.4	3760968.4	14.0	0.60	6.98	2.39	YES	HRDOW
L0000154	0	0.20408E-01	368329.8	3760971.7	14.0	0.60	6.98	2.39	YES	HRDOW
L0000155	0	0.20408E-01	368315.1	3760974.9	13.9	0.60	6.98	2.39	YES	HRDOW
L0000156	0	0.20408E-01	368300.5	3760978.2	13.8	0.60	6.98	2.39	YES	HRDOW
L0000157	0	0.20408E-01	368285.8	3760981.5	13.8	0.60	6.98	2.39	YES	HRDOW
L0000158	0	0.20408E-01	368271.2	3760984.7	13.7	0.60	6.98	2.39	YES	HRDOW
L0000159	0	0.20408E-01	368256.5	3760988.0	13.7	0.60	6.98	2.39	YES	HRDOW
L0000160	0	0.20408E-01	368241.9	3760991.2	13.6	0.60	6.98	2.39	YES	HRDOW
L0000161	0	0.20408E-01	368227.3	3760994.5	13.6	0.60	6.98	2.39	YES	HRDOW
L0000162	0	0.20408E-01	368212.6	3760997.8	13.5	0.60	6.98	2.39	YES	HRDOW
L0000163	0	0.20408E-01	368198.0	3761001.0	13.5	0.60	6.98	2.39	YES	HRDOW
L0000164	0	0.20408E-01	368183.3	3761004.3	13.4	0.60	6.98	2.39	YES	HRDOW
L0000165	0	0.20408E-01	368168.7	3761007.5	13.4	0.60	6.98	2.39	YES	HRDOW
L0000166	0	0.20408E-01	368154.1	3761010.8	13.3	0.60	6.98	2.39	YES	HRDOW
L0000167	0	0.20408E-01	368139.4	3761014.1	13.3	0.60	6.98	2.39	YES	HRDOW
L0000168	0	0.20408E-01	368124.8	3761017.3	13.2	0.60	6.98	2.39	YES	HRDOW
L0000169	0	0.20408E-01	368110.1	3761020.6	13.2	0.60	6.98	2.39	YES	HRDOW
L0000170	0	0.20408E-01	368095.5	3761023.8	13.1	0.60	6.98	2.39	YES	HRDOW
L0000171	0	0.20408E-01	368080.9	3761027.1	13.1	0.60	6.98	2.39	YES	HRDOW
L0000172	0	0.20408E-01	368066.2	3761030.4	13.0	0.60	6.98	2.39	YES	HRDOW
L0000173	0	0.20408E-01	368051.6	3761033.9	13.0	0.60	6.98	2.39	YES	HRDOW

L0000174	0	0.20408E-01	368037.2	3761038.0	13.0	0.60	6.98	2.39	YES	HRDOW
L0000175	0	0.20408E-01	368022.8	3761042.1	13.0	0.60	6.98	2.39	YES	HRDOW
L0000176	0	0.20408E-01	368008.3	3761046.2	13.0	0.60	6.98	2.39	YES	HRDOW
L0000177	0	0.20408E-01	367993.9	3761050.3	13.0	0.60	6.98	2.39	YES	HRDOW
L0000178	0	0.20408E-01	367979.5	3761054.4	13.0	0.60	6.98	2.39	YES	HRDOW
L0000179	0	0.20408E-01	367965.1	3761058.5	13.0	0.60	6.98	2.39	YES	HRDOW
L0000180	0	0.20408E-01	367950.8	3761062.9	12.9	0.60	6.98	2.39	YES	HRDOW
L0000181	0	0.20408E-01	367937.6	3761070.0	12.3	0.60	6.98	2.39	YES	HRDOW
L0000182	0	0.20408E-01	367924.4	3761077.1	11.7	0.60	6.98	2.39	YES	HRDOW
L0000183	0	0.20408E-01	367911.1	3761084.2	11.1	0.60	6.98	2.39	YES	HRDOW
L0000184	0	0.20408E-01	367897.9	3761091.3	10.4	0.60	6.98	2.39	YES	HRDOW
L0000185	0	0.20408E-01	367884.7	3761098.4	9.8	0.60	6.98	2.39	YES	HRDOW
L0000186	0	0.20408E-01	367871.5	3761105.5	9.2	0.60	6.98	2.39	YES	HRDOW
L0000187	0	0.20408E-01	367858.3	3761112.6	8.6	0.60	6.98	2.39	YES	HRDOW
L0000188	0	0.20408E-01	367845.1	3761119.7	8.0	0.60	6.98	2.39	YES	HRDOW
L0000189	0	0.20408E-01	367831.9	3761126.8	7.3	0.60	6.98	2.39	YES	HRDOW
L0000190	0	0.20408E-01	367818.6	3761133.9	6.7	0.60	6.98	2.39	YES	HRDOW
L0000191	0	0.20408E-01	367805.4	3761141.0	6.1	0.60	6.98	2.39	YES	HRDOW
L0000192	0	0.20408E-01	367792.0	3761147.6	5.6	0.60	6.98	2.39	YES	HRDOW
L0000193	0	0.20408E-01	367777.8	3761152.6	5.6	0.60	6.98	2.39	YES	HRDOW
L0000194	0	0.20408E-01	367763.7	3761157.5	5.6	0.60	6.98	2.39	YES	HRDOW
L0000195	0	0.20408E-01	367749.5	3761162.4	5.6	0.60	6.98	2.39	YES	HRDOW
L0000196	0	0.20408E-01	367735.3	3761167.3	5.6	0.60	6.98	2.39	YES	HRDOW
L0000197	0	0.20408E-01	368418.1	3760954.3	14.0	4.15	6.98	2.39	YES	HRDOW
L0000198	0	0.20408E-01	368403.3	3760957.1	14.0	4.15	6.98	2.39	YES	HRDOW
L0000199	0	0.20408E-01	368388.6	3760959.9	14.0	4.15	6.98	2.39	YES	HRDOW
L0000200	0	0.20408E-01	368373.9	3760962.8	14.0	4.15	6.98	2.39	YES	HRDOW
L0000201	0	0.20408E-01	368359.1	3760965.6	14.0	4.15	6.98	2.39	YES	HRDOW
L0000202	0	0.20408E-01	368344.4	3760968.4	14.0	4.15	6.98	2.39	YES	HRDOW
L0000203	0	0.20408E-01	368329.8	3760971.7	14.0	4.15	6.98	2.39	YES	HRDOW
L0000204	0	0.20408E-01	368315.1	3760974.9	13.9	4.15	6.98	2.39	YES	HRDOW
L0000205	0	0.20408E-01	368300.5	3760978.2	13.8	4.15	6.98	2.39	YES	HRDOW
L0000206	0	0.20408E-01	368285.8	3760981.5	13.8	4.15	6.98	2.39	YES	HRDOW
L0000207	0	0.20408E-01	368271.2	3760984.7	13.7	4.15	6.98	2.39	YES	HRDOW
L0000208	0	0.20408E-01	368256.5	3760988.0	13.7	4.15	6.98	2.39	YES	HRDOW
L0000209	0	0.20408E-01	368241.9	3760991.2	13.6	4.15	6.98	2.39	YES	HRDOW
L0000210	0	0.20408E-01	368227.3	3760994.5	13.6	4.15	6.98	2.39	YES	HRDOW
L0000211	0	0.20408E-01	368212.6	3760997.8	13.5	4.15	6.98	2.39	YES	HRDOW
L0000212	0	0.20408E-01	368198.0	3761001.0	13.5	4.15	6.98	2.39	YES	HRDOW
L0000213	0	0.20408E-01	368183.3	3761004.3	13.4	4.15	6.98	2.39	YES	HRDOW
L0000214	0	0.20408E-01	368168.7	3761007.5	13.4	4.15	6.98	2.39	YES	HRDOW
L0000215	0	0.20408E-01	368154.1	3761010.8	13.3	4.15	6.98	2.39	YES	HRDOW
L0000216	0	0.20408E-01	368139.4	3761014.1	13.3	4.15	6.98	2.39	YES	HRDOW
L0000217	0	0.20408E-01	368124.8	3761017.3	13.2	4.15	6.98	2.39	YES	HRDOW
L0000218	0	0.20408E-01	368110.1	3761020.6	13.2	4.15	6.98	2.39	YES	HRDOW
L0000219	0	0.20408E-01	368095.5	3761023.8	13.1	4.15	6.98	2.39	YES	HRDOW
L0000220	0	0.20408E-01	368080.9	3761027.1	13.1	4.15	6.98	2.39	YES	HRDOW
L0000221	0	0.20408E-01	368066.2	3761030.4	13.0	4.15	6.98	2.39	YES	HRDOW
L0000222	0	0.20408E-01	368051.6	3761033.9	13.0	4.15	6.98	2.39	YES	HRDOW
L0000223	0	0.20408E-01	368037.2	3761038.0	13.0	4.15	6.98	2.39	YES	HRDOW

L0000224	0	0.20408E-01	368022.8	3761042.1	13.0	4.15	6.98	2.39	YES	HRDOW
L0000225	0	0.20408E-01	368008.3	3761046.2	13.0	4.15	6.98	2.39	YES	HRDOW
L0000226	0	0.20408E-01	367993.9	3761050.3	13.0	4.15	6.98	2.39	YES	HRDOW
L0000227	0	0.20408E-01	367979.5	3761054.4	13.0	4.15	6.98	2.39	YES	HRDOW
L0000228	0	0.20408E-01	367965.1	3761058.5	13.0	4.15	6.98	2.39	YES	HRDOW
L0000229	0	0.20408E-01	367950.8	3761062.9	12.9	4.15	6.98	2.39	YES	HRDOW
L0000230	0	0.20408E-01	367937.6	3761070.0	12.3	4.15	6.98	2.39	YES	HRDOW
L0000231	0	0.20408E-01	367924.4	3761077.1	11.7	4.15	6.98	2.39	YES	HRDOW
L0000232	0	0.20408E-01	367911.1	3761084.2	11.1	4.15	6.98	2.39	YES	HRDOW
L0000233	0	0.20408E-01	367897.9	3761091.3	10.4	4.15	6.98	2.39	YES	HRDOW
L0000234	0	0.20408E-01	367884.7	3761098.4	9.8	4.15	6.98	2.39	YES	HRDOW
L0000235	0	0.20408E-01	367871.5	3761105.5	9.2	4.15	6.98	2.39	YES	HRDOW
L0000236	0	0.20408E-01	367858.3	3761112.6	8.6	4.15	6.98	2.39	YES	HRDOW
L0000237	0	0.20408E-01	367845.1	3761119.7	8.0	4.15	6.98	2.39	YES	HRDOW
L0000238	0	0.20408E-01	367831.9	3761126.8	7.3	4.15	6.98	2.39	YES	HRDOW
L0000239	0	0.20408E-01	367818.6	3761133.9	6.7	4.15	6.98	2.39	YES	HRDOW
L0000240	0	0.20408E-01	367805.4	3761141.0	6.1	4.15	6.98	2.39	YES	HRDOW
L0000241	0	0.20408E-01	367792.0	3761147.6	5.6	4.15	6.98	2.39	YES	HRDOW
L0000242	0	0.20408E-01	367777.8	3761152.6	5.6	4.15	6.98	2.39	YES	HRDOW
L0000243	0	0.20408E-01	367763.7	3761157.5	5.6	4.15	6.98	2.39	YES	HRDOW
L0000244	0	0.20408E-01	367749.5	3761162.4	5.6	4.15	6.98	2.39	YES	HRDOW
L0000245	0	0.20408E-01	367735.3	3761167.3	5.6	4.15	6.98	2.39	YES	HRDOW

Model Input
Unit Emission Rates (1 g/s)

**MODELOPTs: NonDFAULT CONC   ELEV   BETA   URBAN

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
1	1 ,
2	2 ,
3	3 ,
4A	L0000148 , L0000149 , L0000150 , L0000151 , L0000152 , L0000153 , L0000154 , L0000155 ,
	L0000156 , L0000157 , L0000158 , L0000159 , L0000160 , L0000161 , L0000162 , L0000163 ,
	L0000164 , L0000165 , L0000166 , L0000167 , L0000168 , L0000169 , L0000170 , L0000171 ,
	L0000172 , L0000173 , L0000174 , L0000175 , L0000176 , L0000177 , L0000178 , L0000179 ,
	L0000180 , L0000181 , L0000182 , L0000183 , L0000184 , L0000185 , L0000186 , L0000187 ,
	L0000188 , L0000189 , L0000190 , L0000191 , L0000192 , L0000193 , L0000194 , L0000195 ,
	L0000196 ,
4B	L0000197 , L0000198 , L0000199 , L0000200 , L0000201 , L0000202 , L0000203 , L0000204 ,
	L0000205 , L0000206 , L0000207 , L0000208 , L0000209 , L0000210 , L0000211 , L0000212 ,
	L0000213 , L0000214 , L0000215 , L0000216 , L0000217 , L0000218 , L0000219 , L0000220 ,
	L0000221 , L0000222 , L0000223 , L0000224 , L0000225 , L0000226 , L0000227 , L0000228 ,
	L0000229 , L0000230 , L0000231 , L0000232 , L0000233 , L0000234 , L0000235 , L0000236 ,
	L0000237 , L0000238 , L0000239 , L0000240 , L0000241 , L0000242 , L0000243 , L0000244 ,
	L0000245 ,

**MODELOPTs: NonDFAULT CONC   ELEV   BETA   URBAN

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

URBAN ID	URBAN POP	SOURCE IDs
	28010.	1 , 2 , 3 , L0000148 , L0000149 , L0000150 , L0000151 , L0000152 ,
		L0000153 , L0000154 , L0000155 , L0000156 , L0000157 , L0000158 , L0000159 , L0000160 ,
		L0000161 , L0000162 , L0000163 , L0000164 , L0000165 , L0000166 , L0000167 , L0000168 ,
		L0000169 , L0000170 , L0000171 , L0000172 , L0000173 , L0000174 , L0000175 , L0000176 ,
		L0000177 , L0000178 , L0000179 , L0000180 , L0000181 , L0000182 , L0000183 , L0000184 ,
		L0000185 , L0000186 , L0000187 , L0000188 , L0000189 , L0000190 , L0000191 , L0000192 ,
		L0000193 , L0000194 , L0000195 , L0000196 , L0000197 , L0000198 , L0000199 , L0000200 ,
		L0000201 , L0000202 , L0000203 , L0000204 , L0000205 , L0000206 , L0000207 , L0000208 ,
		L0000209 , L0000210 , L0000211 , L0000212 , L0000213 , L0000214 , L0000215 , L0000216 ,
		L0000217 , L0000218 , L0000219 , L0000220 , L0000221 , L0000222 , L0000223 , L0000224 ,
		L0000225 , L0000226 , L0000227 , L0000228 , L0000229 , L0000230 , L0000231 , L0000232 ,
		L0000233 , L0000234 , L0000235 , L0000236 , L0000237 , L0000238 , L0000239 , L0000240 ,
		L0000241 , L0000242 , L0000243 , L0000244 , L0000245 ,

**MODELOPTs: NonDFAULT CONC   ELEV   BETA   URBAN

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

SOURCE ID = 2   ; SOURCE TYPE = VOLUME   :

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

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

SOURCE ID = 3   ; SOURCE TYPE = VOLUME   :

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

**MODELOPTs: NonDFAULT CONC   ELEV   BETA   URBAN

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

SOURCE ID = L0000148 to L0000196   ; SOURCE TYPE = VOLUME   :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
						DAY OF WEEK = WEEKDAY									
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.1000E+01	10	.9010E+00	11	.7670E+00	12	.7500E+00	13	.7790E+00	14	.7930E+00	15	.8240E+00	16	.8300E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
						DAY OF WEEK = SATURDAY									
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
						DAY OF WEEK = SUNDAY									
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

SOURCE ID = L0000197 to L0000245   ; SOURCE TYPE = VOLUME   :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
						DAY OF WEEK = WEEKDAY									
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.1000E+01	10	.9500E+00	11	.8690E+00	12	.8250E+00	13	.8390E+00	14	.8300E+00	15	.8060E+00	16	.7200E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
						DAY OF WEEK = SATURDAY									
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
						DAY OF WEEK = SUNDAY									
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

Model Input
Unit Emission Rates (1 g/s)

**MODELOPTs: NonDFAULT CONC ELEV BETA URBAN

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

SOURCE ID = 1 ; SOURCE TYPE = POINTHOR :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
DAY OF WEEK = MONDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.5800E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
DAY OF WEEK = TUESDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
DAY OF WEEK = WEDNESDY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
DAY OF WEEK = THURSDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
DAY OF WEEK = FRIDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
DAY OF WEEK = SATURDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
DAY OF WEEK = SUNDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

Model Input
Unit Emission Rates (1 g/s)

**MODELOPTs: NonDFAULT CONC ELEV BETA URBAN

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

(	368149.5,	3761242.2,	5.3,	5.3,	0.0);	(	368159.5,	3761242.2,	5.3,	5.3,	0.0);
(	368139.5,	3761252.2,	5.3,	5.3,	0.0);	(	368149.5,	3761252.2,	5.3,	5.3,	0.0);
(	368159.5,	3761252.2,	5.3,	5.3,	0.0);	(	368169.5,	3761252.2,	5.3,	5.3,	0.0);
(	368139.5,	3761262.2,	5.3,	5.3,	0.0);	(	368149.5,	3761262.2,	5.3,	5.3,	0.0);
(	368159.5,	3761262.2,	5.3,	5.3,	0.0);	(	368169.5,	3761262.2,	5.3,	5.3,	0.0);
(	368129.5,	3761272.2,	5.3,	5.3,	0.0);	(	368139.5,	3761272.2,	5.3,	5.3,	0.0);
(	368149.5,	3761272.2,	5.3,	5.3,	0.0);	(	368159.5,	3761272.2,	5.3,	5.3,	0.0);
(	368169.5,	3761272.2,	5.3,	5.3,	0.0);	(	368179.5,	3761272.2,	5.3,	5.3,	0.0);
(	368119.5,	3761282.2,	5.3,	5.3,	0.0);	(	368129.5,	3761282.2,	5.3,	5.3,	0.0);
(	368139.5,	3761282.2,	5.3,	5.3,	0.0);	(	368149.5,	3761282.2,	5.3,	5.3,	0.0);
(	368159.5,	3761282.2,	5.3,	5.3,	0.0);	(	368169.5,	3761282.2,	5.3,	5.3,	0.0);
(	368179.5,	3761282.2,	5.3,	5.3,	0.0);	(	368189.5,	3761282.2,	5.3,	5.3,	0.0);
(	368119.5,	3761292.2,	5.3,	5.3,	0.0);	(	368129.5,	3761292.2,	5.3,	5.3,	0.0);
(	368139.5,	3761292.2,	5.3,	5.3,	0.0);	(	368149.5,	3761292.2,	5.3,	5.3,	0.0);
(	368159.5,	3761292.2,	5.3,	5.3,	0.0);	(	368169.5,	3761292.2,	5.3,	5.3,	0.0);
(	368179.5,	3761292.2,	5.3,	5.3,	0.0);	(	368189.5,	3761292.2,	5.3,	5.3,	0.0);
(	368109.5,	3761302.2,	5.3,	5.3,	0.0);	(	368119.5,	3761302.2,	5.3,	5.3,	0.0);
(	368129.5,	3761302.2,	5.3,	5.3,	0.0);	(	368139.5,	3761302.2,	5.3,	5.3,	0.0);
(	368149.5,	3761302.2,	5.3,	5.3,	0.0);	(	368159.5,	3761302.2,	5.3,	5.3,	0.0);
(	368169.5,	3761302.2,	5.3,	5.3,	0.0);	(	368179.5,	3761302.2,	5.3,	5.3,	0.0);
(	368189.5,	3761302.2,	5.3,	5.3,	0.0);	(	368199.5,	3761302.2,	5.3,	5.3,	0.0);
(	368119.5,	3761312.2,	5.3,	5.3,	0.0);	(	368129.5,	3761312.2,	5.3,	5.3,	0.0);
(	368139.5,	3761312.2,	5.3,	5.3,	0.0);	(	368149.5,	3761312.2,	5.3,	5.3,	0.0);
(	368159.5,	3761312.2,	5.3,	5.3,	0.0);	(	368169.5,	3761312.2,	5.3,	5.3,	0.0);
(	368179.5,	3761312.2,	5.3,	5.3,	0.0);	(	368189.5,	3761312.2,	5.3,	5.3,	0.0);
(	368199.5,	3761312.2,	5.3,	5.3,	0.0);	(	368209.5,	3761312.2,	5.3,	5.3,	0.0);
(	368129.5,	3761322.2,	5.3,	5.3,	0.0);	(	368139.5,	3761322.2,	5.3,	5.3,	0.0);
(	368149.5,	3761322.2,	5.3,	5.3,	0.0);	(	368159.5,	3761322.2,	5.3,	5.3,	0.0);
(	368169.5,	3761322.2,	5.3,	5.3,	0.0);	(	368179.5,	3761322.2,	5.3,	5.3,	0.0);
(	368189.5,	3761322.2,	5.3,	5.3,	0.0);	(	368199.5,	3761322.2,	5.3,	5.3,	0.0);
(	368209.5,	3761322.2,	5.3,	5.3,	0.0);	(	368149.5,	3761332.2,	5.3,	5.3,	0.0);
(	368159.5,	3761332.2,	5.3,	5.3,	0.0);	(	368169.5,	3761332.2,	5.3,	5.3,	0.0);
(	368179.5,	3761332.2,	5.3,	5.3,	0.0);	(	368189.5,	3761332.2,	5.3,	5.3,	0.0);
(	368199.5,	3761332.2,	5.3,	5.3,	0.0);	(	368209.5,	3761332.2,	5.3,	5.3,	0.0);
(	368219.5,	3761332.2,	5.3,	5.3,	0.0);	(	368159.5,	3761342.2,	5.3,	5.3,	0.0);
(	368169.5,	3761342.2,	5.3,	5.3,	0.0);	(	368179.5,	3761342.2,	5.3,	5.3,	0.0);
(	368189.5,	3761342.2,	5.3,	5.3,	0.0);	(	368199.5,	3761342.2,	5.3,	5.3,	0.0);
(	368209.5,	3761342.2,	5.3,	5.3,	0.0);	(	368219.5,	3761342.2,	5.3,	5.3,	0.0);
(	368229.5,	3761342.2,	5.3,	5.3,	0.0);	(	368179.5,	3761352.2,	5.3,	5.3,	0.0);
(	368189.5,	3761352.2,	5.3,	5.3,	0.0);	(	368199.5,	3761352.2,	5.3,	5.3,	0.0);
(	368209.5,	3761352.2,	5.3,	5.3,	0.0);	(	368219.5,	3761352.2,	5.3,	5.3,	0.0);
(	368229.5,	3761352.2,	5.3,	5.3,	0.0);	(	368189.5,	3761362.2,	5.3,	5.3,	0.0);

```
( 368199.5, 3761362.2,      5.3,      5.3,      0.0);      ( 368209.5, 3761362.2,      5.3,      5.3,      0.0);
( 368219.5, 3761362.2,      5.3,      5.3,      0.0);      ( 368199.5, 3761372.2,      5.3,      5.3,      0.0);
( 368209.5, 3761372.2,      5.3,      5.3,      0.0);
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*** AERMOD - VERSION  15181 ***   *** Panama St K-8 Charter                                                    ***        04/06/16
*** AERMET - VERSION  14134 ***   *** HRA                                                                      ***        15:17:26
                                                                                                                           PAGE 110
**MODELOPTs:   NonDFAULT CONC      ELEV      BETA      URBAN

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

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

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


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

                                              1.54,    3.09,    5.14,    8.23,   10.80,
```

Model Input
Unit Emission Rates (1 g/s)

**MODELOPTs: NonDFAULT CONC ELEV BETA URBAN

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

Surface file: C:\!MET Files\SCAQMD Met Files\laxh8.sfc Met Version: 14134
Profile file: C:\!MET Files\SCAQMD Met Files\laxh8.PFL
Surface format: FREE
Profile format: FREE
Surface station no.: 0 Upper air station no.: 3190
Name: UNKNOWN Name: UNKNOWN
Year: 2007 Year: 2007

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
07	01	01	1	01	-4.3	0.071	-9.000	-9.000	-999.	45.	7.4	0.23	1.00	1.00	1.30	25.	9.1	282.5	5.5
07	01	01	1	02	-3.2	0.071	-9.000	-9.000	-999.	45.	10.0	0.23	1.00	1.00	1.30	39.	9.1	282.5	5.5
07	01	01	1	03	-4.3	0.071	-9.000	-9.000	-999.	45.	7.4	0.23	1.00	1.00	1.30	48.	9.1	282.5	5.5
07	01	01	1	04	-3.7	0.071	-9.000	-9.000	-999.	45.	8.6	0.23	1.00	1.00	1.30	49.	9.1	282.0	5.5
07	01	01	1	05	-4.3	0.071	-9.000	-9.000	-999.	45.	7.4	0.23	1.00	1.00	1.30	52.	9.1	282.0	5.5
07	01	01	1	06	-4.4	0.071	-9.000	-9.000	-999.	45.	7.3	0.23	1.00	1.00	1.30	28.	9.1	281.4	5.5
07	01	01	1	07	-4.4	0.071	-9.000	-9.000	-999.	45.	7.3	0.23	1.00	1.00	1.30	69.	9.1	281.4	5.5
07	01	01	1	08	-2.0	0.049	-9.000	-9.000	-999.	26.	5.4	0.23	1.00	0.53	0.90	64.	9.1	280.9	5.5
07	01	01	1	09	25.4	0.176	0.494	0.005	171.	178.	-19.4	0.23	1.00	0.30	1.30	75.	9.1	283.8	5.5
07	01	01	1	10	79.7	0.248	1.040	0.005	508.	297.	-17.2	0.23	1.00	0.22	1.80	85.	9.1	285.9	5.5
07	01	01	1	11	114.2	0.257	1.365	0.007	803.	313.	-13.4	0.23	1.00	0.19	1.80	110.	9.1	288.8	5.5
07	01	01	1	12	133.3	0.300	1.593	0.018	1091.	395.	-18.3	0.23	1.00	0.18	2.20	111.	9.1	289.9	5.5
07	01	01	1	13	131.8	0.389	1.659	0.022	1247.	581.	-40.1	0.23	1.00	0.18	3.10	243.	9.1	288.8	5.5
07	01	01	1	14	110.8	0.345	1.573	0.021	1264.	487.	-33.3	0.23	1.00	0.19	2.70	244.	9.1	289.2	5.5
07	01	01	1	15	78.6	0.375	1.407	0.021	1276.	551.	-60.4	0.23	1.00	0.22	3.10	222.	9.1	289.2	5.5
07	01	01	1	16	30.6	0.318	1.028	0.021	1278.	431.	-94.1	0.23	1.00	0.31	2.70	242.	9.1	289.9	5.5
07	01	01	1	17	-8.0	0.098	-9.000	-9.000	-999.	143.	10.6	0.23	1.00	0.57	1.80	219.	9.1	288.8	5.5
07	01	01	1	18	-2.1	0.049	-9.000	-9.000	-999.	36.	5.1	0.23	1.00	1.00	0.90	141.	9.1	286.4	5.5
07	01	01	1	19	-2.1	0.049	-9.000	-9.000	-999.	26.	5.1	0.23	1.00	1.00	0.90	75.	9.1	286.4	5.5
07	01	01	1	20	-2.1	0.049	-9.000	-9.000	-999.	26.	5.1	0.23	1.00	1.00	0.90	333.	9.1	287.5	5.5
07	01	01	1	21	-4.5	0.071	-9.000	-9.000	-999.	45.	7.1	0.23	1.00	1.00	1.30	85.	9.1	286.4	5.5
07	01	01	1	22	-4.5	0.071	-9.000	-9.000	-999.	45.	7.1	0.23	1.00	1.00	1.30	83.	9.1	286.4	5.5
07	01	01	1	23	-2.1	0.049	-9.000	-9.000	-999.	26.	5.1	0.23	1.00	1.00	0.90	299.	9.1	286.4	5.5
07	01	01	1	24	-2.1	0.049	-9.000	-9.000	-999.	26.	5.1	0.23	1.00	1.00	0.90	59.	9.1	285.4	5.5

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
07	01	01	01	5.5	0	-999.	-99.00	282.6	99.0	-99.00	-99.00
07	01	01	01	9.1	1	25.	1.30	-999.0	99.0	-99.00	-99.00

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

Model Input
Unit Emission Rates (1 g/s)

**MODELOPTs: NonDFAULT CONC ELEV BETA URBAN

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

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

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					OF TYPE	NETWORK GRID-ID
1	1ST HIGHEST VALUE IS	0.00428 AT	368159.51,	3761242.23,	5.32,	5.32,	0.00)	DC	
	2ND HIGHEST VALUE IS	0.00428 AT	368169.51,	3761252.23,	5.32,	5.32,	0.00)	DC	
	3RD HIGHEST VALUE IS	0.00408 AT	368159.51,	3761252.23,	5.32,	5.32,	0.00)	DC	
	4TH HIGHEST VALUE IS	0.00408 AT	368149.51,	3761242.23,	5.32,	5.32,	0.00)	DC	
	5TH HIGHEST VALUE IS	0.00406 AT	368169.51,	3761262.23,	5.32,	5.32,	0.00)	DC	
	6TH HIGHEST VALUE IS	0.00401 AT	368179.51,	3761272.23,	5.32,	5.32,	0.00)	DC	
	7TH HIGHEST VALUE IS	0.00394 AT	368189.51,	3761282.23,	5.32,	5.32,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.00389 AT	368149.51,	3761252.23,	5.32,	5.32,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.00388 AT	368159.51,	3761262.23,	5.32,	5.32,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.00385 AT	368169.51,	3761272.23,	5.32,	5.32,	0.00)	DC	
2	1ST HIGHEST VALUE IS	0.30739 AT	368169.51,	3761252.23,	5.32,	5.32,	0.00)	DC	
	2ND HIGHEST VALUE IS	0.30515 AT	368189.51,	3761282.23,	5.32,	5.32,	0.00)	DC	
	3RD HIGHEST VALUE IS	0.30115 AT	368159.51,	3761242.23,	5.32,	5.32,	0.00)	DC	
	4TH HIGHEST VALUE IS	0.30091 AT	368209.51,	3761312.23,	5.32,	5.32,	0.00)	DC	
	5TH HIGHEST VALUE IS	0.29965 AT	368179.51,	3761272.23,	5.32,	5.32,	0.00)	DC	
	6TH HIGHEST VALUE IS	0.29627 AT	368199.51,	3761302.23,	5.32,	5.32,	0.00)	DC	
	7TH HIGHEST VALUE IS	0.29412 AT	368169.51,	3761262.23,	5.32,	5.32,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.29368 AT	368229.51,	3761342.23,	5.32,	5.32,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.29142 AT	368189.51,	3761292.23,	5.32,	5.32,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.29052 AT	368219.51,	3761332.23,	5.32,	5.32,	0.00)	DC	
3	1ST HIGHEST VALUE IS	0.18107 AT	368169.51,	3761252.23,	5.32,	5.32,	0.00)	DC	
	2ND HIGHEST VALUE IS	0.17931 AT	368159.51,	3761242.23,	5.32,	5.32,	0.00)	DC	
	3RD HIGHEST VALUE IS	0.17743 AT	368189.51,	3761282.23,	5.32,	5.32,	0.00)	DC	
	4TH HIGHEST VALUE IS	0.17597 AT	368179.51,	3761272.23,	5.32,	5.32,	0.00)	DC	
	5TH HIGHEST VALUE IS	0.17442 AT	368169.51,	3761262.23,	5.32,	5.32,	0.00)	DC	
	6TH HIGHEST VALUE IS	0.17288 AT	368209.51,	3761312.23,	5.32,	5.32,	0.00)	DC	
	7TH HIGHEST VALUE IS	0.17280 AT	368159.51,	3761252.23,	5.32,	5.32,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.17191 AT	368199.51,	3761302.23,	5.32,	5.32,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.17115 AT	368149.51,	3761242.23,	5.32,	5.32,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.17076 AT	368189.51,	3761292.23,	5.32,	5.32,	0.00)	DC	
4A	1ST HIGHEST VALUE IS	1.00551 AT	368149.51,	3761242.23,	5.32,	5.32,	0.00)	DC	
	2ND HIGHEST VALUE IS	0.99142 AT	368159.51,	3761242.23,	5.32,	5.32,	0.00)	DC	
	3RD HIGHEST VALUE IS	0.96073 AT	368139.51,	3761252.23,	5.32,	5.32,	0.00)	DC	
	4TH HIGHEST VALUE IS	0.94752 AT	368149.51,	3761252.23,	5.32,	5.32,	0.00)	DC	

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          5TH HIGHEST VALUE IS      0.93479 AT (  368159.51,  3761252.23,     5.32,     5.32,    0.00)  DC
          6TH HIGHEST VALUE IS      0.92251 AT (  368169.51,  3761252.23,     5.32,     5.32,    0.00)  DC
          7TH HIGHEST VALUE IS      0.90544 AT (  368139.51,  3761262.23,     5.32,     5.32,    0.00)  DC
          8TH HIGHEST VALUE IS      0.89362 AT (  368149.51,  3761262.23,     5.32,     5.32,    0.00)  DC
          9TH HIGHEST VALUE IS      0.88219 AT (  368159.51,  3761262.23,     5.32,     5.32,    0.00)  DC
         10TH HIGHEST VALUE IS      0.87112 AT (  368169.51,  3761262.23,     5.32,     5.32,    0.00)  DC

4B        1ST HIGHEST VALUE IS      1.00980 AT (  368149.51,  3761242.23,     5.32,     5.32,    0.00)  DC
          2ND HIGHEST VALUE IS      0.99609 AT (  368159.51,  3761242.23,     5.32,     5.32,    0.00)  DC
          3RD HIGHEST VALUE IS      0.96346 AT (  368139.51,  3761252.23,     5.32,     5.32,    0.00)  DC
          4TH HIGHEST VALUE IS      0.95070 AT (  368149.51,  3761252.23,     5.32,     5.32,    0.00)  DC
          5TH HIGHEST VALUE IS      0.93838 AT (  368159.51,  3761252.23,     5.32,     5.32,    0.00)  DC
          6TH HIGHEST VALUE IS      0.92646 AT (  368169.51,  3761252.23,     5.32,     5.32,    0.00)  DC
          7TH HIGHEST VALUE IS      0.90721 AT (  368139.51,  3761262.23,     5.32,     5.32,    0.00)  DC
          8TH HIGHEST VALUE IS      0.89584 AT (  368149.51,  3761262.23,     5.32,     5.32,    0.00)  DC
          9TH HIGHEST VALUE IS      0.88483 AT (  368159.51,  3761262.23,     5.32,     5.32,    0.00)  DC
         10TH HIGHEST VALUE IS      0.87415 AT (  368169.51,  3761262.23,     5.32,     5.32,    0.00)  DC


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

**MODELOPTs: NonDFAULT CONC   ELEV   BETA   URBAN

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

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

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
1 HIGH 1ST HIGH VALUE IS	12.52208	ON 10011811:	AT (368189.51, 3761282.23, 5.32, 5.32, 0.00)	DC	
2 HIGH 1ST HIGH VALUE IS	109.16018	ON 09012316:	AT (368209.51, 3761312.23, 5.32, 5.32, 0.00)	DC	
3 HIGH 1ST HIGH VALUE IS	65.23243	ON 09012316:	AT (368179.51, 3761272.23, 5.32, 5.32, 0.00)	DC	
4A HIGH 1ST HIGH VALUE IS	24.81824	ON 10100516:	AT (368149.51, 3761242.23, 5.32, 5.32, 0.00)	DC	
4B HIGH 1ST HIGH VALUE IS	21.61281	ON 10100516:	AT (368149.51, 3761242.23, 5.32, 5.32, 0.00)	DC	

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

```
*** AERMOD - VERSION  15181 ***   *** Panama St K-8 Charter                                  ***        04/06/16
*** AERMET - VERSION  14134 ***   *** HRA                                                    ***        15:17:26
                                                                                                       PAGE 135

**MODELOPTs:   NonDFAULT CONC      ELEV      BETA      URBAN

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

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

A Total of            0 Fatal Error Message(s)
A Total of            1 Warning Message(s)
A Total of         1107 Informational Message(s)

A Total of        43824 Hours Were Processed

A Total of            5 Calm Hours Identified

A Total of         1102 Missing Hours Identified (  2.51 Percent)


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


   ********   WARNING MESSAGES   ********
SO W320     180        PPARM: Input Parameter May Be Out-of-Range for Parameter            VS

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

Appendix E. Risk Calculation Worksheets

Appendix

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Table E1
Pollutant Concentration Worksheet - HARP2 Inputs
Toxic Air Contaminants - Stationary Sources

Source No. (a)	Source (b)	Emission Rates[1] **Annual Average** (g/s) (f)	Contaminant (d)	Weight Fraction (e)	AERMOD Output[2] **Annual Average** ($\mu g/m^3$) (c)	Annual Average MER Concentration ($\mu g/m^3$) (g)	AERMOD Output[2] **1-Hour** ($\mu g/m^3$) (h)	Acute (1-Hour) MER Concentration ($\mu g/m^3$) (i)
Staff and Student Scenarios								
1	AMV Digital (generator)	1.14E-02	Diesel Particulate	1.00E+00	4.28E-03	4.89E-05	n/a	n/a
2	Teledyne (solvent)	4.07E-03	Isopropanol	1.00E+00	3.07E-01	1.25E-03	1.09E+02	4.44E-01
3	Teledyne Reynolds (solvents)	1.62E-02	Isopropanol Methanol	5.00E-01 5.00E-02	1.81E-01	1.46E-03 1.46E-04	6.52E+01	5.27E-01 5.27E-02
Note: Maximum Exposed Receptor (MER)						For Cancer/Chronic Calculation		For Acute Calculation

[1] Emission Rates, per source, from Source Emissions Inventories (Appendix C).

[2] AERMOD Output (Appendix D) at the maximum exposed receptor (MER) are based on unit emission rates for emission sources (1 g/s per source).

Table E2
Pollutant Concentration Worksheet - HARP2 Inputs
Toxic Air Contaminants - Mobile Sources

Source No.	Source	Contaminant	Weight Fraction	Emission Rates[1] **Annual Avg** (g/s)	AERMOD Output[2] **Annual Avg** ($\mu g/m^3$)	Annual Average MER Concentration ($\mu g/m^3$)	Emission Rates[1] **1-Hour** (g/s)	AERMOD Output[2] **1-Hour** ($\mu g/m^3$)	Acute (1-Hour) MER Concentration ($\mu g/m^3$)
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Staff Scenario									
4	SR-90 Cars (TOG)	Acetaldehyde	2.80E-03	2.21E-02	1.006	0.00006	2.89E-02	24.818	0.0020
		Acrolein	1.30E-03			0.00003			0.0009
		Benzene	2.83E-02			0.00063			0.0203
		1,3-Butadiene	5.50E-03			0.00012			0.0039
		Ethylbenzene	1.17E-02			0.00026			0.0084
		Formaldehyde	1.58E-02			0.00035			0.0113
		Hexane	3.14E-02			0.00070			0.0225
		Methanol	1.20E-03			0.00003			0.0009
		Methyl Ethyl Ketone	2.00E-04			0.000004			0.0001
		Naphthalene	5.00E-04			0.000011			0.0004
		Propylene	3.06E-02			0.00068			0.0220
		Styrene	1.20E-03			0.00003			0.0009
		Toluene	7.46E-02			0.00166			0.0536
		Xylenes	5.38E-02			0.00120			0.0386
	SR-90 Trucks (DPM)	Diesel Particulate	1.00E+00	3.53E-04	1.010	0.00036	n/a	n/a	
Student Scenario									
4	SR-90 Cars (TOG)	Acetaldehyde	2.80E-03	2.56E-02	1.006	0.00007	2.89E-02	24.818	0.0020
		Acrolein	1.30E-03			0.00003			0.0009
		Benzene	2.83E-02			0.00073			0.0203
		1,3-Butadiene	5.50E-03			0.00014			0.0039
		Ethylbenzene	1.17E-02			0.00030			0.0084
		Formaldehyde	1.58E-02			0.00041			0.0113
		Hexane	3.14E-02			0.00081			0.0225
		Methanol	1.20E-03			0.00003			0.0009
		Methyl Ethyl Ketone	2.00E-04			0.00001			0.0001
		Naphthalene	5.00E-04			0.00001			0.0004
		Propylene	3.06E-02			0.00079			0.0220
		Styrene	1.20E-03			0.00003			0.0009
		Toluene	7.46E-02			0.00192			0.0536
		Xylenes	5.38E-02			0.00138			0.0386
	SR-90 Trucks (DPM)	Diesel Particulate	1.00E+00	6.17E-04	1.010	0.00062	n/a	n/a	
Note: Maximum Exposed Receptor (MER)						For Cancer/Chronic Calculation			For Acute Calculation

[1] Emission Rates, per source, from Source Emissions Inventories (Appendix B).

[2] AERMOD Output (Appendix C) at the maximum exposed receptor (MER) are based on unit emission rates for emission sources (1 g/s per source).

Table E3
HARP2 Results for Cancer Risk and Chronic Hazards
School Scenario

No.	Source	Contaminant	**Carcinogenic Risks**		Chronic Non-Cancer Risks - Toxicological Endpoints*											
			Staff	**Students**	CV	CNS	IMMUN	KIDNEY	GILV	REPRO	**RESP**	SKIN	EYE	BONE	ENDO	BLOOD
			per million	per million												
(a)	(b)	(c)	(j)	(j)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)
1	AMV Digital (generator)	Diesel Particulate	3.0E-03	5.3E-03							9.78E-06					
2	Teledyne (solvent)	Isopropanol						1.79E-07		1.79E-07						
3	Teledyne Reynolds	Isopropanol						2.09E-07		2.09E-07						
	(solvents)	Methanol								3.65E-08						
4	SR-90 Cars (TOG)	Acetaldehyde	3.4E-05	6.9E-05							5.00E-07					
		Acrolein									8.57E-05					
		Benzene	3.5E-03	7.2E-03												2.43E-04
		1,3-Butadiene	4.1E-03	8.3E-03						7.00E-05						
		Ethylbenzene	1.3E-04	2.6E-04				1.50E-07	1.50E-07	1.50E-07					1.50E-07	
		Formaldehyde	4.1E-04	8.5E-04							4.56E-05					
		Hexane				1.16E-07										
		Methanol								7.50E-09						
		Methyl Ethyl Ketone														
		Naphthalene	7.4E-05	1.2E-04							1.11E-06					
		Propylene									2.63E-07					
		Styrene				3.33E-08										
		Toluene				6.40E-06				6.40E-06	6.40E-06					
		Xylenes				1.97E-06					1.97E-06		1.97E-06			
	SR-90 Trucks (DPM)	Diesel Particulate	2.2E-02	6.7E-02							1.24E-04					
		Total - All Sources	**0.03**	**0.09**	0.00E+00	8.52E-06	0.00E+00	5.37E-07	1.50E-07	7.70E-05	**2.75E-04**	0.00E+00	1.97E-06	0.00E+00	1.50E-07	2.43E-04

Note: Health risks calculated using HARP2, Risk Assessment Standalone Tool, version 16057 (CARB, 2016).

Total Cancer Risk	**Staff**	**0.03**	per million
Total Cancer Risk	**Students**	**0.09**	per million
Maximum Chronic Hazard Index		**2.75E-04**	**Resp**

	Staff	Students	
	16 < 70 years	2 < 16 years	age bin
Dose Exposure Factors:	250	180	exposure frequency (days/year)
	230	520	8-hour inhalation rate (L/kg-8 hours) [1]
	1	1	inhalation absorption factor
Risk Calculation Factors:	1	3	age sensitivity factor
	25	9	exposure duration (years)
	70	70	averaging time (years)

* Key to Toxicological Endpoints

CV	Cardiovascular System
CNS	Central Nervous System
IMMUN	Immune System
KIDN	Kidneys
GILV	Gastrointestinal Tract and Liver/Alimentary Tract
RESP	Respiratory System
REPRO	Reproductive System
SKIN	Skin irritation and/or other effects
EYE	Eye irritation and/or other effects
BONE	Bones and Teeth
ENDO	Endocrine System

[1] 8-hour inhalation rate taken as the 95th percentile breathing rates for Moderate Intensity Activities (OEHHA, 2015).

Table E4
HARP2 Results for Acute Hazards
Student Scenario

Source No.	Source	Contaminant	Acute Non-Cancer Risks - Toxicological Endpoints*											
			CV	CNS	IMMUN	KIDNEY	GILV	REPRO	RESP	SKIN	**EYE**	BONE	ENDO	BLOOD
(a)	(b)	(c)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)
1	AMV Digital (generator)	Diesel Particulate												
2	Teledyne (solvent)	Isopropanol							1.39E-04		1.39E-04			
3	Teledyne Reynolds (solvents)	Isopropanol							1.65E-04		1.65E-04			
		Methanol		1.88E-06										
4	SR-90 Cars (TOG)	Acetaldehyde							4.26E-06		4.26E-06			
		Acrolein							3.60E-04		3.60E-04			
		Benzene			7.52E-04			7.52E-04						7.52E-04
		1,3-Butadiene						5.91E-06						
		Ethylbenzene												
		Formaldehyde									2.05E-04			
		Hexane												
		Methanol		3.21E-08										
		Methyl Ethyl Ketone							7.69E-09		7.69E-09			
		Naphthalene												
		Propylene												
		Styrene	4.29E-08					4.29E-08	4.29E-08		4.29E-08			
		Toluene		1.45E-06				1.45E-06	1.45E-06		1.45E-06			
		Xylenes		1.75E-06					1.75E-06		1.75E-06			
	SR-90 Trucks (DPM)	Diesel Particulate												
		Total - All Sources	4.29E-08	5.12E-06	7.52E-04	0.00E+00	0.00E+00	7.59E-04	6.71E-04	0.00E+00	**8.76E-04**	0.00E+00	0.00E+00	7.52E-04

Note: Health risks calculated using HARP2, Risk Assessment Standalone Tool, version 16057 (CARB, 2016).

Maximum Acute Hazard Index 8.76E-04 Eye

* Key to Toxicological Endpoints

CV	Cardiovascular System	RESP	Respiratory System
CNS	Central Nervous System	SKIN	Skin irritation and/or other effects
IMMUN	Immune System	EYE	Eye irritation and/or other effects
KIDN	Kidneys	BONE	Bones and Teeth
GILV	Gastrointestinal Tract and Liver/Alimentary Tract	ENDO	Endocrine System
REPRO	Reproductive System	BLOOD	Hematological System