

Appendix A. Health Risk Assessment

Appendices

This page intentionally left blank.



TECHNICAL MEMORANDUM

DATE March 13, 2018

TO County of Los Angeles, Chief Executive Office
500 West Temple Street, Room 754
Los Angeles, California 90012

FROM Steve Bush, P.E., Senior Engineer

SUBJECT Health Risk Assessment for the Consolidated Correctional Treatment Facility (Men's Central Jail Replacement Project)
COLA-14

1. Introduction

PlaceWorks conducted a health risk assessment (HRA) for the Consolidated Correctional Treatment Facility (Men's Central Jail Replacement Project). The HRA was prepared based upon the request of the South Coast Air Quality Management District's (SCAQMD) due to the proximity of rail lines and Union Station platform facilities to the Project site. As SCAQMD's comment letter to the Draft Environmental Impact Report (DEIR) acknowledges, there are court rulings that hold that CEQA does not require a health risk assessment based on mere proximity to an environmental source of pollution. The state Supreme Court has held that generally CEQA does not require the analysis of the effect of the environment on the proposed project as it is focused on the effect of the proposed project on the environment. Furthermore, the project is not one that expressly requires a health risk assessment, and it is not a project which aggravates an environmental condition, the other exception to the general rule. Notwithstanding this authority, SCAQMD has requested a health risk assessment to supplement the analysis in the DEIR. Although not required, pursuant to the SCAQMD request, the County has completed a health risk assessment (HRA) for the Proposed Project and it is included in Appendix A of this Final EIR.

The HRA was conducted in accordance with relevant and appropriate procedures of the U.S. Environmental Protection Agency (USEPA), California Environmental Protection Agency (CalEPA), and Office of Environmental Health and Hazard Assessment (OEHHA).¹

¹ Office of Environmental Health Hazard Assessment (OEHHA). 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines – Guidance Manual for Preparation of Health Risk Assessments*. Dated February 2015.

1.1 PROJECT LOCATION

The Consolidated Correctional Treatment Facility (CCTF), the Proposed Project, would replace the Men's Central Jail (MCJ) at the same location, a 17.7-acre site owned by the County and bordered by Bauchet Street to the east, North Vignes Street to the south, and train tracks to the west and north in the City of Los Angeles (Project Site). Street addresses for the Project Site include 429, 433, 441, 506, 510, and 550 East Bauchet Street, and 1000 and 1020 North Vignes Street. The County proposes to reuse the existing MCJ site to develop and operate a new CCTF, which would be developed with multiple mid- and high-rise buildings not to exceed 400 feet in height. The CCTF would consist of a new correctional treatment facility that provides integrated Los Angeles Sheriff's Department and County Health Agency staff support functions and incorporates emerging practices to provide mental-health, substance-use-disorder, and medical treatment and educational programs for male and female inmate-patients. The existing buildings would be demolished in two phases so that portions of the existing MCJ may continue functioning while the new CCTF is constructed.

2. Health Risk Assessment

2.1. SOURCE EMISSIONS

Per the request of SCAQMD, the health risks to people serving sentences (inmates) and working (employees) at the Proposed Project were determined from diesel particulate matter (DPM) emissions from locomotives idling at Union Station and traveling along the adjacent railroad easement. Additionally, diesel buses servicing Union Station at Patsaourus Transit Plaza were included in the evaluation.

Locomotive engines generate pollutants, which can impact local air quality. Although locomotive engines produced today meet stringent USEPA emission requirements and use cleaner burning fuels, they still emit significant amounts of DPM, which contributes to public health impacts. Fleet distribution profiles for locomotives traversing the railroad easement west of the site are based upon passenger train information obtained from Metrolink and Amtrak schedules. Accordingly to passenger train schedules for Union Station reported approximately 196 passenger trains per day for weekdays, 95 trains per day on Saturday, and 91 trains per day on Sunday. Metrolink is currently replacing 40 locomotives (of their total 54 locomotive fleet) within locomotives which meet the USEPA's Tier 4 engine standards (EMD F125). Additional locomotive emission factors used in this evaluation were obtained from the San Joaquin Valley Air Pollution Control District's locomotive emission factor methodology, based on the USEPA's Emission Factors for Locomotives Technical Report.² The emission factors for locomotives were based on a representative engine model (EMD F59PHI for Amtrak locomotives and the remaining 14 Metrolink locomotives) operating at a throttle notch of 3

² United States Environmental Protection Agency (USEPA). 2009. *Emission Factors for Locomotives*.

for an average speed of 17 mph, which was the average speed reported observed during a site reconnaissance of the trains near the Project Site on February 23, 2018.³

EPA's Clean Air Nonroad Diesel Rule requires that locomotive and marine diesel fuels meet the ultra-low sulfur classification of 15 parts per million by 2012.⁴ Characterizations of diesel particulate emissions from locomotive activity accounted for the use of ultra-low sulfur diesel fuel, based on the California Air Resources Board (CARB) OFFROAD Modeling Change Technical Memo.⁵

Diesel-bus activity was provided by Los Angeles County Metropolitan Transportation Authority (MTA) for buses servicing Patsaourus Transit Plaza, immediately east of Union Station. DPM emission factors were obtained from CARB's EMFAC2017 emission factor model for buses in LA County (analysis year 2018). Emission rate calculations for the running and idling locomotives and buses are presented in Appendix A.

2.2. AIR DISPERSION MODELING

Air quality modeling using the AERMOD atmospheric dispersion model was performed to assess the impact of emitted compounds on inmates and employees at the Proposed Project. 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. Locomotive idling emissions and bus running and idling emissions were modeled as poly-area sources. Locomotives running along the rail lines east of the Project were modeled as adjacent line volume sources. The model requires additional input parameters, including terrain data and local meteorology. Meteorological data obtained from the SCAQMD for the nearest representative meteorological station (Central Los Angeles) with the latest available years (2010-2011, 2014-2016) of record were used to represent local weather conditions and prevailing winds.

The modeling analysis also considered the spatial distribution and elevation of each emitting source in relation to the receptors. To accommodate the model's Cartesian grid format, direction-dependent calculations were obtained by identifying the Universal Transverse Mercator (UTM) coordinates for each source location. In addition, digital elevation model (DEM) data for the area were obtained and included in the model runs to account for complex terrain. The model's By-Day-of-Week (HRDOW) scalar option was invoked to predict ground-level and flagpole-level concentrations (0 m for ground-floor receptors, 4.6 m for second-floor receptors, and 9.1 m for third-floor receptors).

³ Starcrest Consulting Group, LLC (Starcrest). 2012. *Port of LA Emissions Inventory*.

⁴ United States Environmental Protection Agency (USEPA). 2004. *Regulatory Announcement: Clean Air Nonroad Diesel Rule*.

⁵ California Air Resources Board (CARB). 2006. *OFFROAD Modeling Change Technical Memo, Changes to the Locomotive Inventory*.

For all modeling runs, a unit emission rate of 1 gram per second was used. The unit emission rates were proportioned over the poly-area sources and divided between the volume sources. The AERMOD concentrations from the output files were then multiplied by the emission rates calculated in Appendix A to obtain the maximum exposed receptor (MER) concentrations at the Project Site.

Appendix B contains a graphical representation of the model setup for the Project Buildout scenario and the Phase 1 Construction scenario. The air dispersion model output for the emission sources is presented in Appendix C for each scenario. The DPM concentrations at the MER are provided in Appendix D from the emission sources.

2.3. CARCINOGENIC RISK

A threshold of ten in a million (10×10^{-6}) has been established as a level posing no significant risk for exposures to carcinogens. Health risks associated with exposure to carcinogenic compounds can be defined in terms of the probability of developing cancer as a result of exposure to a chemical at a given concentration. 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 ($\mu\text{g}/\text{m}^3$) 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. 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 ($\text{mg}/\text{kg}/\text{day}$)⁻¹ to derive the cancer risk estimate. Therefore, to accommodate the unique exposures associated with the residential receptors, the following dose algorithm was used.

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

Where:

Dose _{AIR}	=	dose by inhalation (mg/kg-day), per age group/receptor
C _{air}	=	concentration of contaminant in air ($\mu\text{g}/\text{m}^3$)
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 (1×10^6 , 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. For the inmate population and employees, exposure frequencies, exposure durations and number of outdoor hours per week were provided by the County. Inmates typically remain at MCJ and

CCTF for short durations (less than one year) before being transferred to state and outside facilities. The average length of stay for all inmates is 29 days, and the average length of stay for non-violent, non-serious, non-sex sentenced offenders (N3) is 278 days under the State’s 2011 Public Safety Realignment Program (Assembly Bill [AB] 109). The AB109 exposure duration was used as the maximum exposure duration for the inmate population.

Inmates are present at the Project Site 24 hours per day, 7 days per week for their average and AB109 incarceration durations. Employees work 8 hours per day, 5 days per week, and 240 days per year (taking 4 weeks off for holidays and vacation). The majority of employees (90 percent) work indoors. The remaining 10 percent work a combination of indoors and outdoors. Therefore, 0.4 hour per day was used for the employee scenarios assuming 4 hours per day outdoors for 10 percent of employees.

The 95th percentile daily breathing rates (BR/BW), exposure frequency (EF), exposure duration (ED), age sensitivity factors (ASFs), and outdoors hours per day or week for the receptor types are provided herein:

Receptor Type	BR/BW (L/kg-day)	EF (days/yr)	ED (yr)	ASF	Outdoors
Inmates - average	335	29	1	1	3 hours/week
Inmates - AB109	335	278	1	1	3 hours/week
Employees - average	335	240	6	1	0.4 hr/day
Employees - maximum	335	240	25	1	0.4 hr/day

To calculate the overall cancer risk, the risk for each receptor type is calculated per the following equation:

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

Where:

- Dose_{AIR} = dose by inhalation (mg/kg-day), per age group/receptor type
- CPF = cancer potency factor, chemical-specific (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 (70 years)

The CPFs used in the assessment were obtained from OEHHA guidance. 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 1 x 10⁶ (i.e. 1 million). The calculated results are provided in Appendix D.

For the project buildout scenario, air filters with a minimum efficiency rating value (MERV) of 13 were incorporated in the calculations as the Proposed Project includes MERV 13 filters for new buildings. These types of filters are capable of removing approximately 90 percent of particulate matter from air introduced into the HVAC system. For the phase 1 construction scenario, the Project’s current air filter

rating (MERV 8; 70 percent particulate matter removal efficiency) was incorporated in the calculations. A MERV filter rating chart is provided in Appendix E.

2.4. NON-CARCINOGENIC HAZARDS

An evaluation of the potential non-cancer effects of chronic chemical exposures was also conducted. Adverse health effects are evaluated by comparing the annual receptor ground level or flagpole level concentration of each chemical compound with the appropriate reference exposure limit (REL). Available RELs promulgated by OEHHA were considered in the assessment.

To quantify non-carcinogenic impacts, the hazard index approach was used. The hazard index assumes that chronic 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. A health hazard is presumed to exist where the total equals or exceeds one. The chronic hazard analysis for DPM is provided in Appendix D. The calculations contain the relevant exposure concentrations and corresponding reference dose values used in the evaluation of non-carcinogenic exposures.

2.5. RESULTS

The summary results of the HRA are provided in Table 1. In comparison to the threshold level of 10 in a million, carcinogenic risks are below the significance threshold value for both inmates and employees. Additionally, the chronic hazard index identified for each toxicological endpoint totaled less than one for non-carcinogenic effects. Therefore, chronic non-carcinogenic hazards are below the significance threshold.

Table 1 Health Risk Assessment Summary

EMISSION SOURCES	CANCER RISK (PER MILLION)		CHRONIC HAZARDS
	AVERAGE EXPOSURE DURATION	MAXIMUM EXPOSURE DURATION	
Inmates – Project Buildout	0.02	0.19	0.010
Inmates – Phase 1 Construction	0.04	0.39	0.020
Employees – Project Buildout	0.48	2.0	0.005
Employees – Phase 1 Construction	0.75	3.1	0.008
Threshold	10	10	1.0
Exceeds Threshold?	No	No	No


Source: Office of Environmental Health Hazard Assessment, 2015.

3. Conclusions

Based on a comparison to the carcinogenic and non-carcinogenic thresholds established under the California Safe Drinking Water and Toxic Enforcement Act (Proposition 65) and OEHHA, hazardous air emissions generated by locomotives on the adjacent railroad tracks and locomotives and buses at Union Station are not anticipated to pose an actual or potential endangerment to inmates-patients or employees at the Proposed Project.

Respectfully submitted,

PlaceWorks



Steve Bush, PE
Senior Engineer

Appendix A – Emission Rate Calculations

Source 1
Metrolink/Amtrak Locomotives

Operation: Locomotive Emissions along Easement

Operating hours per day	24	Link Length (feet)	885.1 m
Train speed (mph) ¹	17		2,903 ft
Travel time (hr) ²	0.032		0.55 mi
Throttle Notch	3		
Load factor ³	0.24		
Locomotives per train ⁴	1		
Correction factor for low sulfur fuel ⁵	0.72		

	METROLINK			AMTRAK			
	F125	F59PHI	Wt Avg		F59PHI		
Locomotive Type							
Locomotive horsepower ⁶	4,700	3,000	4,259		3,000		hp
No. Locomotives	40	14					
DPM Emission Rate per Locomotive (g/hp-hr) ⁷	0.03	0.13	0.056		0.13		g/hp-hr
Emission Rate per Locomotive (g/hr)			40.0		65.5		g/hr
	Weekday	Saturday	Sunday	Weekday	Saturday	Sunday	
Trains per day ⁸	141	44	38	55	51	53	
Trains per hour	5.88	1.83	1.58	2.29	2.13	2.21	
Emission Rate Along Rail Line Near Project Site	7.61	2.37	2.05	4.86	4.50	4.68	g/hr
	2.11E-03	6.59E-04	5.69E-04	1.35E-03	1.25E-03	1.30E-03	g/sec

Combined Emission Rate (g/s) **3.46E-03** 1.91E-03 1.87E-03 g/sec

AERMOD Parameters	Weekday	Saturday	Sunday
Variable Emission Scalar	1.0	0.55	0.54
Release Height ⁹ (m)	5.6		

- (1) Based on average speed of 17 mph from site reconnaissance (Feb 23, 2018).
- (2) Calculated by dividing distance in miles by a speed of train.
- (3) Based on a throttle notch of 3 for a speed of 17 mph, *Port of LA Emissions Inventory (Starcrest, 2012)*.
- (4) One locomotive observed for 80 percent of Metrolink/Amtrak trains during site reconnaissance (Feb 23, 2018).
- (5) Correction factor for freight trains in South Coast Air Basin after 2011, *Changes to Locomotive Inventory (CARB, 2006)*.
- (6) Horsepower of EMD F59PHI locomotives used by Amtrak and Metrolink, and F125 Tier 4 engines which will be in service for Metrolink by 2019.
- (7) Emission rate is from San Joaquin Valley Air Pollution Control District's Trains Emission Factor worksheets for passenger/commuter locomotives for analysis years 2018. Emission factors based on USEPA's Emission Factors for Locomotives Technical Report (2009). F125 locomotive emission rate based on Tier 4 emission standard.
- (8) From Metrolink and Amtrak train schedules at Union Station.
- (9) Release height for daytime hours (5.6 m), based upon *Toxic Air Contaminant Emissions Inventory and Dispersion Modeling Report for the Los Angeles Transportation Center*, Los Angeles, CA (Sierra Research, Inc., 2007).

Source 2

Metrolink/Amtrak Locomotives

Operation: Locomotive Emissions Idling at Union Station

Operating hours per day	24	hr/day
Idling time	15	min
DPM Idling Emission Rate per Locomotive ¹	67.8	g/hr

Trains per day²

Idling Emissions

METROLINK/AMTRAK			
Weekday	Saturday	Sunday	
196	95	91	
3.32E+03	1.61E+03	1.54E+03	g/day
138.43	67.09	64.27	g/hr
3.85E-02	1.86E-02	1.79E-02	g/sec

AERMOD Parameters

	Weekday	Saturday	Sunday
Variable Emission Scalar	1.0	0.48	0.46
Release Height ³ (m)	5.6		

(1) Emission rate is from San Joaquin Valley Air Pollution Control District's Trains Emission Factor worksheets for passenger/commuter locomotives for analysis. Emission factors based on USEPA's Emission Factors for Locomotives Technical Report (2009).

(2) From Metrolink and Amtrak train schedules at Union Station.

(3) Release height for daytime hours (5.6 m), based upon *Toxic Air Contaminant Emissions Inventory and Dispersion Modeling Report for the Los Angeles Transportation Center*, Los Angeles, CA (Sierra Research, Inc., 2007).

Sigma Values for Railroad

Initial Horizontal Dispersion Parameter (Sigma Y)

$$SY = (\text{source separation distance})/2.15$$

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)

Width of Traveled Way (m)

30.5

Average Wind Speed (m/s)

2.34

Source Separation Distance (m)

30.5

SY = **14.18**

SZ = **2.89**

Source 3
Patsaourus Transit Plaza - Buses
East of Union Station
Los Angeles, CA 90012

Operation: Diesel Buses

Temporal Profile:	hours	days	weeks
	21	7	52
	0	0	0

Bus Activity:¹

Diesel Buses	202	Buses/day
Miles Traveled/Trip (Ingress/Egress)	0.32	miles
Idling Duration	1	min

Running Emissions:

Buses	
Emission Factor (g/mi) ²	0.0107
Running Emissions (g/sec)	9.21E-06

Idling Emissions:

Buses	Student
Emission Factor (g/hr) ³	0.1485
Idling Emissions (g/sec)	6.61E-06

Combined Emissions (g/sec) 1.58E-05

- (1) Bus activity provided by Los Angeles County Metropolitan Transportation Authority (MTA).
- (2) For DPM, PM10 running emission factors for urban buses obtained from CARB (EMFAC2017) for analysis year 2018. Based upon an average lot travel speed of 5 mph.
- (3) For DPM, PM10 idling emission factors for school buses obtained from CARB (EMFAC2017) for analysis year 2018 (urban bus idling emission rates not available via EMFAC2017).

UNION STATION TRAINS

12 Amtrak/Metrolink tracks

6 island platforms for Amtrak/Metrolink

Train	Line	Weekday	Weekend			
			Saturday	Sunday		
Metrolink	91 Line	9	4	4		
	Antelope Valley Line	30	12	12		
	Orange County Line	21	8	8		
	Riverside Line	12	0	0		
	San Bernardino Line	38	20	14		
	Ventura County Line	31	0	0		
Amtrak	Coast Starlight	4	4	4		
	Southwest Chief	2	2	2		
	Sunset Unlimited	2	0	1	3 times a week - Wed, Friday, Monday arrival; 3 times a week - Sun, Wed, Fri departure	
	Texas Eagle	2	0	1	Same schedule as Sunset Unlimited	
	Pacific Surfliner		21	21	21	Southbound
			24	24	24	Northbound
	Total	196	95	91		

Metrolink trains being replaced with Tier 4 locomotives

All 40 locomotives will be in service by the end of 2018

F125 manufactured by Caterpillar; 4700 hp

Previous locomotives EMD F59PH and then MPI MP36 PH-3C; all F59PHs scheduled to be replaced

Total fleet - 54 locomotives, so 14 locomotives will not be Tier 4

Amtrak has a variety of locomotives in use.

TABLE A
Men's Central Jail - Site Reconnaissance
February 23, 2018 - 1:35 PM to 3:50 PM

Bolero Ln and Bloom St.									
time	owner/ operator	# locomotives	locomotive number	# freight cars	# passenger cars	elapsed time (s)	direction	speed (mph)	notes
1:38 PM	Metrolink	1	869	0	5	20	S	16	
1:43 PM	Amtrak	2	456, 90208	0	7	27	S	18	
1:59 PM	Metrolink	1	872	0	4	12	N	23	
1:59 PM	Metrolink	1	876	0	5	22	N	15	
2:04 PM	Metrolink	1	900	0	4		S		
2:14 PM	Metrolink	1	852	0	6	24	N	16	
2:27 PM	Metrolink	2	863, 890	0	8	32	S	17	one locomotive in middle of train
2:48 PM	Amtrak	1	451	0	6	18	S	22	
2:49 PM	Metrolink	1	881	0	4		S		
2:51 PM	Metrolink	1	863	0	4		N		
2:57 PM	Metrolink	2	800, 894	0	6	39	S	11	locomotive at each end
3:04 PM	Amtrak	1	461	0	6	21	N	18	
3:05 PM	Metrolink	1	869	0	5	21	N	16	
3:08 PM	Amtrak	1	451	0	6	28	N	14	
3:11 PM	Metrolink	1	880	0	5	20	S	16	
3:14 PM	Metrolink	2	864, 879	0	8	46	S	12	one locomotive in middle of train
3:14 PM	Metrolink	1	890	0	4	10	N	27	
3:21 PM	Amtrak	1	459	0	6		S		
3:22 PM	Metrolink	2	894, 800	0	6		N		
3:23 PM	Metrolink	1	857	0	4	25	S	11	
3:30 PM	Metrolink	1	898	0	6	31.5	S	12	
3:31 PM	Metrolink	1	900	0	4	17.5	N	16	
3:38 PM	Metrolink	1	874	0	4	15	S	18	
3:40 PM	Metrolink	1	884	0	5	23	N	14	
3:40 PM	Metrolink			0			N		Directly behind other train
3:41 PM	Metrolink	2	902, 908	0	5	45.5	S	8	
3:42 PM	Metrolink	1	859	0	4	16.5	S	16	
3:45 PM	Metrolink	1	881	0	4	12.5	N	22	
3:49 PM	Metrolink	1	857	0	4	10.5	N	26	
		1.2						17	Average

LOS ANGELES DWTN USC CAMPUS, CALIFORNIA

Period of Record General Climate Summary - Temperature

Station:(045115) LOS ANGELES CIVIC CENTE															
From Year=1906 To Year=2012															
	Monthly Averages			Daily Extremes				Monthly Extremes				Max. Temp.		Min. Temp.	
	Max.	Min.	Mean	High	Date	Low	Date	Highest Mean	Year	Lowest Mean	Year	>= 90 F	<= 32 F	<= 32 F	<= 0 F
	F	F	F	F	dd/yyyy or yyyymmdd	F	dd/yyyy or yyyymmdd	F	-	F	-	# Days	# Days	# Days	# Days
January	66.4	48.3	57.3	95	18/1971	28	07/1913	65.9	1986	46.9	1949	0.1	0.0	0.1	0.0
February	67.3	49.5	58.4	95	20/1995	25	19/1911	65.3	1995	51.9	1911	0.1	0.0	0.0	0.0
March	68.8	51.1	60.0	98	26/1988	35	04/1976	66.0	1931	54.6	1945	0.2	0.0	0.0	0.0
April	71.0	53.5	62.2	106	06/1989	39	07/1975	69.6	1992	56.0	1975	0.8	0.0	0.0	0.0
May	72.9	56.5	64.7	102	16/1967	40	12/1933	72.6	1997	58.7	1917	0.8	0.0	0.0	0.0
June	76.9	59.7	68.3	112	26/1990	49	01/1917	77.4	1981	63.4	1944	1.2	0.0	0.0	0.0
July	82.3	63.2	72.7	107	01/1985	53	17/1907	79.9	2006	66.6	1944	3.1	0.0	0.0	0.0
August	83.1	63.8	73.4	105	06/1983	52	25/1909	80.8	1983	68.1	1914	4.1	0.0	0.0	0.0
September	81.9	62.6	72.3	113	27/2010	50	22/1921	81.3	1984	64.6	1933	4.9	0.0	0.0	0.0
October	77.6	58.7	68.1	108	03/1987	41	30/1971	74.2	1983	59.7	1916	3.1	0.0	0.0	0.0
November	72.8	53.3	63.0	100	01/1966	37	28/1919	68.9	1932	57.9	1906	0.8	0.0	0.0	0.0
December	67.4	49.1	58.2	92	08/1938	30	08/1978	64.2	1939	52.6	1916	0.0	0.0	0.0	0.0
Annual	74.0	55.8	64.9	113	20100927	25	19110219	68.9	1981	60.9	1916	19.5	0.0	0.1	0.0
Winter	67.0	49.0	58.0	95	19710118	25	19110219	63.3	1986	51.0	1949	0.2	0.0	0.1	0.0

Spring	70.9	53.7	62.3	106	19890406	35	19760304	67.8	1997	57.8	1917	1.9	0.0	0.0	0.0
Summer	80.8	62.2	71.5	112	19900626	49	19170601	77.6	1981	66.4	1916	8.5	0.0	0.0	0.0
Fall	77.4	58.2	67.8	113	20100927	37	19191128	72.2	1983	61.4	1916	8.8	0.0	0.0	0.0

Table updated on Oct 31, 2012

For monthly and annual means, thresholds, and sums:

Months with 5 or more missing days are not considered

Years with 1 or more missing months are not considered

Seasons are climatological not calendar seasons

Winter = Dec., Jan., and Feb. Spring = Mar., Apr., and May

Summer = Jun., Jul., and Aug. Fall = Sep., Oct., and Nov.

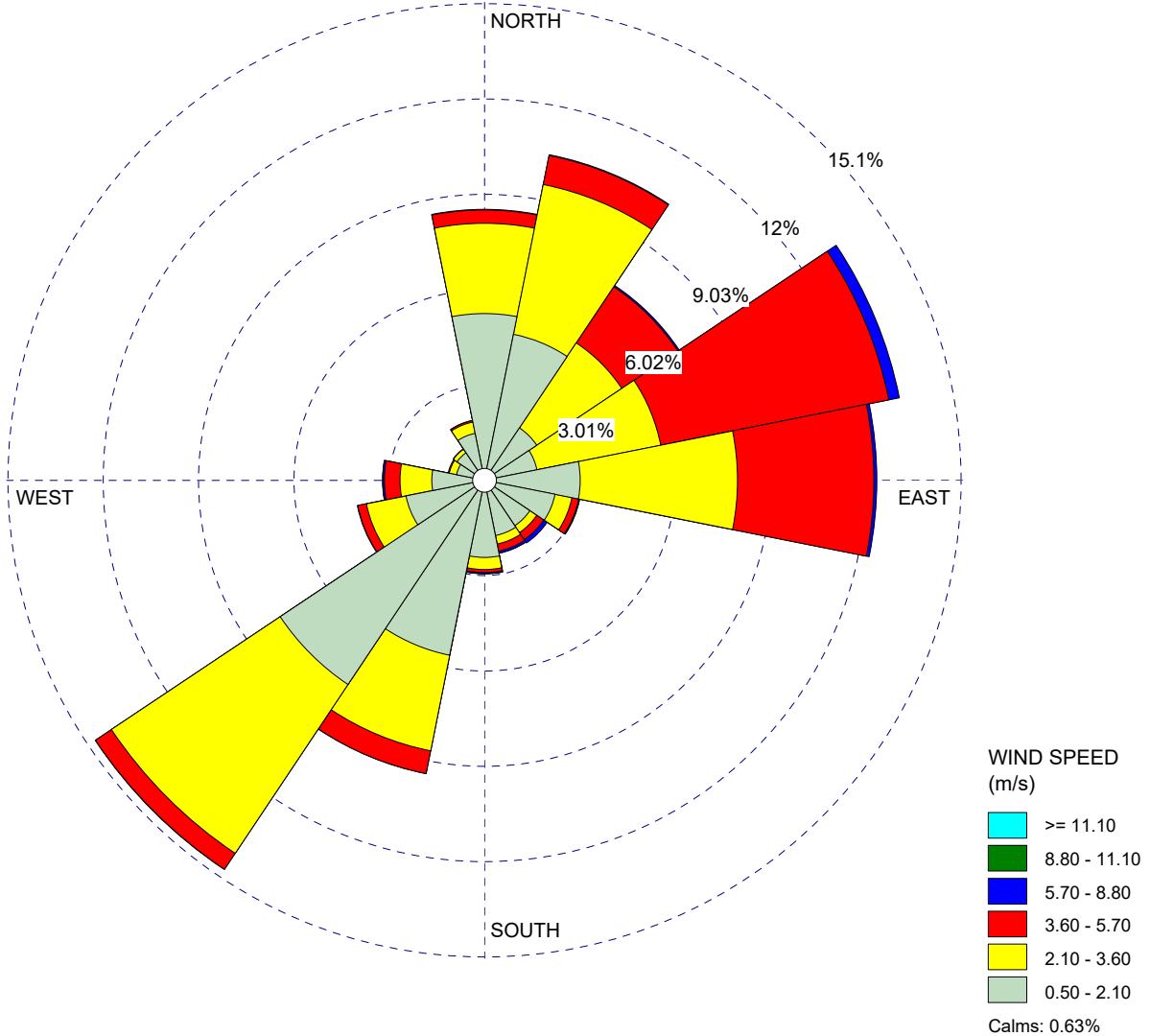
Western Regional Climate Center, wrcc@dri.edu

WIND ROSE PLOT:

**Central LA Meteorological Station
2010-2011, 2014-2016**

DISPLAY:

**Wind Speed
Flow Vector (blowing to)**



COMMENTS:

24 hours/day

DATA PERIOD:

**Start Date: 1/1/2010 - 00:00
End Date: 12/31/2016 - 23:59**

COMPANY NAME:

MODELER:

CALM WINDS:

0.63%

TOTAL COUNT:

43459 hrs.

AVG. WIND SPEED:

2.34 m/s

DATE:

3/7/2018

PROJECT NO.:

COLA-14

Appendix B – Graphical Representation of Model

Model Setup - Project Buildout

Source 1: Metrolink/Amtrak Locomotives

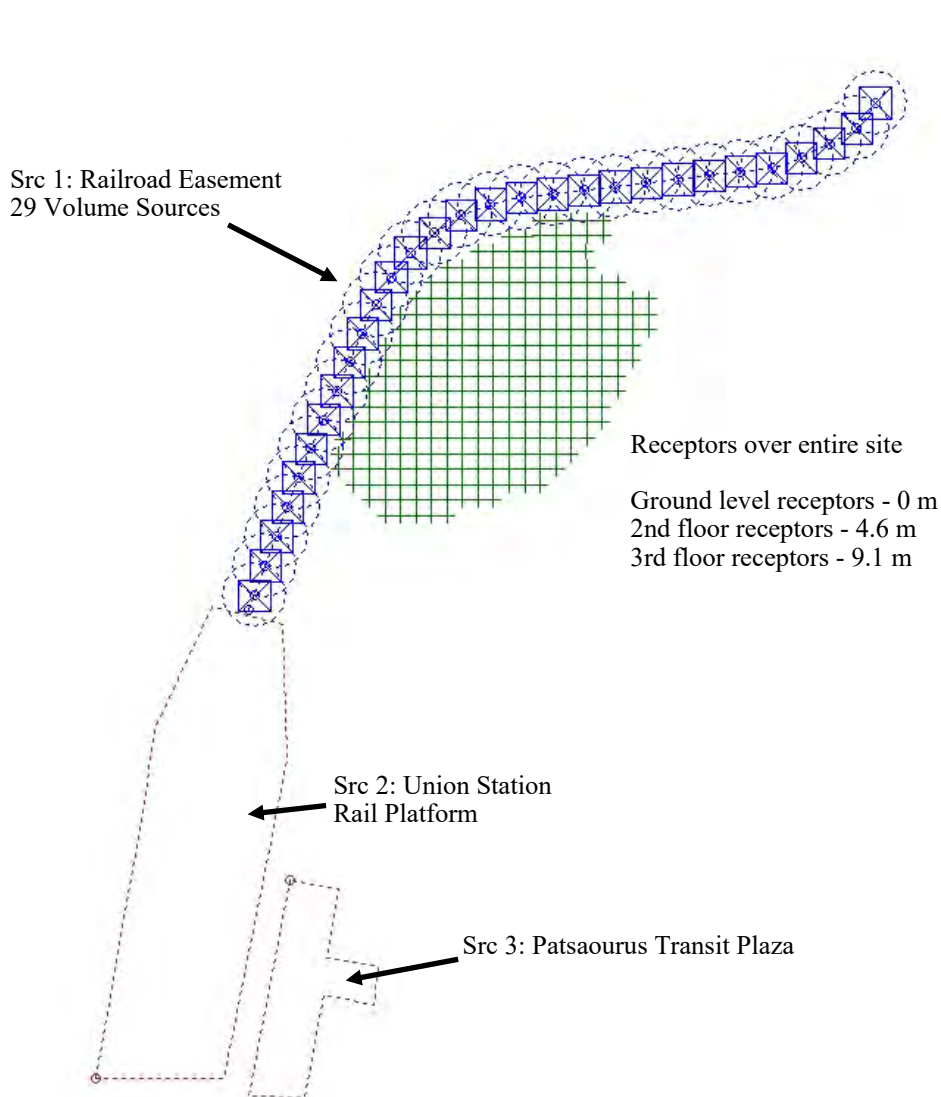
Running along railroad easement (volume sources L0000001-29)

Source 2: Metrolink/Amtrak Locomotives

- Idling at Union Station (area source)

Source 3: MTA buses (diesel-fueled)

- Running and idling at Patsaourus Transit Plaza (area source)



- Locomotives: average release height for daytime hours (5.6 m) based upon *Toxic Air Contaminant Emissions Inventory and Dispersion Modeling Report for the Los Angeles Transportation Center, Los Angeles, CA* (Sierra Research, Inc., 2007).

- Buses: 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).

Model Setup - Phase 1 Construction

Source 1: Metrolink/Amtrak Locomotives

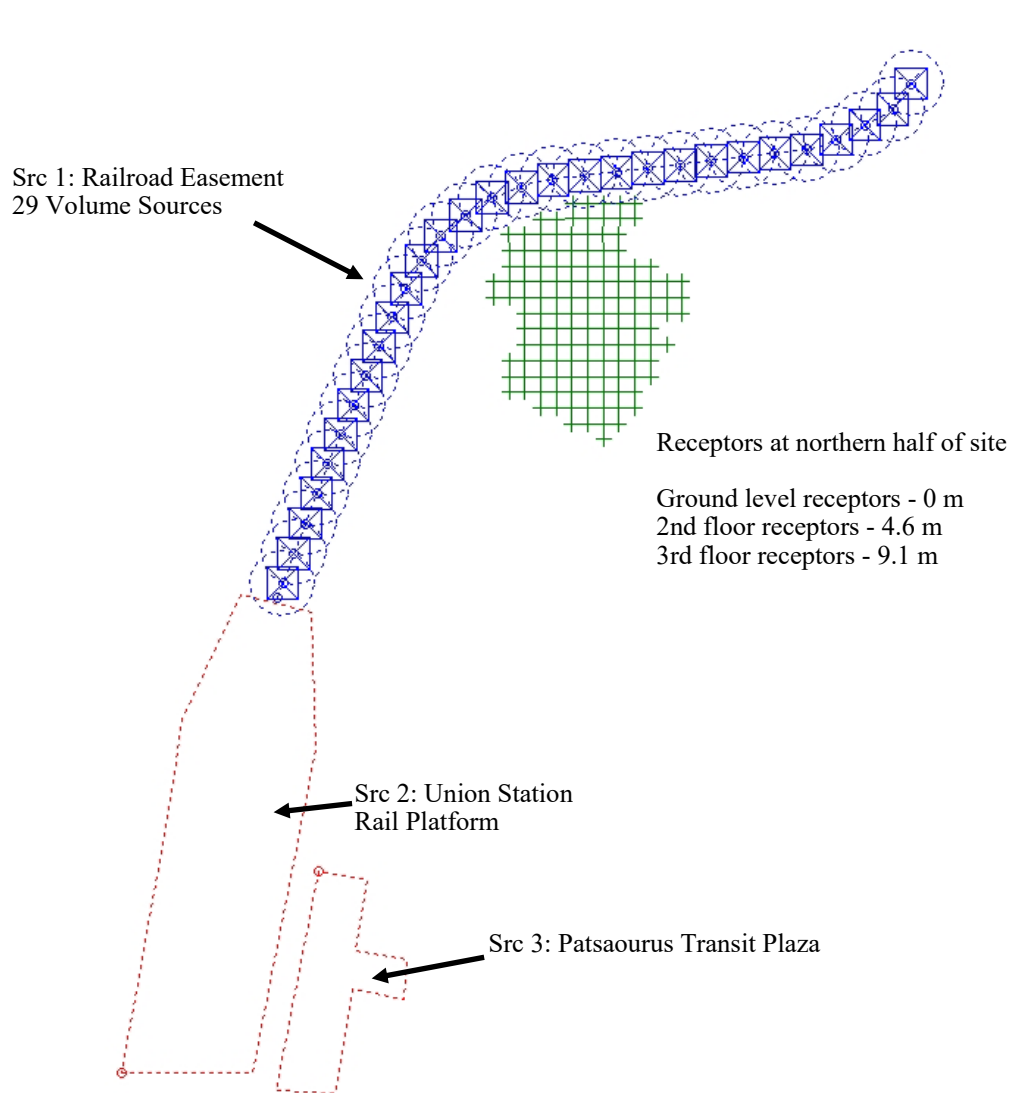
Running along railroad easement (volume sources L0000001-29)

Source 2: Metrolink/Amtrak Locomotives

- Idling at Union Station (area source)

Source 3: MTA buses (diesel-fueled)

- Running and idling at Patsaourus Transit Plaza (area source)



- Locomotives: average release height for daytime hours (5.6 m) based upon *Toxic Air Contaminant Emissions Inventory and Dispersion Modeling Report for the Los Angeles Transportation Center, Los Angeles, CA* (Sierra Research, Inc., 2007).

- Buses: 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).

Appendix C – Air Dispersion Model Output

Output Summary - Project Buildout
Unit Emission Rates (1 g/s)

Results Summary

Mens Central Jail HRA
Union Station

Concentration - Source Group: 1

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		56.39146	ug/m^3	386279.20	3769548.24	89.18	0.00	89.18	

Concentration - Source Group: 2

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		8.05115	ug/m^3	386279.20	3769398.24	88.66	0.00	88.66	

Concentration - Source Group: 3

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		4.15335	ug/m^3	386279.20	3769398.24	88.66	9.10	88.66	

Model Output - Project Buildout Unit Emission Rates (1 g/s)

**The AERMET Input Meteorological Data Version Date: 16216

**Output Options Selected:

Model Outputs Tables of PERIOD Averages by Receptor

Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

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

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 87.00 ; 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: MCJ.err

**File for Summary of Results: MCJ.sum

Model Output - Project Buildout Unit Emission Rates (1 g/s)

*** AERMOD - VERSION 16216r *** *** Mens Central Jail HRA
 *** AERMET - VERSION 16216 *** *** Union Station

*** 03/07/18
 *** 14:45:07
 PAGE 2

*** MODELOPTs: RegDFault CONC ELEV FLGPOL URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
L0000001	0	0.34483E-01	386153.1	3769320.9	87.4	5.60	14.18	2.89	YES	HRDOW
L0000002	0	0.34483E-01	386163.9	3769349.4	87.8	5.60	14.18	2.89	YES	HRDOW
L0000003	0	0.34483E-01	386174.6	3769377.9	88.1	5.60	14.18	2.89	YES	HRDOW
L0000004	0	0.34483E-01	386185.3	3769406.5	88.5	5.60	14.18	2.89	YES	HRDOW
L0000005	0	0.34483E-01	386196.0	3769435.0	88.8	5.60	14.18	2.89	YES	HRDOW
L0000006	0	0.34483E-01	386208.1	3769463.0	89.1	5.60	14.18	2.89	YES	HRDOW
L0000007	0	0.34483E-01	386220.5	3769490.8	89.2	5.60	14.18	2.89	YES	HRDOW
L0000008	0	0.34483E-01	386232.9	3769518.7	89.2	5.60	14.18	2.89	YES	HRDOW
L0000009	0	0.34483E-01	386245.3	3769546.5	89.2	5.60	14.18	2.89	YES	HRDOW
L0000010	0	0.34483E-01	386257.6	3769574.4	89.2	5.60	14.18	2.89	YES	HRDOW
L0000011	0	0.34483E-01	386270.7	3769601.9	89.2	5.60	14.18	2.89	YES	HRDOW
L0000012	0	0.34483E-01	386285.3	3769628.6	89.2	5.60	14.18	2.89	YES	HRDOW
L0000013	0	0.34483E-01	386304.0	3769652.4	89.2	5.60	14.18	2.89	YES	HRDOW
L0000014	0	0.34483E-01	386327.4	3769671.7	89.2	5.60	14.18	2.89	YES	HRDOW
L0000015	0	0.34483E-01	386352.7	3769688.6	89.3	5.60	14.18	2.89	YES	HRDOW
L0000016	0	0.34483E-01	386381.4	3769699.0	89.3	5.60	14.18	2.89	YES	HRDOW
L0000017	0	0.34483E-01	386411.0	3769705.7	89.3	5.60	14.18	2.89	YES	HRDOW
L0000018	0	0.34483E-01	386441.3	3769709.3	89.3	5.60	14.18	2.89	YES	HRDOW
L0000019	0	0.34483E-01	386471.5	3769712.9	89.2	5.60	14.18	2.89	YES	HRDOW
L0000020	0	0.34483E-01	386501.8	3769716.5	89.2	5.60	14.18	2.89	YES	HRDOW
L0000021	0	0.34483E-01	386532.1	3769720.0	89.1	5.60	14.18	2.89	YES	HRDOW
L0000022	0	0.34483E-01	386562.4	3769723.6	88.9	5.60	14.18	2.89	YES	HRDOW
L0000023	0	0.34483E-01	386592.6	3769727.2	88.7	5.60	14.18	2.89	YES	HRDOW
L0000024	0	0.34483E-01	386622.9	3769730.8	88.2	5.60	14.18	2.89	YES	HRDOW
L0000025	0	0.34483E-01	386653.2	3769734.4	87.8	5.60	14.18	2.89	YES	HRDOW
L0000026	0	0.34483E-01	386681.6	3769744.1	87.2	5.60	14.18	2.89	YES	HRDOW
L0000027	0	0.34483E-01	386708.7	3769758.0	86.8	5.60	14.18	2.89	YES	HRDOW
L0000028	0	0.34483E-01	386735.1	3769772.7	86.5	5.60	14.18	2.89	YES	HRDOW
L0000029	0	0.34483E-01	386753.1	3769797.3	86.5	5.60	14.18	2.89	YES	HRDOW

Model Output - Project Buildout Unit Emission Rates (1 g/s)

*** AERMOD - VERSION 16216r *** *** Mens Central Jail HRA
 *** AERMET - VERSION 16216 *** *** Union Station

*** 03/07/18
 *** 14:45:07
 PAGE 3

*** MODELOPTs: RegDEFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** AREAPOLY SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	LOCATION OF AREA X Y (METERS) (METERS)		BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	NUMBER OF VERTS.	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
2	0	0.18557E-04	385999.3	3768853.9	86.1	5.60	7	2.60	YES	HRDOW
3	0	0.79001E-04	386186.9	3769046.3	86.2	4.15	8	1.93	YES	HRDOW

Model Output - Project Buildout
Unit Emission Rates (1 g/s)

*** AERMOD - VERSION 16216r *** *** Mens Central Jail HRA
*** AERMET - VERSION 16216 *** *** Union Station
*** MODELOPTs: RegDEFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** 03/07/18
*** 14:45:07
 PAGE 4

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
-----	-----
1	L0000001 , L0000002 , L0000003 , L0000004 , L0000005 , L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 , L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 , L0000020 , L0000021 , L0000022 , L0000023 , L0000024 , L0000025 , L0000026 , L0000027 , L0000028 , L0000029 ,
2	2 ,
3	3 ,

Model Output - Project Buildout
Unit Emission Rates (1 g/s)

*** AERMOD - VERSION 16216r *** *** Mens Central Jail HRA
*** AERMET - VERSION 16216 *** *** Union Station

*** 03/07/18
*** 14:45:07
 PAGE 5

*** MODELOPTs: RegDEFAULT CONC ELEV FLGPOL URBAN ADJ_U*

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

URBAN ID	URBAN POP	SOURCE IDs								
-----	-----	-----								
L0000007	9818605. 2	, L0000001	, L0000002	, L0000003	, L0000004	, L0000005	, L0000006	,		
		L0000008	, L0000009	, L0000010	, L0000011	, L0000012	, L0000013	, L0000014	, L0000015	,
		L0000016	, L0000017	, L0000018	, L0000019	, L0000020	, L0000021	, L0000022	, L0000023	,
		L0000024	, L0000025	, L0000026	, L0000027	, L0000028	, L0000029	, 3	,	

Model Output - Project Buildout Unit Emission Rates (1 g/s)

```

*** AERMOD - VERSION 16216r ***   *** Mens Central Jail HRA   ***   03/07/18
*** AERMET - VERSION 16216 ***   *** Union Station           ***   14:45:07
                                                                    ***   PAGE 6
  
```

*** MODELOPTs: RegDEFAULT CONC ELEV FLGPOL URBAN ADJ_U*

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

SOURCE ID = 2 ; SOURCE TYPE = AREAPOLY :

HR	SCALAR	HR	SCALAR	HR	SCALAR	HR	SCALAR	HR	SCALAR	HR	SCALAR	HR	SCALAR	HR	SCALAR
DAY OF WEEK = WEEKDAY															
1	.1000E+01	2	.1000E+01	3	.1000E+01	4	.1000E+01	5	.1000E+01	6	.1000E+01	7	.1000E+01	8	.1000E+01
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	.1000E+01	18	.1000E+01	19	.1000E+01	20	.1000E+01	21	.1000E+01	22	.1000E+01	23	.1000E+01	24	.1000E+01
DAY OF WEEK = SATURDAY															
1	.4800E+00	2	.4800E+00	3	.4800E+00	4	.4800E+00	5	.4800E+00	6	.4800E+00	7	.4800E+00	8	.4800E+00
9	.4800E+00	10	.4800E+00	11	.4800E+00	12	.4800E+00	13	.4800E+00	14	.4800E+00	15	.4800E+00	16	.4800E+00
17	.4800E+00	18	.4800E+00	19	.4800E+00	20	.4800E+00	21	.4800E+00	22	.4800E+00	23	.4800E+00	24	.4800E+00
DAY OF WEEK = SUNDAY															
1	.4600E+00	2	.4600E+00	3	.4600E+00	4	.4600E+00	5	.4600E+00	6	.4600E+00	7	.4600E+00	8	.4600E+00
9	.4600E+00	10	.4600E+00	11	.4600E+00	12	.4600E+00	13	.4600E+00	14	.4600E+00	15	.4600E+00	16	.4600E+00
17	.4600E+00	18	.4600E+00	19	.4600E+00	20	.4600E+00	21	.4600E+00	22	.4600E+00	23	.4600E+00	24	.4600E+00

```

*** AERMOD - VERSION 16216r ***   *** Mens Central Jail HRA   ***   03/07/18
*** AERMET - VERSION 16216 ***   *** Union Station           ***   14:45:07
                                                                    ***   PAGE 7
  
```

*** MODELOPTs: RegDEFAULT CONC ELEV FLGPOL URBAN ADJ_U*

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

SOURCE ID = L0000001 to L0000029 ; SOURCE TYPE = VOLUME :

HR	SCALAR	HR	SCALAR	HR	SCALAR	HR	SCALAR	HR	SCALAR	HR	SCALAR	HR	SCALAR	HR	SCALAR
DAY OF WEEK = WEEKDAY															
1	.1000E+01	2	.1000E+01	3	.1000E+01	4	.1000E+01	5	.1000E+01	6	.1000E+01	7	.1000E+01	8	.1000E+01
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	.1000E+01	18	.1000E+01	19	.1000E+01	20	.1000E+01	21	.1000E+01	22	.1000E+01	23	.1000E+01	24	.1000E+01
DAY OF WEEK = SATURDAY															
1	.5500E+00	2	.5500E+00	3	.5500E+00	4	.5500E+00	5	.5500E+00	6	.5500E+00	7	.5500E+00	8	.5500E+00
9	.5500E+00	10	.5500E+00	11	.5500E+00	12	.5500E+00	13	.5500E+00	14	.5500E+00	15	.5500E+00	16	.5500E+00
17	.5500E+00	18	.5500E+00	19	.5500E+00	20	.5500E+00	21	.5500E+00	22	.5500E+00	23	.5500E+00	24	.5500E+00
DAY OF WEEK = SUNDAY															
1	.5400E+00	2	.5400E+00	3	.5400E+00	4	.5400E+00	5	.5400E+00	6	.5400E+00	7	.5400E+00	8	.5400E+00
9	.5400E+00	10	.5400E+00	11	.5400E+00	12	.5400E+00	13	.5400E+00	14	.5400E+00	15	.5400E+00	16	.5400E+00
17	.5400E+00	18	.5400E+00	19	.5400E+00	20	.5400E+00	21	.5400E+00	22	.5400E+00	23	.5400E+00	24	.5400E+00

Model Output - Project Buildout Unit Emission Rates (1 g/s)

```

*** AERMOD - VERSION 16216r ***   *** Mens Central Jail HRA   ***   03/07/18
*** AERMET - VERSION 16216 ***   *** Union Station   ***   14:45:07
                                     ***   PAGE 36

```

```

*** MODELOPTs:   RegDEFAULT CONC ELEV FLGPOL URBAN ADJ_U*

```

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

SOURCE ID = 3		; SOURCE TYPE = AREAPOLY :													
HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
DAY OF WEEK = WEEKDAY															
1	.1000E+01	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.1000E+01	6	.1000E+01	7	.1000E+01	8	.1000E+01
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	.1000E+01	18	.1000E+01	19	.1000E+01	20	.1000E+01	21	.1000E+01	22	.1000E+01	23	.1000E+01	24	.1000E+01
DAY OF WEEK = SATURDAY															
1	.1000E+01	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.1000E+01	6	.1000E+01	7	.1000E+01	8	.1000E+01
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	.1000E+01	18	.1000E+01	19	.1000E+01	20	.1000E+01	21	.1000E+01	22	.1000E+01	23	.1000E+01	24	.1000E+01
DAY OF WEEK = SUNDAY															
1	.1000E+01	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.1000E+01	6	.1000E+01	7	.1000E+01	8	.1000E+01
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	.1000E+01	18	.1000E+01	19	.1000E+01	20	.1000E+01	21	.1000E+01	22	.1000E+01	23	.1000E+01	24	.1000E+01

Model Output - Project Buildout
Unit Emission Rates (1 g/s)

*** AERMOD - VERSION 16216r ***
*** AERMET - VERSION 16216 ***

*** Mens Central Jail HRA
*** Union Station

*** 03/07/18
*** 14:45:07
PAGE 39

*** MODELOPTs: RegDEFAULT CONC ELEV FLGPOL URBAN ADJ_U*

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

(386339.2, 3769578.2,	89.3,	89.3,	0.0);	(386354.2, 3769578.2,	89.3,	89.3,	0.0);
(386369.2, 3769578.2,	89.3,	89.3,	0.0);	(386384.2, 3769578.2,	89.3,	89.3,	0.0);
(386399.2, 3769578.2,	89.3,	89.3,	0.0);	(386414.2, 3769578.2,	89.4,	89.4,	0.0);
(386429.2, 3769578.2,	89.4,	89.4,	0.0);	(386444.2, 3769578.2,	89.4,	89.4,	0.0);
(386459.2, 3769578.2,	89.4,	89.4,	0.0);	(386474.2, 3769578.2,	89.3,	89.3,	0.0);
(386489.2, 3769578.2,	89.2,	89.2,	0.0);	(386504.2, 3769578.2,	89.2,	89.2,	0.0);
(386519.2, 3769578.2,	89.2,	89.2,	0.0);	(386534.2, 3769578.2,	89.2,	89.2,	0.0);
(386294.2, 3769593.2,	89.2,	89.2,	0.0);	(386309.2, 3769593.2,	89.2,	89.2,	0.0);
(386324.2, 3769593.2,	89.2,	89.2,	0.0);	(386339.2, 3769593.2,	89.3,	89.3,	0.0);
(386354.2, 3769593.2,	89.3,	89.3,	0.0);	(386369.2, 3769593.2,	89.3,	89.3,	0.0);
(386384.2, 3769593.2,	89.3,	89.3,	0.0);	(386399.2, 3769593.2,	89.4,	89.4,	0.0);
(386414.2, 3769593.2,	89.4,	89.4,	0.0);	(386429.2, 3769593.2,	89.4,	89.4,	0.0);
(386444.2, 3769593.2,	89.4,	89.4,	0.0);	(386459.2, 3769593.2,	89.4,	89.4,	0.0);
(386474.2, 3769593.2,	89.3,	89.3,	0.0);	(386489.2, 3769593.2,	89.2,	89.2,	0.0);
(386504.2, 3769593.2,	89.2,	89.2,	0.0);	(386519.2, 3769593.2,	89.2,	89.2,	0.0);
(386534.2, 3769593.2,	89.2,	89.2,	0.0);	(386309.2, 3769608.2,	89.2,	89.2,	0.0);
(386324.2, 3769608.2,	89.2,	89.2,	0.0);	(386339.2, 3769608.2,	89.2,	89.2,	0.0);
(386354.2, 3769608.2,	89.3,	89.3,	0.0);	(386369.2, 3769608.2,	89.3,	89.3,	0.0);
(386384.2, 3769608.2,	89.3,	89.3,	0.0);	(386399.2, 3769608.2,	89.4,	89.4,	0.0);
(386414.2, 3769608.2,	89.4,	89.4,	0.0);	(386429.2, 3769608.2,	89.4,	89.4,	0.0);
(386444.2, 3769608.2,	89.4,	89.4,	0.0);	(386459.2, 3769608.2,	89.4,	89.4,	0.0);
(386474.2, 3769608.2,	89.3,	89.3,	0.0);	(386489.2, 3769608.2,	89.2,	89.2,	0.0);
(386504.2, 3769608.2,	89.2,	89.2,	0.0);	(386519.2, 3769608.2,	89.2,	89.2,	0.0);
(386534.2, 3769608.2,	89.2,	89.2,	0.0);	(386324.2, 3769623.2,	89.2,	89.2,	0.0);
(386339.2, 3769623.2,	89.2,	89.2,	0.0);	(386354.2, 3769623.2,	89.2,	89.2,	0.0);
(386369.2, 3769623.2,	89.3,	89.3,	0.0);	(386384.2, 3769623.2,	89.3,	89.3,	0.0);
(386399.2, 3769623.2,	89.3,	89.3,	0.0);	(386414.2, 3769623.2,	89.4,	89.4,	0.0);
(386429.2, 3769623.2,	89.4,	89.4,	0.0);	(386444.2, 3769623.2,	89.4,	89.4,	0.0);
(386459.2, 3769623.2,	89.4,	89.4,	0.0);	(386474.2, 3769623.2,	89.3,	89.3,	0.0);
(386489.2, 3769623.2,	89.3,	89.3,	0.0);	(386504.2, 3769623.2,	89.3,	89.3,	0.0);
(386339.2, 3769638.2,	89.2,	89.2,	0.0);	(386354.2, 3769638.2,	89.2,	89.2,	0.0);
(386369.2, 3769638.2,	89.2,	89.2,	0.0);	(386384.2, 3769638.2,	89.3,	89.3,	0.0);
(386399.2, 3769638.2,	89.3,	89.3,	0.0);	(386414.2, 3769638.2,	89.3,	89.3,	0.0);
(386429.2, 3769638.2,	89.3,	89.3,	0.0);	(386444.2, 3769638.2,	89.4,	89.4,	0.0);
(386459.2, 3769638.2,	89.4,	89.4,	0.0);	(386474.2, 3769638.2,	89.3,	89.3,	0.0);
(386369.2, 3769653.2,	89.2,	89.2,	0.0);	(386384.2, 3769653.2,	89.3,	89.3,	0.0);
(386399.2, 3769653.2,	89.3,	89.3,	0.0);	(386414.2, 3769653.2,	89.3,	89.3,	0.0);
(386429.2, 3769653.2,	89.4,	89.4,	0.0);	(386444.2, 3769653.2,	89.4,	89.4,	0.0);
(386399.2, 3769668.2,	89.3,	89.3,	0.0);	(386414.2, 3769668.2,	89.3,	89.3,	0.0);
(386429.5, 3769668.6,	89.4,	89.4,	0.0);	(386444.5, 3769668.6,	89.4,	89.4,	0.0);
(386459.5, 3769668.6,	89.4,	89.4,	0.0);	(386474.5, 3769668.6,	89.4,	89.4,	0.0);
(386489.5, 3769668.6,	89.4,	89.4,	0.0);	(386429.5, 3769683.6,	89.4,	89.4,	0.0);

Model Output - Project Buildout
Unit Emission Rates (1 g/s)

(386444.5, 3769683.6,	89.4,	89.4,	0.0);	(386459.5, 3769683.6,	89.4,	89.4,	0.0);
(386474.5, 3769683.6,	89.4,	89.4,	0.0);	(386489.5, 3769683.6,	89.3,	89.3,	0.0);
(386458.5, 3769653.0,	89.4,	89.4,	0.0);	(386473.5, 3769653.0,	89.4,	89.4,	0.0);
(386279.2, 3769398.2,	88.7,	88.7,	4.6);	(386294.2, 3769398.2,	88.7,	88.7,	4.6);
(386309.2, 3769398.2,	88.7,	88.7,	4.6);	(386324.2, 3769398.2,	88.8,	88.8,	4.6);
(386339.2, 3769398.2,	88.8,	88.8,	4.6);	(386264.2, 3769413.2,	88.7,	88.7,	4.6);
(386279.2, 3769413.2,	88.7,	88.7,	4.6);	(386294.2, 3769413.2,	88.8,	88.8,	4.6);
(386309.2, 3769413.2,	88.8,	88.8,	4.6);	(386324.2, 3769413.2,	88.8,	88.8,	4.6);
(386339.2, 3769413.2,	88.9,	88.9,	4.6);	(386354.2, 3769413.2,	88.9,	88.9,	4.6);
(386369.2, 3769413.2,	88.9,	88.9,	4.6);	(386384.2, 3769413.2,	88.9,	88.9,	4.6);
(386249.2, 3769428.2,	88.8,	88.8,	4.6);	(386264.2, 3769428.2,	88.8,	88.8,	4.6);
(386279.2, 3769428.2,	88.9,	88.9,	4.6);	(386294.2, 3769428.2,	88.9,	88.9,	4.6);
(386309.2, 3769428.2,	89.0,	89.0,	4.6);	(386324.2, 3769428.2,	89.0,	89.0,	4.6);
(386339.2, 3769428.2,	89.0,	89.0,	4.6);	(386354.2, 3769428.2,	89.0,	89.0,	4.6);
(386369.2, 3769428.2,	89.0,	89.0,	4.6);	(386384.2, 3769428.2,	89.0,	89.0,	4.6);
(386399.2, 3769428.2,	89.0,	89.0,	4.6);	(386414.2, 3769428.2,	89.1,	89.1,	4.6);
(386429.2, 3769428.2,	89.0,	89.0,	4.6);	(386234.2, 3769443.2,	88.9,	88.9,	4.6);
(386249.2, 3769443.2,	88.9,	88.9,	4.6);	(386264.2, 3769443.2,	88.9,	88.9,	4.6);
(386279.2, 3769443.2,	89.0,	89.0,	4.6);	(386294.2, 3769443.2,	89.0,	89.0,	4.6);
(386309.2, 3769443.2,	89.1,	89.1,	4.6);	(386324.2, 3769443.2,	89.1,	89.1,	4.6);
(386339.2, 3769443.2,	89.1,	89.1,	4.6);	(386354.2, 3769443.2,	89.1,	89.1,	4.6);
(386369.2, 3769443.2,	89.1,	89.1,	4.6);	(386384.2, 3769443.2,	89.1,	89.1,	4.6);
(386399.2, 3769443.2,	89.1,	89.1,	4.6);	(386414.2, 3769443.2,	89.1,	89.1,	4.6);
(386429.2, 3769443.2,	89.1,	89.1,	4.6);	(386444.2, 3769443.2,	89.1,	89.1,	4.6);
(386234.2, 3769458.2,	89.0,	89.0,	4.6);	(386249.2, 3769458.2,	89.0,	89.0,	4.6);
(386264.2, 3769458.2,	89.0,	89.0,	4.6);	(386279.2, 3769458.2,	89.1,	89.1,	4.6);
(386294.2, 3769458.2,	89.1,	89.1,	4.6);	(386309.2, 3769458.2,	89.2,	89.2,	4.6);
(386324.2, 3769458.2,	89.2,	89.2,	4.6);	(386339.2, 3769458.2,	89.2,	89.2,	4.6);
(386354.2, 3769458.2,	89.2,	89.2,	4.6);	(386369.2, 3769458.2,	89.2,	89.2,	4.6);
(386384.2, 3769458.2,	89.2,	89.2,	4.6);	(386399.2, 3769458.2,	89.2,	89.2,	4.6);
(386414.2, 3769458.2,	89.2,	89.2,	4.6);	(386429.2, 3769458.2,	89.2,	89.2,	4.6);
(386444.2, 3769458.2,	89.2,	89.2,	4.6);	(386459.2, 3769458.2,	89.2,	89.2,	4.6);
(386238.9, 3769472.2,	89.1,	89.1,	4.6);	(386249.2, 3769473.2,	89.1,	89.1,	4.6);
(386264.2, 3769473.2,	89.1,	89.1,	4.6);	(386279.2, 3769473.2,	89.1,	89.1,	4.6);
(386294.2, 3769473.2,	89.2,	89.2,	4.6);	(386309.2, 3769473.2,	89.2,	89.2,	4.6);
(386324.2, 3769473.2,	89.2,	89.2,	4.6);	(386339.2, 3769473.2,	89.2,	89.2,	4.6);
(386354.2, 3769473.2,	89.2,	89.2,	4.6);	(386369.2, 3769473.2,	89.2,	89.2,	4.6);
(386384.2, 3769473.2,	89.2,	89.2,	4.6);	(386399.2, 3769473.2,	89.3,	89.3,	4.6);
(386414.2, 3769473.2,	89.3,	89.3,	4.6);	(386429.2, 3769473.2,	89.3,	89.3,	4.6);
(386444.2, 3769473.2,	89.3,	89.3,	4.6);	(386459.2, 3769473.2,	89.2,	89.2,	4.6);
(386474.2, 3769473.2,	89.2,	89.2,	4.6);	(386249.2, 3769488.2,	89.2,	89.2,	4.6);
(386264.2, 3769488.2,	89.2,	89.2,	4.6);	(386279.2, 3769488.2,	89.2,	89.2,	4.6);
(386294.2, 3769488.2,	89.2,	89.2,	4.6);	(386309.2, 3769488.2,	89.2,	89.2,	4.6);
(386324.2, 3769488.2,	89.2,	89.2,	4.6);	(386339.2, 3769488.2,	89.2,	89.2,	4.6);
(386354.2, 3769488.2,	89.2,	89.2,	4.6);	(386369.2, 3769488.2,	89.2,	89.2,	4.6);
(386384.2, 3769488.2,	89.2,	89.2,	4.6);	(386399.2, 3769488.2,	89.3,	89.3,	4.6);
(386414.2, 3769488.2,	89.3,	89.3,	4.6);	(386429.2, 3769488.2,	89.3,	89.3,	4.6);
(386444.2, 3769488.2,	89.3,	89.3,	4.6);	(386459.2, 3769488.2,	89.3,	89.3,	4.6);

Model Output - Project Buildout Unit Emission Rates (1 g/s)

*** AERMOD - VERSION 16216r *** *** Mens Central Jail HRA
*** AERMET - VERSION 16216 *** *** Union Station

*** 03/07/18
*** 14:45:07
PAGE 41

*** MODELOPTs: RegDEFAULT CONC ELEV FLGPOL URBAN ADJ_U*

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

(386474.2, 3769488.2,	89.2,	89.2,	4.6);	(386489.2, 3769488.2,	89.2,	89.2,	4.6);
(386249.2, 3769503.2,	89.2,	89.2,	4.6);	(386264.2, 3769503.2,	89.2,	89.2,	4.6);
(386279.2, 3769503.2,	89.2,	89.2,	4.6);	(386294.2, 3769503.2,	89.2,	89.2,	4.6);
(386309.2, 3769503.2,	89.2,	89.2,	4.6);	(386324.2, 3769503.2,	89.2,	89.2,	4.6);
(386339.2, 3769503.2,	89.3,	89.3,	4.6);	(386354.2, 3769503.2,	89.3,	89.3,	4.6);
(386369.2, 3769503.2,	89.3,	89.3,	4.6);	(386384.2, 3769503.2,	89.3,	89.3,	4.6);
(386399.2, 3769503.2,	89.3,	89.3,	4.6);	(386414.2, 3769503.2,	89.3,	89.3,	4.6);
(386429.2, 3769503.2,	89.4,	89.4,	4.6);	(386444.2, 3769503.2,	89.4,	89.4,	4.6);
(386459.2, 3769503.2,	89.3,	89.3,	4.6);	(386474.2, 3769503.2,	89.3,	89.3,	4.6);
(386489.2, 3769503.2,	89.2,	89.2,	4.6);	(386264.2, 3769518.2,	89.2,	89.2,	4.6);
(386279.2, 3769518.2,	89.2,	89.2,	4.6);	(386294.2, 3769518.2,	89.2,	89.2,	4.6);
(386309.2, 3769518.2,	89.2,	89.2,	4.6);	(386324.2, 3769518.2,	89.2,	89.2,	4.6);
(386339.2, 3769518.2,	89.3,	89.3,	4.6);	(386354.2, 3769518.2,	89.3,	89.3,	4.6);
(386369.2, 3769518.2,	89.3,	89.3,	4.6);	(386384.2, 3769518.2,	89.3,	89.3,	4.6);
(386399.2, 3769518.2,	89.3,	89.3,	4.6);	(386414.2, 3769518.2,	89.3,	89.3,	4.6);
(386429.2, 3769518.2,	89.3,	89.3,	4.6);	(386444.2, 3769518.2,	89.4,	89.4,	4.6);
(386459.2, 3769518.2,	89.4,	89.4,	4.6);	(386474.2, 3769518.2,	89.3,	89.3,	4.6);
(386489.2, 3769518.2,	89.3,	89.3,	4.6);	(386504.2, 3769518.2,	89.2,	89.2,	4.6);
(386264.2, 3769533.2,	89.2,	89.2,	4.6);	(386279.2, 3769533.2,	89.2,	89.2,	4.6);
(386294.2, 3769533.2,	89.2,	89.2,	4.6);	(386309.2, 3769533.2,	89.2,	89.2,	4.6);
(386324.2, 3769533.2,	89.2,	89.2,	4.6);	(386339.2, 3769533.2,	89.2,	89.2,	4.6);
(386354.2, 3769533.2,	89.2,	89.2,	4.6);	(386369.2, 3769533.2,	89.2,	89.2,	4.6);
(386384.2, 3769533.2,	89.3,	89.3,	4.6);	(386399.2, 3769533.2,	89.3,	89.3,	4.6);
(386414.2, 3769533.2,	89.3,	89.3,	4.6);	(386429.2, 3769533.2,	89.3,	89.3,	4.6);
(386444.2, 3769533.2,	89.4,	89.4,	4.6);	(386459.2, 3769533.2,	89.4,	89.4,	4.6);
(386474.2, 3769533.2,	89.3,	89.3,	4.6);	(386489.2, 3769533.2,	89.2,	89.2,	4.6);
(386504.2, 3769533.2,	89.2,	89.2,	4.6);	(386279.2, 3769548.2,	89.2,	89.2,	4.6);
(386294.2, 3769548.2,	89.3,	89.3,	4.6);	(386309.2, 3769548.2,	89.3,	89.3,	4.6);
(386324.2, 3769548.2,	89.3,	89.3,	4.6);	(386339.2, 3769548.2,	89.3,	89.3,	4.6);
(386354.2, 3769548.2,	89.2,	89.2,	4.6);	(386369.2, 3769548.2,	89.2,	89.2,	4.6);
(386384.2, 3769548.2,	89.2,	89.2,	4.6);	(386399.2, 3769548.2,	89.2,	89.2,	4.6);
(386414.2, 3769548.2,	89.3,	89.3,	4.6);	(386429.2, 3769548.2,	89.4,	89.4,	4.6);
(386444.2, 3769548.2,	89.4,	89.4,	4.6);	(386459.2, 3769548.2,	89.4,	89.4,	4.6);
(386474.2, 3769548.2,	89.3,	89.3,	4.6);	(386489.2, 3769548.2,	89.2,	89.2,	4.6);
(386504.2, 3769548.2,	89.2,	89.2,	4.6);	(386519.2, 3769548.2,	89.2,	89.2,	4.6);
(386279.2, 3769563.2,	89.2,	89.2,	4.6);	(386294.2, 3769563.2,	89.2,	89.2,	4.6);
(386309.2, 3769563.2,	89.3,	89.3,	4.6);	(386324.2, 3769563.2,	89.3,	89.3,	4.6);
(386339.2, 3769563.2,	89.3,	89.3,	4.6);	(386354.2, 3769563.2,	89.3,	89.3,	4.6);
(386369.2, 3769563.2,	89.3,	89.3,	4.6);	(386384.2, 3769563.2,	89.2,	89.2,	4.6);
(386399.2, 3769563.2,	89.2,	89.2,	4.6);	(386414.2, 3769563.2,	89.3,	89.3,	4.6);
(386429.2, 3769563.2,	89.4,	89.4,	4.6);	(386444.2, 3769563.2,	89.4,	89.4,	4.6);
(386459.2, 3769563.2,	89.4,	89.4,	4.6);	(386474.2, 3769563.2,	89.3,	89.3,	4.6);

Model Output - Project Buildout
Unit Emission Rates (1 g/s)

*** AERMOD - VERSION 16216r ***
*** AERMET - VERSION 16216 ***

*** Mens Central Jail HRA
*** Union Station

*** 03/07/18
*** 14:45:07
PAGE 43

*** MODELOPTs: RegDEFAULT CONC ELEV FLGPOL URBAN ADJ_U*

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

(386279.2, 3769398.2,	88.7,	88.7,	9.1);	(386294.2, 3769398.2,	88.7,	88.7,	9.1);
(386309.2, 3769398.2,	88.7,	88.7,	9.1);	(386324.2, 3769398.2,	88.8,	88.8,	9.1);
(386339.2, 3769398.2,	88.8,	88.8,	9.1);	(386264.2, 3769413.2,	88.7,	88.7,	9.1);
(386279.2, 3769413.2,	88.7,	88.7,	9.1);	(386294.2, 3769413.2,	88.8,	88.8,	9.1);
(386309.2, 3769413.2,	88.8,	88.8,	9.1);	(386324.2, 3769413.2,	88.8,	88.8,	9.1);
(386339.2, 3769413.2,	88.9,	88.9,	9.1);	(386354.2, 3769413.2,	88.9,	88.9,	9.1);
(386369.2, 3769413.2,	88.9,	88.9,	9.1);	(386384.2, 3769413.2,	88.9,	88.9,	9.1);
(386249.2, 3769428.2,	88.8,	88.8,	9.1);	(386264.2, 3769428.2,	88.8,	88.8,	9.1);
(386279.2, 3769428.2,	88.9,	88.9,	9.1);	(386294.2, 3769428.2,	88.9,	88.9,	9.1);
(386309.2, 3769428.2,	89.0,	89.0,	9.1);	(386324.2, 3769428.2,	89.0,	89.0,	9.1);
(386339.2, 3769428.2,	89.0,	89.0,	9.1);	(386354.2, 3769428.2,	89.0,	89.0,	9.1);
(386369.2, 3769428.2,	89.0,	89.0,	9.1);	(386384.2, 3769428.2,	89.0,	89.0,	9.1);
(386399.2, 3769428.2,	89.0,	89.0,	9.1);	(386414.2, 3769428.2,	89.1,	89.1,	9.1);
(386429.2, 3769428.2,	89.0,	89.0,	9.1);	(386234.2, 3769443.2,	88.9,	88.9,	9.1);
(386249.2, 3769443.2,	88.9,	88.9,	9.1);	(386264.2, 3769443.2,	88.9,	88.9,	9.1);
(386279.2, 3769443.2,	89.0,	89.0,	9.1);	(386294.2, 3769443.2,	89.0,	89.0,	9.1);
(386309.2, 3769443.2,	89.1,	89.1,	9.1);	(386324.2, 3769443.2,	89.1,	89.1,	9.1);
(386339.2, 3769443.2,	89.1,	89.1,	9.1);	(386354.2, 3769443.2,	89.1,	89.1,	9.1);
(386369.2, 3769443.2,	89.1,	89.1,	9.1);	(386384.2, 3769443.2,	89.1,	89.1,	9.1);
(386399.2, 3769443.2,	89.1,	89.1,	9.1);	(386414.2, 3769443.2,	89.1,	89.1,	9.1);
(386429.2, 3769443.2,	89.1,	89.1,	9.1);	(386444.2, 3769443.2,	89.1,	89.1,	9.1);
(386234.2, 3769458.2,	89.0,	89.0,	9.1);	(386249.2, 3769458.2,	89.0,	89.0,	9.1);
(386264.2, 3769458.2,	89.0,	89.0,	9.1);	(386279.2, 3769458.2,	89.1,	89.1,	9.1);
(386294.2, 3769458.2,	89.1,	89.1,	9.1);	(386309.2, 3769458.2,	89.2,	89.2,	9.1);
(386324.2, 3769458.2,	89.2,	89.2,	9.1);	(386339.2, 3769458.2,	89.2,	89.2,	9.1);
(386354.2, 3769458.2,	89.2,	89.2,	9.1);	(386369.2, 3769458.2,	89.2,	89.2,	9.1);
(386384.2, 3769458.2,	89.2,	89.2,	9.1);	(386399.2, 3769458.2,	89.2,	89.2,	9.1);
(386414.2, 3769458.2,	89.2,	89.2,	9.1);	(386429.2, 3769458.2,	89.2,	89.2,	9.1);
(386444.2, 3769458.2,	89.2,	89.2,	9.1);	(386459.2, 3769458.2,	89.2,	89.2,	9.1);
(386238.9, 3769472.2,	89.1,	89.1,	9.1);	(386249.2, 3769473.2,	89.1,	89.1,	9.1);
(386264.2, 3769473.2,	89.1,	89.1,	9.1);	(386279.2, 3769473.2,	89.1,	89.1,	9.1);
(386294.2, 3769473.2,	89.2,	89.2,	9.1);	(386309.2, 3769473.2,	89.2,	89.2,	9.1);
(386324.2, 3769473.2,	89.2,	89.2,	9.1);	(386339.2, 3769473.2,	89.2,	89.2,	9.1);
(386354.2, 3769473.2,	89.2,	89.2,	9.1);	(386369.2, 3769473.2,	89.2,	89.2,	9.1);
(386384.2, 3769473.2,	89.2,	89.2,	9.1);	(386399.2, 3769473.2,	89.3,	89.3,	9.1);
(386414.2, 3769473.2,	89.3,	89.3,	9.1);	(386429.2, 3769473.2,	89.3,	89.3,	9.1);
(386444.2, 3769473.2,	89.3,	89.3,	9.1);	(386459.2, 3769473.2,	89.2,	89.2,	9.1);
(386474.2, 3769473.2,	89.2,	89.2,	9.1);	(386249.2, 3769488.2,	89.2,	89.2,	9.1);
(386264.2, 3769488.2,	89.2,	89.2,	9.1);	(386279.2, 3769488.2,	89.2,	89.2,	9.1);
(386294.2, 3769488.2,	89.2,	89.2,	9.1);	(386309.2, 3769488.2,	89.2,	89.2,	9.1);
(386324.2, 3769488.2,	89.2,	89.2,	9.1);	(386339.2, 3769488.2,	89.2,	89.2,	9.1);
(386354.2, 3769488.2,	89.2,	89.2,	9.1);	(386369.2, 3769488.2,	89.2,	89.2,	9.1);

Model Output - Project Buildout Unit Emission Rates (1 g/s)

*** AERMOD - VERSION 16216r *** *** Mens Central Jail HRA
 *** AERMET - VERSION 16216 *** *** Union Station

*** 03/07/18
 *** 14:45:07
 *** PAGE 46

*** MODELOPTS: RegDFault CONC ELEV FLGPOL URBAN ADJ_U*

* SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT BE PERFORMED *
 LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR FASTAREA/FASTALL

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS)	- - YR (METERS)	DISTANCE (METERS)
L0000006	386234.2	3769458.2	-3.99
L0000006	386234.2	3769458.2	-3.99
L0000006	386234.2	3769458.2	-3.99
L0000007	386238.9	3769472.2	-4.28
L0000007	386249.2	3769488.2	-1.68
L0000007	386249.2	3769503.2	0.78
L0000007	386238.9	3769472.2	-4.28
L0000007	386249.2	3769488.2	-1.68
L0000007	386249.2	3769503.2	0.78
L0000007	386238.9	3769472.2	-4.28
L0000007	386249.2	3769488.2	-1.68
L0000007	386249.2	3769503.2	0.78
L0000008	386249.2	3769503.2	-8.04
L0000008	386264.2	3769518.2	0.83
L0000008	386249.2	3769503.2	-8.04
L0000008	386264.2	3769518.2	0.83
L0000008	386249.2	3769503.2	-8.04
L0000008	386264.2	3769518.2	0.83
L0000009	386264.2	3769533.2	-7.36
L0000009	386264.2	3769533.2	-7.36
L0000009	386264.2	3769533.2	-7.36
L0000010	386279.2	3769563.2	-6.23
L0000010	386279.2	3769563.2	-6.23
L0000010	386279.2	3769563.2	-6.23
L0000011	386294.2	3769593.2	-5.45
L0000011	386294.2	3769593.2	-5.45
L0000011	386294.2	3769593.2	-5.45
L0000012	386309.2	3769608.2	0.89
L0000012	386309.2	3769608.2	0.89
L0000012	386309.2	3769608.2	0.89
L0000017	386429.5	3769683.6	-1.70
L0000017	386429.5	3769683.6	-1.70
L0000017	386429.5	3769683.6	-1.70
L0000018	386429.5	3769683.6	-2.26
L0000018	386444.5	3769683.6	-4.63
L0000018	386459.5	3769683.6	0.98
L0000018	386429.5	3769683.6	-2.26
L0000018	386444.5	3769683.6	-4.63
L0000018	386459.5	3769683.6	0.98
L0000018	386429.5	3769683.6	-2.26

Model Output - Project Buildout
Unit Emission Rates (1 g/s)

*** AERMOD - VERSION 16216r *** *** Mens Central Jail HRA
*** AERMET - VERSION 16216 *** *** Union Station

*** 03/07/18
*** 14:45:07
PAGE 47

*** MODELOPTs: RegDEFAULT CONC ELEV FLGPOL URBAN ADJ_U*

* SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT BE PERFORMED *
LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR FASTAREA/FASTALL

SOURCE ID	-- RECEPTOR LOCATION --		DISTANCE
	XR (METERS)	YR (METERS)	(METERS)
L0000018	386444.5	3769683.6	-4.63
L0000018	386459.5	3769683.6	0.98
L0000019	386474.5	3769683.6	-1.10
L0000019	386474.5	3769683.6	-1.10
L0000019	386474.5	3769683.6	-1.10

Model Output - Project Buildout
Unit Emission Rates (1 g/s)

*** AERMOD - VERSION 16216r *** *** Mens Central Jail HRA
*** AERMET - VERSION 16216 *** *** Union Station

*** 03/07/18
*** 14:45:07
 PAGE 84

*** MODELOPTs: RegDFault CONC ELEV FLGPOL URBAN ADJ_U*

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

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

A Total of 0 Fatal Error Message(s)
A Total of 4 Warning Message(s)
A Total of 808 Informational Message(s)

A Total of 43824 Hours Were Processed

A Total of 4 Calm Hours Identified

A Total of 804 Missing Hours Identified (1.83 Percent)

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

***** WARNING MESSAGES *****
ME W186 559 MEOPEN: THRESH_LMIN 1-min ASOS wind speed threshold used 0.50
ME W187 559 MEOPEN: ADJ_U* Option for Low Winds used in AERMET
MX W450 17521 CHKDAT: Record Out of Sequence in Meteorological File at: 14010101
MX W450 17521 CHKDAT: Record Out of Sequence in Meteorological File at: 2 year gap

*** AERMOD Finishes Successfully ***

Output Summary - Phase 1 Buildout
Unit Emission Rates (1 g/s)

Results Summary

Mens Central Jail HRA
Union Station

Concentration - Source Group: 1

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		54.67121	ug/m^3	386489.50	3769683.64	89.35	0.00	89.35	

Concentration - Source Group: 2

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		3.88450	ug/m^3	386369.20	3769503.24	89.28	0.00	89.28	

Concentration - Source Group: 3

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		2.87483	ug/m^3	386369.20	3769503.24	89.28	9.10	89.28	

Model Output - Phase 1 Buildout Unit Emission Rates (1 g/s)

**The AERMET Input Meteorological Data Version Date: 16216

**Output Options Selected:

Model Outputs Tables of PERIOD Averages by Receptor

Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

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

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 87.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

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

**Detailed Error/Message File: MCJ_ph1.err

**File for Summary of Results: MCJ_ph1.sum

Model Output - Phase 1 Buildout Unit Emission Rates (1 g/s)

*** AERMOD - VERSION 16216r *** *** Mens Central Jail HRA
 *** AERMET - VERSION 16216 *** *** Union Station

*** 03/08/18
 *** 13:51:51
 *** PAGE 2

*** MODELOPTs: RegDEFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
L0000001	0	0.34483E-01	386153.1	3769320.9	87.4	5.60	14.18	2.89	YES	HRDOW
L0000002	0	0.34483E-01	386163.9	3769349.4	87.8	5.60	14.18	2.89	YES	HRDOW
L0000003	0	0.34483E-01	386174.6	3769377.9	88.1	5.60	14.18	2.89	YES	HRDOW
L0000004	0	0.34483E-01	386185.3	3769406.5	88.5	5.60	14.18	2.89	YES	HRDOW
L0000005	0	0.34483E-01	386196.0	3769435.0	88.8	5.60	14.18	2.89	YES	HRDOW
L0000006	0	0.34483E-01	386208.1	3769463.0	89.1	5.60	14.18	2.89	YES	HRDOW
L0000007	0	0.34483E-01	386220.5	3769490.8	89.2	5.60	14.18	2.89	YES	HRDOW
L0000008	0	0.34483E-01	386232.9	3769518.7	89.2	5.60	14.18	2.89	YES	HRDOW
L0000009	0	0.34483E-01	386245.3	3769546.5	89.2	5.60	14.18	2.89	YES	HRDOW
L0000010	0	0.34483E-01	386257.6	3769574.4	89.2	5.60	14.18	2.89	YES	HRDOW
L0000011	0	0.34483E-01	386270.7	3769601.9	89.2	5.60	14.18	2.89	YES	HRDOW
L0000012	0	0.34483E-01	386285.3	3769628.6	89.2	5.60	14.18	2.89	YES	HRDOW
L0000013	0	0.34483E-01	386304.0	3769652.4	89.2	5.60	14.18	2.89	YES	HRDOW
L0000014	0	0.34483E-01	386327.4	3769671.7	89.2	5.60	14.18	2.89	YES	HRDOW
L0000015	0	0.34483E-01	386352.7	3769688.6	89.3	5.60	14.18	2.89	YES	HRDOW
L0000016	0	0.34483E-01	386381.4	3769699.0	89.3	5.60	14.18	2.89	YES	HRDOW
L0000017	0	0.34483E-01	386411.0	3769705.7	89.3	5.60	14.18	2.89	YES	HRDOW
L0000018	0	0.34483E-01	386441.3	3769709.3	89.3	5.60	14.18	2.89	YES	HRDOW
L0000019	0	0.34483E-01	386471.5	3769712.9	89.2	5.60	14.18	2.89	YES	HRDOW
L0000020	0	0.34483E-01	386501.8	3769716.5	89.2	5.60	14.18	2.89	YES	HRDOW
L0000021	0	0.34483E-01	386532.1	3769720.0	89.1	5.60	14.18	2.89	YES	HRDOW
L0000022	0	0.34483E-01	386562.4	3769723.6	88.9	5.60	14.18	2.89	YES	HRDOW
L0000023	0	0.34483E-01	386592.6	3769727.2	88.7	5.60	14.18	2.89	YES	HRDOW
L0000024	0	0.34483E-01	386622.9	3769730.8	88.2	5.60	14.18	2.89	YES	HRDOW
L0000025	0	0.34483E-01	386653.2	3769734.4	87.8	5.60	14.18	2.89	YES	HRDOW
L0000026	0	0.34483E-01	386681.6	3769744.1	87.2	5.60	14.18	2.89	YES	HRDOW
L0000027	0	0.34483E-01	386708.7	3769758.0	86.8	5.60	14.18	2.89	YES	HRDOW
L0000028	0	0.34483E-01	386735.1	3769772.7	86.5	5.60	14.18	2.89	YES	HRDOW
L0000029	0	0.34483E-01	386753.1	3769797.3	86.5	5.60	14.18	2.89	YES	HRDOW

Model Output - Phase 1 Buildout Unit Emission Rates (1 g/s)

*** AERMOD - VERSION 16216r *** *** Mens Central Jail HRA
 *** AERMET - VERSION 16216 *** *** Union Station
 *** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** 03/08/18
 *** 13:51:51
 *** PAGE 3

*** AREAPOLY SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	LOCATION OF AREA X Y (METERS) (METERS)		BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	NUMBER OF VERTS.	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
2	0	0.18557E-04	385999.3	3768853.9	86.1	5.60	7	2.60	YES	HRDOW
3	0	0.79001E-04	386186.9	3769046.3	86.2	4.15	8	1.93	YES	HRDOW

Model Output - Phase 1 Buildout
Unit Emission Rates (1 g/s)

*** AERMOD - VERSION 16216r *** *** Mens Central Jail HRA
*** AERMET - VERSION 16216 *** *** Union Station
*** MODELOPTs: RegDEFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** 03/08/18
*** 13:51:51
 PAGE 4

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
-----	-----
1	L0000001 , L0000002 , L0000003 , L0000004 , L0000005 , L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 , L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 , L0000020 , L0000021 , L0000022 , L0000023 , L0000024 , L0000025 , L0000026 , L0000027 , L0000028 , L0000029 ,
2	2 ,
3	3 ,

Model Output - Phase 1 Buildout
Unit Emission Rates (1 g/s)

*** AERMOD - VERSION 16216r *** *** Mens Central Jail HRA
*** AERMET - VERSION 16216 *** *** Union Station

*** 03/08/18
*** 13:51:51
PAGE 5

*** MODELOPTs: RegDEFAULT CONC ELEV FLGPOL URBAN ADJ_U*

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

URBAN ID	URBAN POP	SOURCE IDs
-----	-----	-----
L0000007	9818605. 2	, L0000001 , L0000002 , L0000003 , L0000004 , L0000005 , L0000006 ,
		,
	L0000008	, L0000009 , L0000010 , L0000011 , L0000012 , L0000013 , L0000014 , L0000015 ,
	L0000016	, L0000017 , L0000018 , L0000019 , L0000020 , L0000021 , L0000022 , L0000023 ,
	L0000024	, L0000025 , L0000026 , L0000027 , L0000028 , L0000029 , 3 ,

Model Output - Phase 1 Buildout Unit Emission Rates (1 g/s)

```

*** AERMOD - VERSION 16216r ***   *** Mens Central Jail HRA   ***   03/08/18
*** AERMET - VERSION 16216 ***   *** Union Station           ***   13:51:51
                                                                    ***   PAGE 6
  
```

*** MODELOPTs: RegDEFAULT CONC ELEV FLGPOL URBAN ADJ_U*

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

SOURCE ID = 2 ; SOURCE TYPE = AREAPOLY :

HR	SCALAR	HR	SCALAR	HR	SCALAR	HR	SCALAR	HR	SCALAR	HR	SCALAR	HR	SCALAR	HR	SCALAR
DAY OF WEEK = WEEKDAY															
1	.1000E+01	2	.1000E+01	3	.1000E+01	4	.1000E+01	5	.1000E+01	6	.1000E+01	7	.1000E+01	8	.1000E+01
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	.1000E+01	18	.1000E+01	19	.1000E+01	20	.1000E+01	21	.1000E+01	22	.1000E+01	23	.1000E+01	24	.1000E+01
DAY OF WEEK = SATURDAY															
1	.4800E+00	2	.4800E+00	3	.4800E+00	4	.4800E+00	5	.4800E+00	6	.4800E+00	7	.4800E+00	8	.4800E+00
9	.4800E+00	10	.4800E+00	11	.4800E+00	12	.4800E+00	13	.4800E+00	14	.4800E+00	15	.4800E+00	16	.4800E+00
17	.4800E+00	18	.4800E+00	19	.4800E+00	20	.4800E+00	21	.4800E+00	22	.4800E+00	23	.4800E+00	24	.4800E+00
DAY OF WEEK = SUNDAY															
1	.4600E+00	2	.4600E+00	3	.4600E+00	4	.4600E+00	5	.4600E+00	6	.4600E+00	7	.4600E+00	8	.4600E+00
9	.4600E+00	10	.4600E+00	11	.4600E+00	12	.4600E+00	13	.4600E+00	14	.4600E+00	15	.4600E+00	16	.4600E+00
17	.4600E+00	18	.4600E+00	19	.4600E+00	20	.4600E+00	21	.4600E+00	22	.4600E+00	23	.4600E+00	24	.4600E+00

```

*** AERMOD - VERSION 16216r ***   *** Mens Central Jail HRA   ***   03/08/18
*** AERMET - VERSION 16216 ***   *** Union Station           ***   13:51:51
                                                                    ***   PAGE 7
  
```

*** MODELOPTs: RegDEFAULT CONC ELEV FLGPOL URBAN ADJ_U*

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

SOURCE ID = L0000001 to L0000029 ; SOURCE TYPE = VOLUME :

HR	SCALAR	HR	SCALAR	HR	SCALAR	HR	SCALAR	HR	SCALAR	HR	SCALAR	HR	SCALAR	HR	SCALAR
DAY OF WEEK = WEEKDAY															
1	.1000E+01	2	.1000E+01	3	.1000E+01	4	.1000E+01	5	.1000E+01	6	.1000E+01	7	.1000E+01	8	.1000E+01
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	.1000E+01	18	.1000E+01	19	.1000E+01	20	.1000E+01	21	.1000E+01	22	.1000E+01	23	.1000E+01	24	.1000E+01
DAY OF WEEK = SATURDAY															
1	.5500E+00	2	.5500E+00	3	.5500E+00	4	.5500E+00	5	.5500E+00	6	.5500E+00	7	.5500E+00	8	.5500E+00
9	.5500E+00	10	.5500E+00	11	.5500E+00	12	.5500E+00	13	.5500E+00	14	.5500E+00	15	.5500E+00	16	.5500E+00
17	.5500E+00	18	.5500E+00	19	.5500E+00	20	.5500E+00	21	.5500E+00	22	.5500E+00	23	.5500E+00	24	.5500E+00
DAY OF WEEK = SUNDAY															
1	.5400E+00	2	.5400E+00	3	.5400E+00	4	.5400E+00	5	.5400E+00	6	.5400E+00	7	.5400E+00	8	.5400E+00
9	.5400E+00	10	.5400E+00	11	.5400E+00	12	.5400E+00	13	.5400E+00	14	.5400E+00	15	.5400E+00	16	.5400E+00
17	.5400E+00	18	.5400E+00	19	.5400E+00	20	.5400E+00	21	.5400E+00	22	.5400E+00	23	.5400E+00	24	.5400E+00

Model Output - Phase 1 Buildout Unit Emission Rates (1 g/s)

*** AERMOD - VERSION 16216r *** *** Mens Central Jail HRA
 *** AERMET - VERSION 16216 *** *** Union Station

*** 03/08/18
 *** 13:51:51
 *** PAGE 36

*** MODELOPTs: RegDEFAULT CONC ELEV FLGPOL URBAN ADJ_U*

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

SOURCE ID = 3 ; SOURCE TYPE = AREAPOLY :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
DAY OF WEEK = WEEKDAY															
1	.1000E+01	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.1000E+01	6	.1000E+01	7	.1000E+01	8	.1000E+01
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	.1000E+01	18	.1000E+01	19	.1000E+01	20	.1000E+01	21	.1000E+01	22	.1000E+01	23	.1000E+01	24	.1000E+01
DAY OF WEEK = SATURDAY															
1	.1000E+01	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.1000E+01	6	.1000E+01	7	.1000E+01	8	.1000E+01
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	.1000E+01	18	.1000E+01	19	.1000E+01	20	.1000E+01	21	.1000E+01	22	.1000E+01	23	.1000E+01	24	.1000E+01
DAY OF WEEK = SUNDAY															
1	.1000E+01	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.1000E+01	6	.1000E+01	7	.1000E+01	8	.1000E+01
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	.1000E+01	18	.1000E+01	19	.1000E+01	20	.1000E+01	21	.1000E+01	22	.1000E+01	23	.1000E+01	24	.1000E+01

Model Output - Phase 1 Buildout
Unit Emission Rates (1 g/s)

*** AERMOD - VERSION 16216r ***
*** AERMET - VERSION 16216 ***

*** Mens Central Jail HRA
*** Union Station

*** 03/08/18
*** 13:51:51
PAGE 37

*** MODELOPTs: RegDEFAULT CONC ELEV FLGPOL URBAN ADJ_U*

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

(386459.2, 3769458.2,	89.2,	89.2,	0.0);	(386429.2, 3769473.2,	89.3,	89.3,	0.0);
(386444.2, 3769473.2,	89.3,	89.3,	0.0);	(386459.2, 3769473.2,	89.2,	89.2,	0.0);
(386474.2, 3769473.2,	89.2,	89.2,	0.0);	(386399.2, 3769488.2,	89.3,	89.3,	0.0);
(386414.2, 3769488.2,	89.3,	89.3,	0.0);	(386429.2, 3769488.2,	89.3,	89.3,	0.0);
(386444.2, 3769488.2,	89.3,	89.3,	0.0);	(386459.2, 3769488.2,	89.3,	89.3,	0.0);
(386474.2, 3769488.2,	89.2,	89.2,	0.0);	(386489.2, 3769488.2,	89.2,	89.2,	0.0);
(386369.2, 3769503.2,	89.3,	89.3,	0.0);	(386384.2, 3769503.2,	89.3,	89.3,	0.0);
(386399.2, 3769503.2,	89.3,	89.3,	0.0);	(386414.2, 3769503.2,	89.3,	89.3,	0.0);
(386429.2, 3769503.2,	89.4,	89.4,	0.0);	(386444.2, 3769503.2,	89.4,	89.4,	0.0);
(386459.2, 3769503.2,	89.3,	89.3,	0.0);	(386474.2, 3769503.2,	89.3,	89.3,	0.0);
(386489.2, 3769503.2,	89.2,	89.2,	0.0);	(386369.2, 3769518.2,	89.3,	89.3,	0.0);
(386384.2, 3769518.2,	89.3,	89.3,	0.0);	(386399.2, 3769518.2,	89.3,	89.3,	0.0);
(386414.2, 3769518.2,	89.3,	89.3,	0.0);	(386429.2, 3769518.2,	89.3,	89.3,	0.0);
(386444.2, 3769518.2,	89.4,	89.4,	0.0);	(386459.2, 3769518.2,	89.4,	89.4,	0.0);
(386474.2, 3769518.2,	89.3,	89.3,	0.0);	(386489.2, 3769518.2,	89.3,	89.3,	0.0);
(386504.2, 3769518.2,	89.2,	89.2,	0.0);	(386369.2, 3769533.2,	89.2,	89.2,	0.0);
(386384.2, 3769533.2,	89.3,	89.3,	0.0);	(386399.2, 3769533.2,	89.3,	89.3,	0.0);
(386414.2, 3769533.2,	89.3,	89.3,	0.0);	(386429.2, 3769533.2,	89.3,	89.3,	0.0);
(386444.2, 3769533.2,	89.4,	89.4,	0.0);	(386459.2, 3769533.2,	89.4,	89.4,	0.0);
(386474.2, 3769533.2,	89.3,	89.3,	0.0);	(386489.2, 3769533.2,	89.2,	89.2,	0.0);
(386504.2, 3769533.2,	89.2,	89.2,	0.0);	(386384.2, 3769548.2,	89.2,	89.2,	0.0);
(386399.2, 3769548.2,	89.2,	89.2,	0.0);	(386414.2, 3769548.2,	89.3,	89.3,	0.0);
(386429.2, 3769548.2,	89.4,	89.4,	0.0);	(386444.2, 3769548.2,	89.4,	89.4,	0.0);
(386459.2, 3769548.2,	89.4,	89.4,	0.0);	(386474.2, 3769548.2,	89.3,	89.3,	0.0);
(386489.2, 3769548.2,	89.2,	89.2,	0.0);	(386504.2, 3769548.2,	89.2,	89.2,	0.0);
(386519.2, 3769548.2,	89.2,	89.2,	0.0);	(386384.2, 3769563.2,	89.2,	89.2,	0.0);
(386399.2, 3769563.2,	89.2,	89.2,	0.0);	(386414.2, 3769563.2,	89.3,	89.3,	0.0);
(386429.2, 3769563.2,	89.4,	89.4,	0.0);	(386444.2, 3769563.2,	89.4,	89.4,	0.0);
(386459.2, 3769563.2,	89.4,	89.4,	0.0);	(386474.2, 3769563.2,	89.3,	89.3,	0.0);
(386489.2, 3769563.2,	89.2,	89.2,	0.0);	(386504.2, 3769563.2,	89.2,	89.2,	0.0);
(386368.3, 3769653.3,	89.2,	89.2,	0.0);	(386384.2, 3769578.2,	89.3,	89.3,	0.0);
(386399.2, 3769578.2,	89.3,	89.3,	0.0);	(386414.2, 3769578.2,	89.4,	89.4,	0.0);
(386429.2, 3769578.2,	89.4,	89.4,	0.0);	(386444.2, 3769578.2,	89.4,	89.4,	0.0);
(386459.2, 3769578.2,	89.4,	89.4,	0.0);	(386474.2, 3769578.2,	89.3,	89.3,	0.0);
(386489.2, 3769578.2,	89.2,	89.2,	0.0);	(386504.2, 3769578.2,	89.2,	89.2,	0.0);
(386519.2, 3769578.2,	89.2,	89.2,	0.0);	(386534.2, 3769578.2,	89.2,	89.2,	0.0);
(386354.2, 3769593.2,	89.3,	89.3,	0.0);	(386369.2, 3769593.2,	89.3,	89.3,	0.0);
(386384.2, 3769593.2,	89.3,	89.3,	0.0);	(386399.2, 3769593.2,	89.4,	89.4,	0.0);
(386414.2, 3769593.2,	89.4,	89.4,	0.0);	(386429.2, 3769593.2,	89.4,	89.4,	0.0);
(386444.2, 3769593.2,	89.4,	89.4,	0.0);	(386459.2, 3769593.2,	89.4,	89.4,	0.0);
(386474.2, 3769593.2,	89.3,	89.3,	0.0);	(386489.2, 3769593.2,	89.2,	89.2,	0.0);
(386504.2, 3769593.2,	89.2,	89.2,	0.0);	(386519.2, 3769593.2,	89.2,	89.2,	0.0);

Model Output - Phase 1 Buildout
Unit Emission Rates (1 g/s)

(386534.2, 3769593.2,	89.2,	89.2,	0.0);	(386354.2, 3769608.2,	89.3,	89.3,	0.0);
(386369.2, 3769608.2,	89.3,	89.3,	0.0);	(386384.2, 3769608.2,	89.3,	89.3,	0.0);
(386399.2, 3769608.2,	89.4,	89.4,	0.0);	(386414.2, 3769608.2,	89.4,	89.4,	0.0);
(386429.2, 3769608.2,	89.4,	89.4,	0.0);	(386444.2, 3769608.2,	89.4,	89.4,	0.0);
(386459.2, 3769608.2,	89.4,	89.4,	0.0);	(386474.2, 3769608.2,	89.3,	89.3,	0.0);
(386489.2, 3769608.2,	89.2,	89.2,	0.0);	(386504.2, 3769608.2,	89.2,	89.2,	0.0);
(386519.2, 3769608.2,	89.2,	89.2,	0.0);	(386534.2, 3769608.2,	89.2,	89.2,	0.0);
(386369.2, 3769623.2,	89.3,	89.3,	0.0);	(386384.2, 3769623.2,	89.3,	89.3,	0.0);
(386399.2, 3769623.2,	89.3,	89.3,	0.0);	(386414.2, 3769623.2,	89.4,	89.4,	0.0);
(386429.2, 3769623.2,	89.4,	89.4,	0.0);	(386444.2, 3769623.2,	89.4,	89.4,	0.0);
(386459.2, 3769623.2,	89.4,	89.4,	0.0);	(386474.2, 3769623.2,	89.3,	89.3,	0.0);
(386489.2, 3769623.2,	89.3,	89.3,	0.0);	(386504.2, 3769623.2,	89.3,	89.3,	0.0);
(386369.2, 3769638.2,	89.2,	89.2,	0.0);	(386384.2, 3769638.2,	89.3,	89.3,	0.0);
(386399.2, 3769638.2,	89.3,	89.3,	0.0);	(386414.2, 3769638.2,	89.3,	89.3,	0.0);
(386429.2, 3769638.2,	89.3,	89.3,	0.0);	(386444.2, 3769638.2,	89.4,	89.4,	0.0);
(386459.2, 3769638.2,	89.4,	89.4,	0.0);	(386474.2, 3769638.2,	89.3,	89.3,	0.0);
(386384.2, 3769653.2,	89.3,	89.3,	0.0);	(386399.2, 3769653.2,	89.3,	89.3,	0.0);
(386414.2, 3769653.2,	89.3,	89.3,	0.0);	(386429.2, 3769653.2,	89.4,	89.4,	0.0);
(386444.2, 3769653.2,	89.4,	89.4,	0.0);	(386399.2, 3769668.2,	89.3,	89.3,	0.0);
(386414.2, 3769668.2,	89.3,	89.3,	0.0);	(386429.5, 3769668.6,	89.4,	89.4,	0.0);
(386444.5, 3769668.6,	89.4,	89.4,	0.0);	(386459.5, 3769668.6,	89.4,	89.4,	0.0);
(386474.5, 3769668.6,	89.4,	89.4,	0.0);	(386489.5, 3769668.6,	89.4,	89.4,	0.0);
(386429.5, 3769683.6,	89.4,	89.4,	0.0);	(386444.5, 3769683.6,	89.4,	89.4,	0.0);
(386459.5, 3769683.6,	89.4,	89.4,	0.0);	(386474.5, 3769683.6,	89.4,	89.4,	0.0);
(386489.5, 3769683.6,	89.3,	89.3,	0.0);	(386458.5, 3769653.0,	89.4,	89.4,	0.0);
(386473.5, 3769653.0,	89.4,	89.4,	0.0);				
(386429.2, 3769473.2,	89.3,	89.3,	4.6);	(386459.2, 3769458.2,	89.2,	89.2,	4.6);
(386459.2, 3769473.2,	89.2,	89.2,	4.6);	(386444.2, 3769473.2,	89.3,	89.3,	4.6);
(386399.2, 3769488.2,	89.3,	89.3,	4.6);	(386474.2, 3769473.2,	89.2,	89.2,	4.6);
(386429.2, 3769488.2,	89.3,	89.3,	4.6);	(386414.2, 3769488.2,	89.3,	89.3,	4.6);
(386459.2, 3769488.2,	89.3,	89.3,	4.6);	(386444.2, 3769488.2,	89.3,	89.3,	4.6);
(386489.2, 3769488.2,	89.2,	89.2,	4.6);	(386474.2, 3769488.2,	89.2,	89.2,	4.6);
(386384.2, 3769503.2,	89.3,	89.3,	4.6);	(386369.2, 3769503.2,	89.3,	89.3,	4.6);
(386414.2, 3769503.2,	89.3,	89.3,	4.6);	(386399.2, 3769503.2,	89.3,	89.3,	4.6);
(386444.2, 3769503.2,	89.4,	89.4,	4.6);	(386429.2, 3769503.2,	89.4,	89.4,	4.6);
(386474.2, 3769503.2,	89.3,	89.3,	4.6);	(386459.2, 3769503.2,	89.3,	89.3,	4.6);
(386369.2, 3769518.2,	89.3,	89.3,	4.6);	(386489.2, 3769503.2,	89.2,	89.2,	4.6);
(386399.2, 3769518.2,	89.3,	89.3,	4.6);	(386384.2, 3769518.2,	89.3,	89.3,	4.6);
(386429.2, 3769518.2,	89.3,	89.3,	4.6);	(386414.2, 3769518.2,	89.3,	89.3,	4.6);
(386459.2, 3769518.2,	89.4,	89.4,	4.6);	(386444.2, 3769518.2,	89.4,	89.4,	4.6);
(386489.2, 3769518.2,	89.3,	89.3,	4.6);	(386474.2, 3769518.2,	89.3,	89.3,	4.6);
(386369.2, 3769533.2,	89.2,	89.2,	4.6);	(386504.2, 3769518.2,	89.2,	89.2,	4.6);
(386399.2, 3769533.2,	89.3,	89.3,	4.6);	(386384.2, 3769533.2,	89.3,	89.3,	4.6);
(386429.2, 3769533.2,	89.3,	89.3,	4.6);	(386414.2, 3769533.2,	89.3,	89.3,	4.6);
(386459.2, 3769533.2,	89.4,	89.4,	4.6);	(386444.2, 3769533.2,	89.4,	89.4,	4.6);
(386489.2, 3769533.2,	89.2,	89.2,	4.6);	(386474.2, 3769533.2,	89.3,	89.3,	4.6);
(386384.2, 3769548.2,	89.2,	89.2,	4.6);	(386504.2, 3769533.2,	89.2,	89.2,	4.6);
(386414.2, 3769548.2,	89.3,	89.3,	4.6);	(386399.2, 3769548.2,	89.2,	89.2,	4.6);
				(386429.2, 3769548.2,	89.4,	89.4,	4.6);

Model Output - Phase 1 Buildout
Unit Emission Rates (1 g/s)

*** AERMOD - VERSION 16216r ***
*** AERMET - VERSION 16216 ***

*** Mens Central Jail HRA
*** Union Station

*** 03/08/18
*** 13:51:51
PAGE 39

*** MODELOPTs: RegDEFAULT CONC ELEV FLGPOL URBAN ADJ_U*

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

(386444.2, 3769548.2,	89.4,	89.4,	4.6);	(386459.2, 3769548.2,	89.4,	89.4,	4.6);
(386474.2, 3769548.2,	89.3,	89.3,	4.6);	(386489.2, 3769548.2,	89.2,	89.2,	4.6);
(386504.2, 3769548.2,	89.2,	89.2,	4.6);	(386519.2, 3769548.2,	89.2,	89.2,	4.6);
(386384.2, 3769563.2,	89.2,	89.2,	4.6);	(386399.2, 3769563.2,	89.2,	89.2,	4.6);
(386414.2, 3769563.2,	89.3,	89.3,	4.6);	(386429.2, 3769563.2,	89.4,	89.4,	4.6);
(386444.2, 3769563.2,	89.4,	89.4,	4.6);	(386459.2, 3769563.2,	89.4,	89.4,	4.6);
(386474.2, 3769563.2,	89.3,	89.3,	4.6);	(386489.2, 3769563.2,	89.2,	89.2,	4.6);
(386504.2, 3769563.2,	89.2,	89.2,	4.6);	(386384.2, 3769578.2,	89.3,	89.3,	4.6);
(386399.2, 3769578.2,	89.3,	89.3,	4.6);	(386414.2, 3769578.2,	89.4,	89.4,	4.6);
(386429.2, 3769578.2,	89.4,	89.4,	4.6);	(386444.2, 3769578.2,	89.4,	89.4,	4.6);
(386459.2, 3769578.2,	89.4,	89.4,	4.6);	(386474.2, 3769578.2,	89.3,	89.3,	4.6);
(386489.2, 3769578.2,	89.2,	89.2,	4.6);	(386504.2, 3769578.2,	89.2,	89.2,	4.6);
(386519.2, 3769578.2,	89.2,	89.2,	4.6);	(386534.2, 3769578.2,	89.2,	89.2,	4.6);
(386369.2, 3769593.2,	89.3,	89.3,	4.6);	(386384.2, 3769593.2,	89.3,	89.3,	4.6);
(386399.2, 3769593.2,	89.4,	89.4,	4.6);	(386414.2, 3769593.2,	89.4,	89.4,	4.6);
(386429.2, 3769593.2,	89.4,	89.4,	4.6);	(386444.2, 3769593.2,	89.4,	89.4,	4.6);
(386459.2, 3769593.2,	89.4,	89.4,	4.6);	(386474.2, 3769593.2,	89.3,	89.3,	4.6);
(386489.2, 3769593.2,	89.2,	89.2,	4.6);	(386504.2, 3769593.2,	89.2,	89.2,	4.6);
(386519.2, 3769593.2,	89.2,	89.2,	4.6);	(386534.2, 3769593.2,	89.2,	89.2,	4.6);
(386369.2, 3769608.2,	89.3,	89.3,	4.6);	(386384.2, 3769608.2,	89.3,	89.3,	4.6);
(386399.2, 3769608.2,	89.4,	89.4,	4.6);	(386414.2, 3769608.2,	89.4,	89.4,	4.6);
(386429.2, 3769608.2,	89.4,	89.4,	4.6);	(386444.2, 3769608.2,	89.4,	89.4,	4.6);
(386459.2, 3769608.2,	89.4,	89.4,	4.6);	(386474.2, 3769608.2,	89.3,	89.3,	4.6);
(386489.2, 3769608.2,	89.2,	89.2,	4.6);	(386504.2, 3769608.2,	89.2,	89.2,	4.6);
(386519.2, 3769608.2,	89.2,	89.2,	4.6);	(386534.2, 3769608.2,	89.2,	89.2,	4.6);
(386369.2, 3769623.2,	89.3,	89.3,	4.6);	(386384.2, 3769623.2,	89.3,	89.3,	4.6);
(386399.2, 3769623.2,	89.3,	89.3,	4.6);	(386414.2, 3769623.2,	89.4,	89.4,	4.6);
(386429.2, 3769623.2,	89.4,	89.4,	4.6);	(386444.2, 3769623.2,	89.4,	89.4,	4.6);
(386459.2, 3769623.2,	89.4,	89.4,	4.6);	(386474.2, 3769623.2,	89.3,	89.3,	4.6);
(386489.2, 3769623.2,	89.3,	89.3,	4.6);	(386504.2, 3769623.2,	89.3,	89.3,	4.6);
(386414.2, 3769638.2,	89.3,	89.3,	4.6);	(386429.2, 3769638.2,	89.3,	89.3,	4.6);
(386444.2, 3769638.2,	89.4,	89.4,	4.6);	(386459.2, 3769638.2,	89.4,	89.4,	4.6);
(386474.2, 3769638.2,	89.3,	89.3,	4.6);	(386429.2, 3769653.2,	89.4,	89.4,	4.6);
(386444.2, 3769653.2,	89.4,	89.4,	4.6);	(386414.2, 3769668.2,	89.3,	89.3,	4.6);
(386459.5, 3769668.6,	89.4,	89.4,	4.6);	(386474.5, 3769668.6,	89.4,	89.4,	4.6);
(386489.5, 3769668.6,	89.4,	89.4,	4.6);	(386489.5, 3769683.6,	89.3,	89.3,	4.6);
(386458.5, 3769653.0,	89.4,	89.4,	4.6);	(386473.5, 3769653.0,	89.4,	89.4,	4.6);
(386459.2, 3769458.2,	89.2,	89.2,	9.1);	(386429.2, 3769473.2,	89.3,	89.3,	9.1);
(386444.2, 3769473.2,	89.3,	89.3,	9.1);	(386459.2, 3769473.2,	89.2,	89.2,	9.1);
(386474.2, 3769473.2,	89.2,	89.2,	9.1);	(386399.2, 3769488.2,	89.3,	89.3,	9.1);
(386414.2, 3769488.2,	89.3,	89.3,	9.1);	(386429.2, 3769488.2,	89.3,	89.3,	9.1);

Model Output - Phase 1 Buildout Unit Emission Rates (1 g/s)

```

*** AERMOD - VERSION 16216r ***   *** Mens Central Jail HRA   ***   03/08/18
*** AERMET - VERSION 16216 ***   *** Union Station           ***   13:51:51
                                     *** PAGE 41

```

*** MODELOPTs: RegDEFAULT CONC ELEV FLGPOL URBAN ADJ_U*

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

(386429.2, 3769638.2,	89.3,	89.3,	9.1);	(386444.2, 3769638.2,	89.4,	89.4,	9.1);
(386459.2, 3769638.2,	89.4,	89.4,	9.1);	(386474.2, 3769638.2,	89.3,	89.3,	9.1);
(386429.2, 3769653.2,	89.4,	89.4,	9.1);	(386444.2, 3769653.2,	89.4,	89.4,	9.1);
(386414.2, 3769668.2,	89.3,	89.3,	9.1);	(386459.5, 3769668.6,	89.4,	89.4,	9.1);
(386474.5, 3769668.6,	89.4,	89.4,	9.1);	(386489.5, 3769668.6,	89.4,	89.4,	9.1);
(386489.5, 3769683.6,	89.3,	89.3,	9.1);	(386458.5, 3769653.0,	89.4,	89.4,	9.1);
(386473.5, 3769653.0,	89.4,	89.4,	9.1);				

```

*** AERMOD - VERSION 16216r ***   *** Mens Central Jail HRA   ***   03/08/18
*** AERMET - VERSION 16216 ***   *** Union Station           ***   13:51:51
                                     *** PAGE 42

```

*** MODELOPTs: RegDEFAULT CONC ELEV FLGPOL URBAN ADJ_U*

* SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT BE PERFORMED *
LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR FASTAREA/FASTALL

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS) YR (METERS)	DISTANCE (METERS)
L0000017	386429.5 3769683.6	-1.70
L0000018	386429.5 3769683.6	-2.26
L0000018	386444.5 3769683.6	-4.63
L0000018	386459.5 3769683.6	0.98
L0000019	386474.5 3769683.6	-1.10

Model Output - Phase 1 Buildout Unit Emission Rates (1 g/s)

*** AERMOD - VERSION 16216r *** *** Mens Central Jail HRA
 *** AERMET - VERSION 16216 *** *** Union Station

*** 03/08/18
 *** 13:51:51
 PAGE 60

*** MODELOPTs: RegDEFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** 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	54.67121 AT (	386489.50,	3769683.64,	89.35,	89.35,	0.00) DC
	2ND HIGHEST VALUE IS	54.40891 AT (	386399.20,	3769668.24,	89.27,	89.27,	0.00) DC
	3RD HIGHEST VALUE IS	51.82187 AT (	386368.31,	3769653.31,	89.19,	89.19,	0.00) DC
	4TH HIGHEST VALUE IS	50.53616 AT (	386414.20,	3769668.24,	89.33,	89.33,	0.00) DC
	5TH HIGHEST VALUE IS	47.95695 AT (	386429.50,	3769668.64,	89.38,	89.38,	0.00) DC
	6TH HIGHEST VALUE IS	45.96698 AT (	386384.20,	3769653.24,	89.27,	89.27,	0.00) DC
	7TH HIGHEST VALUE IS	45.90635 AT (	386459.50,	3769683.64,	89.38,	89.38,	0.00) DC
	8TH HIGHEST VALUE IS	45.88543 AT (	386489.50,	3769683.64,	89.35,	89.35,	4.60) DC
	9TH HIGHEST VALUE IS	45.71271 AT (	386444.50,	3769668.64,	89.38,	89.38,	0.00) DC
	10TH HIGHEST VALUE IS	44.69421 AT (	386444.50,	3769683.64,	89.38,	89.38,	0.00) DC
2	1ST HIGHEST VALUE IS	3.88450 AT (	386369.20,	3769503.24,	89.28,	89.28,	0.00) DC
	2ND HIGHEST VALUE IS	3.82200 AT (	386399.20,	3769488.24,	89.27,	89.27,	0.00) DC
	3RD HIGHEST VALUE IS	3.75556 AT (	386384.20,	3769503.24,	89.28,	89.28,	0.00) DC
	4TH HIGHEST VALUE IS	3.73790 AT (	386429.20,	3769473.24,	89.27,	89.27,	0.00) DC
	5TH HIGHEST VALUE IS	3.68605 AT (	386414.20,	3769488.24,	89.28,	89.28,	0.00) DC
	6TH HIGHEST VALUE IS	3.68405 AT (	386369.20,	3769518.24,	89.28,	89.28,	0.00) DC
	7TH HIGHEST VALUE IS	3.65157 AT (	386459.20,	3769458.24,	89.17,	89.17,	0.00) DC
	8TH HIGHEST VALUE IS	3.63016 AT (	386399.20,	3769503.24,	89.27,	89.27,	0.00) DC
	9TH HIGHEST VALUE IS	3.61715 AT (	386369.20,	3769503.24,	89.28,	89.28,	4.60) DC
	10TH HIGHEST VALUE IS	3.60271 AT (	386444.20,	3769473.24,	89.26,	89.26,	0.00) DC
3	1ST HIGHEST VALUE IS	2.87483 AT (	386369.20,	3769503.24,	89.28,	89.28,	9.10) DC
	2ND HIGHEST VALUE IS	2.84827 AT (	386399.20,	3769488.24,	89.27,	89.27,	4.60) DC
	3RD HIGHEST VALUE IS	2.84617 AT (	386399.20,	3769488.24,	89.27,	89.27,	9.10) DC
	4TH HIGHEST VALUE IS	2.84503 AT (	386369.20,	3769503.24,	89.28,	89.28,	4.60) DC
	5TH HIGHEST VALUE IS	2.81619 AT (	386384.20,	3769503.24,	89.28,	89.28,	9.10) DC
	6TH HIGHEST VALUE IS	2.81062 AT (	386429.20,	3769473.24,	89.27,	89.27,	4.60) DC
	7TH HIGHEST VALUE IS	2.79804 AT (	386384.20,	3769503.24,	89.28,	89.28,	4.60) DC
	8TH HIGHEST VALUE IS	2.78257 AT (	386414.20,	3769488.24,	89.28,	89.28,	4.60) DC
	9TH HIGHEST VALUE IS	2.77566 AT (	386459.20,	3769458.24,	89.17,	89.17,	0.00) DC
	10TH HIGHEST VALUE IS	2.77131 AT (	386369.20,	3769518.24,	89.28,	89.28,	9.10) DC

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

Model Output - Phase 1 Buildout
Unit Emission Rates (1 g/s)

*** AERMOD - VERSION 16216r *** *** Mens Central Jail HRA
*** AERMET - VERSION 16216 *** *** Union Station

*** 03/08/18
*** 13:51:51
 PAGE 61

*** MODELOPTs: RegDFault CONC ELEV FLGPOL URBAN ADJ_U*

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

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

A Total of 0 Fatal Error Message(s)
A Total of 4 Warning Message(s)
A Total of 808 Informational Message(s)

A Total of 43824 Hours Were Processed

A Total of 4 Calm Hours Identified

A Total of 804 Missing Hours Identified (1.83 Percent)

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

***** WARNING MESSAGES *****
ME W186 559 MEOPEN: THRESH_LMIN 1-min ASOS wind speed threshold used 0.50
ME W187 559 MEOPEN: ADJ_U* Option for Low Winds used in AERMET
MX W450 17521 CHKDAT: Record Out of Sequence in Meteorological File at: 14010101
MX W450 17521 CHKDAT: Record Out of Sequence in Meteorological File at: 2 year gap

*** AERMOD Finishes Successfully ***

Appendix D – Risk Calculations

Table C1
MER Worksheet
24-Hour Outdoor Exposure

Source No.	Source	Emission Rates ¹ Annual Average (g/s)	Contaminant	Weight Fraction	AERMOD Output ² Annual Average (µg/m ³)	Annual Average MER Concentration (µg/m ³) (g)
(a)	(b)	(c)	(d)	(e)	(f)	
Scenario - Project Buildout						
1	Locomotives (easement)	3.46E-03	Diesel Particulate	1.00E+00	56.39	1.95E-01
2	Locomotives (Union Station)	3.85E-02	Diesel Particulate	1.00E+00	8.051	3.10E-01
3	LA Metro (buses)	1.58E-05	Diesel Particulate	1.00E+00	4.153	6.57E-05
						For Cancer/Chronic Calculation
Scenario - Phase 1 Construction						
1	Locomotives (easement)	3.46E-03	Diesel Particulate	1.00E+00	54.67	1.89E-01
2	Locomotives (Union Station)	3.85E-02	Diesel Particulate	1.00E+00	3.885	1.49E-01
3	LA Metro (buses)	1.58E-05	Diesel Particulate	1.00E+00	2.875	4.55E-05
						For Cancer/Chronic Calculation

Note: Maximum Exposed Receptor (MER)

¹ Emission Rates, per source, from source emissions inventories (Appendix A).

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 C2a
Quantification of Health Risks - Inmates
Project Buildout

Source (a)	MER	Weight	Contaminant (d)	URF ($\mu\text{g}/\text{m}^3$) ⁻¹ (e)	CPF ($\text{mg}/\text{kg}/\text{day}$) ⁻¹ (f)	Dose (by receptor)		Cancer Risks (by receptor)		Chronic Hazards ¹			
	Conc. ($\mu\text{g}/\text{m}^3$) (b)	Fraction (c)				Average	AB109	Average	AB109	Chronic REL ($\mu\text{g}/\text{m}^3$) (l)	RESP (m)		
						($\text{mg}/\text{kg}/\text{day}$) (g)	($\text{mg}/\text{kg}/\text{day}$) (h)	per million (i)	per million (j)				
Inmates - Outdoors 24-hr/day													
1	Locomotives (easement)	1.95E-01	1.00E+00	DPM	3.0E-04	1.1E+00	5.20E-06	4.98E-05	7.79E-02	7.47E-01	5.0	3.90E-02	
2	Locomotives (Union Station)	3.10E-01	1.00E+00				8.24E-06	7.90E-05	1.24E-01	1.18E+00		6.19E-02	
3	LA Metro (buses)	6.57E-05	1.00E+00				1.75E-09	1.68E-08	2.62E-05	2.52E-04		1.31E-05	
							Total	0.20	1.93			0.10	
Inmates - MERV13 filters													
1	Locomotives (easement)	1.95E-02	1.00E+00	DPM	3.0E-04	1.1E+00	5.20E-07	4.98E-06	7.79E-03	7.47E-02	5.0	3.90E-03	
2	Locomotives (Union Station)	3.10E-02	1.00E+00				8.24E-07	7.90E-06	1.24E-02	1.18E-01		6.19E-03	
3	LA Metro (buses)	6.57E-06	1.00E+00				1.75E-10	1.68E-09	2.62E-06	2.52E-05		1.31E-06	
							Total	0.02	0.19			0.01	
Inmates - Indoor/Outdoor Scenario													
Hours Outdoors ²		0.02						Outdoor Risk x (outdoor hours/24 hr-day)		1.50E-04	1.44E-03		7.51E-05
Hours Indoors		23.98						Indoor Risk x (indoor hours/24 hr-day)		2.01E-02	1.93E-01		1.01E-02
							Total	0.02	0.19			0.010	

	Receptor Type	Average	AB1009
	exposure year	2018	2018
Dose Exposure Factors:	exposure frequency (days/year) ³	29	278
	inhalation rate (L/kg-day) ⁴	335	335
	inhalation absorption factor	1	1
	conversion factor ($\text{mg}/\mu\text{g}; \text{m}^3/\text{L}$)	1.0E-06	1.0E-06
Risk Calculation Factors:	exposure duration (year)	1	1
	age sensitivity factor	1	1
	averaging time (years)	70	70
	per million	1.0E+06	1.0E+06
	MERV 13 DPM Removal Efficiency	0.90	

¹ Chronic Hazards for DPM using the chronic reference exposure level (REL) for the Respiratory Toxicological Endpoint.

² 3 hours outdoors per week (0.02 hours/day) for inmates, provided by LA County.

³ Average lengths of incarceration for all inmates and AB109, provided by LA County.

⁴ Inhalation rate taken as the 95th percentile breathing rates (OEHHA, 2015).

Table C2b
Quantification of Health Risks - Inmates
Phase 1 Construction

Source (a)	MER	Weight	Contaminant (d)	URF ($\mu\text{g}/\text{m}^3$) ⁻¹ (e)	CPF ($\text{mg}/\text{kg}/\text{day}$) ⁻¹ (f)	Dose (by receptor)		Cancer Risks (by receptor)		Chronic Hazards ¹		
	Conc. ($\mu\text{g}/\text{m}^3$) (b)	Fraction (c)				Average	AB109	Average	AB109	Chronic REL ($\mu\text{g}/\text{m}^3$) (l)	RESP (m)	
						($\text{mg}/\text{kg}/\text{day}$) (g)	($\text{mg}/\text{kg}/\text{day}$) (h)	per million (i)	per million (j)			
Inmates - Outdoors 24-hr/day												
1	Locomotives (easement)	1.89E-01	1.00E+00	DPM	3.0E-04	1.1E+00	5.04E-06	4.83E-05	7.56E-02	7.24E-01	5.0	3.79E-02
2	Locomotives (Union Station)	1.49E-01	1.00E+00				3.98E-06	3.81E-05	5.96E-02	5.72E-01		2.99E-02
3	LA Metro (buses)	4.55E-05	1.00E+00				1.21E-09	1.16E-08	1.82E-05	1.74E-04		9.10E-06
							Total	0.14	1.30			0.07
Inmates - MERV 8 filters (existing facilities)												
1	Locomotives (easement)	5.68E-02	1.00E+00	DPM	3.0E-04	1.1E+00	1.51E-06	1.45E-05	2.27E-02	2.17E-01	5.0	1.14E-02
2	Locomotives (Union Station)	4.48E-02	1.00E+00				1.19E-06	1.14E-05	1.79E-02	1.71E-01		8.96E-03
3	LA Metro (buses)	1.36E-05	1.00E+00				3.63E-10	3.48E-09	5.45E-06	5.22E-05		2.73E-06
							Total	0.04	0.39			0.02
Inmates - Indoor/Outdoor Scenario												
Hours Outdoors ²		0.02				Outdoor Risk x (outdoor hours/24 hr-day)		1.01E-04	9.64E-04			5.04E-05
Hours Indoors		23.98				Indoor Risk x (indoor hours/24 hr-day)		4.05E-02	3.89E-01			2.03E-02
							Total	0.04	0.39			0.020

	Receptor Type	Average	AB1009
	exposure year	2018	2018
Dose Exposure Factors:	exposure frequency (days/year) ³	29	278
	inhalation rate (L/kg-day) ⁴	335	335
	inhalation absorption factor	1	1
	conversion factor ($\text{mg}/\mu\text{g}; \text{m}^3/\text{L}$)	1.0E-06	1.0E-06
Risk Calculation Factors:	exposure duration (year)	1	1
	age sensitivity factor	1	1
	averaging time (years)	70	70
	per million	1.0E+06	1.0E+06
	MERV 8 DPM Removal Efficiency	0.70	

¹ Chronic Hazards for DPM using the chronic reference exposure level (REL) for the Respiratory Toxicological Endpoint.

² 3 hours outdoors per week (0.02 hours/day) for inmates, provided by LA County.

³ Average lengths of incarceration for all inmates and AB109, provided by LA County.

⁴ Inhalation rate taken as the 95th percentile breathing rates (OEHHA, 2015).

Table C3a
Quantification of Health Risks - Employees
Project Buildout

Source (a)	MER Conc. ($\mu\text{g}/\text{m}^3$) (b)	Weight Fraction (c)	Contaminant (d)	URF ($\mu\text{g}/\text{m}^3$) ⁻¹ (e)	CPF ($\text{mg}/\text{kg}/\text{day}$) ⁻¹ (f)	Dose (by receptor)		Cancer Risks (by receptor)		Chronic Hazards ¹		
						Average ($\text{mg}/\text{kg}/\text{day}$) (g)	Max-OEHHA ($\text{mg}/\text{kg}/\text{day}$) (h)	Average per million (i)	Max-OEHHA per million (j)	Chronic REL ($\mu\text{g}/\text{m}^3$) (l)	RESP (m)	
Employees - Outdoors 24-hr/day												
1	Locomotives (easement)	1.95E-01	1.00E+00	DPM	3.0E-04	1.1E+00	4.30E-05	4.30E-05	3.87E+00	1.61E+01	5.0	3.90E-02
2	Locomotives (Union Station)	3.10E-01	1.00E+00				6.82E-05	6.82E-05	6.14E+00	2.56E+01		6.19E-02
3	LA Metro (buses)	6.57E-05	1.00E+00				1.45E-08	1.45E-08	1.30E-03	5.43E-03		1.31E-05
Total									10.0	41.7		0.10
Employees - MERV13 filters												
1	Locomotives (easement)	1.95E-02	1.00E+00	DPM	3.0E-04	1.1E+00	4.30E-06	4.30E-06	3.87E-01	1.61E+00	5.0	3.90E-03
2	Locomotives (Union Station)	3.10E-02	1.00E+00				6.82E-06	6.82E-06	6.14E-01	2.56E+00		6.19E-03
3	LA Metro (buses)	6.57E-06	1.00E+00				1.45E-09	1.45E-09	1.30E-04	5.43E-04		1.31E-06
Total									1.00	4.17		0.01
Employees - Indoor/Outdoor Scenario												
Hours Outdoors ²	0.4						Outdoor Risk x (outdoor hours/24 hr-day)		0.17	0.70		1.68E-03
Hours Indoors	7.6						Indoor Risk x (indoor hours/24 hr-day)		0.32	1.32		3.20E-03
Hours not on-site ³	16						Indoor Risk x (indoor hours/24 hr-day)		0.00	0.00		0E+00
Total									0.48	2.0		0.005

	Receptor Type exposure year	Average 2018	Max - OEHHA 2018
Dose Exposure Factors:	exposure frequency (days/year) ⁴	240	240
	inhalation rate (L/kg-day) ⁵	335	335
	inhalation absorption factor	1	1
	conversion factor ($\text{mg}/\mu\text{g}; \text{m}^3/\text{L}$)	1.0E-06	1.0E-06
Risk Calculation Factors:	exposure duration (year)	6	25
	age sensitivity factor	1	1
	averaging time (years)	70	70
	per million	1.0E+06	1.0E+06
	MERV 13 DPM Removal Efficiency	0.90	

¹ Chronic Hazards for DPM using the chronic reference exposure level (REL) for the Respiratory Toxicological Endpoint.

² The vast majority of MCJ employees (90%) work indoors, provided by LA County. The remaining 10% work a combination of indoors and outdoors. Assumed 10% of the time employees work 4 hours per day outdoors.

³ Work schedule of 8 hours per day (i.e., not present at MCJ 16 hours per day).

⁴ Employees work 5 days per week; 48 weeks per year (4 weeks off for holidays and vacation).

⁵ Inhalation rate taken as the 95th percentile breathing rates (OEHHA, 2015).

Table C3b
Quantification of Health Risks - Employees
Phase 1 Construction

Source (a)	MER Conc. ($\mu\text{g}/\text{m}^3$) (b)	Weight Fraction (c)	Contaminant (d)	URF ($\mu\text{g}/\text{m}^3$) ⁻¹ (e)	CPF ($\text{mg}/\text{kg}/\text{day}$) ⁻¹ (f)	Dose (by receptor)		Cancer Risks (by receptor)		Chronic Hazards ¹		
						Average ($\text{mg}/\text{kg}/\text{day}$) (g)	Max-OEHHA ($\text{mg}/\text{kg}/\text{day}$) (h)	Average per million (i)	Max-OEHHA per million (j)	Chronic REL ($\mu\text{g}/\text{m}^3$) (l)	RESP (m)	
Employees - Outdoors 24-hr/day												
1	Locomotives (easement)	1.89E-01	1.00E+00	DPM	3.0E-04	1.1E+00	4.17E-05	4.17E-05	3.75E+00	1.56E+01	5.0	3.79E-02
2	Locomotives (Union Station)	1.49E-01	1.00E+00				3.29E-05	3.29E-05	2.96E+00	1.23E+01		2.99E-02
3	LA Metro (buses)	4.55E-05	1.00E+00				1.00E-08	1.00E-08	9.02E-04	3.76E-03		9.10E-06
							Total	6.7	28.0		0.07	
Employees - MERV 8 filters (existing facilities)												
1	Locomotives (easement)	5.68E-02	1.00E+00	DPM	3.0E-04	1.1E+00	1.25E-05	1.25E-05	1.13E+00	4.69E+00	5.0	1.14E-02
2	Locomotives (Union Station)	4.48E-02	1.00E+00				9.87E-06	9.87E-06	8.88E-01	3.70E+00		8.96E-03
3	LA Metro (buses)	1.36E-05	1.00E+00				3.01E-09	3.01E-09	2.71E-04	1.13E-03		2.73E-06
							Total	2.01	8.4		0.02	
Employees - Indoor/Outdoor Scenario												
Hours Outdoors ²	0.4						Outdoor Risk x (outdoor hours/24 hr-day)		0.11	0.47		1.13E-03
Hours Indoors	7.6						Indoor Risk x (indoor hours/24 hr-day)		0.64	2.66		6.43E-03
Hours not on-site ³	16						Indoor Risk x (indoor hours/24 hr-day)		0.00	0.00		0E+00
							Total	0.75	3.1		0.008	

	Receptor Type exposure year	Average 2018	Max - OEHHA 2018
Dose Exposure Factors:	exposure frequency (days/year) ⁴	240	240
	inhalation rate (L/kg-day) ⁵	335	335
	inhalation absorption factor	1	1
	conversion factor ($\text{mg}/\mu\text{g}; \text{m}^3/\text{L}$)	1.0E-06	1.0E-06
Risk Calculation Factors:	exposure duration (year)	6	25
	age sensitivity factor	1	1
	averaging time (years)	70	70
	per million	1.0E+06	1.0E+06
	MERV 8 DPM Removal Efficiency	0.70	

¹ Chronic Hazards for DPM using the chronic reference exposure level (REL) for the Respiratory Toxicological Endpoint.

² The vast majority of MCJ employees (90%) work indoors, provided by LA County. The remaining 10% work a combination of indoors and outdoors. Assumed 10% of the time employees work 4 hours per day outdoors.

³ Work schedule of 8 hours per day (i.e., not present at MCJ 16 hours per day).

⁴ Employees work 5 days per week; 48 weeks per year (4 weeks off for holidays and vacation).

⁵ Inhalation rate taken as the 95th percentile breathing rates (OEHHA, 2015).

Appendix E – MERV Chart

TABLE 2: MINIMUM EFFICIENCY REPORTING VALUE (MERV) PARAMETERS

ASHRAE Standard 52.2				ASHRAE Standard 52.1	Application Guidelines		
MERV	Particle Size Removal Efficiency, Percent in Particle Size Range, μm			Dust-Spot Efficiency Percent	Particle Size and Typical Controlled Contaminant	Typical Applications	Typical Air Filter/Cleaner Type
	0.3 to 1	1 to 3	3 to 10				
20	≥ 99.999	in 0.1 – 0.2 μm particle size		—	< 0.3 μm Virus (unattached) Carbon dust Sea salt All combustion smoke	Electronics manufacturing Pharmaceutical manufacturing Carcinogenic materials	HEPA/ULPA Filters*
19	≥ 99.999	in 0.3 μm particle size		—			
18	≥ 99.99			—			
17	≥ 99.97			—			
16	> 95	> 95	> 95	—	0.3-1 μm All bacteria Droplet nuclei (sneeze) Cooking oil Most smoke Insecticide dust Most face powder Most paint pigments	Superior commercial buildings Hospital inpatient care General surgery	Bag Filters – Nonsupported (flexible) microfine fiberglass or synthetic media, 12 to 36 inches deep. Box Filters – Rigid style cartridge, 6 to 12 inches deep.
15	85-95	> 90	> 90	> 95			
14	75-85	> 90	> 90	90-95			
13	< 75	> 90	> 90	80-90			
12	—	> 80	> 90	70-75	1-3 μm Legionella Humidifier dust Lead dust Milled flour Auto emission particles Nebulizer drops	Superior residential Better commercial buildings Hospital laboratories	Pleated filters –Extended surface with cotton or polyester media or both, 1 to 6 inches thick. Box Filters – Rigid style cartridge, 6 to 12 inches deep.
11	—	65-80	> 85	60-65			
10	—	50-65	> 85	50-55			
9	—	< 50	> 85	40-45			
8	—	—	> 70	30-35	3-10 μm Mold Spores Dust mite body parts and droppings Cat and dog dander Hair spray Fabric protector Dusting aids Pudding mix Powdered milk	Better residential Commercial buildings Industrial workplaces	Pleated filters –Extended surface with cotton or polyester media or both, 1 to 6 inches thick. Cartridge filters –Viscous cube or pocket filters Throwaway –Synthetic media panel filters
7	—	—	50-70	25-30			
6**	—	—	35-50	< 20			
5	—	—	20-35	< 20			
4	—	—	< 20	< 20	> 10 μm Pollen Dust mites Cockroach body parts and droppings Spanish moss Sanding dust Spray paint dust Textile fibers Carpet fibers	Minimum filtration Residential window air conditioners	Throwaway – Fiberglass or synthetic media panel, 1 inch thick. Washable – Aluminum mesh, foam rubber panel Electrostatic – Self-charging (passive) woven polycarbonate panel
3	—	—	< 20	< 20			
2	—	—	< 20	< 20			
1	—	—	< 20	< 20			

This table is adapted from ANSI/ASHRAE Standard 52.2-2007.¹⁵

*The last four MERV values of 17 to 20 are not part of the official standard test, but have been added by ASHRAE for comparison purposes. Ultra Low Penetration Air filters (ULPA) have a minimum efficiency of 99.999 percent in removing 0.3 μm particles, based on the IEST test method. MERVs between 17 and 19 are rated for 0.3 μm particles, whereas a MERV of 20 is rated for 0.1 to 0.2 μm particles.

** For residential applications, the ANSI/ASHRAE Standard 62.2-2007¹⁶ requires a filter with a designated minimum efficiency of MERV 6 or better.

