APPENDIX B:
HEALTH RISK ASSESSMENT

1. Health Risk Assessment

1.1 CONSTRUCTION HEALTH RISK ASSESSMENT

The proposed project would construct a boutique hotel on a 1.72-acre site in the City of Cupertino. The project site is located at 10765 - 10801 North Wolfe Road in the northeast region of the City. The following provides the background methodology used for the construction health risk assessment for the proposed project.

The latest version of the Bay Area Air Quality Management District (BAAQMD) CEQA Air Quality Guidelines requires projects to evaluate the impacts of construction activities on sensitive receptors (BAAQMD, 2017). Project construction is anticipated to take place starting at the beginning of August 2019 and be completed by the end of July 2021 (approximately 522 work days). The nearest sensitive receptors to the project site include the residents at the apartments approximately 80 feet to the west of the project site along Pruneridge Road. The BAAQMD has developed *Screening Tables for Air Toxics Evaluation During Construction* (2017) that evaluate construction-related health risks associated with residential, commercial, and industrial projects. According to the screening tables, the residences are closer than the distance of 100 meters (328 feet) that would screen out potential health risks and therefore could be potentially impacted from the proposed construction activities. As a result, a site-specific construction health risk assessment (HRA) has been prepared for the proposed project. This HRA considers the health impact to off-site sensitive receptors (children at the nearby residences) from construction emissions at the project site, including diesel equipment exhaust (diesel particulate matter or DPM) and particulate matter less than 2.5 microns ($PM_{2.5}$).

It should be noted that these health impacts are based on conservative (i.e., health protective) assumptions. The United States Environmental Protection Agency (USEPA, 2005) and the Office of Environmental Health Hazard Assessment (OEHHA, 2015) note that conservative assumptions used in a risk assessment are intended to ensure that the estimated risks do not underestimate the actual risks. Therefore, the estimated risks may not necessarily represent actual risks experienced by populations at or near a site. The use of conservative assumptions tends to produce upper-bound estimates of exposure and thus risk.

For residential-based receptors, the following conservative assumptions were used:

- It was assumed that maximum-exposed off-site residential receptors (both children and adults) stood outdoors and are subject to DPM at their residence for 8 hours per day, and approximately 260 construction days per year. In reality, California residents typically will spend on average 2 hours per day outdoors at their residences (USEPA, 2011). This would result in lower exposures to construction related DPM emissions and lower estimated risk values.

- The calculated risk for infants from third trimester to age 2 is multiplied by a factor of 10 to account for early life exposure and uncertainty in child versus adult exposure impacts (OEHHA, 2015).

1.2 METHODOLOGY AND SIGNIFICANCE THRESHOLDS

For this HRA, the BAAQMD significance thresholds were deemed to be appropriate and the thresholds that were used for this project are shown below:

- Excess cancer risk of more than 10 in a million
- Non-cancer hazard index (chronic or acute) greater than 1.0
- Incremental increase in average annual $PM_{2.5}$ concentration of greater than 0.3 $\mu g/m^3$

The methodology used in this HRA is consistent with the following BAAQMD and the OEHHA guidance documents:

- BAAQMD, 2017. *California Environmental Quality Act Air Quality Guidelines*. May 2017.
- BAAQMD, 2010. *Screening Tables for Air Toxics Evaluation During Construction.* May 2010.
- BAAQMD, 2012. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. Version 3.0. May 2012.
- OEHHA. 2015. *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments.* February, 2015.

Potential exposures to DPM and $PM_{2.5}$ from proposed project construction were evaluated for off-site sensitive receptors in close proximity to the site. Pollutant concentrations were estimated using an air dispersion model, and excess lifetime cancer risks and chronic non-cancer hazard indexes were calculated. These risks were then compared to the significance thresholds adopted for this HRA.

1.3 CONSTRUCTION EMISSIONS

Construction emissions were calculated as average daily emissions in pounds per day, using the proposed construction schedule and the latest version of California Emissions Estimation Model, known as CalEEMod Version 2016.3.2 (CAPCOA, 2016). DPM emissions were based on the CalEEMod construction runs, using annual exhaust PM_{10} construction emissions presented in pounds (lbs) per day. The $PM_{2.5}$ emissions were taken from the CalEEMod output for exhaust $PM_{2.5}$ also presented in lbs per day.

The project was assumed to take place over 24 months (522 work days) from beginning of August 2019 to July 2021. The average daily emission rates from construction equipment used during the proposed project were determined by dividing the annual average emissions for each construction year by the number of construction days per year for each calendar year of construction (i.e., 2019 through 2021). The off-site hauling emission rates were adjusted to evaluate localized emissions from the 0.23-mile haul route within 1,000 feet of the project site. The CalEEMod construction emissions output and emission rate calculations are provided in Appendix A of the HRA.

1.4 DISPERSION MODELING

To assess the impact of emitted compounds on sensitive receptors near the project, air quality modeling using the AERMOD atmospheric dispersion model was performed. The model is a steady state Gaussian plume model and is an approved model by BAAQMD for estimating ground level impacts from point and fugitive sources in simple and complex terrain. The on-site construction emissions for the project were modeled as poly-area sources. The off-site mobile sources were modeled as adjacent line volume sources. The model requires additional input parameters, including chemical emission data and local meteorology. Inputs for the construction emission rates are those described in Section 1.3. Meteorological data obtained from the BAAQMD for the nearest representative meteorological station (N.Y. Mineta San Jose International Airport) with the five latest available years (2009 to 2013) 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 sensitive 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. An emission release height of 4.15 meters was used as representative of the stack exhaust height for off-road construction equipment and diesel truck traffic, and an initial vertical dispersion parameter of 1.93 m was used, per California Air Resources Board (CARB) guidance (2000).

To determine contaminant impacts during construction hours, the model's Season-Hour-Day (HRDOW) scalar option was invoked to predict flagpole-level concentrations (1.5 m for ground-floor receptors and 6.1 m for second-floor receptors) for construction emissions generated between the hours of 7:00 AM and 4:00 PM with a 1-hour lunch break. In addition, a scalar factor was applied to the risk calculations to account for the number of days residents are exposed to construction emissions per year.

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 for on-site construction emissions, and divided between the volume sources for off-site hauling emissions. The maximum modeled concentrations from the output files were then multiplied by the emission rates calculated in Appendix A to obtain the maximum flagpole-level concentrations at the off-site maximum exposed receptors (MER). The off-site MER are the Hampton Apartments approximately 200 feet to the southeast along North Wolfe Road. The MER location is the receptor location associated with the maximum predicted AERMOD concentrations from the on-site emission source. The calculated on-site emission rates are approximately 2 to 3 orders of magnitude higher than the calculated off-site emission rates (see Appendix A). Therefore, the maximum concentrations associated with the on-site emission sources produce the highest overall ground-level MER concentrations and, consequently, higher calculated health risks.

The air dispersion model output for the emission sources is presented in Appendix B. The model output DPM and $PM_{2.5}$ concentrations from the construction emission sources are provided in Appendix C.

1.5 RISK CHARACTERIZATION

1.5.1 Carcinogenic Chemical Risk

A threshold of ten in a million ($10x10^{-6}$) 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 ($\mu g/m^3$) over a lifetime of 70 years.

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

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

Where:

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

The inhalation absorption factor (A) is a unitless factor that is only used if the cancer potency factor included a correction for absorption across the lung. For this assessment, the default value of 1 was used. For residential receptors, the exposure frequency (EF) of 0.96 is used to represent 350 days per year to allow for a two week period away from home each year (OEHHA, 2015). The 95th percentile daily breathing rates (BR/BW), exposure duration (ED), age sensitivity factors (ASFs), and fraction of time at home (FAH) for the various age groups are provided herein:

Age Groups	BR/BW (L/kg-day)	ED	ASF	FAH
Third trimester	361	0.25	10	0.85
0-2 age group	1,090	2	10	0.85
2-9 age group	861	7	3	0.72
2-16 age group	745	14	3	0.72

16-30 age group	335	14	1	0.73
16-70 age group	290	54	1	0.73

For construction analysis, the exposure duration spans the length of construction (e.g. 522 work days). As the length of construction is equal to 2 years, only the third trimester and 0-2 age bins apply to the construction analysis for the off-site residential receptors.

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

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

Where:

Dose_{AIR}	=	dose by inhalation (mg/kg-day), per age group
CPF	=	cancer potency factor, chemical-specific $(\text{mg/kg-day})^{-1}$
ASF	=	age sensitivity factor, per age group
FAH	=	fraction of time at home, per age group (for residential receptors only)
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 excess lifetime cancer risks during the construction period to the maximally exposed resident were calculated based on the factors provided above. The cancer risks for each age group are summed to estimate the total cancer risk for each toxic chemical species. For purposes of this assessment and as stated, the calculated residential cancer risks associated with construction activities are based on the 3rd trimester and 0-2 year old age groups. The final step converts the cancer risk in scientific notation to a whole number that expresses the cancer risk in "chances per million" by multiplying the cancer risk by a factor of $1x10^6$ (i.e. 1 million).

The calculated results are provided in Appendix C.

1.5.2 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 level (flagpole) 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. Where the total equals or exceeds one, a health hazard is presumed to exist.

The chronic hazard analysis for DPM is provided in Appendix C. The calculations contain the relevant exposure concentrations and corresponding reference dose values used in the evaluation of non-carcinogenic exposures.

1.5.3 Criteria Pollutants

The BAAQMD has recently incorporated $PM_{2.5}$ into the District's CEQA significance thresholds due to recent studies that show adverse health impacts from exposure to this pollutant. An incremental increase of greater than 0.3 $\mu g/m^3$ for the annual average $PM_{2.5}$ concentration is considered to be a significant impact.

1.6 CONSTRUCTION HRA RESULTS

The calculated results are provided in Appendix C and the results are summarized in Table 1.

TABLE 1. CONSTRUCTION RISK SUMMARY - UNMITIGATED

Receptor	Cancer Risk (per million)	Chronic Hazards	$PM_{2.5}$ ($\mu g/m^3$)
Maximum Exposed Receptor – Offsite Residences	24.5	0.06	0.12
BAAQMD Threshold	10	1.0	0.30
Exceeds Threshold?	No	No	No

Note: Cancer risk calculated using 2015 OEHHA HRA guidance.
Source: Lakes AERMOD View, 9.5 (2017).

Cancer risk for the maximum exposed receptor (MER) from project-related construction emissions was calculated to be 24.5 in a million, which would not exceed the 10 in a million significance threshold. In accordance with the latest 2015 OEHHA guidance, the calculated total cancer risk conservatively assumes that the risk for the MER consists of a pregnant woman in the third trimester that subsequently gives birth to an infant during the approximately 24-month construction period; therefore, all calculated risk values were multiplied by a factor of 10. In addition, it was conservatively assumed that the residents were outdoors 8 hours a day, 260 construction days per year and exposed to all of the daily construction emissions.

For non-carcinogenic effects, the chronic hazard index identified for each toxicological endpoint totaled less than one for all the off-site sensitive receptors. Therefore, chronic non-carcinogenic hazards are within acceptable limits. The highest $PM_{2.5}$ annual concentration of 0.12 is below the BAAQMD significance threshold of 0.3 micrograms per cubic meter ($\mu g/m^3$).

Because cancer risk and $PM_{2.5}$ annual concentrations for the MER would exceed BAAQMD's significance thresholds due to construction activities associated with the proposed project, the following mitigation measure is proposed:

> **Mitigation Measure AIR-2:** During construction, the construction contractor(s) shall use construction equipment fitted with Level 3 Diesel Particulate Filters (DPF) for all equipment of 50 horsepower or more. The construction contractor shall maintain a list of all operating equipment in use on the project site for verification by the City of Cupertino Building Division official or his/her designee. The construction equipment list shall state the makes, models, and

number of construction equipment on-site. Equipment shall be properly serviced and maintained in accordance with manufacturer recommendations. The construction contractor shall ensure that all nonessential idling of construction equipment is restricted to five minutes or less in compliance with California Air Resources Board Rule 2449. Prior to issuance of any construction permit, the construction contractor shall ensure that all construction plans submitted to the City of Cupertino Planning Department and/or Building Division clearly show the requirement for Level 3 DPF emissions standards for construction equipment over 50 horsepower.

Mitigation Measure AIR-2 would reduce the project's localized construction emissions, as shown in the following table. The results indicate that, with mitigation, cancer risk and $PM_{2.5}$ impacts would be less than the BAAQMD's significance thresholds for residential-based receptors. Therefore, the project would not expose off-site sensitive receptors to substantial concentrations of air pollutant emissions during construction and impacts would be *less than significant* with mitigation.

TABLE 2 CONSTRUCTION RISK SUMMARY – MITIGATED

Receptor	Cancer Risk (per million)	Chronic Hazards	$PM_{2.5}$ ($\mu g/m^3$)[a]
Maximum Exposed Receptor – Offsite Residences	1.5	0.004	0.01
BAAQMD Threshold	10	1.0	0.3
Exceeds Threshold?	No	No	No

Risks incorporate Mitigation Measure AIR-2, which includes using construction equipment with Level 3 Diesel Particulate Filters and Tier\ 3 engines.
Note: Cancer risk calculated using 2015 OEHHA HRA guidance.
Source: Lakes AERMOD View, 9.5 (2017).

2. References

Bay Area Air Quality Management District. 2017. *California Environmental Quality Act Air Quality Guidelines.*

———. 2012. *Recommended Methods for Screening and Modeling Local Risks and Hazards.* Version 3.0. Dated May 2012.

———. 2010. Screening Tables for Air Toxics Evaluation During Construction. Version 1.0. Dated May 2010.

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California Air Pollution Control Officers Association (CAPCOA). 2016. California Emissions Estimator Model (CalEEMod). Version 2016.3.2. Prepared by: ENVIRON International Corporation and the California Air Districts.

California Air Resources Board (CARB). 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.*

———. 2015. *Meteorological Files.* https://www.arb.ca.gov/toxics/harp/metfiles2.htm

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United States Environmental Protection Agency (USEPA). 2011. *Exposure Factors Handbook 2011 Edition (Final).* EPA/600/R-09/052F, 2011.

_____. 2005. *Guideline on Air Quality Models* (Revised). EPA-450/2-78-027R.

Appendix A. Emission Rate Calculations

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Appendix B. Air Dispersion Model Output

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Appendix C. Construction Risk Calculations

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Construction Emissions - DPM and PM2.5
Input to Risk Tables

On-site Construction Emissions		DPM [1]	$PM_{2.5}$ [2]
2019 On-site Emissions	Average Daily Emissions (lbs/day)	0.62	0.58
	Average Daily Emissions (lbs/hr)	7.74E-02	7.21E-02
	Emission Rate (g/s)	9.75E-03	9.09E-03
2020 On-site Emissions	Average Daily Emissions (lbs/day)	0.49	0.45
	Average Daily Emissions (lbs/hr)	6.12E-02	5.63E-02
	Emission Rate (g/s)	7.71E-03	7.09E-03
2021 On-site Emissions	Average Daily Emissions (lbs/day)	0.46	0.42
	Average Daily Emissions (lbs/hr)	5.74E-02	5.29E-02
	Emission Rate (g/s)	7.24E-03	6.66E-03

Note: Emissions assumed to be evenly distributed over entire construction phase area.

Off-site Construction Emissions		DPM [1]	$PM_{2.5}$ [2]
2019 Off-site Emissions	Haul Length Daily Emissions (lbs/day)	0.022	0.021
	Hauling Emissions w/in 1,000 ft (lbs/day) [3]	2.65E-04	2.52E-04
	Emission Rate (lbs/hr)	3.32E-05	3.15E-05
	Emission Rate (g/s)	4.18E-06	3.97E-06
2020 Off-site Emissions	Haul Length Daily Emissions (lbs/day)	0.021	0.019
	Hauling Emissions w/in 1,000 ft (lbs/day) [3]	2.44E-04	2.31E-04
	Emission Rate (lbs/hr)	3.05E-05	2.88E-05
	Emission Rate (g/s)	3.85E-06	3.63E-06
2021 Off-site Emissions	Haul Length Daily Emissions (lbs/day)	0.013	0.012
	Hauling Emissions w/in 1,000 ft (lbs/day) [3]	1.49E-04	1.38E-04
	Emission Rate (lbs/hr)	1.86E-05	1.73E-05
	Emission Rate (g/s)	2.35E-06	2.18E-06

Note: Emissions evenly distributed over 16 modeled volume sources.

Hours per work day (7:00 AM to 4:00 PM, 1-hour of breaks) [4] 8 hours

	Year	Workdays	Risk Scalar [5]
Total construction days per year	2019	109	0.42
	2020	262	1.00
	2021	151	0.58

	Demolition	Site Prep	Grading
Number of Haul Trips	187	37	129
Hauling Length (miles)	10	30	30
Average Hauling Length (miles)	**19.4**		
Haul Length within 1,000 ft of Site (mile) [3]	**0.23**		

[1] DPM emissions taken as PM_{10} exhaust emissions from CalEEMod average daily emissions.

[2] $PM_{2.5}$ emissions taken as $PM_{2.5}$ exhaust emissions from CalEEMod average daily emissions.

[3] Emissions from CalEEMod offsite average daily emissions, which is based on proportioned haul truck trip distances proportioned to evaluate emissions from the 0.23-mile route within 1,000 of the project site.

[4] Work hours applied in By Hour/Day (HRDOW) variable emissions module in air dispersion model (see App B - Air Dispersion Model Output Files).

[5] Residential risk scalars determined for each year of construction to adjust receptor exposures to the exposure durations for each construction year (see App C - Risk Calculations).

Construction Emissions - DPM and PM2.5
Input to Risk Tables

Mitigated On-site Construction Emissions		DPM [1]	$PM_{2.5}$ [2]
2019 On-site Emissions	Average Daily Emissions (lbs/day)	0.07	0.06
	Average Daily Emissions (lbs/hr)	8.62E-03	8.00E-03
	Emission Rate (g/s)	1.09E-03	1.01E-03
2020 On-site Emissions	Average Daily Emissions (lbs/day)	0.04	0.04
	Average Daily Emissions (lbs/hr)	5.01E-03	4.61E-03
	Emission Rate (g/s)	6.31E-04	5.81E-04
2021 On-site Emissions	Average Daily Emissions (lbs/day)	0.42	0.39
	Average Daily Emissions (lbs/hr)	5.31E-02	4.88E-02
	Emission Rate (g/s)	6.69E-03	6.15E-03

Note: Emissions assumed to be evenly distributed over entire construction phase area.

Mitigated Off-site Construction Emissions		DPM [1]	$PM_{2.5}$ [2]
2019 Off-site Emissions	Haul Length Daily Emissions (lbs/day)	0.020	0.019
	Hauling Emissions w/in 1,000 ft (lbs/day) [3]	2.37E-04	2.22E-04
	Emission Rate (lbs/hr)	2.96E-05	2.77E-05
	Emission Rate (g/s)	3.73E-06	3.49E-06
2020 Off-site Emissions	Haul Length Daily Emissions (lbs/day)	0.011	0.011
	Hauling Emissions w/in 1,000 ft (lbs/day) [3]	1.34E-04	1.27E-04
	Emission Rate (lbs/hr)	1.67E-05	1.58E-05
	Emission Rate (g/s)	2.11E-06	2.00E-06
2021 Off-site Emissions	Haul Length Daily Emissions (lbs/day)	0.012	0.012
	Hauling Emissions w/in 1,000 ft (lbs/day) [3]	1.48E-04	1.38E-04
	Emission Rate (lbs/hr)	1.84E-05	1.73E-05
	Emission Rate (g/s)	2.32E-06	2.18E-06

Note: Emissions evenly distributed over 16 modeled volume sources.

Hours per work day (7:00 AM to 4:00 PM, 1-hour of breaks) [4] 8 hours

	Year	Workdays	Risk Scalar [5]
Total construction days per year	2019	109	0.42
	2020	262	1.00
	2021	151	0.58

	Demolition	Site Prep	Grading
Number of Haul Trips	187	37	129
Hauling Length (miles)	10	30	30
Average Hauling Length (miles)	**19.4**		
Haul Length within 1,000 ft of Site (mile) [3]	**0.23**		

[1] DPM emissions taken as PM_{10} exhaust emissions from CalEEMod average daily emissions.

[2] $PM_{2.5}$ emissions taken as $PM_{2.5}$ exhaust emissions from CalEEMod average daily emissions.

[3] Emissions from CalEEMod offsite average daily emissions, which is based on proportioned haul truck trip distances proportioned to evaluate emissions from the 0.23-mile route within 1,000 of the project site.

[4] Work hours applied in By Hour/Day (HRDOW) variable emissions module in air dispersion model (see App B - Air Dispersion Model Output Files).

[5] Residential risk scalars determined for each year of construction to adjust receptor exposures to the exposure durations for each construction year (see App C - Risk Calculations).

Table C1
Off-site Residential MER Concentrations for Risk Calculations

Contaminant	Source		Model Output [1] ($\mu g/m^3$)	Emission Rates [2] (g/s)	MER Conc. ($\mu g/m^3$)	Total MER Conc. Annual Average ($\mu g/m^3$)
(a)	(b)		(c)	(d)	(e)	(f)
Residential Receptors - Unmitigated						
DPM	2019	On-Site Emissions	12.82	9.75E-03	1.25E-01	1.25E-01
		Truck Route	16.39	4.18E-06	6.85E-05	
	2020	On-Site Emissions	12.82	7.71E-03	9.88E-02	9.88E-02
		Truck Route	16.39	3.85E-06	6.31E-05	
	2021	On-Site Emissions	12.82	7.24E-03	9.27E-02	9.28E-02
		Truck Route	16.39	2.35E-06	3.85E-05	
				Total DPM concentrations used for Cancer Risk and Chronic Hazard calculations		
$PM_{2.5}$	2029	On-Site Emissions	12.82	9.09E-03	1.16E-01	1.17E-01
		Truck Route	16.39	3.97E-06	6.51E-05	
	2020	On-Site Emissions	12.82	7.09E-03	9.09E-02	9.10E-02
		Truck Route	16.39	3.63E-06	5.96E-05	
	2021	On-Site Emissions	12.82	6.66E-03	8.54E-02	8.54E-02
		Truck Route	16.39	2.18E-06	3.57E-05	
					Maximum Annual $PM_{2.5}$ Concentration	**0.12**
					BAAQMD Threshold	**0.30**
Residential Receptors - Mitigated Run: Level 3 DPFs for eq. > 50 HP						
DPM	2019	On-Site Emissions	12.82	1.09E-03	1.39E-02	1.40E-02
		Truck Route	16.39	3.73E-06	6.12E-05	
	2020	On-Site Emissions	12.82	6.31E-04	8.09E-03	8.12E-03
		Truck Route	16.39	2.11E-06	3.46E-05	
	2021	On-Site Emissions	12.82	6.69E-03	8.58E-02	8.58E-02
		Truck Route	16.39	2.32E-06	3.81E-05	
				Total DPM concentrations used for Cancer Risk and Chronic Hazard calculations		
$PM_{2.5}$	2019	On-Site Emissions	12.82	1.01E-03	1.29E-02	1.30E-02
		Truck Route	16.39	3.49E-06	5.73E-05	
	2020	On-Site Emissions	12.82	5.81E-04	7.44E-03	7.47E-03
		Truck Route	16.39	2.00E-06	3.27E-05	
	2021	On-Site Emissions	12.82	6.15E-03	7.88E-02	7.88E-02
		Truck Route	16.39	2.18E-06	3.57E-05	
					Maximum Annual $PM_{2.5}$ Concentration	**0.01**

Maximum Exposed Receptor (MER) UTM coordinates: 587206.00 E, 4132493.80 N

[1] Model Output at the MER based on unit emission rates for sources (1 g/s).

[2] Emission Rates from Emission Rate Calculations (Appendix A - Construction Emissions).

Table C2
Quantification of Health Risks for Off-site Residents

Source		MER	Weight	Contaminant			Dose (by age bin)		Carcinogenic Risks (by age bin)		**Total Cancer Risk**	**Chronic Hazards [3]**	
		Conc.	Fraction		URF	CPF	3rd Trimester	0 < 2 years	3rd Trimester	0 < 2 years		Chronic REL	RESP
		($\mu g/m^3$)			$(\mu g/m^3)^{-1}$	$(mg/kg/day)^{-1}$	(mg/kg-day)		per million		per million	($\mu g/m^3$)	
(a)		(b)	(c)	(d)	(e)	(f)	(g)		(i)		(k)	(l)	(m)
Residential Receptors - Unmitigated													
2019	On & Off-Site	1.25E-01	1.00E+00	DPM	3.0E-04	1.1E+00	4.33E-05	1.31E-04	1.38E+00	2.79E+00	4.2	5.0E+00	2.50E-02
2020	On & Off-Site	9.88E-02	1.00E+00	DPM	3.0E-04	1.1E+00		1.03E-04		1.32E+01	13.2	5.0E+00	1.98E-02
2021	On & Off-Site	9.28E-02	1.00E+00	DPM	3.0E-04	1.1E+00		9.70E-05		7.15E+00	7.2	5.0E+00	1.86E-02
										Total	**24.5**		**0.063**
										BAAQMD Threshold	**10.0**		**1.0**
Residential Receptors - Mitigated Run: Level 3 DPFs for eq. > 50 HP													
2019	On & Off-Site	1.40E-02	1.00E+00	DPM	3.0E-04	1.1E+00	4.84E-06	1.46E-05	1.54E-01	3.12E-01	0.47	5.0E+00	2.80E-03
2020	On & Off-Site	8.12E-03	1.00E+00	DPM	3.0E-04	1.1E+00		8.49E-06		1.08E+00	1.08	5.0E+00	1.62E-03
2021	On & Off-Site	8.58E-02	1.00E+00	DPM	3.0E-04	1.1E+00		8.97E-05		6.62E+00	6.62	5.0E+00	1.72E-02
										Total	**1.5**		**0.004**

Maximum Exposed Receptor (MER) UTM coordinates: 587206.00 E, 4132493.80 N

	OEHHA age bin	3rd Trimester	0 < 2 years
	exposure year(s)	2019	2019-2021
Dose Exposure Factors:	xposure frequency (days/year)	350	350
	inhalation rate (L/kg-day) [1]	361	1090
	inhalation absorption factor	1	1
	conversion factor (mg/µg; m^3/L)	1.0E-06	1.0E-06
Risk Calculation Factors:	age sensitivity factor	10	10
	averaging time (years)	70	70
	per million	1.0E+06	1.0E+06
	fraction of time at home	0.85	0.85

exposure durations per age bin		exposure durations (year)	
Construction Year	Risk Scalar [2]	3rd Trimester	0 < 2 years
2019	0.42	0.25	0.17
2020	1.00		1.00
2021	0.58		0.58
Total	2.00	0.25	1.75

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

[2] Risk scalar determined for each year of construction to adjust receptor exposures to the exposure durations for each construction year (see App A - Construction Emissions).

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

Results Summary

Village Hotel Health Risk Assessment

Concentration - Source Group: OFFSITE

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		16.38829	ug/m^3	587348.45	4132332.80	52.00	1.50	52.00	

Concentration - Source Group: ONSITE

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		12.81539	ug/m^3	587358.45	4132382.80	52.00	1.50	52.00	

```
**
**************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 9.5.0
** Lakes Environmental Software Inc.
** Date: 5/24/2018
** File: C:\Lakes\AERMOD View\Village_Hotel\Village_Hotel.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE Village Hotel Health Risk Assessment
   MODELOPT DFAULT CONC
   AVERTIME PERIOD
   URBANOPT 60643
   POLLUTID OTHER
   FLAGPOLE 1.50
   RUNORNOT RUN
   ERRORFIL Village_Hotel.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION PAREA1       AREAPOLY   587239.219  4132417.134       53.000
```

```
** DESCRSRC Onsite
** ----------------------------------------------------------------------
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE1
** DESCRSRC
** PREFIX
** Length of Side = 24.38
** Configuration = Adjacent
** Emission Rate = 1.0
** Vertical Dimension = 4.15
** SZINIT = 1.93
** Nodes = 3
** 587239.883, 4132407.067, 53.00, 4.15, 11.34
** 587319.572, 4132406.201, 52.00, 4.15, 11.34
** 587313.509, 4132107.364, 53.00, 4.15, 11.34
** ----------------------------------------------------------------------
   LOCATION L0000001     VOLUME   587252.074 4132406.935 52.90
   LOCATION L0000002     VOLUME   587276.457 4132406.670 52.59
   LOCATION L0000003     VOLUME   587300.839 4132406.405 52.05
   LOCATION L0000004     VOLUME   587319.458 4132400.553 52.00
   LOCATION L0000005     VOLUME   587318.963 4132376.174 52.00
   LOCATION L0000006     VOLUME   587318.469 4132351.795 52.00
   LOCATION L0000007     VOLUME   587317.974 4132327.416 52.15
   LOCATION L0000008     VOLUME   587317.479 4132303.037 52.52
   LOCATION L0000009     VOLUME   587316.985 4132278.658 52.54
   LOCATION L0000010     VOLUME   587316.490 4132254.279 52.89
   LOCATION L0000011     VOLUME   587315.995 4132229.900 53.00
   LOCATION L0000012     VOLUME   587315.501 4132205.521 53.00
   LOCATION L0000013     VOLUME   587315.006 4132181.142 53.00
   LOCATION L0000014     VOLUME   587314.511 4132156.763 53.00
   LOCATION L0000015     VOLUME   587314.017 4132132.384 53.00
   LOCATION L0000016     VOLUME   587313.522 4132108.005 53.00
** End of LINE VOLUME Source ID = SLINE1
** Source Parameters **
   SRCPARAM PAREA1       0.0001947135     4.150          4     1.930
   AREAVERT PAREA1       587239.219 4132417.134 587298.801 4132416.813
   AREAVERT PAREA1       587301.043 4132500.420 587237.297 4132500.100
```

```
** LINE VOLUME Source ID = SLINE1
   SRCPARAM L0000001        0.0625      4.15     11.34      1.93
   SRCPARAM L0000002        0.0625      4.15     11.34      1.93
   SRCPARAM L0000003        0.0625      4.15     11.34      1.93
   SRCPARAM L0000004        0.0625      4.15     11.34      1.93
   SRCPARAM L0000005        0.0625      4.15     11.34      1.93
   SRCPARAM L0000006        0.0625      4.15     11.34      1.93
   SRCPARAM L0000007        0.0625      4.15     11.34      1.93
   SRCPARAM L0000008        0.0625      4.15     11.34      1.93
   SRCPARAM L0000009        0.0625      4.15     11.34      1.93
   SRCPARAM L0000010        0.0625      4.15     11.34      1.93
   SRCPARAM L0000011        0.0625      4.15     11.34      1.93
   SRCPARAM L0000012        0.0625      4.15     11.34      1.93
   SRCPARAM L0000013        0.0625      4.15     11.34      1.93
   SRCPARAM L0000014        0.0625      4.15     11.34      1.93
   SRCPARAM L0000015        0.0625      4.15     11.34      1.93
   SRCPARAM L0000016        0.0625      4.15     11.34      1.93
** ------------------------------------------------------------------------
**************************************
** AERMOD Receptor Pathway
**************************************
```

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** 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	0.62500E-01	587252.1	4132406.9	52.9	4.15	11.34	1.93	YES	HRDOW
L0000002	0	0.62500E-01	587276.5	4132406.7	52.6	4.15	11.34	1.93	YES	HRDOW
L0000003	0	0.62500E-01	587300.8	4132406.4	52.0	4.15	11.34	1.93	YES	HRDOW
L0000004	0	0.62500E-01	587319.5	4132400.6	52.0	4.15	11.34	1.93	YES	HRDOW
L0000005	0	0.62500E-01	587319.0	4132376.2	52.0	4.15	11.34	1.93	YES	HRDOW
L0000006	0	0.62500E-01	587318.5	4132351.8	52.0	4.15	11.34	1.93	YES	HRDOW
L0000007	0	0.62500E-01	587318.0	4132327.4	52.1	4.15	11.34	1.93	YES	HRDOW
L0000008	0	0.62500E-01	587317.5	4132303.0	52.5	4.15	11.34	1.93	YES	HRDOW
L0000009	0	0.62500E-01	587317.0	4132278.7	52.5	4.15	11.34	1.93	YES	

```
HRDOW
 L0000010          0   0.62500E-01  587316.5 4132254.3    52.9     4.15     11.34     1.93     YES
HRDOW
 L0000011          0   0.62500E-01  587316.0 4132229.9    53.0     4.15     11.34     1.93     YES
HRDOW
 L0000012          0   0.62500E-01  587315.5 4132205.5    53.0     4.15     11.34     1.93     YES
HRDOW
 L0000013          0   0.62500E-01  587315.0 4132181.1    53.0     4.15     11.34     1.93     YES
HRDOW
 L0000014          0   0.62500E-01  587314.5 4132156.8    53.0     4.15     11.34     1.93     YES
HRDOW
 L0000015          0   0.62500E-01  587314.0 4132132.4    53.0     4.15     11.34     1.93     YES
HRDOW
 L0000016          0   0.62500E-01  587313.5 4132108.0    53.0     4.15     11.34     1.93     YES
HRDOW
```

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** THE PERIOD (43872 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: OFFSITE ***

INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 ,
L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 ,
L0000014 , L0000015 , L0000016 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

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

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
587408.45	4132302.80	5.93038	587418.45	4132302.80	5.24775
587428.45	4132302.80	4.66319	587438.45	4132302.80	4.15754
587448.45	4132302.80	3.71696	587458.45	4132302.80	3.34413
587468.45	4132302.80	3.02595	587478.45	4132302.80	2.74611
587488.45	4132302.80	2.49939	587498.45	4132302.80	2.28086
587508.45	4132302.80	2.08610	587518.45	4132302.80	1.91206

587528.45 4132302.80 1.75615 587538.45 4132302.80
1.61616
587348.45 4132312.80 15.91901 587358.45 4132312.80
12.96313
587368.45 4132312.80 10.76877 587378.45 4132312.80
9.10717
587388.45 4132312.80 7.81385 587398.45 4132312.80
6.78052
587408.45 4132312.80 5.93619 587418.45 4132312.80
5.23366
587428.45 4132312.80 4.63292 587438.45 4132312.80
4.11446
587448.45 4132312.80 3.66084 587458.45 4132312.80
3.28269
587468.45 4132312.80 2.96189 587478.45 4132312.80
2.68029
587488.45 4132312.80 2.43213 587498.45 4132312.80
2.21270
587508.45 4132312.80 2.01808 587518.45 4132312.80
1.84498
587528.45 4132312.80 1.69063 587348.45 4132322.80
16.14662
587358.45 4132322.80 13.12660 587368.45 4132322.80
10.88566
587378.45 4132322.80 9.18405 587388.45 4132322.80
7.85485
587398.45 4132322.80 6.78974 587408.45 4132322.80
5.91820
587418.45 4132322.80 5.19329 587428.45 4132322.80
4.57657
587438.45 4132322.80 4.04857 587448.45 4132322.80
3.58910
587458.45 4132322.80 3.20489 587468.45 4132322.80
2.88020
587478.45 4132322.80 2.59684 587488.45 4132322.80
2.34857
587498.45 4132322.80 2.13028 587508.45 4132322.80

1.93771
587518.45 4132322.80 1.76732 587348.45 4132332.80
16.38829
587358.45 4132332.80 13.29360 587368.45 4132332.80
10.99622
587378.45 4132332.80 9.24398 587388.45 4132332.80
7.86952
587398.45 4132332.80 6.76598 587408.45 4132332.80
5.86355
587418.45 4132332.80 5.11519 587428.45 4132332.80
4.48363
587438.45 4132332.80 3.94850 587448.45 4132332.80
3.48726
587458.45 4132332.80 3.10083 587468.45 4132332.80
2.77545
587478.45 4132332.80 2.49342 587488.45 4132332.80
2.24793
587498.45 4132332.80 2.03340 587508.45 4132332.80
1.84521
587358.45 4132342.80 13.46798 587368.45 4132342.80
11.09292
587378.45 4132342.80 9.27037 587388.45 4132342.80
7.83804
587398.45 4132342.80 6.68748 587408.45 4132342.80
5.75101
587418.45 4132342.80 4.98174 587428.45 4132342.80
4.34131
587438.45 4132342.80 3.80445 587448.45 4132342.80
3.34908
587458.45 4132342.80 2.96767 587468.45 4132342.80
2.64618

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** THE PERIOD (43872 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: OFFSITE ***

INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 ,
L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 ,
L0000014 , L0000015 , L0000016 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

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

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
587478.45	4132342.80	2.36960	587488.45	4132342.80	2.13048
587498.45	4132342.80	1.92277	587358.45	4132352.80	13.64185
587368.45	4132352.80	11.14370	587378.45	4132352.80	9.22754
587388.45	4132352.80	7.72719	587398.45	4132352.80	6.52964
587408.45	4132352.80	5.56618	587418.45	4132352.80	4.78630
587428.45	4132352.80	4.14589	587438.45	4132352.80	3.61621

587448.45	4132352.80	3.17378	587458.45	4132352.80	2.80454
587468.45	4132352.80	2.49277	587478.45	4132352.80	2.22651
587358.45	4132362.80	13.72454	587368.45	4132362.80	11.07539
587378.45	4132362.80	9.05401	587388.45	4132362.80	7.49069
587398.45	4132362.80	6.26395	587408.45	4132362.80	5.29569
587418.45	4132362.80	4.52017	587428.45	4132362.80	3.89430
587438.45	4132362.80	3.38499	587448.45	4132362.80	2.96431
587458.45	4132362.80	2.61336	587468.45	4132362.80	2.31785
587358.45	4132372.80	13.60200	587368.45	4132372.80	10.77702
587378.45	4132372.80	8.67032	587388.45	4132372.80	7.07888
587398.45	4132372.80	5.86398	587408.45	4132372.80	4.92779
587418.45	4132372.80	4.18834	587428.45	4132372.80	3.59608
587438.45	4132372.80	3.11778	587448.45	4132372.80	2.72508
587458.45	4132372.80	2.39932	587358.45	4132382.80	13.01959
587368.45	4132382.80	10.10417	587378.45	4132382.80	8.00185
587388.45	4132382.80	6.46012	587398.45	4132382.80	5.31967
587408.45	4132382.80	4.46107	587418.45	4132382.80	3.79100
587428.45	4132382.80	3.25359	587454.03	4132086.22	2.74296
587464.03	4132086.22	2.56145	587474.03	4132086.22	

2.39868					
	587484.03	4132086.22	2.25298	587494.03	4132086.22
2.12585					
	587454.03	4132096.22	2.85674	587464.03	4132096.22
2.66612					
	587474.03	4132096.22	2.49511	587484.03	4132096.22
2.34186					
	587494.03	4132096.22	2.20313	587428.45	4132102.80
3.61840					
	587438.45	4132102.80	3.34077	587448.45	4132102.80
3.09603					
	587458.45	4132102.80	2.87734	587468.45	4132102.80
2.68170					
	587478.45	4132102.80	2.50672	587488.45	4132102.80
2.34924					
	587498.45	4132102.80	2.20669	587508.45	4132102.80
2.07701					
	587518.45	4132102.80	1.95850	587428.45	4132112.80
3.74760					
	587438.45	4132112.80	3.44969	587448.45	4132112.80
3.18848					
	587458.45	4132112.80	2.95699	587468.45	4132112.80
2.75090					
	587478.45	4132112.80	2.56699	587488.45	4132112.80
2.40183					
	587498.45	4132112.80	2.25264	587508.45	4132112.80
2.11717					
	587518.45	4132112.80	1.99360	587528.45	4132112.80
1.88042					
	587418.45	4132122.80	4.21168	587428.45	4132122.80
3.85250					

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** THE SUMMARY OF MAXIMUM PERIOD (43872 HRS) RESULTS ***

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

NETWORK GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE GRID-ID
ONSITE	1ST HIGHEST VALUE IS	12.81539 AT (587358.45, 4132382.80, 52.00, 52.00, 1.50)	DC
	2ND HIGHEST VALUE IS	12.68656 AT (587358.45, 4132382.80, 52.00, 52.00, 6.10)	DC
	3RD HIGHEST VALUE IS	11.95395 AT (587206.00, 4132493.80, 53.00, 53.00, 1.50)	DC
	4TH HIGHEST VALUE IS	11.82097 AT (587206.00, 4132483.80, 53.00, 53.00, 1.50)	DC
	5TH HIGHEST VALUE IS	11.67372 AT (587368.45, 4132382.80, 52.00, 52.00, 1.50)	DC
	6TH HIGHEST VALUE IS	11.59335 AT (587368.45, 4132382.80, 52.00, 52.00, 6.10)	DC
	7TH HIGHEST VALUE IS	11.21305 AT (587206.00, 4132473.80, 53.00, 53.00, 1.50)	DC
	8TH HIGHEST VALUE IS	10.87978 AT (587358.45, 4132372.80, 52.00, 52.00,	

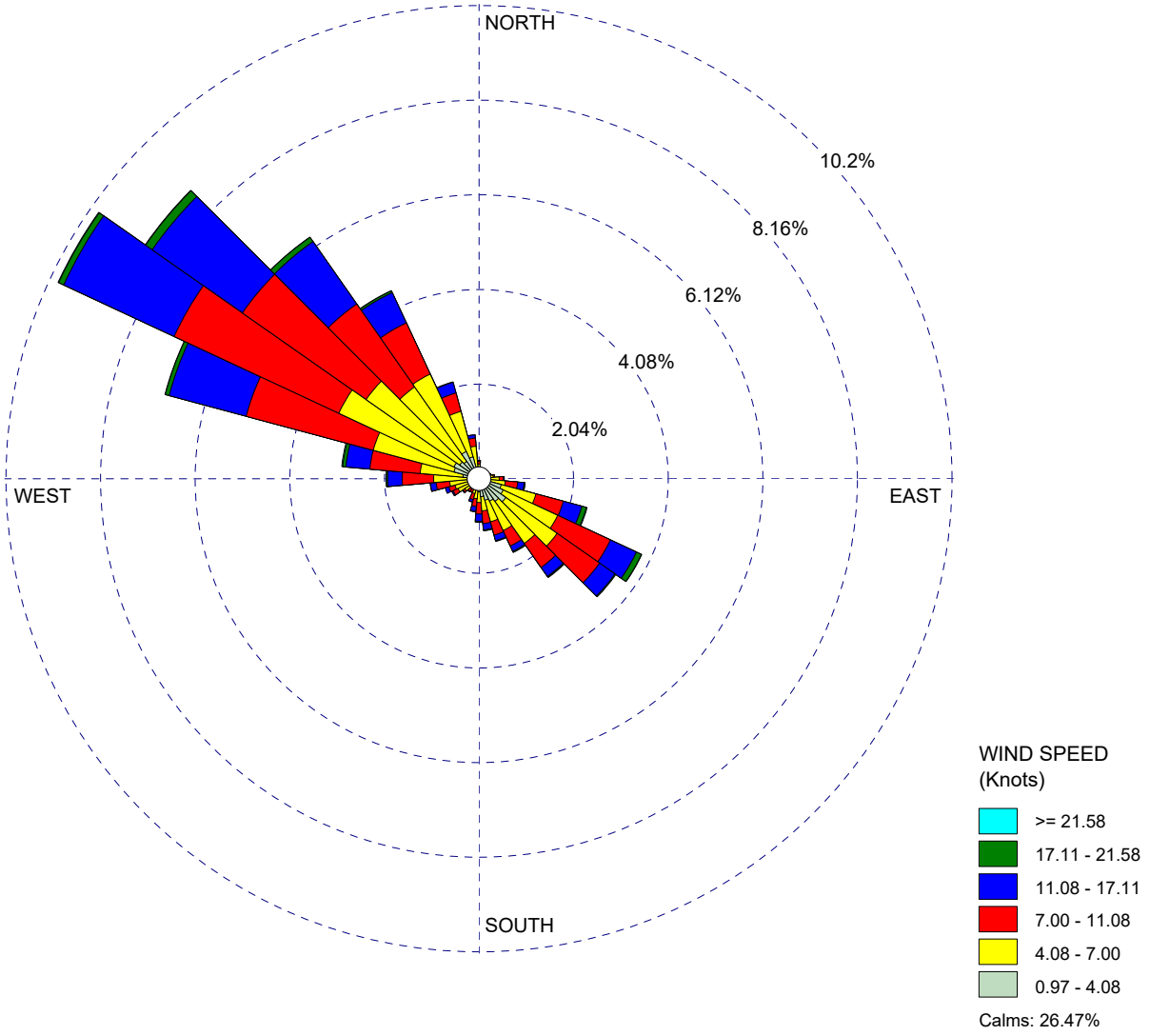
```
1.50)  DC
          9TH HIGHEST VALUE IS      10.86429 AT (  587358.45,  4132372.80,    52.00,    52.00,
6.10)  DC
         10TH HIGHEST VALUE IS      10.58982 AT (  587378.45,  4132382.80,    52.00,    52.00,
1.50)  DC

OFFSITE   1ST HIGHEST VALUE IS      16.38829 AT (  587348.45,  4132332.80,    52.00,    52.00,
1.50)  DC
          2ND HIGHEST VALUE IS      16.14662 AT (  587348.45,  4132322.80,    52.00,    52.00,
1.50)  DC
          3RD HIGHEST VALUE IS      15.91901 AT (  587348.45,  4132312.80,    52.00,    52.00,
1.50)  DC
          4TH HIGHEST VALUE IS      15.71947 AT (  587348.45,  4132302.80,    52.00,    52.00,
1.50)  DC
          5TH HIGHEST VALUE IS      15.49790 AT (  587348.45,  4132292.80,    52.00,    52.00,
1.50)  DC
          6TH HIGHEST VALUE IS      15.36931 AT (  587348.45,  4132282.80,    52.00,    52.00,
1.50)  DC
          7TH HIGHEST VALUE IS      15.23188 AT (  587348.45,  4132272.80,    52.06,    52.06,
1.50)  DC
          8TH HIGHEST VALUE IS      15.10298 AT (  587348.45,  4132262.80,    52.22,    52.22,
1.50)  DC
          9TH HIGHEST VALUE IS      14.96357 AT (  587348.45,  4132252.80,    52.39,    52.39,
1.50)  DC
         10TH HIGHEST VALUE IS      14.78057 AT (  587348.45,  4132242.80,    52.49,    52.49,
1.50)  DC


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

WIND ROSE PLOT:

Wind Rose for San Jose Mineta Airport

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS:	DATA PERIOD: **Start Date: 1/1/2009 - 00:00** **End Date: 1/2/2014 - 23:59**	COMPANY NAME:	
		MODELER:	
	CALM WINDS: **26.47%**	TOTAL COUNT: **42621 hrs.**	
	AVG. WIND SPEED: **5.71 Knots**	DATE: **5/22/2018**	PROJECT NO.: