April 18, 2022

Ms. Chantal Power
City of Perris
135 North D Street
Perris, CA 92570

SUBJECT: PERRIS VALLEY COMMERCE CENTER AIR QUALITY, ENERGY, GREENHOUSE GAS, AND HEALTH RISK ASSESSMENT RESPONSE TO COMMENTS

Dear Ms. Chantal Power:

This letter has been prepared to respond to the comments submitted by Blum Collins & Ho, LLP regarding the Draft EIR (DEIR) for the Perris Valley Commerce Center Specific Plan, Amendment No. 13 (SPA19-05287) & Development Plan Review No. 19-00012 (Project). The comment letter from Blum Collins & Ho, LLP was received by the City of Perris after close of the 45-day public review period for the DEIR and this is the reason that it is not included in the Final EIR for the Project.

RESPONSE TO AIR QUALITY IMPACT ANALYSIS COMMENTS

COMMENT 1

Unsubstantiated Input Parameters Used to Estimate Project Emissions: the commentors explain how CalEEMod is used for estimating construction and operational emissions, and states that after review of the CalEEMod output files, they believe that there are several model inputs that are not consistent with information disclosed in the DEIR, thus concluding that the Projects construction and operational emissions may be underestimated.

RESPONSE 1

The commenters alleges that several model inputs are not consistent with information disclosed in the DEIR. However, this comment is more of an introductory statement to the letter and does not identify any specific inconsistencies. No further response can be provided for this comment.

COMMENT 2

Failure To Model All Proposed Land Uses: the commentors state that the model included all of the 347,918 square feet (SF) as "Unrefrigerated Warehouse-No Rail" and did not include the 8,000-SF of office space in addition to the 339,918-SF light industrial building. They go on to state that this inconsistency creates an issue because each of the land use types in CalEEMod are assigned an energy usage emission factor and specific trip rates that are used for calculation of mobile-source emissions. They conclude that construction and operational related emissions may be underestimated and should not be relied on to determine Project significance.

RESPONSE 2

The commenters claims are misplaced. As evaluated in the DEIR and underlying technical studies, including the traffic analysis, the Project's trip generation estimates are based on the total square footage of the building (which includes ancillary office building space). The commenter attempts to conflate the ancillary office space associated with the warehousing use to a traditional stand-alone office building. The office space within the building would operate with and support the warehouse activities in the building. The DEIR and underlying technical reports correctly and conservatively evaluate the total building space as an unrefrigerated warehouse up to 347,918 square feet which includes up to 8,000 square feet of ancillary office space. The DEIR and technical studies have accurately evaluated the Project as proposed and no changes to the DEIR are required.

COMMENT 3

Underestimated Parking Land Use Size: the commentors state that the model included only 217 parking spaces when according to the DEIR the site will include 145 automobile parking stalls and 82 trailer parking stalls which adds to 227 parking spaces, not 217 parking spaces as seen in the model. They state that the underestimation presents an issue as the square footage of parking land uses is used for certain calculations such as determining the area to be painted and stripped (i.e., VOC emissions from architectural coatings) and volume to be ventilated (i.e., energy impacts). Thus, by underestimating the number of proposed parking spaces, the models underestimate the Project's construction-related and operational emissions and should not be relied upon to determine Project significance.

RESPONSE 3

The commenter incorrectly claims that the proposed parking modeled is underestimated by 19 spaces. By the commenters own account, 227 parking spaces should have been modeled whereas CalEEMod modeled 217 spaces, a difference of 10 spaces. The commenter is correct that 217 parking spaces were in fact modeled at the time the air quality analysis was prepared, notwithstanding, the modeling conservatively includes 3.44 acres of "Other Asphalt Surfaces" as modeled and shown in the CalEEMod output. The "Other Asphalt Surfaces" combined with the "Parking Lot" addresses adequately address any potential asphalt parking that may be required. As such, the potential off-gassing emissions from the construction and ongoing maintenance of the parking areas have been accurately estimated and no changes to the DEIR are required.

COMMENT 4

Unsubstantiated Changes to Individual Construction Phase Lengths: the commentors state that there are several changes to the default individual construction phase lengths. They state "the DEIR and AQ Analysis fail to provide an adequate source for the proposed construction schedule (p. 3-12). Thus, the DEIR and AQ Analysis fail to provide substantial evidence to support the revised individual construction phase lengths. As such, we cannot verify the changes. These unsubstantiated changes present an issue, as the construction emissions are improperly spread out over a longer period of time for some phases, but not for others." They conclude that without justification for extending some construction phases

there will be a greater number of days to complete construction, which will result in less construction and pollutants per day. Thus, concluding that the peak daily emissions associated with some phases of construction should not be relied upon for determine project significance.

RESPONSE 4

There is no requirement to use the default construction phase lengths that are programmed into CalEEMod. The proposed construction schedule that is reflected in the CalEEMod model runs is based on information provided by the Project team and reflects a reasonable estimate of construction activities as required by the California Environmental Quality Act (CEQA).

COMMENT 5

Underestimated Saturday and Sunday Operational Vehicle Trips: the commentors state that the Trip Generation Assessment and VMT Screening Evaluation provided in the DEIR estimate the proposed project to generate 492 vehicle trips. They state that the model includes Saturday and Sunday trips of 327 and 303 trips only. They conclude that the operational on-road vehicle emissions are underestimated and should not be used for determining project significance.

RESPONSE 5

The commentors are incorrect. The 492 vehicle-trips identified in the Traffic Analysis is for weekday trips and not for Saturday and Sunday trips. The 327 and 303 trips for Saturday and Sunday were calculated by using the corresponding Institute of Transportation Engineers (ITE) land use code (used for the weekday trips) Saturday and Sunday trip rates, which was then multiplied by the Project building in thousand square feet. The mass daily and localized (LST) operational emissions identified in the DEIR are based on the higher weekday trip rates since these represent the worst-case daily scenario. The emissions for Saturdays and Sundays are added to the weekday emissions to estimate the annual greenhouse gas (GHG) emissions presented in the Greenhouse Gas Emissions section of the DEIR.

COMMENT 6

Underestimated Number of Operational Forklifts: the commentors state that the modeled 2 compressed natural gas (CNG) tractors hours of usage per day and fuel type are unsubstantiated after review of the *SCAQMD High Cube Warehouse Truck Trip Study White Paper Summary of Business Survey Results.* They state "that the SCAQMD fails to mention or substantiate that off-road equipment would use CNG, rather than diesel, or operation would be limited to only 4 hours a day. As such, in order to conduct the most conservative analysis, the model should have included diesel-powered tractors as being operated for 8 hours per day. Furthermore, the SCAQMD reported an average of 0.12 forklifts/pallet jacks per 1,000-SF of warehouse building area. As such, per SCAQMD guidelines, the model should have included approximately 41 operational forklifts in addition to the 2 operational tractors."

RESPONSE 6

The commenters provide no substantial evidence as to why the use of 4 hours per day is inappropriate and why 8 hours per day is justified, or that if 8 hours per day had been used for the operating time of yard trucks, the DEIR and conclusions would have to be revised to render a new significant impact. In fact, even if the emissions associated with on-site equipment (currently based on 4 hours of operating time) were doubled to account for 8 hours of operating time as suggested by the commenters, there would be no change to the findings in the DEIR. It should also be noted that the Project, as part of its design, would require that exterior yard trucks be gasoline or non-diesel powered. Furthermore, it is now common practice that indoor forklifts will be electric powered and would not generate any emissions typically associated with combustion engines that are used in the exterior yard trucks. As such, the analysis in the DEIR and supporting technical analysis is accurate for the Project and no changes to the DEIR are needed.

COMMENT 7

Updated Analysis Indicates a Potentially Significant Air Quality Impact: after including all previously mentioned comments in an updated model run, the commentors conclude that the ROG emissions have increased from 55.4 to 222.7 pounds per day, which exceeds the SCAQMD threshold of 75 pounds per day.

RESPONSE 7

No updated analysis is required as shown in the responses to comments 2 through 6. No changes are warranted and the SWAPE Construction and Operational runs are erroneous and irrelevant to the DEIR findings.

COMMENT 8

Diesel Particulate Matter Health Risk Emission Inadequately Evaluated: the commentors state "the DEIR fails to discuss the health risk impacts associated with toxic air contaminant ("TAC") emissions generated during Project construction whatsoever. As such, the DEIR's evaluation of the Project's potential health risk impacts, as well as the subsequent less-than-significant impact conclusion, is incorrect for three reasons.

- First, by failing to prepare a quantified construction HRA, the Project is inconsistent with CEQA's requirement to correlate the increase in emissions that the Project would generate to the adverse impacts on human health caused by those emissions.
- Second, the State of California Department of Justice recommends the preparation of a quantitative HRA pursuant to the Office of Environmental Health Hazard Assessment ("OEHHA"), the organization responsible for providing guidance on conducting HRAs in California, as well as local air district guidelines.
- Third, while the DEIR includes a HRA evaluating the health risk impacts to nearby, existing receptors as a result of heavy-duty trucks accessing the site during Project operation, the HRA fails to evaluate the combined lifetime cancer risk to nearby, existing receptors as a result of Project construction and

operation together. According to OEHHA guidance, as referenced by the DEIR, "the excess cancer risk is calculated separately for each age grouping and then summed to yield cancer risk at the receptor location" (p. 4.2-14). However, the Project's HRA fails to sum each age bin to evaluate the total cancer risk over the course of the Project's total construction and operation."

RESPONSE 8

As noted by the commenters, the DEIR includes a detailed operational health risk assessment (HRA) that evaluates the Project's potential health risks associated with diesel exhaust from heavy trucks.

Additionally, the DEIR and underlying technical Air Quality Report evaluates both construction and operational emissions that would be generated by the proposed Project and could affect nearby existing sensitive receptors. The South Coast Air Quality Management District (SCAQMD) does not state that construction based HRAs are required. However, as directed by the SCAQMD, the localized significance thresholds (LSTs) are used to evaluate potential impacts from particulate matter emissions to sensitive receptors in the project's vicinity from project construction. As shown in the DEIR, local construction and operational related emissions would not exceed the SCAQMD LST thresholds.

Also, an HRA analyzing the project's construction emissions of diesel particulate matter is not warranted. The primary purpose of an HRA is to determine long-term health risks, such as cancer risks over, for example, a 30-year residency or 70-year lifetime. As discussed in the DEIR Project Description, construction of the project would occur over a period of approximately one year. Exposure of such duration would not create long-term health effects to adjacent receptors. Additionally, the City follows SCAQMD guidance for air quality analysis. The SCAQMD's HRA procedures recommend evaluating risk from extended exposures measured across several years and not for short term construction exposures or for infrequent operational exposure to diesel truck deliveries or trash hauling. [1]

Urban Crossroads, Inc. has also reviewed the referenced Office of Environmental Health Hazard Assessment (OEHHA) Guidance Manual[2] to determine applicability of the use of early life exposure adjustments to diesel particulate matter (DPM) emissions resulting from construction activity.

Specifically, the OEHHA Guidance states "Due to the uncertainty in assessing cancer risk from very short-term exposures, we do not recommend assessing cancer risk for projects lasting less than two months at the Maximally Exposed Individual Resident (MEIR). **We recommend that exposure from projects longer than 2 months, but less than 6 months be assumed to last 6 months** (e.g., a 2-month project would be evaluated as if it lasted 6 months)." (2015 Guidance Manual p. 8-18 [emphasis added].)

As such, the determination of whether a construction HRA is warranted is dependent on whether or not early life exposure adjustments apply to DPM emissions resulting from construction activity. The following discussion outlines the substantial evidence to support why early life exposure adjustments

[1] SCAQMD. 2015. Risk Assessment (RA) Procedures for Rules 1401 and 212. Accessed July 2017 at http://www.aqmd.gov/home/permits/risk-assessment; SCAQMD. 2016. AB2588 Supplemental Guidelines. Accessed July 2017 at http://www.aqmd.gov/home/regulations/compliance/toxic-hot-spots-ab-2588/health-risk-assessment

[2] http://oehha.ca.gov/air/hot_spots/hotspots2015.html

are not applicable to construction DPM and, therefore, a construction health risk assessment is not required due to the short-term duration of construction activity (long-term exposure e.g., 9 or 30 years of activity are typically used to generate a risk estimates).

For risk assessments conducted under the auspices of The Air Toxics "Hot Spots" Information and Assessment Act of 1987 [Assembly Bill (AB) 2588], OEHHA applies specific adjustment factors to all carcinogens regardless of purported mechanism of action. Notwithstanding, applicability of AB 2588 is limited to commercial and industrial operations. There are two broad classes of facilities subject to the AB 2588 Program: 1) Core facilities and 2) facilities identified within discrete industry-wide source categories. Core facilities subject to AB 2588 compliance are sources whose criteria pollutant emissions (particulate matter, oxides of sulfur, oxides of nitrogen and volatile organic compounds) are 25 tons per year or more as well as those facilities whose criteria pollutant emissions are 10 tons per year or more but less than 25 tons per year. Industry-wide source facilities are classified as smaller operations with relatively similar emission profiles (e.g., auto body shops, gas stations and dry cleaners using perchloroethylene). The emissions generated from off-road mobile sources are not classified in AB 2588 as core operations nor subject to industry-wide source evaluation.

In comments presented to the SCAQMD Governing Board (Meeting Date: June 5, 2015, Agenda No. 28) relating to toxic air contaminant exposures under Rules 1401, 1401.1, 1402 and 212 revisions, use of the OEHHA Guidelines specifically related to the applicability and use of early-life exposure adjustments for projects subject to CEQA, it was reported that[3]:

> "The Proposed Amended Rules are separate from the CEQA significance thresholds. The SCAQMD staff is currently evaluating how to implement the Revised OEHHA Guidelines under CEQA. The SCAQMD staff will evaluate a variety of options on how to evaluate health risks under the Revised OEHHA Guidelines under CEQA. The SCAQMD staff will conduct public workshops to gather input before bringing recommendations to the Governing Board. In the interim, staff will continue to use the previous guidelines for CEQA determinations."

To date, the SCAQMD, as a commenting agency, has not conducted public workshops nor developed policy relating to the application of early-life exposure adjustments utilizing the OEHHA Guidance Manual for projects prepared by other public/lead agencies subject to CEQA.

As a result, it is our recommendation that health risk assessments rely upon U.S. Environmental Protection Agency (EPA) documentation when evaluating the use of early life exposure adjustment factors (*Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens*, EPA/630/R-003F) wherein adjustment factors are only considered when carcinogens act "through the mutagenic mode of action." A mutagen is a physical or chemical agent that changes genetic material, such as DNA, increasing the frequency of mutations to produce carcinogenic effects. The use of adjustment factors is recommended to account for the susceptibility of producing adverse health effects

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[3] See response to comment #13, Page A-7 and A-8 of the June 5, 2015 board meeting Agenda No. 28. http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2015/2015-jun1-028

during early life stages from exposure to these mutagenic compounds.

In 2006, the U.S. EPA published a memorandum which provides guidance regarding the preparation of health risk assessments should carcinogenic compounds elicit a mutagenic mode of action (USEPA, 2006[4]). As presented in the technical memorandum, numerous compounds were identified as having a mutagenic mode of action. For diesel particulates, polycyclic aromatic hydrocarbons (PAHs) and their derivatives, which are known to exhibit a mutagenic mode of action, comprise < 1% of the exhaust particulate mass. To date, the U.S. EPA reports that whole diesel engine exhaust has not been shown to elicit a mutagenic mode of action (USEPA, 2018[5]).

Additionally, the California Department of Toxic Substances Control (DTSC), which is charged with protecting individuals and the environment from the effects of toxic substances, and is responsible for assessing, investigating and evaluating sensitive receptor populations to ensure that properties are free of contamination or that health protective remediation levels are achieved, has adopted the U.S. EPA's policy in the application of early-life exposure adjustments which is consistent with the methodology considered herein. As such, incorporation of early-life exposure adjustments for exposures to DPM emissions in the quantification of carcinogenic risk for construction of the proposed Project is not warranted.

Given that there is no available guidance that has been adopted by the SCAQMD for CEQA purposes and the fact that the Project does not emit any pollutants that elicit a primary mutagenic mode of action, the use of the OEHHA guidelines to determine potential construction health risks would not be appropriate and, therefore, is not recommended by the City at this time. The DEIR correctly evaluates potential impacts, and no further evaluation is technically required.

RESPONSE TO GREENHOUSE GAS ANALYSIS COMMENTS

COMMENT 9

Failure to Adequately Evaluate Greenhouse Gas Impacts: The commentors state the less-than-significant impact conclusion is incorrect for two reasons:

1. The DEIR's quantitative GHG analysis relies upon an incorrect and unsubstantiated air model
2. The DEIR fails to consider the performance-based standards under CARB's Scoping Plan.

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[4] United States Environmental Protection Agency, 2006. Memorandum – Implementation of the Cancer Guidelines and Accompanying Supplemental Guidance - Science Policy Council Cancer Guidelines Implementation Workgroup Communication II: Performing Risk Assessments that include Carcinogens Described in the Supplemental Guidance as having a Mutagenic Mode of Action.

[5] United States Environmental Protection Agency, National Center for Environmental Assessment, 2018. Integrated Risk Information System (IRIS). Diesel Engine Exhaust.

RESPONSE 9

See responses to comments 10 and 11.

COMMENT 10

Incorrect and Unsubstantiated Quantitative Analysis of Emissions

RESPONSE 10

The commenters incorrectly assert that the Draft EIR's quantitative GHG analysis is incorrect and based on unsubstantiated quantitative analysis of emissions. The commenter refers to comments previously made (specifically comments 2 through 6) as the support for this assertion. As provided herein, responses to comments 2 through 6, refute each of the allegations of incorrect and unsubstantiated modeling and analysis assumptions.

COMMENT 11

Failure to Consider Performance-based Standards Under CARB's 2017 Scoping Plan

RESPONSE 11

The comment indicates that the Project would not meet the Vehicle miles Traveled (VMT) Per Capita as anticipated in CARB's 2017 Scoping Plan and therefore, the less-than-significant determination in the Draft EIR is incorrect and unsubstantiated. However, the analysis as presented in this comment is inaccurate for several reasons, which leads to an inaccurate assumption of Project-related Per Capita VMT rates.

First, the per capita analysis in the comment takes the light-duty vehicles- (LDV) associated VMT in the State and divides it by the total population of the State, to reach the Per Capita values.

The Project VMT as disclosed in the DEIR is less than significant and screens out of further analysis based on the City's adopted guidelines.

The State light-duty auto associated VMT included all of the home-work, home-shopping, commercial-work, commercial-customer trips and divides it by the total population consisting of all of the residents, employees, and customers in the State. The Project's VMT is less than significant is based only on the employees and does not include any residential and non-employee-based population. This is underscored by the Office of Planning and Research's (OPRs) *Technical Advisory on Evaluating Transportation Impacts in CEQA* (see page 5 of the *Technical Advisory*) which states that in order to have an accurate comparison of VMT estimates, the same model and methodology used to determine the thresholds should be used to provide project-generated VMT.

COMMENT 12

Feasible Mitigation Measures Available to reduce Emissions: the commentors propose several

mitigation measures to reduce the emissions associated with the Project.

RESPONSE 12:

The commenters incorrectly assert that the Project would have potentially significant air quality and GHG impacts, and that additional mitigation should be required. As summarized in the DEIR and supporting technical studies, and supported by the responses above, the Project would not result in a significant air quality (after implementation of identified regulatory requirements and mitigation for construction-related emission), or GHG emissions impact. As such, there is no nexus for the City to require additional mitigation for the proposed Project.

If you have any questions, please contact me at (949) 660-1994.

Respectfully submitted,

URBAN CROSSROADS, INC.

Haseeb Qureshi,
Associate Principal

ATTACHMENT A: BLUM COLLINS & HO, LLP FEBRUARY 18, 2022, COMMENTS

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February 18, 2022

Gary Ho
Blum Collins LLP
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Subject: **Comments on the Perris Valley Commerce Center Specific Plan, Amendment No. 13 (SPA19-05287) & Development Plan Review No. 19-00012 (SCH No. 2021050021)**

Dear Mr. Ho,

We have reviewed the December 2021 Draft Environmental Impact Report ("DEIR") for the Perris Valley Commerce Center Specific Plan, Amendment No. 13 (SPA19-05287) & Development Plan Review No. 19-00012 ("Project") located in the City of Perris ("City"). The Project proposes to construct a 347,918-square feet ("SF") warehouse building with 8,000-SF of office space, as well as 145 parking spaces and 82 trailer stalls, on the 16-acre site.

Our review concludes that the DEIR fails to adequately evaluate the Project's air quality, health risk, and greenhouse gas impacts. As a result, emissions and health risk impacts associated with construction and operation of the proposed Project are underestimated and inadequately addressed. An updated EIR should be prepared to adequately assess and mitigate the potential air quality, health risk, and greenhouse gas impacts that the project may have on the surrounding environment.

Air Quality

Unsubstantiated Input Parameters Used to Estimate Project Emissions

The DEIR's air quality analysis relies on emissions calculated with CalEEMod.2020.4.0 (3.2-12).[1] CalEEMod provides recommended default values based on site-specific information, such as land use type, meteorological data, total lot acreage, project type and typical equipment associated with project type. If more specific project information is known, the user can change the default values and input

[1] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* http://www.aqmd.gov/caleemod/user's-guide.

project-specific values, but the California Environmental Quality Act ("CEQA") requires that such changes be justified by substantial evidence. Once all of the values are inputted into the model, the Project's construction and operational emissions are calculated, and "output files" are generated. These output files disclose to the reader what parameters are utilized in calculating the Project's air pollutant emissions and make known which default values are changed as well as provide justification for the values selected.

When reviewing the Project's CalEEMod output files, provided in the Air Quality Impact Analysis ("AQ Analysis") and Greenhouse Gas Emissions Analysis ("GHG Analysis") as Appendix I1 and I2 to the DEIR, respectively, we found that several model inputs were not consistent with information disclosed in the DEIR. As a result, the Project's construction and operational emissions may be underestimated. Thus, an updated EIR should be prepared to include an updated air quality analysis that adequately evaluates the impacts that construction and operation of the Project will have on local and regional air quality.

Failure to Model All Proposed Land Uses

Regarding the Project's proposed land uses, the DEIR states:

> "As stated in Subchapter 3.1, the applicant for SPA13 proposes the development of a 16-acre Project site with an approximate 347,918-square-foot (sq. ft.) light industrial building; the building will be divided into 339,918 sq. ft. of non-refrigerated warehouse space and 8,000 sq. ft. of office space" (p. 3-5).

As demonstrated above, the models should have included 8,000-SF of office space in addition to 339,918-SF of warehouse space. However, review of the CalEEMod output files demonstrates that the "Perris and Ramona Warehouse (Construction - Unmitigated)" and "Perris and Ramona Warehouse (Operations)" models include all 347,918-SF as "Unrefrigerated Warehouse-No Rail" (see excerpt below) (Appendix I1, pp. 130, 158, 188, 204; Appendix I2, pp. 74, 110).

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area
Unrefrigerated Warehouse-No Rail	347.92	1000sqft	7.99	347,918.00
User Defined Industrial	347.92	User Defined Unit	0.00	0.00
Parking Lot	217.00	Space	1.57	68,356.00
City Park	2.52	Acre	2.52	109,644.00
Other Asphalt Surfaces	150.02	1000sqft	3.44	150,018.00

As you can see in the excerpt above, the model fails to distinguish between the warehouse and office land uses. This inconsistency presents an issue, as CalEEMod includes 63 different land use types that are each assigned a distinctive set of energy usage emission factors.[2] Furthermore, each land use type includes a specific trip rate that CalEEMod uses to calculate mobile-source emissions.[3] Thus, by failing to

[2] "CalEEMod User's Guide, Appendix D." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide.
[3] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 29.

include all proposed land use types, the models may underestimate the Project's construction-related and operational emissions and should not be relied upon to determine Project significance.

Underestimated Parking Land Use Size

According to the DEIR:

> "Automobile parking would be provided along the eastern and western boundaries of the site. A total of 145 automobile parking stalls […] Additionally, 82 10' x 55' trailer parking stalls would be provided along the southern boundary of the site." (pp. 3-11).

As such, the models should have included 227 parking spaces.[4] However, review of the CalEEMod output files demonstrates that the "Perris and Ramona Warehouse (Construction - Unmitigated)" and "Perris and Ramona Warehouse (Operations)" models include only 217 parking spaces (see excerpt below) (Appendix I1, pp. 130, 158, 188, 204; Appendix I2, pp. 74, 110).

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area
Unrefrigerated Warehouse-No Rail	347.92	1000sqft	7.99	347,918.00
User Defined Industrial	347.92	User Defined Unit	0.00	0.00
Parking Lot	217.00	Space	1.57	68,356.00
City Park	2.52	Acre	2.52	109,644.00
Other Asphalt Surfaces	150.02	1000sqft	3.44	150,018.00

As you can see in the excerpt above, the proposed parking is underestimated by 19 spaces.[5] This underestimation presents an issue, as the square footage of parking land uses is used for certain calculations such as determining the area to be painted and stripped (i.e., VOC emissions from architectural coatings) and volume to be ventilated (i.e., energy impacts).[6] Thus, by underestimating the number of proposed parking spaces, the models underestimate the Project's construction-related and operational emissions and should not be relied upon to determine Project significance.

Unsubstantiated Changes to Individual Construction Phase Lengths

Review of the CalEEMod output files demonstrates that the "Perris and Ramona Warehouse (Construction - Unmitigated)" model includes several changes to the default individual construction phase lengths (see excerpt below) (Appendix I1, pp. 131, 159; Appendix I2, pp. 75).

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	NumDays	300.00	200.00

As a result of these changes, the model includes the following construction schedule (see excerpt below) (Appendix I1, pp. 137, 165; Appendix I2, pp. 80):

[4] Calculated: 145 automobile parking spaces + 82 trailer parking stalls = 227 parking spaces total.
[5] Calculated: 227 proposed parking spaces – 217 modeled parking spaces = 19 parking spaces underestimated.
[6] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 29.

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days
1	Site Preparation	Site Preparation	12/6/2022	12/19/2022	5	10
2	Grading	Grading	12/20/2022	1/30/2023	5	30
3	Building Construction	Building Construction	1/31/2023	11/6/2023	5	200
4	Paving	Paving	10/10/2023	11/6/2023	5	20
5	Architectural Coating	Architectural Coating	8/15/2023	11/6/2023	5	60

As you can see from the excerpts above, the building construction phase was decreased by 33%, from the default value of 300 to 200 days; and architectural coating phase was increased by 200%, from the default value of 20 to 60 days. As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.[7] According to the "User Entered Comments & Non-Default Data" table, the justification provided for these changes is:

> "Construction anticipated to start in December 2022 and end in Novemeber 2023" (Appendix I1, pp. 130, 158; Appendix I2, pp. 74).

Furthermore, the DEIR provides the Project's anticipated construction duration and individual phase lengths (see excerpt below) (p. 3-12):

Table 3-2
Anticipated Construction Duration

Phase Name	Start Date	End Date	Days
Site Preparation	12/06/2022	12/19/2022	10
Grading	12/20/2022	01/30/2023	30
Building Construction	01/31/2023	11/06/2023	200
Paving	10/10/2023	11/06/2023	20
Architectural Coating	08/15/2023	11/06/2023	60

Source: *AQ Analysis* (**Appendix I1**)

As you can see in the excerpt above, the source provided for the anticipated construction schedule is the AQ Analysis. Furthermore, per the citation, the AQ Analysis also provides the Project's anticipated construction duration and individual phase lengths (see excerpt below) (Appendix I1, p. 44):

[7] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 1, 14.

TABLE 3-4: CONSTRUCTION DURATION

Phase Name	Start Date	End Date	Days
Site Preparation	12/06/2022	12/19/2022	10
Grading	12/20/2022	01/30/2023	30
Building Construction	01/31/2023	11/06/2023	200
Paving	10/10/2023	11/06/2023	20
Architectural Coating	08/15/2023	11/06/2023	60

However, the above table fails to provide a source and only reflects the "construction schedule utilized in the analysis" (Appendix I1, p. 45). As such, the provided phase lengths are the CalEEMod input parameters themselves. This is incorrect, as according to the CalEEMod User's Guide:

> "CalEEMod was also designed to allow the user to change the defaults to reflect site- or project-specific information, when available, provided that the information is supported by substantial evidence as required by CEQA." [8]

Here, while the DEIR indicates that "[c]onstruction of the Project is expected to commence in December 2022 and be completed by November 2023," the DEIR and AQ Analysis fail to provide an adequate source for the proposed construction schedule (p. 3-12). Thus, the DEIR and AQ Analysis fail to provide substantial evidence to support the revised individual construction phase lengths. As such, we cannot verify the changes.

These unsubstantiated changes present an issue, as the construction emissions are improperly spread out over a longer period of time for some phases, but not for others. According to the CalEEMod User's Guide, each construction phase is associated with different emissions activities (see excerpt below).[9]

> ***Demolition*** involves removing buildings or structures.
>
> ***Site Preparation*** involves clearing vegetation (grubbing and tree/stump removal) and removing stones and other unwanted material or debris prior to grading.
>
> ***Grading*** involves the cut and fill of land to ensure that the proper base and slope is created for the foundation.
>
> ***Building Construction*** involves the construction of the foundation, structures and buildings.
>
> ***Architectural Coating*** involves the application of coatings to both the interior and exterior of buildings or structures, the painting of parking lot or parking garage striping, associated signage and curbs, and the painting of the walls or other components such as stair railings inside parking structures.
>
> ***Paving*** involves the laying of concrete or asphalt such as in parking lots, roads, driveways, or sidewalks.

[8] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 13-14.
[9] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 32.

Thus, by disproportionately altering and extending some of the individual construction phase lengths without proper justification, the model assumes there are a greater number of days to complete the construction activities required by the prolonged phases. As such, there will be less construction activities required per day and, consequently, less pollutants emitted per day. As a result, the model may underestimate the peak daily emissions associated with some phases of construction and should not be relied upon to determine Project significance.

Underestimated Saturday and Sunday Operational Vehicle Trip Rates

According to the Trip Generation Assessment and Vehicle Miles Traveled (VMT) Screening Evaluation ("TA"), provided as Appendix N to DEIR, the proposed Project is expected to generate approximately 492 daily operational vehicle trips (see excerpt below) (p. 3, Table 2):

TABLE 2: PROPOSED PROJECT TRIP GENERATION SUMMARY

Project Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Project Trip Generation Summary:									
Actual Vehicles									
High-Cube Transload/Short-term Storage Warehouse	347.918	TSF							
Passenger Cars:			18	6	24	9	22	31	410
2-Axle Trucks:			1	1	2	1	1	2	14
3-Axle Trucks:			1	1	2	1	1	2	18
4+-Axle Trucks:			3	1	4	1	3	4	50
Total Trucks:			5	3	8	3	5	8	82
Total Trips (Actual Vehicles)			**23**	**9**	**32**	**12**	**27**	**39**	**492**
Passenger Car Equivalent (PCE)									
High-Cube Transload/Short-term Storage Warehouse	347.918	TSF							
Passenger Cars:			18	6	24	9	22	31	410
2-Axle Trucks:			2	1	3	1	2	3	20
3-Axle Trucks:			2	1	3	1	2	3	34
4+-Axle Trucks:			9	3	12	3	8	11	148
Total Trucks (PCE):			13	5	18	5	12	17	202
Total Trips (PCE)			**31**	**11**	**42**	**14**	**34**	**48**	**612**

[1] TSF = thousand square feet

As such, the Project's model should have included trip rates that reflect the estimated number of average daily vehicle trips. However, review of the CalEEMod output files demonstrates that the "Perris and Ramona Warehouse (Operations)" model includes only approximately 327 Saturday and 303 Sunday vehicle trips (see excerpt below) (Appendix I1, pp. 197, 213; Appendix I2, pp. 119).

	Average Daily Trip Rate		
Land Use	Weekday	Saturday	Sunday
City Park	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00
Parking Lot	0.00	0.00	0.00
Unrefrigerated Warehouse-No Rail	409.99	272.52	252.24
User Defined Industrial	82.00	54.52	50.45
Total	491.99	327.04	302.69

As you can see in the excerpt above, the Saturday and Sunday trips are each underestimated by approximately 165 trips[10] and 189 trips,[11] respectively. As such, the trip rates inputted into the model are underestimated and inconsistent with the information provided by the TA.

These inconsistencies present an issue, as CalEEMod uses the operational vehicle trip rates to calculate the emissions associated with the operational on-road vehicles.[12] Thus, by including underestimated Saturday and Sunday operational vehicle trips, the model underestimates the Project's mobile-source operational emissions and should not be relied upon to determine Project significance.

Underestimated Number of Operational Forklifts

Review of the CalEEMod output files demonstrates that the "Perris and Ramona Warehouse (Operations)" model assumes that Project operation would include the use of 2 compressed natural gas ("CNG") tractors that would operate for 4 hours per day (see excerpt below) (Appendix I1, pp. 202, 218; Appendix I2, pp. 131).

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Tractors/Loaders/Backhoes	2	4.00	365	200	0.37	CNG

As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.[13] According to the "User Entered Comments and Non-Default Data" table, the justification provided for the inclusion of operational off-road equipment is: "Based on SCAQMD High Cube Warehouse Truck Trip Study White Paper Summary of Busniess Survey Results (2014)" (Appendix I1, pp. 188, 204; Appendix I2, pp. 110). However, the model's assumptions regarding the number of hours per day and fuel type are unsubstantiated.

Review of the *SCAQMD High Cube Warehouse Truck Trip Study White Paper Summary of Business Survey Results* demonstrates that the SCAQMD fails to mention or substantiate that off-road equipment would use CNG, rather than diesel, or operation would be limited to only 4 hours a day.[14] As such, in order to conduct the most conservative analysis, the model should have included diesel-powered tractors as being operated for 8 hours per day.

[10] Calculated: 492 proposed vehicle trips – 327 modeled vehicle trips = 165 vehicle trips underestimated.
[11] Calculated: 492 proposed vehicle trips – 303 modeled vehicle trips = 189 vehicle trips underestimated
[12] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 36.
[13] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 1, 14.
[14] "SCAQMD High Cube Warehouse Truck Trip Study White Paper Summary of Business Survey Results." SCAQMD, June 2014, *available at:* http://www.aqmd.gov/docs/default-source/ceqa/handbook/high-cube-warehouse-trip-rate-study-for-air-quality-analysis/business-survey-summary.pdf.

Furthermore, the SCAQMD reported an average of 0.12 forklifts/pallet jacks per 1,000-SF of warehouse building area.[15] As such, per SCAQMD guidelines, the model should have included approximately 41 operational forklifts in addition to the 2 operational tractors.[16]

This presents an issue, as CalEEMod uses operational off-road equipment to calculate the emissions associated with the Project's area-source operational emissions.[17] Thus, by including an unsubstantiated fuel type and usage hours, the model may underestimate the Project's area-source operational emissions and should not be relied upon to determine Project significance.

Updated Analysis Indicates a Potentially Significant Air Quality Impact

In an effort to more accurately estimate Project's construction-related and operational emissions, we prepared updated CalEEMod models, using the Project-specific information provided by the DEIR. In our updated model, we included the correct land use sizes and types, number of forklifts, and number of Saturday and Sunday operational vehicle trips; proportionately altered the individual construction phase lengths to match the construction duration utilized in the DEIR's model; and omitted the unsubstantiated off-road operational fuel type and hours per day in order to conduct the most conservative analysis.[18]

Our updated analysis estimates that the Project's construction-related ROG emissions exceed the applicable SCAQMD thresholds of 75-pounds per day ("lbs/day"), respectively (see table below).[19]

SWAPE Criteria Air Pollutant Emissions	
Construction	**ROG** (lbs/day)
DEIR	55.4
SWAPE	222.7
% Increase	302%
SCAQMD Threshold	**75**
Exceeds?	***Yes***

As you can see in the excerpt above, the Project's construction-related ROG emissions, as estimated by SWAPE, increase by approximately 302% and exceed the applicable SCAQMD significance thresholds. Thus, our model demonstrates that the Project would result in a potentially significant air quality impact that was not previously identified or addressed in the DEIR. As a result, an updated EIR should be

[15] "SCAQMD High Cube Warehouse Truck Trip Study White Paper Summary of Business Survey Results." SCAQMD, June 2014, *available at*: http://www.aqmd.gov/docs/default-source/ceqa/handbook/high-cube-warehouse-trip-rate-study-for-air-quality-analysis/business-survey-summary.pdf, p. 9.
[16] Calculated: (339,918-SF / 1,000-SF) * 0.12 = 40.79 forklifts.
[17] "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/user's-guide, p. 42.
[18] See Attachment B for updated modeling.
[19] "South Coast AQMD Air Quality Significance Thresholds." SCAQMD, April 2019, *available at*: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf.

prepared to adequately assess and mitigate the potential air quality impacts that the Project may have on the surrounding environment.

Diesel Particulate Matter Health Risk Emissions Inadequately Evaluated

The DEIR concludes that the proposed Project would result in a less-than-significant health risk impact based on quantified mobile-source operational health risk analysis ("HRA"). Specifically, the DEIR estimates that the maximum lifetime cancer risk posed to nearby, existing sensitive receptors as a result of heavy trucks accessing the site during Project operation would be 0.95 in one million, which would not exceed the SCAQMD significance threshold of 10 in one million (see excerpt below) (p. 4.2-30, Table 4.2-10):

Table 4.2-10
Summary of Cancer and Non-Cancer Risks

Time Period	Location	Maximum Lifetime Cancer Risk (Risk per Million)	Significance Threshold (Risk per Million)	Exceeds Significance Threshold?
30-Year Exposure	Maximum Exposed Individual Receptor	0.95	10	No
25-Year Exposure	Maximum Exposed Worker Receptor	0.53	10	No
Time Period	**Location**	**Maximum Hazard Index**	**Significance Threshold**	**Exceeds Significance Threshold?**
Annual Average	Maximum Exposed Sensitive Receptor	<0.01	1.0	No
Annual Average	Maximum Exposed Worker Receptor	<0.01	1.0	No

However, the DEIR fails to discuss the health risk impacts associated with toxic air contaminant ("TAC") emissions generated during Project construction whatsoever. As such, the DEIR's evaluation of the Project's potential health risk impacts, as well as the subsequent less-than-significant impact conclusion, is incorrect for three reasons.

First, by failing to prepare a quantified construction HRA, the Project is inconsistent with CEQA's requirement to correlate the increase in emissions that the Project would generate to the adverse impacts on human health caused by those emissions. This is incorrect, as construction of the proposed Project will produce emissions of diesel particulate matter ("DPM") through the exhaust stacks of construction equipment over the course of the 11-month construction duration (p. 3-12). However, the DEIR fails to discuss the potential TACs associated with Project construction or evaluate the concentrations at which such pollutants would trigger adverse health effects. Thus, without making a reasonable effort to connect the Project's construction-related TAC emissions to the potential health risks posed to nearby receptors, the Project is inconsistent with CEQA's requirement to correlate the increase in TAC emissions with potential adverse impacts on human health.

Second, the State of California Department of Justice recommends the preparation of a quantitative HRA pursuant to the Office of Environmental Health Hazard Assessment ("OEHHA"), the organization responsible for providing guidance on conducting HRAs in California, as well as local air district

guidelines.[20] OEHHA released its most recent *Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments* in February 2015, as referenced by the DEIR (p. 4.2-2).[21] This guidance document describes the types of projects that warrant the preparation of an HRA. The OEHHA document recommends that all short-term projects lasting at least two months be evaluated for cancer risks to nearby sensitive receptors. As the Project's proposed construction duration vastly exceeds the 2-month requirement set forth by OEHHA, it is clear that the Project meets the threshold warranting a quantified construction-related HRA under OEHHA guidance. These recommendations reflect the most recent state health risk policies, and as such, we recommend that an analysis of health risk impacts posed to nearby sensitive receptors from Project-generated construction DPM emissions be included in an EIR for the Project.

Third, while the DEIR includes a HRA evaluating the health risk impacts to nearby, existing receptors as a result of heavy-duty trucks accessing the site during Project operation, the HRA fails to evaluate the combined lifetime cancer risk to nearby, existing receptors as a result of Project construction and operation together. According to OEHHA guidance, as referenced by the DEIR, "the excess cancer risk is calculated separately for each age grouping and then summed to yield cancer risk at the receptor location" (p. 4.2-14).[22] However, the Project's HRA fails to sum each age bin to evaluate the total cancer risk over the course of the Project's total construction and operation. This is incorrect and thus, an updated analysis should quantify the entirety of the Project's construction and operational health risks together and sum them to compare to the SCAQMD threshold of 10 in one million, as referenced by the DEIR (p. 4.2-29).

Greenhouse Gas

Failure to Adequately Evaluate Greenhouse Gas Impacts

The DEIR estimates that the Project would generate net annual greenhouse gas ("GHG") emissions of 2,539.85 metric tons of carbon dioxide equivalents per year ("MT CO_2e/year"), which would not exceed the SCAQMD threshold of 10,000 MT CO_2e/year (p. 4.6-16, Table 4.6-6).

[20] "Warehouse Projects: Best Practices and Mitigation Measures to Comply with the California Environmental Quality Act." State of California Department of Justice, *available at*: https://oag.ca.gov/sites/all/files/agweb/pdfs/environment/warehouse-best-practices.pdf, p. 6.
[21] "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* http://oehha.ca.gov/air/hot_spots/hotspots2015.html.
[22] "Guidance Manual for preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf p. 8-4

Table 4.6-6
Project Operational GHG Emissions

Emission Source	Emissions (MT/yr)			
	CO_2	CH_4	N_2O	Total CO_2e
Annual construction-related emissions amortized over 30 years	38.34	<0.01	<0.01	38.81
Area Source	0.03	0.01	<0.01	0.03
Energy Source	184.71	0.16	0.05	185.69
Mobile Source	1,641.01	0.04	0.19	1,697.20
On-Site Equipment	101.50	0.03	0.00	102.32
Waste	66.43	3.93	0.00	164.58
Water Usage	217.23	2.64	0.06	302.21
Reductions from EV Charging Stations	(-49)			
Total CO_2e (All Sources)	**2,539.85**			
SCAQMD Threshold	**10,000.00**			
Exceeds SCAQMD Threshold?	**No**			

Furthermore, the DEIR's analysis relies upon the Project's consistency with the CARB 2017 Climate Change Scoping Plan and City's CAP to conclude that the Project would result in a less-than-significant GHG impact (p. 4.6-17 – 4.6-22). However, the DEIR's analysis, as well as the subsequent less-than-significant impact conclusion, is incorrect for two reasons.

(1) The DEIR's quantitative GHG analysis relies upon an incorrect and unsubstantiated air model; and
(2) The DEIR fails to consider the performance-based standards under CARB's *Scoping Plan*.

1) Incorrect and Unsubstantiated Quantitative Analysis of Emissions

As previously stated, the DEIR estimates that the Project would generate net annual GHG emissions of 2,547.94 MT CO_2e/year (p. 4.6-16, Table 4.6-6). However, the DEIR's quantitative GHG analysis is unsubstantiated. As previously discussed, when we reviewed the Project's CalEEMod output files, provided in the GHG Analysis as Appendix I2 to the DEIR, we found that several of the values inputted into the model are not consistent with information disclosed in the DEIR. As a result, the model underestimates the Project's emissions, and the DEIR's quantitative GHG analysis should not be relied upon to determine Project significance. An updated EIR should be prepared that adequately assesses the potential GHG impacts that construction and operation of the proposed Project may have on the surrounding environment.

2) Failure to Consider Performance-based Standards Under CARB's 2017 Scoping Plan

As previously discussed, the DEIR concludes that the Project would be consistent with CARB's 2017 Climate Change Scoping Plan (p. 4.6-17 – 4.6-21). However, this is incorrect, as the DEIR fails to consider performance-based measures proposed by CARB.

i. Passenger & Light Duty VMT Per Capita Benchmarks per SB 375

In reaching the State's long-term GHG emission reduction goals, CARB's 2017 *Scoping Plan* explicitly cites to SB 375 and the VMT reductions anticipated under the implementation of Sustainable Community Strategies.[23] CARB has identified the population and daily VMT from passenger autos and light-duty vehicles at the state and county level for each year between 2010 to 2050 under a "baseline scenario" that includes "current projections of VMT included in the existing Regional Transportation Plans/Sustainable Communities Strategies (RTP/SCSs) adopted by the State's 18 Metropolitan Planning Organizations (MPOs) pursuant to SB 375 as of 2015."[24] By dividing the projected daily VMT by the population, we calculated the daily VMT per capita for each year at the state and county level for 2010 (baseline year), 2023 (Project operational year), and 2030 (target years under SB 32) (see table below).

2017 Scoping Plan Daily VMT Per Capita

	Riverside County			State		
Year	Population	LDV VMT Baseline	VMT Per Capita	Population	LDV VMT Baseline	VMT Per Capita
2010	2,196,083	52,385,344.80	23.85	37,335,085	836,463,980.46	22.40
2023	2,613,313	62,311,461.25	23.84	41,659,526	924,184,228.61	22.18
2030	2,857,496	65,276,502.05	22.84	43,939,250	957,178,153.19	21.78

As the DEIR fails to evaluate the Project's consistency with the CARB 2017 *Scoping Plan* performance-based daily VMT per capita projections, the DEIR's claim that the proposed Project would not conflict with the CARB 2017 *Scoping Plan* is unsupported. An updated EIR should be prepared for the proposed Project to provide additional information and analysis to conclude less-than-significant GHG impacts.

Feasible Mitigation Measures Available to Reduce Emissions

The DEIR's analysis demonstrates that the Project would result in significant air quality impacts that should be mitigated further. In an effort to reduce the Project's emissions, we identified several mitigation measures that are applicable to the proposed Project. Feasible mitigation measures can be found in the Department of Justice Warehouse Project Best Practices document.[25] Therefore, to reduce the Project's emissions, consideration of the following measures should be made:

- Requiring off-road construction equipment to be zero-emission, where available, and all diesel-fueled off-road construction equipment, to be equipped with CARB Tier IV-compliant engines or better, and including this requirement in applicable bid documents, purchase orders, and contracts, with successful contractors demonstrating the ability to supply the compliant construction equipment for use prior to any ground-disturbing and construction activities.

[23] "California's 2017 Climate Change Scoping Plan." CARB, November 2017, *available at*: https://ww3.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf, p. 25, 98, 101-103.
[24] "Supporting Calculations for 2017 Scoping Plan-Identified VMT Reductions," Excel Sheet "Readme." CARB, January 2019, *available at*: https://ww2.arb.ca.gov/sites/default/files/2019-01/sp_mss_vmt_calculations_jan19_0.xlsx.
[25] "Warehouse Projects: Best Practices and Mitigation Measures to Comply with the California Environmental Quality Act." State of California Department of Justice.

- Prohibiting off-road diesel-powered equipment from being in the “on” position for more than 10 hours per day.
- Requiring on-road heavy-duty haul trucks to be model year 2010 or newer if diesel-fueled.
- Limiting the amount of daily grading disturbance area.
- Prohibiting grading on days with an Air Quality Index forecast of greater than 100 for particulates or ozone for the project area.
- Forbidding idling of heavy equipment for more than two minutes.
- Keeping onsite and furnishing to the lead agency or other regulators upon request, all equipment maintenance records and data sheets, including design specifications and emission control tier classifications.
- Conducting an on-site inspection to verify compliance with construction mitigation and to identify other opportunities to further reduce construction impacts.
- Using paints, architectural coatings, and industrial maintenance coatings that have volatile organic compound levels of less than 10 g/L.
- Providing meal options onsite or shuttles between the facility and nearby meal destinations for construction employees.
- Requiring all heavy-duty vehicles entering or operated on the project site to be zero-emission beginning in 2030.
- Requiring on-site equipment, such as forklifts and yard trucks, to be electric with the necessary electrical charging stations provided.
- Forbidding trucks from idling for more than two minutes and requiring operators to turn off engines when not in use.
- Installing and maintaining, at the manufacturer’s recommended maintenance intervals, air filtration systems at sensitive receptors within a certain radius of facility for the life of the project.
- Installing and maintaining, at the manufacturer’s recommended maintenance intervals, an air monitoring station proximate to sensitive receptors and the facility for the life of the project, and making the resulting data publicly available in real time. While air monitoring does not mitigate the air quality or greenhouse gas impacts of a facility, it nonetheless benefits the affected community by providing information that can be used to improve air quality or avoid exposure to unhealthy air.
- Constructing electric truck charging stations proportional to the number of dock doors at the project.
- Constructing electric light-duty vehicle charging stations proportional to the number of parking spaces at the project.
- Installing solar photovoltaic systems on the project site of a specified electrical generation capacity, such as equal to the building’s projected energy needs.
- Requiring all stand-by emergency generators to be powered by a non-diesel fuel.
- Requiring facility operators to train managers and employees on efficient scheduling and load management to eliminate unnecessary queuing and idling of trucks.

- Requiring operators to establish and promote a rideshare program that discourages single-occupancy vehicle trips and provides financial incentives for alternate modes of transportation, including carpooling, public transit, and biking.
- Meeting CalGreen Tier 2 green building standards, including all provisions related to designated parking for clean air vehicles, electric vehicle charging, and bicycle parking.
- Achieving certification of compliance with LEED green building standards.
- Providing meal options onsite or shuttles between the facility and nearby meal destinations.
- Posting signs at every truck exit driveway providing directional information to the truck route.
- Improving and maintaining vegetation and tree canopy for residents in and around the project area.
- Requiring that every tenant train its staff in charge of keeping vehicle records in diesel technologies and compliance with CARB regulations, by attending CARB approved courses. Also require facility operators to maintain records on-site demonstrating compliance and make records available for inspection by the local jurisdiction, air district, and state upon request.
- Requiring tenants to enroll in the United States Environmental Protection Agency's SmartWay program, and requiring tenants to use carriers that are SmartWay carriers.

These measures offer a cost-effective, feasible way to incorporate lower-emitting design features into the proposed Project, which subsequently, reduce emissions released during Project construction and operation. An updated EIR should be prepared to include all feasible mitigation measures, as well as include an updated air quality analysis to ensure that the necessary mitigation measures are implemented to reduce emissions to below thresholds. The updated EIR should also demonstrate a commitment to the implementation of these measures prior to Project approval, to ensure that the Project's significant emissions are reduced to the maximum extent possible.

Disclaimer

SWAPE has received limited discovery regarding this project. Additional information may become available in the future; thus, we retain the right to revise or amend this report when additional information becomes available. Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable environmental consultants practicing in this or similar localities at the time of service. No other warranty, expressed or implied, is made as to the scope of work, work methodologies and protocols, site conditions, analytical testing results, and findings presented. This report reflects efforts which were limited to information that was reasonably accessible at the time of the work, and may contain informational gaps, inconsistencies, or otherwise be incomplete due to the unavailability or uncertainty of information obtained or provided by third parties.

Sincerely,

Matt Hagemann, P.G., C.Hg.

Paul E. Rosenfeld, Ph.D.

Attachment A: CalEEMod Output Files
Attachment B: Matt Hagemann CV
Attachment C: Paul E. Rosenfeld CV

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Perris and Ramona Warehouse (Construction - Unmitigated)

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	8.00	1000sqft	0.18	8,000.00	0
Unrefrigerated Warehouse-No Rail	339.92	1000sqft	7.80	339,918.00	0
Other Asphalt Surfaces	150.02	1000sqft	3.44	150,018.00	0
Parking Lot	227.00	Space	1.57	90,800.00	0
City Park	2.52	Acre	2.52	109,664.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Consistent with the DEIR's model.

Land Use - See SWAPE comment on "Failure to model all proposed land uses"

Construction Phase - See SWAPE comment on "Unsubstantiated Changes to Individual Construction Phase Lengths"

Off-road Equipment - Consistent with the DEIR's model.

Off-road Equipment - Consistent with the DEIR's model.

Off-road Equipment - Consistent with the DEIR's model.

Off-road Equipment - Consistent with the DEIR's model.

Off-road Equipment - Consistent with the DEIR's model.

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Trips and VMT - Consistent with the DEIR's model.

Grading - Consistent with the DEIR's model.

Architectural Coating - Consistent with the DEIR's model.

Vehicle Trips - Consistent with the DEIR's model.

Energy Use - Consistent with the DEIR's model.

Water And Wastewater - Consistent with the DEIR's model.

Solid Waste - Consistent with the DEIR's model.

Construction Off-road Equipment Mitigation - Consistent with the DEIR's model.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblConstructionPhase	NumDays	10.00	6.00
tblConstructionPhase	NumDays	30.00	19.00
tblConstructionPhase	NumDays	300.00	189.00
tblConstructionPhase	NumDays	20.00	13.00
tblConstructionPhase	NumDays	20.00	13.00
tblEnergyUse	LightingElect	3.66	0.00
tblEnergyUse	LightingElect	0.35	0.00
tblEnergyUse	LightingElect	1.17	0.00
tblEnergyUse	NT24E	2.79	0.00
tblEnergyUse	NT24E	0.82	0.00
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24E	2.74	0.00
tblEnergyUse	T24E	0.33	0.00
tblEnergyUse	T24NG	3.43	0.00
tblEnergyUse	T24NG	1.98	0.00
tblGrading	AcresOfGrading	76.00	480.00
tblGrading	AcresOfGrading	21.00	160.00
tblLandUse	LandUseSquareFeet	339,920.00	339,918.00

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblLandUse	LandUseSquareFeet	150,020.00	150,018.00
tblLandUse	LandUseSquareFeet	109,771.20	109,664.00
tblLandUse	LotAcreage	2.04	1.57
tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblSolidWaste	SolidWasteGenerationRate	0.22	0.00
tblSolidWaste	SolidWasteGenerationRate	7.44	0.00
tblSolidWaste	SolidWasteGenerationRate	319.52	0.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	14.00
tblTripsAndVMT	VendorTripNumber	114.00	93.00
tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CC_TL	8.40	0.00

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CC_TTP	48.00	0.00
tblVehicleTrips	CC_TTP	48.00	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	41.00	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	CW_TTP	33.00	0.00
tblVehicleTrips	CW_TTP	33.00	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	DV_TP	28.00	0.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	6.00	0.00
tblVehicleTrips	PB_TP	4.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	66.00	0.00
tblVehicleTrips	PR_TP	77.00	0.00
tblVehicleTrips	PR_TP	92.00	0.00
tblVehicleTrips	ST_TR	1.96	0.00

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	ST_TR	2.21	0.00
tblVehicleTrips	ST_TR	1.74	0.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	SU_TR	0.70	0.00
tblVehicleTrips	SU_TR	1.74	0.00
tblVehicleTrips	WD_TR	0.78	0.00
tblVehicleTrips	WD_TR	9.74	0.00
tblVehicleTrips	WD_TR	1.74	0.00
tblWater	IndoorWaterUseRate	1,421,869.98	0.00
tblWater	IndoorWaterUseRate	78,606,500.00	0.00
tblWater	OutdoorWaterUseRate	3,002,533.00	0.00
tblWater	OutdoorWaterUseRate	871,468.70	0.00

2.0 Emissions Summary

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0420	0.4648	0.2575	6.7000e-004	0.4354	0.0189	0.4543	0.0887	0.0174	0.1061	0.0000	59.2693	59.2693	0.0181	3.2000e-004	59.8174
2023	1.9509	4.3705	3.8373	0.0109	0.6387	0.1750	0.8137	0.1359	0.1640	0.2999	0.0000	969.8257	969.8257	0.1577	0.0282	982.1814
Maximum	**1.9509**	**4.3705**	**3.8373**	**0.0109**	**0.6387**	**0.1750**	**0.8137**	**0.1359**	**0.1640**	**0.2999**	**0.0000**	**969.8257**	**969.8257**	**0.1577**	**0.0282**	**982.1814**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0420	0.4648	0.2575	6.7000e-004	0.4354	0.0189	0.4543	0.0887	0.0174	0.1061	0.0000	59.2692	59.2692	0.0181	3.2000e-004	59.8173
2023	1.9509	4.3705	3.8373	0.0109	0.6387	0.1750	0.8137	0.1359	0.1640	0.2999	0.0000	969.8250	969.8250	0.1577	0.0282	982.1807
Maximum	**1.9509**	**4.3705**	**3.8373**	**0.0109**	**0.6387**	**0.1750**	**0.8137**	**0.1359**	**0.1640**	**0.2999**	**0.0000**	**969.8250**	**969.8250**	**0.1577**	**0.0282**	**982.1807**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**12-6-2022**	**3-5-2023**	1.6101	1.6101
2	**3-6-2023**	**6-5-2023**	1.6133	1.6133
3	**6-6-2023**	**9-5-2023**	1.6121	1.6121
4	**9-6-2023**	**9-30-2023**	0.4249	0.4249
		Highest	1.6133	1.6133

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.4393	8.0000e-005	9.2800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0181	0.0181	5.0000e-005	0.0000	0.0192
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.4393**	**8.0000e-005**	**9.2800e-003**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0181**	**0.0181**	**5.0000e-005**	**0.0000**	**0.0192**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.4393	8.0000e-005	9.2800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0181	0.0181	5.0000e-005	0.0000	0.0192
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.4393**	**8.0000e-005**	**9.2800e-003**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0181**	**0.0181**	**5.0000e-005**	**0.0000**	**0.0192**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	12/6/2022	12/13/2022	5	6	
2	Grading	Grading	12/14/2022	1/9/2023	5	19	
3	Building Construction	Building Construction	1/10/2023	9/29/2023	5	189	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Paving	Paving	9/30/2023	10/18/2023	5	13	
5	Architectural Coating	Architectural Coating	10/19/2023	11/6/2023	5	13	

Acres of Grading (Site Preparation Phase): 160

Acres of Grading (Grading Phase): 480

Acres of Paving: 5.01

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 521,877; Non-Residential Outdoor: 173,959; Striped Parking Area: 14,449 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Crawler Tractors	4	8.00	212	0.43
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Crawler Tractors	2	8.00	212	0.43
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	2	8.00	231	0.29
Building Construction	Crawler Tractors	4	8.00	212	0.43
Building Construction	Forklifts	4	8.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Welders	2	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Architectural Coating	Air Compressors	1	8.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	5.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	14.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	14	293.00	93.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	59.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1390	0.0000	0.1390	0.0390	0.0000	0.0390	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0134	0.1510	0.0599	1.7000e-004		6.4700e-003	6.4700e-003		5.9500e-003	5.9500e-003	0.0000	14.9924	14.9924	4.8500e-003	0.0000	15.1136
Total	**0.0134**	**0.1510**	**0.0599**	**1.7000e-004**	**0.1390**	**6.4700e-003**	**0.1455**	**0.0390**	**5.9500e-003**	**0.0449**	**0.0000**	**14.9924**	**14.9924**	**4.8500e-003**	**0.0000**	**15.1136**

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3.2 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	6.7000e-004	2.2000e-004	0.0000	9.0000e-005	1.0000e-005	1.0000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.2627	0.2627	0.0000	4.0000e-005	0.2744
Worker	1.9000e-004	1.5000e-004	1.8400e-003	1.0000e-005	5.9000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4693	0.4693	1.0000e-005	1.0000e-005	0.4735
Total	**2.1000e-004**	**8.2000e-004**	**2.0600e-003**	**1.0000e-005**	**6.8000e-004**	**1.0000e-005**	**7.0000e-004**	**1.9000e-004**	**1.0000e-005**	**2.0000e-004**	**0.0000**	**0.7320**	**0.7320**	**1.0000e-005**	**5.0000e-005**	**0.7479**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1390	0.0000	0.1390	0.0390	0.0000	0.0390	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0134	0.1510	0.0599	1.7000e-004		6.4700e-003	6.4700e-003		5.9500e-003	5.9500e-003	0.0000	14.9924	14.9924	4.8500e-003	0.0000	15.1136
Total	**0.0134**	**0.1510**	**0.0599**	**1.7000e-004**	**0.1390**	**6.4700e-003**	**0.1455**	**0.0390**	**5.9500e-003**	**0.0449**	**0.0000**	**14.9924**	**14.9924**	**4.8500e-003**	**0.0000**	**15.1136**

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3.2 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	6.7000e-004	2.2000e-004	0.0000	9.0000e-005	1.0000e-005	1.0000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.2627	0.2627	0.0000	4.0000e-005	0.2744
Worker	1.9000e-004	1.5000e-004	1.8400e-003	1.0000e-005	5.9000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4693	0.4693	1.0000e-005	1.0000e-005	0.4735
Total	**2.1000e-004**	**8.2000e-004**	**2.0600e-003**	**1.0000e-005**	**6.8000e-004**	**1.0000e-005**	**7.0000e-004**	**1.9000e-004**	**1.0000e-005**	**2.0000e-004**	**0.0000**	**0.7320**	**0.7320**	**1.0000e-005**	**5.0000e-005**	**0.7479**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2937	0.0000	0.2937	0.0490	0.0000	0.0490	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0278	0.3086	0.1897	4.6000e-004		0.0124	0.0124		0.0114	0.0114	0.0000	40.8215	40.8215	0.0132	0.0000	41.1515
Total	**0.0278**	**0.3086**	**0.1897**	**4.6000e-004**	**0.2937**	**0.0124**	**0.3061**	**0.0490**	**0.0114**	**0.0604**	**0.0000**	**40.8215**	**40.8215**	**0.0132**	**0.0000**	**41.1515**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4000e-004	4.0400e-003	1.3600e-003	2.0000e-005	5.7000e-004	6.0000e-005	6.3000e-004	1.7000e-004	5.0000e-005	2.2000e-004	0.0000	1.5936	1.5936	2.0000e-005	2.4000e-004	1.6645
Worker	4.5000e-004	3.5000e-004	4.4300e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.1299	1.1299	3.0000e-005	3.0000e-005	1.1399
Total	**5.9000e-004**	**4.3900e-003**	**5.7900e-003**	**3.0000e-005**	**2.0000e-003**	**7.0000e-005**	**2.0700e-003**	**5.5000e-004**	**6.0000e-005**	**6.1000e-004**	**0.0000**	**2.7234**	**2.7234**	**5.0000e-005**	**2.7000e-004**	**2.8044**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2937	0.0000	0.2937	0.0490	0.0000	0.0490	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0278	0.3086	0.1897	4.6000e-004		0.0124	0.0124		0.0114	0.0114	0.0000	40.8214	40.8214	0.0132	0.0000	41.1515
Total	**0.0278**	**0.3086**	**0.1897**	**4.6000e-004**	**0.2937**	**0.0124**	**0.3061**	**0.0490**	**0.0114**	**0.0604**	**0.0000**	**40.8214**	**40.8214**	**0.0132**	**0.0000**	**41.1515**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4000e-004	4.0400e-003	1.3600e-003	2.0000e-005	5.7000e-004	6.0000e-005	6.3000e-004	1.7000e-004	5.0000e-005	2.2000e-004	0.0000	1.5936	1.5936	2.0000e-005	2.4000e-004	1.6645
Worker	4.5000e-004	3.5000e-004	4.4300e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.1299	1.1299	3.0000e-005	3.0000e-005	1.1399
Total	**5.9000e-004**	**4.3900e-003**	**5.7900e-003**	**3.0000e-005**	**2.0000e-003**	**7.0000e-005**	**2.0700e-003**	**5.5000e-004**	**6.0000e-005**	**6.1000e-004**	**0.0000**	**2.7234**	**2.7234**	**5.0000e-005**	**2.7000e-004**	**2.8044**

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2726	0.0000	0.2726	0.0374	0.0000	0.0374	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0117	0.1250	0.0842	2.1000e-004		5.0100e-003	5.0100e-003		4.6100e-003	4.6100e-003	0.0000	18.8349	18.8349	6.0900e-003	0.0000	18.9872
Total	**0.0117**	**0.1250**	**0.0842**	**2.1000e-004**	**0.2726**	**5.0100e-003**	**0.2776**	**0.0374**	**4.6100e-003**	**0.0420**	**0.0000**	**18.8349**	**18.8349**	**6.0900e-003**	**0.0000**	**18.9872**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0000e-005	1.4400e-003	5.7000e-004	1.0000e-005	2.7000e-004	1.0000e-005	2.8000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	0.7067	0.7067	1.0000e-005	1.0000e-004	0.7380
Worker	1.9000e-004	1.4000e-004	1.8800e-003	1.0000e-005	6.6000e-004	0.0000	6.6000e-004	1.8000e-004	0.0000	1.8000e-004	0.0000	0.5078	0.5078	1.0000e-005	1.0000e-005	0.5121
Total	**2.4000e-004**	**1.5800e-003**	**2.4500e-003**	**2.0000e-005**	**9.3000e-004**	**1.0000e-005**	**9.4000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**1.2145**	**1.2145**	**2.0000e-005**	**1.1000e-004**	**1.2501**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2726	0.0000	0.2726	0.0374	0.0000	0.0374	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0117	0.1250	0.0842	2.1000e-004		5.0100e-003	5.0100e-003		4.6100e-003	4.6100e-003	0.0000	18.8349	18.8349	6.0900e-003	0.0000	18.9872
Total	**0.0117**	**0.1250**	**0.0842**	**2.1000e-004**	**0.2726**	**5.0100e-003**	**0.2776**	**0.0374**	**4.6100e-003**	**0.0420**	**0.0000**	**18.8349**	**18.8349**	**6.0900e-003**	**0.0000**	**18.9872**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0000e-005	1.4400e-003	5.7000e-004	1.0000e-005	2.7000e-004	1.0000e-005	2.8000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	0.7067	0.7067	1.0000e-005	1.0000e-004	0.7380
Worker	1.9000e-004	1.4000e-004	1.8800e-003	1.0000e-005	6.6000e-004	0.0000	6.6000e-004	1.8000e-004	0.0000	1.8000e-004	0.0000	0.5078	0.5078	1.0000e-005	1.0000e-005	0.5121
Total	**2.4000e-004**	**1.5800e-003**	**2.4500e-003**	**2.0000e-005**	**9.3000e-004**	**1.0000e-005**	**9.4000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**1.2145**	**1.2145**	**2.0000e-005**	**1.1000e-004**	**1.2501**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3785	3.7973	2.6358	6.3500e-003		0.1621	0.1621		0.1519	0.1519	0.0000	548.2717	548.2717	0.1399	0.0000	551.7679
Total	**0.3785**	**3.7973**	**2.6358**	**6.3500e-003**		**0.1621**	**0.1621**		**0.1519**	**0.1519**	**0.0000**	**548.2717**	**548.2717**	**0.1399**	**0.0000**	**551.7679**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.5200e-003	0.3013	0.1200	1.5400e-003	0.0555	2.5000e-003	0.0580	0.0160	2.4000e-003	0.0184	0.0000	147.8670	147.8670	1.4900e-003	0.0219	154.4199
Worker	0.0899	0.0666	0.8692	2.5200e-003	0.3043	1.4500e-003	0.3058	0.0808	1.3400e-003	0.0822	0.0000	234.3365	234.3365	5.7800e-003	6.1500e-003	236.3122
Total	**0.0994**	**0.3679**	**0.9893**	**4.0600e-003**	**0.3599**	**3.9500e-003**	**0.3638**	**0.0968**	**3.7400e-003**	**0.1006**	**0.0000**	**382.2035**	**382.2035**	**7.2700e-003**	**0.0280**	**390.7322**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3785	3.7973	2.6358	6.3500e-003		0.1621	0.1621		0.1519	0.1519	0.0000	548.2711	548.2711	0.1399	0.0000	551.7673
Total	**0.3785**	**3.7973**	**2.6358**	**6.3500e-003**		**0.1621**	**0.1621**		**0.1519**	**0.1519**	**0.0000**	**548.2711**	**548.2711**	**0.1399**	**0.0000**	**551.7673**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.5200e-003	0.3013	0.1200	1.5400e-003	0.0555	2.5000e-003	0.0580	0.0160	2.4000e-003	0.0184	0.0000	147.8670	147.8670	1.4900e-003	0.0219	154.4199
Worker	0.0899	0.0666	0.8692	2.5200e-003	0.3043	1.4500e-003	0.3058	0.0808	1.3400e-003	0.0822	0.0000	234.3365	234.3365	5.7800e-003	6.1500e-003	236.3122
Total	**0.0994**	**0.3679**	**0.9893**	**4.0600e-003**	**0.3599**	**3.9500e-003**	**0.3638**	**0.0968**	**3.7400e-003**	**0.1006**	**0.0000**	**382.2035**	**382.2035**	**7.2700e-003**	**0.0280**	**390.7322**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.7100e-003	0.0663	0.0948	1.5000e-004		3.3200e-003	3.3200e-003		3.0500e-003	3.0500e-003	0.0000	13.0175	13.0175	4.2100e-003	0.0000	13.1227
Paving	6.5600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0133**	**0.0663**	**0.0948**	**1.5000e-004**		**3.3200e-003**	**3.3200e-003**		**3.0500e-003**	**3.0500e-003**	**0.0000**	**13.0175**	**13.0175**	**4.2100e-003**	**0.0000**	**13.1227**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.3000e-004	3.0600e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0800e-003	2.8000e-004	0.0000	2.9000e-004	0.0000	0.8252	0.8252	2.0000e-005	2.0000e-005	0.8321
Total	**3.2000e-004**	**2.3000e-004**	**3.0600e-003**	**1.0000e-005**	**1.0700e-003**	**1.0000e-005**	**1.0800e-003**	**2.8000e-004**	**0.0000**	**2.9000e-004**	**0.0000**	**0.8252**	**0.8252**	**2.0000e-005**	**2.0000e-005**	**0.8321**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.7100e-003	0.0663	0.0948	1.5000e-004		3.3200e-003	3.3200e-003		3.0500e-003	3.0500e-003	0.0000	13.0175	13.0175	4.2100e-003	0.0000	13.1227
Paving	6.5600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0133**	**0.0663**	**0.0948**	**1.5000e-004**		**3.3200e-003**	**3.3200e-003**		**3.0500e-003**	**3.0500e-003**	**0.0000**	**13.0175**	**13.0175**	**4.2100e-003**	**0.0000**	**13.1227**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.3000e-004	3.0600e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0800e-003	2.8000e-004	0.0000	2.9000e-004	0.0000	0.8252	0.8252	2.0000e-005	2.0000e-005	0.8321
Total	**3.2000e-004**	**2.3000e-004**	**3.0600e-003**	**1.0000e-005**	**1.0700e-003**	**1.0000e-005**	**1.0800e-003**	**2.8000e-004**	**0.0000**	**2.9000e-004**	**0.0000**	**0.8252**	**0.8252**	**2.0000e-005**	**2.0000e-005**	**0.8321**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.4445					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6600e-003	0.0113	0.0157	3.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	2.2128	2.2128	1.3000e-004	0.0000	2.2161
Total	**1.4462**	**0.0113**	**0.0157**	**3.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**2.2128**	**2.2128**	**1.3000e-004**	**0.0000**	**2.2161**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2400e-003	9.2000e-004	0.0120	3.0000e-005	4.2200e-003	2.0000e-005	4.2400e-003	1.1200e-003	2.0000e-005	1.1400e-003	0.0000	3.2457	3.2457	8.0000e-005	9.0000e-005	3.2731
Total	**1.2400e-003**	**9.2000e-004**	**0.0120**	**3.0000e-005**	**4.2200e-003**	**2.0000e-005**	**4.2400e-003**	**1.1200e-003**	**2.0000e-005**	**1.1400e-003**	**0.0000**	**3.2457**	**3.2457**	**8.0000e-005**	**9.0000e-005**	**3.2731**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.4445					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6600e-003	0.0113	0.0157	3.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	2.2128	2.2128	1.3000e-004	0.0000	2.2161
Total	**1.4462**	**0.0113**	**0.0157**	**3.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**2.2128**	**2.2128**	**1.3000e-004**	**0.0000**	**2.2161**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2400e-003	9.2000e-004	0.0120	3.0000e-005	4.2200e-003	2.0000e-005	4.2400e-003	1.1200e-003	2.0000e-005	1.1400e-003	0.0000	3.2457	3.2457	8.0000e-005	9.0000e-005	3.2731
Total	**1.2400e-003**	**9.2000e-004**	**0.0120**	**3.0000e-005**	**4.2200e-003**	**2.0000e-005**	**4.2400e-003**	**1.1200e-003**	**2.0000e-005**	**1.1400e-003**	**0.0000**	**3.2457**	**3.2457**	**8.0000e-005**	**9.0000e-005**	**3.2731**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
General Office Building	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.534849	0.056022	0.172639	0.141007	0.026597	0.007310	0.011327	0.018693	0.000616	0.000315	0.024057	0.001100	0.005468
General Office Building	0.534849	0.056022	0.172639	0.141007	0.026597	0.007310	0.011327	0.018693	0.000616	0.000315	0.024057	0.001100	0.005468
Other Asphalt Surfaces	0.534849	0.056022	0.172639	0.141007	0.026597	0.007310	0.011327	0.018693	0.000616	0.000315	0.024057	0.001100	0.005468
Parking Lot	0.534849	0.056022	0.172639	0.141007	0.026597	0.007310	0.011327	0.018693	0.000616	0.000315	0.024057	0.001100	0.005468
Unrefrigerated Warehouse-No Rail	0.534849	0.056022	0.172639	0.141007	0.026597	0.007310	0.011327	0.018693	0.000616	0.000315	0.024057	0.001100	0.005468

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.4393	8.0000e-005	9.2800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0181	0.0181	5.0000e-005	0.0000	0.0192
Unmitigated	1.4393	8.0000e-005	9.2800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0181	0.0181	5.0000e-005	0.0000	0.0192

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1646					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2738					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.6000e-004	8.0000e-005	9.2800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0181	0.0181	5.0000e-005	0.0000	0.0192
Total	**1.4393**	**8.0000e-005**	**9.2800e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0181**	**0.0181**	**5.0000e-005**	**0.0000**	**0.0192**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1646					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2738					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.6000e-004	8.0000e-005	9.2800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0181	0.0181	5.0000e-005	0.0000	0.0192
Total	**1.4393**	**8.0000e-005**	**9.2800e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0181**	**0.0181**	**5.0000e-005**	**0.0000**	**0.0192**

7.0 Water Detail

7.1 Mitigation Measures Water

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Perris and Ramona Warehouse (Construction - Unmitigated)

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	8.00	1000sqft	0.18	8,000.00	0
Unrefrigerated Warehouse-No Rail	339.92	1000sqft	7.80	339,918.00	0
Other Asphalt Surfaces	150.02	1000sqft	3.44	150,018.00	0
Parking Lot	227.00	Space	1.57	90,800.00	0
City Park	2.52	Acre	2.52	109,664.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Consistent with the DEIR's model.

Land Use - See SWAPE comment on "Failure to model all proposed land uses"

Construction Phase - See SWAPE comment on "Unsubstantiated Changes to Individual Construction Phase Lengths"

Off-road Equipment - Consistent with the DEIR's model.

Off-road Equipment - Consistent with the DEIR's model.

Off-road Equipment - Consistent with the DEIR's model.

Off-road Equipment - Consistent with the DEIR's model.

Off-road Equipment - Consistent with the DEIR's model.

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Trips and VMT - Consistent with the DEIR's model.

Grading - Consistent with the DEIR's model.

Architectural Coating - Consistent with the DEIR's model.

Vehicle Trips - Consistent with the DEIR's model.

Energy Use - Consistent with the DEIR's model.

Water And Wastewater - Consistent with the DEIR's model.

Solid Waste - Consistent with the DEIR's model.

Construction Off-road Equipment Mitigation - Consistent with the DEIR's model.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblConstructionPhase	NumDays	10.00	6.00
tblConstructionPhase	NumDays	30.00	19.00
tblConstructionPhase	NumDays	300.00	189.00
tblConstructionPhase	NumDays	20.00	13.00
tblConstructionPhase	NumDays	20.00	13.00
tblEnergyUse	LightingElect	3.66	0.00
tblEnergyUse	LightingElect	0.35	0.00
tblEnergyUse	LightingElect	1.17	0.00
tblEnergyUse	NT24E	2.79	0.00
tblEnergyUse	NT24E	0.82	0.00
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24E	2.74	0.00
tblEnergyUse	T24E	0.33	0.00
tblEnergyUse	T24NG	3.43	0.00
tblEnergyUse	T24NG	1.98	0.00
tblGrading	AcresOfGrading	76.00	480.00
tblGrading	AcresOfGrading	21.00	160.00
tblLandUse	LandUseSquareFeet	339,920.00	339,918.00

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblLandUse	LandUseSquareFeet	150,020.00	150,018.00
tblLandUse	LandUseSquareFeet	109,771.20	109,664.00
tblLandUse	LotAcreage	2.04	1.57
tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblSolidWaste	SolidWasteGenerationRate	0.22	0.00
tblSolidWaste	SolidWasteGenerationRate	7.44	0.00
tblSolidWaste	SolidWasteGenerationRate	319.52	0.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	14.00
tblTripsAndVMT	VendorTripNumber	114.00	93.00
tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CC_TL	8.40	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CC_TTP	48.00	0.00
tblVehicleTrips	CC_TTP	48.00	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	41.00	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	CW_TTP	33.00	0.00
tblVehicleTrips	CW_TTP	33.00	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	DV_TP	28.00	0.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	6.00	0.00
tblVehicleTrips	PB_TP	4.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	66.00	0.00
tblVehicleTrips	PR_TP	77.00	0.00
tblVehicleTrips	PR_TP	92.00	0.00
tblVehicleTrips	ST_TR	1.96	0.00

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	ST_TR	2.21	0.00
tblVehicleTrips	ST_TR	1.74	0.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	SU_TR	0.70	0.00
tblVehicleTrips	SU_TR	1.74	0.00
tblVehicleTrips	WD_TR	0.78	0.00
tblVehicleTrips	WD_TR	9.74	0.00
tblVehicleTrips	WD_TR	1.74	0.00
tblWater	IndoorWaterUseRate	1,421,869.98	0.00
tblWater	IndoorWaterUseRate	78,606,500.00	0.00
tblWater	OutdoorWaterUseRate	3,002,533.00	0.00
tblWater	OutdoorWaterUseRate	871,468.70	0.00

2.0 Emissions Summary

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	4.5526	50.6027	30.1855	0.0761	46.5795	2.1605	48.7400	13.0468	1.9877	15.0346	0.0000	7,399.5922	7,399.5922	2.2469	0.0451	7,469.2181
2023	222.7035	43.8829	39.8922	0.1122	33.1269	1.7572	34.8012	6.2882	1.6470	7.8287	0.0000	11,066.6041	11,066.6041	2.2455	0.3234	11,205.8660
Maximum	**222.7035**	**50.6027**	**39.8922**	**0.1122**	**46.5795**	**2.1605**	**48.7400**	**13.0468**	**1.9877**	**15.0346**	**0.0000**	**11,066.6041**	**11,066.6041**	**2.2469**	**0.3234**	**11,205.8660**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	4.5526	50.6027	30.1855	0.0761	46.5795	2.1605	48.7400	13.0468	1.9877	15.0346	0.0000	7,399.5922	7,399.5922	2.2469	0.0451	7,469.2181
2023	222.7035	43.8829	39.8922	0.1122	33.1269	1.7572	34.8012	6.2882	1.6470	7.8287	0.0000	11,066.6041	11,066.6041	2.2455	0.3234	11,205.8660
Maximum	**222.7035**	**50.6027**	**39.8922**	**0.1122**	**46.5795**	**2.1605**	**48.7400**	**13.0468**	**1.9877**	**15.0346**	**0.0000**	**11,066.6041**	**11,066.6041**	**2.2469**	**0.3234**	**11,205.8660**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.8886	6.8000e-004	0.0743	1.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004		0.1592	0.1592	4.2000e-004		0.1697
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.8886**	**6.8000e-004**	**0.0743**	**1.0000e-005**	**0.0000**	**2.6000e-004**	**2.6000e-004**	**0.0000**	**2.6000e-004**	**2.6000e-004**		**0.1592**	**0.1592**	**4.2000e-004**	**0.0000**	**0.1697**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.8886	6.8000e-004	0.0743	1.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004		0.1592	0.1592	4.2000e-004		0.1697
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.8886**	**6.8000e-004**	**0.0743**	**1.0000e-005**	**0.0000**	**2.6000e-004**	**2.6000e-004**	**0.0000**	**2.6000e-004**	**2.6000e-004**		**0.1592**	**0.1592**	**4.2000e-004**	**0.0000**	**0.1697**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	12/6/2022	12/13/2022	5	6	
2	Grading	Grading	12/14/2022	1/9/2023	5	19	
3	Building Construction	Building Construction	1/10/2023	9/29/2023	5	189	
4	Paving	Paving	9/30/2023	10/18/2023	5	13	
5	Architectural Coating	Architectural Coating	10/19/2023	11/6/2023	5	13	

Acres of Grading (Site Preparation Phase): 160

Acres of Grading (Grading Phase): 480

Acres of Paving: 5.01

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 521,877; Non-Residential Outdoor: 173,959; Striped Parking Area: 14,449 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Crawler Tractors	4	8.00	212	0.43
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Crawler Tractors	2	8.00	212	0.43
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	2	8.00	231	0.29
Building Construction	Crawler Tractors	4	8.00	212	0.43
Building Construction	Forklifts	4	8.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Welders	2	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	8.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	5.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	14.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	14	293.00	93.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	59.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					46.3463	0.0000	46.3463	12.9843	0.0000	12.9843			0.0000			0.0000
Off-Road	4.4735	50.3453	19.9794	0.0569		2.1564	2.1564		1.9839	1.9839		5,508.7626	5,508.7626	1.7817		5,553.3037
Total	**4.4735**	**50.3453**	**19.9794**	**0.0569**	**46.3463**	**2.1564**	**48.5027**	**12.9843**	**1.9839**	**14.9682**		**5,508.7626**	**5,508.7626**	**1.7817**		**5,553.3037**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.1400e-003	0.2114	0.0735	9.1000e-004	0.0320	3.0500e-003	0.0351	9.2200e-003	2.9200e-003	0.0121		96.4727	96.4727	1.0200e-003	0.0143	100.7615
Worker	0.0709	0.0460	0.7176	1.8300e-003	0.2012	1.0000e-003	0.2022	0.0534	9.2000e-004	0.0543		186.0370	186.0370	4.6100e-003	4.5800e-003	187.5158
Total	**0.0791**	**0.2574**	**0.7911**	**2.7400e-003**	**0.2332**	**4.0500e-003**	**0.2373**	**0.0626**	**3.8400e-003**	**0.0664**		**282.5097**	**282.5097**	**5.6300e-003**	**0.0189**	**288.2773**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					46.3463	0.0000	46.3463	12.9843	0.0000	12.9843			0.0000			0.0000
Off-Road	4.4735	50.3453	19.9794	0.0569		2.1564	2.1564		1.9839	1.9839	0.0000	5,508.7626	5,508.7626	1.7817		5,553.3037
Total	**4.4735**	**50.3453**	**19.9794**	**0.0569**	**46.3463**	**2.1564**	**48.5027**	**12.9843**	**1.9839**	**14.9682**	**0.0000**	**5,508.7626**	**5,508.7626**	**1.7817**		**5,553.3037**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.1400e-003	0.2114	0.0735	9.1000e-004	0.0320	3.0500e-003	0.0351	9.2200e-003	2.9200e-003	0.0121		96.4727	96.4727	1.0200e-003	0.0143	100.7615
Worker	0.0709	0.0460	0.7176	1.8300e-003	0.2012	1.0000e-003	0.2022	0.0534	9.2000e-004	0.0543		186.0370	186.0370	4.6100e-003	4.5800e-003	187.5158
Total	**0.0791**	**0.2574**	**0.7911**	**2.7400e-003**	**0.2332**	**4.0500e-003**	**0.2373**	**0.0626**	**3.8400e-003**	**0.0664**		**282.5097**	**282.5097**	**5.6300e-003**	**0.0189**	**288.2773**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					32.8137	0.0000	32.8137	6.2031	0.0000	6.2031			0.0000			0.0000
Off-Road	4.2765	47.4744	29.1823	0.0715		1.9068	1.9068		1.7543	1.7543		6,922.7609	6,922.7609	2.2390		6,978.7349
Total	**4.2765**	**47.4744**	**29.1823**	**0.0715**	**32.8137**	**1.9068**	**34.7205**	**6.2031**	**1.7543**	**7.9574**		**6,922.7609**	**6,922.7609**	**2.2390**		**6,978.7349**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0228	0.5920	0.2059	2.5500e-003	0.0897	8.5400e-003	0.0982	0.0258	8.1700e-003	0.0340		270.1235	270.1235	2.8600e-003	0.0401	282.1323
Worker	0.0788	0.0511	0.7973	2.0300e-003	0.2236	1.1100e-003	0.2247	0.0593	1.0300e-003	0.0603		206.7078	206.7078	5.1200e-003	5.0800e-003	208.3509
Total	**0.1016**	**0.6431**	**1.0032**	**4.5800e-003**	**0.3132**	**9.6500e-003**	**0.3229**	**0.0851**	**9.2000e-003**	**0.0943**		**476.8313**	**476.8313**	**7.9800e-003**	**0.0451**	**490.4831**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					32.8137	0.0000	32.8137	6.2031	0.0000	6.2031			0.0000			0.0000
Off-Road	4.2765	47.4744	29.1823	0.0715		1.9068	1.9068		1.7543	1.7543	0.0000	6,922.7609	6,922.7609	2.2390		6,978.7349
Total	**4.2765**	**47.4744**	**29.1823**	**0.0715**	**32.8137**	**1.9068**	**34.7205**	**6.2031**	**1.7543**	**7.9574**	**0.0000**	**6,922.7609**	**6,922.7609**	**2.2390**		**6,978.7349**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0228	0.5920	0.2059	2.5500e-003	0.0897	8.5400e-003	0.0982	0.0258	8.1700e-003	0.0340		270.1235	270.1235	2.8600e-003	0.0401	282.1323
Worker	0.0788	0.0511	0.7973	2.0300e-003	0.2236	1.1100e-003	0.2247	0.0593	1.0300e-003	0.0603		206.7078	206.7078	5.1200e-003	5.0800e-003	208.3509
Total	**0.1016**	**0.6431**	**1.0032**	**4.5800e-003**	**0.3132**	**9.6500e-003**	**0.3229**	**0.0851**	**9.2000e-003**	**0.0943**		**476.8313**	**476.8313**	**7.9800e-003**	**0.0451**	**490.4831**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					32.8137	0.0000	32.8137	6.2031	0.0000	6.2031			0.0000			0.0000
Off-Road	3.9049	41.6648	28.0633	0.0715		1.6692	1.6692		1.5357	1.5357		6,920.6360	6,920.6360	2.2383		6,976.5928
Total	**3.9049**	**41.6648**	**28.0633**	**0.0715**	**32.8137**	**1.6692**	**34.4829**	**6.2031**	**1.5357**	**7.7388**		**6,920.6360**	**6,920.6360**	**2.2383**		**6,976.5928**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0158	0.4574	0.1883	2.4500e-003	0.0897	3.9800e-003	0.0937	0.0258	3.8100e-003	0.0296		259.3794	259.3794	2.6400e-003	0.0383	270.8674
Worker	0.0731	0.0452	0.7337	1.9700e-003	0.2236	1.0500e-003	0.2246	0.0593	9.7000e-004	0.0603		201.2406	201.2406	4.5900e-003	4.6900e-003	202.7537
Total	**0.0889**	**0.5025**	**0.9221**	**4.4200e-003**	**0.3132**	**5.0300e-003**	**0.3183**	**0.0851**	**4.7800e-003**	**0.0899**		**460.6200**	**460.6200**	**7.2300e-003**	**0.0430**	**473.6211**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					32.8137	0.0000	32.8137	6.2031	0.0000	6.2031			0.0000			0.0000
Off-Road	3.9049	41.6648	28.0633	0.0715		1.6692	1.6692		1.5357	1.5357	0.0000	6,920.6360	6,920.6360	2.2383		6,976.5928
Total	**3.9049**	**41.6648**	**28.0633**	**0.0715**	**32.8137**	**1.6692**	**34.4829**	**6.2031**	**1.5357**	**7.7388**	**0.0000**	**6,920.6360**	**6,920.6360**	**2.2383**		**6,976.5928**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0158	0.4574	0.1883	2.4500e-003	0.0897	3.9800e-003	0.0937	0.0258	3.8100e-003	0.0296		259.3794	259.3794	2.6400e-003	0.0383	270.8674
Worker	0.0731	0.0452	0.7337	1.9700e-003	0.2236	1.0500e-003	0.2246	0.0593	9.7000e-004	0.0603		201.2406	201.2406	4.5900e-003	4.6900e-003	202.7537
Total	**0.0889**	**0.5025**	**0.9221**	**4.4200e-003**	**0.3132**	**5.0300e-003**	**0.3183**	**0.0851**	**4.7800e-003**	**0.0899**		**460.6200**	**460.6200**	**7.2300e-003**	**0.0430**	**473.6211**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.0053	40.1831	27.8922	0.0672		1.7154	1.7154		1.6075	1.6075		6,395.4089	6,395.4089	1.6313		6,436.1910
Total	**4.0053**	**40.1831**	**27.8922**	**0.0672**		**1.7154**	**1.7154**		**1.6075**	**1.6075**		**6,395.4089**	**6,395.4089**	**1.6313**		**6,436.1910**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1048	3.0384	1.2511	0.0163	0.5957	0.0265	0.6221	0.1715	0.0253	0.1968		1,723.0203	1,723.0203	0.0176	0.2546	1,799.3336
Worker	1.0705	0.6615	10.7489	0.0288	3.2751	0.0154	3.2904	0.8686	0.0141	0.8827		2,948.1748	2,948.1748	0.0673	0.0687	2,970.3415
Total	**1.1753**	**3.6998**	**12.0000**	**0.0451**	**3.8707**	**0.0418**	**3.9125**	**1.0401**	**0.0395**	**1.0795**		**4,671.1951**	**4,671.1951**	**0.0849**	**0.3234**	**4,769.6750**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.0053	40.1831	27.8922	0.0672		1.7154	1.7154		1.6075	1.6075	0.0000	6,395.4089	6,395.4089	1.6313		6,436.1910
Total	**4.0053**	**40.1831**	**27.8922**	**0.0672**		**1.7154**	**1.7154**		**1.6075**	**1.6075**	**0.0000**	**6,395.4089**	**6,395.4089**	**1.6313**		**6,436.1910**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1048	3.0384	1.2511	0.0163	0.5957	0.0265	0.6221	0.1715	0.0253	0.1968		1,723.0203	1,723.0203	0.0176	0.2546	1,799.3336
Worker	1.0705	0.6615	10.7489	0.0288	3.2751	0.0154	3.2904	0.8686	0.0141	0.8827		2,948.1748	2,948.1748	0.0673	0.0687	2,970.3415
Total	**1.1753**	**3.6998**	**12.0000**	**0.0451**	**3.8707**	**0.0418**	**3.9125**	**1.0401**	**0.0395**	**1.0795**		**4,671.1951**	**4,671.1951**	**0.0849**	**0.3234**	**4,769.6750**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	1.0097					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.0425**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0548	0.0339	0.5503	1.4700e-003	0.1677	7.9000e-004	0.1685	0.0445	7.2000e-004	0.0452		150.9305	150.9305	3.4500e-003	3.5200e-003	152.0653
Total	**0.0548**	**0.0339**	**0.5503**	**1.4700e-003**	**0.1677**	**7.9000e-004**	**0.1685**	**0.0445**	**7.2000e-004**	**0.0452**		**150.9305**	**150.9305**	**3.4500e-003**	**3.5200e-003**	**152.0653**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	1.0097					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.0425**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0548	0.0339	0.5503	1.4700e-003	0.1677	7.9000e-004	0.1685	0.0445	7.2000e-004	0.0452		150.9305	150.9305	3.4500e-003	3.5200e-003	152.0653
Total	**0.0548**	**0.0339**	**0.5503**	**1.4700e-003**	**0.1677**	**7.9000e-004**	**0.1685**	**0.0445**	**7.2000e-004**	**0.0452**		**150.9305**	**150.9305**	**3.4500e-003**	**3.5200e-003**	**152.0653**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	222.2324					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2556	1.7373	2.4148	3.9600e-003		0.0944	0.0944		0.0944	0.0944		375.2641	375.2641	0.0225		375.8253
Total	**222.4879**	**1.7373**	**2.4148**	**3.9600e-003**		**0.0944**	**0.0944**		**0.0944**	**0.0944**		**375.2641**	**375.2641**	**0.0225**		**375.8253**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2156	0.1332	2.1645	5.8000e-003	0.6595	3.0900e-003	0.6626	0.1749	2.8500e-003	0.1778		593.6598	593.6598	0.0136	0.0138	598.1234
Total	**0.2156**	**0.1332**	**2.1645**	**5.8000e-003**	**0.6595**	**3.0900e-003**	**0.6626**	**0.1749**	**2.8500e-003**	**0.1778**		**593.6598**	**593.6598**	**0.0136**	**0.0138**	**598.1234**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	222.2324					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2556	1.7373	2.4148	3.9600e-003		0.0944	0.0944		0.0944	0.0944	0.0000	375.2641	375.2641	0.0225		375.8253
Total	**222.4879**	**1.7373**	**2.4148**	**3.9600e-003**		**0.0944**	**0.0944**		**0.0944**	**0.0944**	**0.0000**	**375.2641**	**375.2641**	**0.0225**		**375.8253**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2156	0.1332	2.1645	5.8000e-003	0.6595	3.0900e-003	0.6626	0.1749	2.8500e-003	0.1778		593.6598	593.6598	0.0136	0.0138	598.1234
Total	**0.2156**	**0.1332**	**2.1645**	**5.8000e-003**	**0.6595**	**3.0900e-003**	**0.6626**	**0.1749**	**2.8500e-003**	**0.1778**		**593.6598**	**593.6598**	**0.0136**	**0.0138**	**598.1234**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
General Office Building	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.534849	0.056022	0.172639	0.141007	0.026597	0.007310	0.011327	0.018693	0.000616	0.000315	0.024057	0.001100	0.005468
General Office Building	0.534849	0.056022	0.172639	0.141007	0.026597	0.007310	0.011327	0.018693	0.000616	0.000315	0.024057	0.001100	0.005468
Other Asphalt Surfaces	0.534849	0.056022	0.172639	0.141007	0.026597	0.007310	0.011327	0.018693	0.000616	0.000315	0.024057	0.001100	0.005468
Parking Lot	0.534849	0.056022	0.172639	0.141007	0.026597	0.007310	0.011327	0.018693	0.000616	0.000315	0.024057	0.001100	0.005468
Unrefrigerated Warehouse-No Rail	0.534849	0.056022	0.172639	0.141007	0.026597	0.007310	0.011327	0.018693	0.000616	0.000315	0.024057	0.001100	0.005468

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.8886	6.8000e-004	0.0743	1.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004		0.1592	0.1592	4.2000e-004		0.1697
Unmitigated	7.8886	6.8000e-004	0.0743	1.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004		0.1592	0.1592	4.2000e-004		0.1697

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.9020					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.9797					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.8800e-003	6.8000e-004	0.0743	1.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004		0.1592	0.1592	4.2000e-004		0.1697
Total	**7.8886**	**6.8000e-004**	**0.0743**	**1.0000e-005**		**2.6000e-004**	**2.6000e-004**		**2.6000e-004**	**2.6000e-004**		**0.1592**	**0.1592**	**4.2000e-004**		**0.1697**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.9020					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.9797					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.8800e-003	6.8000e-004	0.0743	1.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004		0.1592	0.1592	4.2000e-004		0.1697
Total	**7.8886**	**6.8000e-004**	**0.0743**	**1.0000e-005**		**2.6000e-004**	**2.6000e-004**		**2.6000e-004**	**2.6000e-004**		**0.1592**	**0.1592**	**4.2000e-004**		**0.1697**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Perris and Ramona Warehouse (Construction - Unmitigated)

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	8.00	1000sqft	0.18	8,000.00	0
Unrefrigerated Warehouse-No Rail	339.92	1000sqft	7.80	339,918.00	0
Other Asphalt Surfaces	150.02	1000sqft	3.44	150,018.00	0
Parking Lot	227.00	Space	1.57	90,800.00	0
City Park	2.52	Acre	2.52	109,664.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Consistent with the DEIR's model.

Land Use - See SWAPE comment on "Failure to model all proposed land uses"

Construction Phase - See SWAPE comment on "Unsubstantiated Changes to Individual Construction Phase Lengths"

Off-road Equipment - Consistent with the DEIR's model.

Off-road Equipment - Consistent with the DEIR's model.

Off-road Equipment - Consistent with the DEIR's model.

Off-road Equipment - Consistent with the DEIR's model.

Off-road Equipment - Consistent with the DEIR's model.

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Trips and VMT - Consistent with the DEIR's model.

Grading - Consistent with the DEIR's model.

Architectural Coating - Consistent with the DEIR's model.

Vehicle Trips - Consistent with the DEIR's model.

Energy Use - Consistent with the DEIR's model.

Water And Wastewater - Consistent with the DEIR's model.

Solid Waste - Consistent with the DEIR's model.

Construction Off-road Equipment Mitigation - Consistent with the DEIR's model.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblConstructionPhase	NumDays	10.00	6.00
tblConstructionPhase	NumDays	30.00	19.00
tblConstructionPhase	NumDays	300.00	189.00
tblConstructionPhase	NumDays	20.00	13.00
tblConstructionPhase	NumDays	20.00	13.00
tblEnergyUse	LightingElect	3.66	0.00
tblEnergyUse	LightingElect	0.35	0.00
tblEnergyUse	LightingElect	1.17	0.00
tblEnergyUse	NT24E	2.79	0.00
tblEnergyUse	NT24E	0.82	0.00
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24E	2.74	0.00
tblEnergyUse	T24E	0.33	0.00
tblEnergyUse	T24NG	3.43	0.00
tblEnergyUse	T24NG	1.98	0.00
tblGrading	AcresOfGrading	76.00	480.00
tblGrading	AcresOfGrading	21.00	160.00
tblLandUse	LandUseSquareFeet	339,920.00	339,918.00

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblLandUse	LandUseSquareFeet	150,020.00	150,018.00
tblLandUse	LandUseSquareFeet	109,771.20	109,664.00
tblLandUse	LotAcreage	2.04	1.57
tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblSolidWaste	SolidWasteGenerationRate	0.22	0.00
tblSolidWaste	SolidWasteGenerationRate	7.44	0.00
tblSolidWaste	SolidWasteGenerationRate	319.52	0.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	14.00
tblTripsAndVMT	VendorTripNumber	114.00	93.00
tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CC_TL	8.40	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	CC_TL	8.40	0.00
tblVehicleTrips	CC_TTP	48.00	0.00
tblVehicleTrips	CC_TTP	48.00	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TL	6.90	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	41.00	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	CW_TL	16.60	0.00
tblVehicleTrips	CW_TTP	33.00	0.00
tblVehicleTrips	CW_TTP	33.00	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	DV_TP	28.00	0.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	6.00	0.00
tblVehicleTrips	PB_TP	4.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	66.00	0.00
tblVehicleTrips	PR_TP	77.00	0.00
tblVehicleTrips	PR_TP	92.00	0.00
tblVehicleTrips	ST_TR	1.96	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	ST_TR	2.21	0.00
tblVehicleTrips	ST_TR	1.74	0.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	SU_TR	0.70	0.00
tblVehicleTrips	SU_TR	1.74	0.00
tblVehicleTrips	WD_TR	0.78	0.00
tblVehicleTrips	WD_TR	9.74	0.00
tblVehicleTrips	WD_TR	1.74	0.00
tblWater	IndoorWaterUseRate	1,421,869.98	0.00
tblWater	IndoorWaterUseRate	78,606,500.00	0.00
tblWater	OutdoorWaterUseRate	3,002,533.00	0.00
tblWater	OutdoorWaterUseRate	871,468.70	0.00

2.0 Emissions Summary

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	4.5476	50.6158	30.0423	0.0759	46.5795	2.1605	48.7400	13.0468	1.9878	15.0346	0.0000	7,380.4137	7,380.4137	2.2469	0.0453	7,450.0959
2023	222.6900	44.0917	37.9137	0.1096	33.1269	1.7573	34.8012	6.2882	1.6471	7.8287	0.0000	10,794.0166	10,794.0166	2.2454	0.3258	10,933.9973
Maximum	**222.6900**	**50.6158**	**37.9137**	**0.1096**	**46.5795**	**2.1605**	**48.7400**	**13.0468**	**1.9878**	**15.0346**	**0.0000**	**10,794.0166**	**10,794.0166**	**2.2469**	**0.3258**	**10,933.9973**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	4.5476	50.6158	30.0423	0.0759	46.5795	2.1605	48.7400	13.0468	1.9878	15.0346	0.0000	7,380.4137	7,380.4137	2.2469	0.0453	7,450.0959
2023	222.6900	44.0917	37.9137	0.1096	33.1269	1.7573	34.8012	6.2882	1.6471	7.8287	0.0000	10,794.0166	10,794.0166	2.2454	0.3258	10,933.9973
Maximum	**222.6900**	**50.6158**	**37.9137**	**0.1096**	**46.5795**	**2.1605**	**48.7400**	**13.0468**	**1.9878**	**15.0346**	**0.0000**	**10,794.0166**	**10,794.0166**	**2.2469**	**0.3258**	**10,933.9973**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.8886	6.8000e-004	0.0743	1.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004		0.1592	0.1592	4.2000e-004		0.1697
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.8886**	**6.8000e-004**	**0.0743**	**1.0000e-005**	**0.0000**	**2.6000e-004**	**2.6000e-004**	**0.0000**	**2.6000e-004**	**2.6000e-004**		**0.1592**	**0.1592**	**4.2000e-004**	**0.0000**	**0.1697**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.8886	6.8000e-004	0.0743	1.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004		0.1592	0.1592	4.2000e-004		0.1697
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.8886**	**6.8000e-004**	**0.0743**	**1.0000e-005**	**0.0000**	**2.6000e-004**	**2.6000e-004**	**0.0000**	**2.6000e-004**	**2.6000e-004**		**0.1592**	**0.1592**	**4.2000e-004**	**0.0000**	**0.1697**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	12/6/2022	12/13/2022	5	6	
2	Grading	Grading	12/14/2022	1/9/2023	5	19	
3	Building Construction	Building Construction	1/10/2023	9/29/2023	5	189	
4	Paving	Paving	9/30/2023	10/18/2023	5	13	
5	Architectural Coating	Architectural Coating	10/19/2023	11/6/2023	5	13	

Acres of Grading (Site Preparation Phase): 160

Acres of Grading (Grading Phase): 480

Acres of Paving: 5.01

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 521,877; Non-Residential Outdoor: 173,959; Striped Parking Area: 14,449 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Crawler Tractors	4	8.00	212	0.43
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Crawler Tractors	2	8.00	212	0.43
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	2	8.00	231	0.29
Building Construction	Crawler Tractors	4	8.00	212	0.43
Building Construction	Forklifts	4	8.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Welders	2	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	8.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	5.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	14.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	14	293.00	93.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	59.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					46.3463	0.0000	46.3463	12.9843	0.0000	12.9843			0.0000			0.0000
Off-Road	4.4735	50.3453	19.9794	0.0569		2.1564	2.1564		1.9839	1.9839		5,508.7626	5,508.7626	1.7817		5,553.3037
Total	**4.4735**	**50.3453**	**19.9794**	**0.0569**	**46.3463**	**2.1564**	**48.5027**	**12.9843**	**1.9839**	**14.9682**		**5,508.7626**	**5,508.7626**	**1.7817**		**5,553.3037**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.7900e-003	0.2228	0.0763	9.1000e-004	0.0320	3.0600e-003	0.0351	9.2200e-003	2.9200e-003	0.0122		96.5779	96.5779	1.0100e-003	0.0143	100.8743
Worker	0.0663	0.0477	0.5816	1.6600e-003	0.2012	1.0000e-003	0.2022	0.0534	9.2000e-004	0.0543		168.5113	168.5113	4.5800e-003	4.6800e-003	170.0216
Total	**0.0741**	**0.2705**	**0.6579**	**2.5700e-003**	**0.2332**	**4.0600e-003**	**0.2373**	**0.0626**	**3.8400e-003**	**0.0664**		**265.0892**	**265.0892**	**5.5900e-003**	**0.0190**	**270.8959**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					46.3463	0.0000	46.3463	12.9843	0.0000	12.9843			0.0000			0.0000
Off-Road	4.4735	50.3453	19.9794	0.0569		2.1564	2.1564		1.9839	1.9839	0.0000	5,508.7626	5,508.7626	1.7817		5,553.3037
Total	**4.4735**	**50.3453**	**19.9794**	**0.0569**	**46.3463**	**2.1564**	**48.5027**	**12.9843**	**1.9839**	**14.9682**	**0.0000**	**5,508.7626**	**5,508.7626**	**1.7817**		**5,553.3037**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.7900e-003	0.2228	0.0763	9.1000e-004	0.0320	3.0600e-003	0.0351	9.2200e-003	2.9200e-003	0.0122		96.5779	96.5779	1.0100e-003	0.0143	100.8743
Worker	0.0663	0.0477	0.5816	1.6600e-003	0.2012	1.0000e-003	0.2022	0.0534	9.2000e-004	0.0543		168.5113	168.5113	4.5800e-003	4.6800e-003	170.0216
Total	**0.0741**	**0.2705**	**0.6579**	**2.5700e-003**	**0.2332**	**4.0600e-003**	**0.2373**	**0.0626**	**3.8400e-003**	**0.0664**		**265.0892**	**265.0892**	**5.5900e-003**	**0.0190**	**270.8959**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					32.8137	0.0000	32.8137	6.2031	0.0000	6.2031			0.0000			0.0000
Off-Road	4.2765	47.4744	29.1823	0.0715		1.9068	1.9068		1.7543	1.7543		6,922.7609	6,922.7609	2.2390		6,978.7349
Total	**4.2765**	**47.4744**	**29.1823**	**0.0715**	**32.8137**	**1.9068**	**34.7205**	**6.2031**	**1.7543**	**7.9574**		**6,922.7609**	**6,922.7609**	**2.2390**		**6,978.7349**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0218	0.6237	0.2138	2.5500e-003	0.0897	8.5600e-003	0.0982	0.0258	8.1900e-003	0.0340		270.4181	270.4181	2.8100e-003	0.0401	282.4482
Worker	0.0736	0.0530	0.6462	1.8400e-003	0.2236	1.1100e-003	0.2247	0.0593	1.0300e-003	0.0603		187.2348	187.2348	5.0800e-003	5.2000e-003	188.9129
Total	**0.0954**	**0.6767**	**0.8599**	**4.3900e-003**	**0.3132**	**9.6700e-003**	**0.3229**	**0.0851**	**9.2200e-003**	**0.0943**		**457.6528**	**457.6528**	**7.8900e-003**	**0.0453**	**471.3610**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					32.8137	0.0000	32.8137	6.2031	0.0000	6.2031			0.0000			0.0000
Off-Road	4.2765	47.4744	29.1823	0.0715		1.9068	1.9068		1.7543	1.7543	0.0000	6,922.7609	6,922.7609	2.2390		6,978.7349
Total	**4.2765**	**47.4744**	**29.1823**	**0.0715**	**32.8137**	**1.9068**	**34.7205**	**6.2031**	**1.7543**	**7.9574**	**0.0000**	**6,922.7609**	**6,922.7609**	**2.2390**		**6,978.7349**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0218	0.6237	0.2138	2.5500e-003	0.0897	8.5600e-003	0.0982	0.0258	8.1900e-003	0.0340		270.4181	270.4181	2.8100e-003	0.0401	282.4482
Worker	0.0736	0.0530	0.6462	1.8400e-003	0.2236	1.1100e-003	0.2247	0.0593	1.0300e-003	0.0603		187.2348	187.2348	5.0800e-003	5.2000e-003	188.9129
Total	**0.0954**	**0.6767**	**0.8599**	**4.3900e-003**	**0.3132**	**9.6700e-003**	**0.3229**	**0.0851**	**9.2200e-003**	**0.0943**		**457.6528**	**457.6528**	**7.8900e-003**	**0.0453**	**471.3610**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					32.8137	0.0000	32.8137	6.2031	0.0000	6.2031			0.0000			0.0000
Off-Road	3.9049	41.6648	28.0633	0.0715		1.6692	1.6692		1.5357	1.5357		6,920.6360	6,920.6360	2.2383		6,976.5928
Total	**3.9049**	**41.6648**	**28.0633**	**0.0715**	**32.8137**	**1.6692**	**34.4829**	**6.2031**	**1.5357**	**7.7388**		**6,920.6360**	**6,920.6360**	**2.2383**		**6,976.5928**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0146	0.4851	0.1947	2.4500e-003	0.0897	4.0000e-003	0.0937	0.0258	3.8200e-003	0.0296		260.0231	260.0231	2.5900e-003	0.0385	271.5479
Worker	0.0685	0.0469	0.5958	1.7800e-003	0.2236	1.0500e-003	0.2246	0.0593	9.7000e-004	0.0603		182.3421	182.3421	4.5800e-003	4.8000e-003	183.8876
Total	**0.0831**	**0.5319**	**0.7905**	**4.2300e-003**	**0.3132**	**5.0500e-003**	**0.3183**	**0.0851**	**4.7900e-003**	**0.0899**		**442.3652**	**442.3652**	**7.1700e-003**	**0.0433**	**455.4354**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					32.8137	0.0000	32.8137	6.2031	0.0000	6.2031			0.0000			0.0000
Off-Road	3.9049	41.6648	28.0633	0.0715		1.6692	1.6692		1.5357	1.5357	0.0000	6,920.6360	6,920.6360	2.2383		6,976.5928
Total	**3.9049**	**41.6648**	**28.0633**	**0.0715**	**32.8137**	**1.6692**	**34.4829**	**6.2031**	**1.5357**	**7.7388**	**0.0000**	**6,920.6360**	**6,920.6360**	**2.2383**		**6,976.5928**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0146	0.4851	0.1947	2.4500e-003	0.0897	4.0000e-003	0.0937	0.0258	3.8200e-003	0.0296		260.0231	260.0231	2.5900e-003	0.0385	271.5479
Worker	0.0685	0.0469	0.5958	1.7800e-003	0.2236	1.0500e-003	0.2246	0.0593	9.7000e-004	0.0603		182.3421	182.3421	4.5800e-003	4.8000e-003	183.8876
Total	**0.0831**	**0.5319**	**0.7905**	**4.2300e-003**	**0.3132**	**5.0500e-003**	**0.3183**	**0.0851**	**4.7900e-003**	**0.0899**		**442.3652**	**442.3652**	**7.1700e-003**	**0.0433**	**455.4354**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.0053	40.1831	27.8922	0.0672		1.7154	1.7154		1.6075	1.6075		6,395.4089	6,395.4089	1.6313		6,436.1910
Total	**4.0053**	**40.1831**	**27.8922**	**0.0672**		**1.7154**	**1.7154**		**1.6075**	**1.6075**		**6,395.4089**	**6,395.4089**	**1.6313**		**6,436.1910**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0971	3.2223	1.2932	0.0163	0.5957	0.0266	0.6222	0.1715	0.0254	0.1969		1,727.2964	1,727.2964	0.0172	0.2555	1,803.8537
Worker	1.0034	0.6863	8.7283	0.0261	3.2751	0.0154	3.2904	0.8686	0.0141	0.8827		2,671.3113	2,671.3113	0.0671	0.0704	2,693.9526
Total	**1.1004**	**3.9086**	**10.0215**	**0.0424**	**3.8707**	**0.0419**	**3.9126**	**1.0401**	**0.0395**	**1.0796**		**4,398.6077**	**4,398.6077**	**0.0843**	**0.3258**	**4,497.8063**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.0053	40.1831	27.8922	0.0672		1.7154	1.7154		1.6075	1.6075	0.0000	6,395.4089	6,395.4089	1.6313		6,436.1910
Total	**4.0053**	**40.1831**	**27.8922**	**0.0672**		**1.7154**	**1.7154**		**1.6075**	**1.6075**	**0.0000**	**6,395.4089**	**6,395.4089**	**1.6313**		**6,436.1910**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0971	3.2223	1.2932	0.0163	0.5957	0.0266	0.6222	0.1715	0.0254	0.1969		1,727.2964	1,727.2964	0.0172	0.2555	1,803.8537
Worker	1.0034	0.6863	8.7283	0.0261	3.2751	0.0154	3.2904	0.8686	0.0141	0.8827		2,671.3113	2,671.3113	0.0671	0.0704	2,693.9526
Total	**1.1004**	**3.9086**	**10.0215**	**0.0424**	**3.8707**	**0.0419**	**3.9126**	**1.0401**	**0.0395**	**1.0796**		**4,398.6077**	**4,398.6077**	**0.0843**	**0.3258**	**4,497.8063**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	1.0097					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.0425**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0514	0.0351	0.4468	1.3400e-003	0.1677	7.9000e-004	0.1685	0.0445	7.2000e-004	0.0452		136.7566	136.7566	3.4300e-003	3.6000e-003	137.9157
Total	**0.0514**	**0.0351**	**0.4468**	**1.3400e-003**	**0.1677**	**7.9000e-004**	**0.1685**	**0.0445**	**7.2000e-004**	**0.0452**		**136.7566**	**136.7566**	**3.4300e-003**	**3.6000e-003**	**137.9157**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	1.0097					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.0425**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0514	0.0351	0.4468	1.3400e-003	0.1677	7.9000e-004	0.1685	0.0445	7.2000e-004	0.0452		136.7566	136.7566	3.4300e-003	3.6000e-003	137.9157
Total	**0.0514**	**0.0351**	**0.4468**	**1.3400e-003**	**0.1677**	**7.9000e-004**	**0.1685**	**0.0445**	**7.2000e-004**	**0.0452**		**136.7566**	**136.7566**	**3.4300e-003**	**3.6000e-003**	**137.9157**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	222.2324					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2556	1.7373	2.4148	3.9600e-003		0.0944	0.0944		0.0944	0.0944		375.2641	375.2641	0.0225		375.8253
Total	**222.4879**	**1.7373**	**2.4148**	**3.9600e-003**		**0.0944**	**0.0944**		**0.0944**	**0.0944**		**375.2641**	**375.2641**	**0.0225**		**375.8253**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2020	0.1382	1.7576	5.2600e-003	0.6595	3.0900e-003	0.6626	0.1749	2.8500e-003	0.1778		537.9091	537.9091	0.0135	0.0142	542.4683
Total	**0.2020**	**0.1382**	**1.7576**	**5.2600e-003**	**0.6595**	**3.0900e-003**	**0.6626**	**0.1749**	**2.8500e-003**	**0.1778**		**537.9091**	**537.9091**	**0.0135**	**0.0142**	**542.4683**

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	222.2324					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2556	1.7373	2.4148	3.9600e-003		0.0944	0.0944		0.0944	0.0944	0.0000	375.2641	375.2641	0.0225		375.8253
Total	**222.4879**	**1.7373**	**2.4148**	**3.9600e-003**		**0.0944**	**0.0944**		**0.0944**	**0.0944**	**0.0000**	**375.2641**	**375.2641**	**0.0225**		**375.8253**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2020	0.1382	1.7576	5.2600e-003	0.6595	3.0900e-003	0.6626	0.1749	2.8500e-003	0.1778		537.9091	537.9091	0.0135	0.0142	542.4683
Total	**0.2020**	**0.1382**	**1.7576**	**5.2600e-003**	**0.6595**	**3.0900e-003**	**0.6626**	**0.1749**	**2.8500e-003**	**0.1778**		**537.9091**	**537.9091**	**0.0135**	**0.0142**	**542.4683**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
General Office Building	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.534849	0.056022	0.172639	0.141007	0.026597	0.007310	0.011327	0.018693	0.000616	0.000315	0.024057	0.001100	0.005468
General Office Building	0.534849	0.056022	0.172639	0.141007	0.026597	0.007310	0.011327	0.018693	0.000616	0.000315	0.024057	0.001100	0.005468
Other Asphalt Surfaces	0.534849	0.056022	0.172639	0.141007	0.026597	0.007310	0.011327	0.018693	0.000616	0.000315	0.024057	0.001100	0.005468
Parking Lot	0.534849	0.056022	0.172639	0.141007	0.026597	0.007310	0.011327	0.018693	0.000616	0.000315	0.024057	0.001100	0.005468
Unrefrigerated Warehouse-No Rail	0.534849	0.056022	0.172639	0.141007	0.026597	0.007310	0.011327	0.018693	0.000616	0.000315	0.024057	0.001100	0.005468

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Perris and Ramona Warehouse (Construction - Unmitigated) - Riverside-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.8886	6.8000e-004	0.0743	1.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004		0.1592	0.1592	4.2000e-004		0.1697
Unmitigated	7.8886	6.8000e-004	0.0743	1.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004		0.1592	0.1592	4.2000e-004		0.1697

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.9020					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.9797					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.8800e-003	6.8000e-004	0.0743	1.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004		0.1592	0.1592	4.2000e-004		0.1697
Total	**7.8886**	**6.8000e-004**	**0.0743**	**1.0000e-005**		**2.6000e-004**	**2.6000e-004**		**2.6000e-004**	**2.6000e-004**		**0.1592**	**0.1592**	**4.2000e-004**		**0.1697**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.9020					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.9797					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.8800e-003	6.8000e-004	0.0743	1.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004		0.1592	0.1592	4.2000e-004		0.1697
Total	**7.8886**	**6.8000e-004**	**0.0743**	**1.0000e-005**		**2.6000e-004**	**2.6000e-004**		**2.6000e-004**	**2.6000e-004**		**0.1592**	**0.1592**	**4.2000e-004**		**0.1697**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

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Matthew F. Hagemann, P.G., C.Hg., QSD, QSP

Geologic and Hydrogeologic Characterization
Investigation and Remediation Strategies
Litigation Support and Testifying Expert
Industrial Stormwater Compliance
CEQA Review

Education:

M.S. Degree, Geology, California State University Los Angeles, Los Angeles, CA, 1984.
B.A. Degree, Geology, Humboldt State University, Arcata, CA, 1982.

Professional Certifications:

California Professional Geologist
California Certified Hydrogeologist
Qualified SWPPP Developer and Practitioner

Professional Experience:

Matt has 30 years of experience in environmental policy, contaminant assessment and remediation, stormwater compliance, and CEQA review. He spent nine years with the U.S. EPA in the RCRA and Superfund programs and served as EPA's Senior Science Policy Advisor in the Western Regional Office where he identified emerging threats to groundwater from perchlorate and MTBE. While with EPA, Matt also served as a Senior Hydrogeologist in the oversight of the assessment of seven major military facilities undergoing base closure. He led numerous enforcement actions under provisions of the Resource Conservation and Recovery Act (RCRA) and directed efforts to improve hydrogeologic characterization and water quality monitoring. For the past 15 years, as a founding partner with SWAPE, Matt has developed extensive client relationships and has managed complex projects that include consultation as an expert witness and a regulatory specialist, and a manager of projects ranging from industrial stormwater compliance to CEQA review of impacts from hazardous waste, air quality and greenhouse gas emissions.

Positions Matt has held include:

- Founding Partner, Soil/Water/Air Protection Enterprise (SWAPE) (2003 – present);
- Geology Instructor, Golden West College, 2010 – 2104, 2017;
- Senior Environmental Analyst, Komex H2O Science, Inc. (2000 -- 2003);

- Executive Director, Orange Coast Watch (2001 – 2004);
- Senior Science Policy Advisor and Hydrogeologist, U.S. Environmental Protection Agency (1989–1998);
- Hydrogeologist, National Park Service, Water Resources Division (1998 – 2000);
- Adjunct Faculty Member, San Francisco State University, Department of Geosciences (1993 – 1998);
- Instructor, College of Marin, Department of Science (1990 – 1995);
- Geologist, U.S. Forest Service (1986 – 1998); and
- Geologist, Dames & Moore (1984 – 1986).

Senior Regulatory and Litigation Support Analyst:

With SWAPE, Matt's responsibilities have included:

- Lead analyst and testifying expert in the review of over 300 environmental impact reports and negative declarations since 2003 under CEQA that identify significant issues with regard to hazardous waste, water resources, water quality, air quality, greenhouse gas emissions, and geologic hazards. Make recommendations for additional mitigation measures to lead agencies at the local and county level to include additional characterization of health risks and implementation of protective measures to reduce worker exposure to hazards from toxins and Valley Fever.
- Stormwater analysis, sampling and best management practice evaluation at more than 100 industrial facilities.
- Expert witness on numerous cases including, for example, perfluorooctanoic acid (PFOA) contamination of groundwater, MTBE litigation, air toxins at hazards at a school, CERCLA compliance in assessment and remediation, and industrial stormwater contamination.
- Technical assistance and litigation support for vapor intrusion concerns.
- Lead analyst and testifying expert in the review of environmental issues in license applications for large solar power plants before the California Energy Commission.
- Manager of a project to evaluate numerous formerly used military sites in the western U.S.
- Manager of a comprehensive evaluation of potential sources of perchlorate contamination in Southern California drinking water wells.
- Manager and designated expert for litigation support under provisions of Proposition 65 in the review of releases of gasoline to sources drinking water at major refineries and hundreds of gas stations throughout California.

With Komex H2O Science Inc., Matt's duties included the following:

- Senior author of a report on the extent of perchlorate contamination that was used in testimony by the former U.S. EPA Administrator and General Counsel.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of MTBE use, research, and regulation.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of perchlorate use, research, and regulation.
- Senior researcher in a study that estimates nationwide costs for MTBE remediation and drinking water treatment, results of which were published in newspapers nationwide and in testimony against provisions of an energy bill that would limit liability for oil companies.
- Research to support litigation to restore drinking water supplies that have been contaminated by MTBE in California and New York.

- Expert witness testimony in a case of oil production-related contamination in Mississippi.
- Lead author for a multi-volume remedial investigation report for an operating school in Los Angeles that met strict regulatory requirements and rigorous deadlines.
- Development of strategic approaches for cleanup of contaminated sites in consultation with clients and regulators.

Executive Director:

As Executive Director with Orange Coast Watch, Matt led efforts to restore water quality at Orange County beaches from multiple sources of contamination including urban runoff and the discharge of wastewater. In reporting to a Board of Directors that included representatives from leading Orange County universities and businesses, Matt prepared issue papers in the areas of treatment and disinfection of wastewater and control of the discharge of grease to sewer systems. Matt actively participated in the development of countywide water quality permits for the control of urban runoff and permits for the discharge of wastewater. Matt worked with other nonprofits to protect and restore water quality, including Surfrider, Natural Resources Defense Council and Orange County CoastKeeper as well as with business institutions including the Orange County Business Council.

Hydrogeology:

As a Senior Hydrogeologist with the U.S. Environmental Protection Agency, Matt led investigations to characterize and cleanup closing military bases, including Mare Island Naval Shipyard, Hunters Point Naval Shipyard, Treasure Island Naval Station, Alameda Naval Station, Moffett Field, Mather Army Airfield, and Sacramento Army Depot. Specific activities were as follows:

- Led efforts to model groundwater flow and contaminant transport, ensured adequacy of monitoring networks, and assessed cleanup alternatives for contaminated sediment, soil, and groundwater.
- Initiated a regional program for evaluation of groundwater sampling practices and laboratory analysis at military bases.
- Identified emerging issues, wrote technical guidance, and assisted in policy and regulation development through work on four national U.S. EPA workgroups, including the Superfund Groundwater Technical Forum and the Federal Facilities Forum.

At the request of the State of Hawaii, Matt developed a methodology to determine the vulnerability of groundwater to contamination on the islands of Maui and Oahu. He used analytical models and a GIS to show zones of vulnerability, and the results were adopted and published by the State of Hawaii and County of Maui.

As a hydrogeologist with the EPA Groundwater Protection Section, Matt worked with provisions of the Safe Drinking Water Act and NEPA to prevent drinking water contamination. Specific activities included the following:

- Received an EPA Bronze Medal for his contribution to the development of national guidance for the protection of drinking water.
- Managed the Sole Source Aquifer Program and protected the drinking water of two communities through designation under the Safe Drinking Water Act. He prepared geologic reports, conducted

public hearings, and responded to public comments from residents who were very concerned about the impact of designation.

- Reviewed a number of Environmental Impact Statements for planned major developments, including large hazardous and solid waste disposal facilities, mine reclamation, and water transfer.

Matt served as a hydrogeologist with the RCRA Hazardous Waste program. Duties were as follows:

- Supervised the hydrogeologic investigation of hazardous waste sites to determine compliance with Subtitle C requirements.
- Reviewed and wrote "part B" permits for the disposal of hazardous waste.
- Conducted RCRA Corrective Action investigations of waste sites and led inspections that formed the basis for significant enforcement actions that were developed in close coordination with U.S. EPA legal counsel.
- Wrote contract specifications and supervised contractor's investigations of waste sites.

With the National Park Service, Matt directed service-wide investigations of contaminant sources to prevent degradation of water quality, including the following tasks:

- Applied pertinent laws and regulations including CERCLA, RCRA, NEPA, NRDA, and the Clean Water Act to control military, mining, and landfill contaminants.
- Conducted watershed-scale investigations of contaminants at parks, including Yellowstone and Olympic National Park.
- Identified high-levels of perchlorate in soil adjacent to a national park in New Mexico and advised park superintendent on appropriate response actions under CERCLA.
- Served as a Park Service representative on the Interagency Perchlorate Steering Committee, a national workgroup.
- Developed a program to conduct environmental compliance audits of all National Parks while serving on a national workgroup.
- Co-authored two papers on the potential for water contamination from the operation of personal watercraft and snowmobiles, these papers serving as the basis for the development of nation-wide policy on the use of these vehicles in National Parks.
- Contributed to the Federal Multi-Agency Source Water Agreement under the Clean Water Action Plan.

Policy:

Served senior management as the Senior Science Policy Advisor with the U.S. Environmental Protection Agency, Region 9.

Activities included the following:

- Advised the Regional Administrator and senior management on emerging issues such as the potential for the gasoline additive MTBE and ammonium perchlorate to contaminate drinking water supplies.
- Shaped EPA's national response to these threats by serving on workgroups and by contributing to guidance, including the Office of Research and Development publication, Oxygenates in Water: Critical Information and Research Needs.
- Improved the technical training of EPA's scientific and engineering staff.
- Earned an EPA Bronze Medal for representing the region's 300 scientists and engineers in negotiations with the Administrator and senior management to better integrate scientific

principles into the policy-making process.
- Established national protocol for the peer review of scientific documents.

Geology:

With the U.S. Forest Service, Matt led investigations to determine hillslope stability of areas proposed for timber harvest in the central Oregon Coast Range. Specific activities were as follows:

- Mapped geology in the field, and used aerial photographic interpretation and mathematical models to determine slope stability.
- Coordinated his research with community members who were concerned with natural resource protection.
- Characterized the geology of an aquifer that serves as the sole source of drinking water for the city of Medford, Oregon.

As a consultant with Dames and Moore, Matt led geologic investigations of two contaminated sites (later listed on the Superfund NPL) in the Portland, Oregon, area and a large hazardous waste site in eastern Oregon. Duties included the following:

- Supervised year-long effort for soil and groundwater sampling.
- Conducted aquifer tests.
- Investigated active faults beneath sites proposed for hazardous waste disposal.

Teaching:

From 1990 to 1998, Matt taught at least one course per semester at the community college and university levels:

- At San Francisco State University, held an adjunct faculty position and taught courses in environmental geology, oceanography (lab and lecture), hydrogeology, and groundwater contamination.
- Served as a committee member for graduate and undergraduate students.
- Taught courses in environmental geology and oceanography at the College of Marin.

Matt is currently a part time geology instructor at Golden West College in Huntington Beach, California where he taught from 2010 to 2014 and in 2017.

Invited Testimony, Reports, Papers and Presentations:

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Presentation to the Public Environmental Law Conference, Eugene, Oregon.

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Invited presentation to U.S. EPA Region 9, San Francisco, California.

Hagemann, M.F., 2005. Use of Electronic Databases in Environmental Regulation, Policy Making and Public Participation. Brownfields 2005, Denver, Coloradao.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Nevada and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Las Vegas, NV (served on conference organizing committee).

Hagemann, M.F., 2004. Invited testimony to a California Senate committee hearing on air toxins at schools in Southern California, Los Angeles.

Brown, A., Farrow, J., Gray, A. and **Hagemann, M.**, 2004. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to the Ground Water and Environmental Law Conference, National Groundwater Association.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Arizona and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Phoenix, AZ (served on conference organizing committee).

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in the Southwestern U.S. Invited presentation to a special committee meeting of the National Academy of Sciences, Irvine, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a tribal EPA meeting, Pechanga, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a meeting of tribal repesentatives, Parker, AZ.

Hagemann, M.F., 2003. Impact of Perchlorate on the Colorado River and Associated Drinking Water Supplies. Invited presentation to the Inter-Tribal Meeting, Torres Martinez Tribe.

Hagemann, M.F., 2003. The Emergence of Perchlorate as a Widespread Drinking Water Contaminant. Invited presentation to the U.S. EPA Region 9.

Hagemann, M.F., 2003. A Deductive Approach to the Assessment of Perchlorate Contamination. Invited presentation to the California Assembly Natural Resources Committee.

Hagemann, M.F., 2003. Perchlorate: A Cold War Legacy in Drinking Water. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. From Tank to Tap: A Chronology of MTBE in Groundwater. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. A Chronology of MTBE in Groundwater and an Estimate of Costs to Address Impacts to Groundwater. Presentation to the annual meeting of the Society of Environmental Journalists.

Hagemann, M.F., 2002. An Estimate of the Cost to Address MTBE Contamination in Groundwater (and Who Will Pay). Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to a meeting of the U.S. EPA and State Underground Storage Tank Program managers.

Hagemann, M.F., 2001. From Tank to Tap: A Chronology of MTBE in Groundwater. Unpublished report.

Hagemann, M.F., 2001. Estimated Cleanup Cost for MTBE in Groundwater Used as Drinking Water. Unpublished report.

Hagemann, M.F., 2001. Estimated Costs to Address MTBE Releases from Leaking Underground Storage Tanks. Unpublished report.

Hagemann, M.F., and VanMouwerik, M., 1999. Potential Water Quality Concerns Related to Snowmobile Usage. Water Resources Division, National Park Service, Technical Report.

VanMouwerik, M. and **Hagemann, M.F**. 1999, Water Quality Concerns Related to Personal Watercraft Usage. Water Resources Division, National Park Service, Technical Report.

Hagemann, M.F., 1999, Is Dilution the Solution to Pollution in National Parks? The George Wright Society Biannual Meeting, Asheville, North Carolina.

Hagemann, M.F., 1997, The Potential for MTBE to Contaminate Groundwater. U.S. EPA Superfund Groundwater Technical Forum Annual Meeting, Las Vegas, Nevada.

Hagemann, M.F., and Gill, M., 1996, Impediments to Intrinsic Remediation, Moffett Field Naval Air Station, Conference on Intrinsic Remediation of Chlorinated Hydrocarbons, Salt Lake City.

Hagemann, M.F., Fukunaga, G.L., 1996, The Vulnerability of Groundwater to Anthropogenic Contaminants on the Island of Maui, Hawaii. Hawaii Water Works Association Annual Meeting, Maui, October 1996.

Hagemann, M. F., Fukanaga, G. L., 1996, Ranking Groundwater Vulnerability in Central Oahu, Hawaii. Proceedings, Geographic Information Systems in Environmental Resources Management, Air and Waste Management Association Publication VIP-61.

Hagemann, M.F., 1994. Groundwater Characterization and Cleanup at Closing Military Bases in California. Proceedings, California Groundwater Resources Association Meeting.

Hagemann, M.F. and Sabol, M.A., 1993. Role of the U.S. EPA in the High Plains States Groundwater Recharge Demonstration Program. Proceedings, Sixth Biennial Symposium on the Artificial Recharge of Groundwater.

Hagemann, M.F., 1993. U.S. EPA Policy on the Technical Impracticability of the Cleanup of DNAPL-contaminated Groundwater. California Groundwater Resources Association Meeting.

Hagemann, M.F., 1992. Dense Nonaqueous Phase Liquid Contamination of Groundwater: An Ounce of Prevention... Proceedings, Association of Engineering Geologists Annual Meeting, v. 35.

Other Experience:

Selected as subject matter expert for the California Professional Geologist licensing examinations, 2009-2011.

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

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Paul Rosenfeld, Ph.D.

Chemical Fate and Transport & Air Dispersion Modeling

Principal Environmental Chemist

Risk Assessment & Remediation Specialist

Education

Ph.D. Soil Chemistry, University of Washington, 1999. Dissertation on volatile organic compound filtration.

M.S. Environmental Science, U.C. Berkeley, 1995. Thesis on organic waste economics.

B.A. Environmental Studies, U.C. Santa Barbara, 1991. Thesis on wastewater treatment.

Professional Experience

Dr. Rosenfeld has over 25 years' experience conducting environmental investigations and risk assessments for evaluating impacts to human health, property, and ecological receptors. His expertise focuses on the fate and transport of environmental contaminants, human health risk, exposure assessment, and ecological restoration. Dr. Rosenfeld has evaluated and modeled emissions from oil spills, landfills, boilers and incinerators, process stacks, storage tanks, confined animal feeding operations, industrial, military and agricultural sources, unconventional oil drilling operations, and locomotive and construction engines. His project experience ranges from monitoring and modeling of pollution sources to evaluating impacts of pollution on workers at industrial facilities and residents in surrounding communities. Dr. Rosenfeld has also successfully modeled exposure to contaminants distributed by water systems and via vapor intrusion.

Dr. Rosenfeld has investigated and designed remediation programs and risk assessments for contaminated sites containing lead, heavy metals, mold, bacteria, particulate matter, petroleum hydrocarbons, chlorinated solvents, pesticides, radioactive waste, dioxins and furans, semi- and volatile organic compounds, PCBs, PAHs, creosote, perchlorate, asbestos, per- and poly-fluoroalkyl substances (PFOA/PFOS), unusual polymers, fuel oxygenates (MTBE), among other pollutants. Dr. Rosenfeld also has experience evaluating greenhouse gas emissions from various projects and is an expert on the assessment of odors from industrial and agricultural sites, as well as the evaluation of odor nuisance impacts and technologies for abatement of odorous emissions. As a principal scientist at SWAPE, Dr. Rosenfeld directs air dispersion modeling and exposure assessments. He has served as an expert witness and testified about pollution sources causing nuisance and/or personal injury at sites and has testified as an expert witness on numerous cases involving exposure to soil, water and air contaminants from industrial, railroad, agricultural, and military sources.

Professional History:

Soil Water Air Protection Enterprise (SWAPE); 2003 to present; Principal and Founding Partner
UCLA School of Public Health; 2007 to 2011; Lecturer (Assistant Researcher)
UCLA School of Public Health; 2003 to 2006; Adjunct Professor
UCLA Environmental Science and Engineering Program; 2002-2004; Doctoral Intern Coordinator
UCLA Institute of the Environment, 2001-2002; Research Associate
Komex H_2O Science, 2001 to 2003; Senior Remediation Scientist
National Groundwater Association, 2002-2004; Lecturer
San Diego State University, 1999-2001; Adjunct Professor
Anteon Corp., San Diego, 2000-2001; Remediation Project Manager
Ogden (now Amec), San Diego, 2000-2000; Remediation Project Manager
Bechtel, San Diego, California, 1999 – 2000; Risk Assessor
King County, Seattle, 1996 – 1999; Scientist
James River Corp., Washington, 1995-96; Scientist
Big Creek Lumber, Davenport, California, 1995; Scientist
Plumas Corp., California and USFS, Tahoe 1993-1995; Scientist
Peace Corps and World Wildlife Fund, St. Kitts, West Indies, 1991-1993; Scientist

Publications:

Remy, L.L., Clay T., Byers, V., **Rosenfeld P. E.** (2019) Hospital, Health, and Community Burden After Oil Refinery Fires, Richmond, California 2007 and 2012. *Environmental Health.* 18:48

Simons, R.A., Seo, Y. **Rosenfeld, P**., (2015) Modeling the Effect of Refinery Emission On Residential Property Value. Journal of Real Estate Research. 27(3):321-342

Chen, J. A, Zapata A. R., Sutherland A. J., Molmen, D.R., Chow, B. S., Wu, L. E., **Rosenfeld, P. E.,** Hesse, R. C., (2012) Sulfur Dioxide and Volatile Organic Compound Exposure To A Community In Texas City Texas Evaluated Using Aermod and Empirical Data. *American Journal of Environmental Science*, 8(6), 622-632.

Rosenfeld, P.E. & Feng, L. (2011). *The Risks of Hazardous Waste.* Amsterdam: Elsevier Publishing.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2011). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Agrochemical Industry*, Amsterdam: Elsevier Publishing.

Gonzalez, J., Feng, L., Sutherland, A., Waller, C., Sok, H., Hesse, R., **Rosenfeld, P.** (2010). PCBs and Dioxins/Furans in Attic Dust Collected Near Former PCB Production and Secondary Copper Facilities in Sauget, IL. *Procedia Environmental Sciences*. 113–125.

Feng, L., Wu, C., Tam, L., Sutherland, A.J., Clark, J.J., **Rosenfeld, P.E.** (2010). Dioxin and Furan Blood Lipid and Attic Dust Concentrations in Populations Living Near Four Wood Treatment Facilities in the United States. *Journal of Environmental Health*. 73(6), 34-46.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2010). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Wood and Paper Industries.* Amsterdam: Elsevier Publishing.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2009). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Petroleum Industry*. Amsterdam: Elsevier Publishing.

Wu, C., Tam, L., Clark, J., **Rosenfeld, P**. (2009). Dioxin and furan blood lipid concentrations in populations living near four wood treatment facilities in the United States. *WIT Transactions on Ecology and the Environment, Air Pollution,* 123 (17), 319-327.

Tam L. K.., Wu C. D., Clark J. J. and **Rosenfeld, P.E.** (2008). A Statistical Analysis Of Attic Dust And Blood Lipid Concentrations Of Tetrachloro-p-Dibenzodioxin (TCDD) Toxicity Equivalency Quotients (TEQ) In Two Populations Near Wood Treatment Facilities. *Organohalogen Compounds*, 70, 002252-002255.

Tam L. K.., Wu C. D., Clark J. J. and **Rosenfeld, P.E.** (2008). Methods For Collect Samples For Assessing Dioxins And Other Environmental Contaminants In Attic Dust: A Review. *Organohalogen Compounds*, 70, 000527-000530.

Hensley, A.R. A. Scott, J. J. J. Clark, **Rosenfeld, P.E.** (2007). Attic Dust and Human Blood Samples Collected near a Former Wood Treatment Facility. *Environmental Research*. 105, 194-197.

Rosenfeld, P.E., J. J. J. Clark, A. R. Hensley, M. Suffet. (2007). The Use of an Odor Wheel Classification for Evaluation of Human Health Risk Criteria for Compost Facilities. *Water Science & Technology* 55(5), 345-357.

Rosenfeld, P. E., M. Suffet. (2007). The Anatomy Of Odour Wheels For Odours Of Drinking Water, Wastewater, Compost And The Urban Environment. *Water Science & Technology* 55(5), 335-344.

Sullivan, P. J. Clark, J.J.J., Agardy, F. J., **Rosenfeld, P.E.** (2007). *Toxic Legacy, Synthetic Toxins in the Food, Water, and Air in American Cities.* Boston Massachusetts: Elsevier Publishing

Rosenfeld, P.E., and Suffet I.H. (2004). Control of Compost Odor Using High Carbon Wood Ash. *Water Science and Technology*. 49(9),171-178.

Rosenfeld P. E., J.J. Clark, I.H. (Mel) Suffet (2004). The Value of An Odor-Quality-Wheel Classification Scheme For The Urban Environment. *Water Environment Federation's Technical Exhibition and Conference (WEFTEC) 2004.* New Orleans, October 2-6, 2004.

Rosenfeld, P.E., and Suffet, I.H. (2004). Understanding Odorants Associated With Compost, Biomass Facilities, and the Land Application of Biosolids. *Water Science and Technology*. 49(9), 193-199.

Rosenfeld, P.E., and Suffet I.H. (2004). Control of Compost Odor Using High Carbon Wood Ash, *Water Science and Technology*, 49(9), 171-178.

Rosenfeld, P. E., Grey, M. A., Sellew, P. (2004). Measurement of Biosolids Odor and Odorant Emissions from Windrows, Static Pile and Biofilter. *Water Environment Research*. 76(4), 310-315.

Rosenfeld, P.E., Grey, M and Suffet, M. (2002). Compost Demonstration Project, Sacramento California Using High-Carbon Wood Ash to Control Odor at a Green Materials Composting Facility. *Integrated Waste Management Board Public Affairs Office*, Publications Clearinghouse (MS–6), Sacramento, CA Publication #442-02-008.

Rosenfeld, P.E., and C.L. Henry. (2001). Characterization of odor emissions from three different biosolids. *Water Soil and Air Pollution*. 127(1-4), 173-191.

Rosenfeld, P.E., and Henry C. L., (2000). Wood ash control of odor emissions from biosolids application. *Journal of Environmental Quality.* 29, 1662-1668.

Rosenfeld, P.E., C.L. Henry and D. Bennett. (2001). Wastewater dewatering polymer affect on biosolids odor emissions and microbial activity. *Water Environment Research*. 73(4), 363-367.

Rosenfeld, P.E., and C.L. Henry. (2001). Activated Carbon and Wood Ash Sorption of Wastewater, Compost, and Biosolids Odorants. *Water Environment Research*, 73, 388-393.

Rosenfeld, P.E., and Henry C. L., (2001). High carbon wood ash effect on biosolids microbial activity and odor. *Water Environment Research*. 131(1-4), 247-262.

Chollack, T. and **P. Rosenfeld. (**1998). Compost Amendment Handbook For Landscaping. Prepared for and distributed by the City of Redmond, Washington State.

Rosenfeld, P. E. (1992). The Mount Liamuiga Crater Trail. *Heritage Magazine of St. Kitts*, 3(2).

Rosenfeld, P. E. (1993). High School Biogas Project to Prevent Deforestation On St. Kitts. *Biomass Users Network*, 7(1).

Rosenfeld, P. E. (1998). Characterization, Quantification, and Control of Odor Emissions From Biosolids Application To Forest Soil. Doctoral Thesis. University of Washington College of Forest Resources.

Rosenfeld, P. E. (1994). Potential Utilization of Small Diameter Trees on Sierra County Public Land. Masters thesis reprinted by the Sierra County Economic Council. Sierra County, California.

Rosenfeld, P. E. (1991). How to Build a Small Rural Anaerobic Digester & Uses Of Biogas In The First And Third World. Bachelors Thesis. University of California.

Presentations:

Rosenfeld, P.E., "The science for Perfluorinated Chemicals (PFAS): What makes remediation so hard?" Law Seminars International, (May 9-10, 2018) 800 Fifth Avenue, Suite 101 Seattle, WA.

Rosenfeld, P.E., Sutherland, A; Hesse, R.; Zapata, A. (October 3-6, 2013). Air dispersion modeling of volatile organic emissions from multiple natural gas wells in Decatur, TX. *44th Western Regional Meeting, American Chemical Society.* Lecture conducted from Santa Clara, CA.

Sok, H.L.; Waller, C.C.; Feng, L.; Gonzalez, J.; Sutherland, A.J.; Wisdom-Stack, T.; Sahai, R.K.; Hesse, R.C.; **Rosenfeld, P.E.** (June 20-23, 2010). Atrazine: A Persistent Pesticide in Urban Drinking Water. *Urban Environmental Pollution*. Lecture conducted from Boston, MA.

Feng, L.; Gonzalez, J.; Sok, H.L.; Sutherland, A.J.; Waller, C.C.; Wisdom-Stack, T.; Sahai, R.K.; La, M.; Hesse, R.C.; **Rosenfeld, P.E.** (June 20-23, 2010). Bringing Environmental Justice to East St. Louis, Illinois. *Urban Environmental Pollution.* Lecture conducted from Boston, MA.

Rosenfeld, P.E. (April 19-23, 2009). Perfluoroctanoic Acid (PFOA) and Perfluoroactane Sulfonate (PFOS) Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States. *2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting*, Lecture conducted from Tuscon, AZ.

Rosenfeld, P.E. (April 19-23, 2009). Cost to Filter Atrazine Contamination from Drinking Water in the United States" Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States. *2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting*. Lecture conducted from Tuscon, AZ.

Wu, C., Tam, L., Clark, J., **Rosenfeld, P**. (20-22 July, 2009). Dioxin and furan blood lipid concentrations in populations living near four wood treatment facilities in the United States. Brebbia, C.A. and Popov, V., eds., *Air Pollution XVII: Proceedings of the Seventeenth International Conference on Modeling, Monitoring and Management of Air Pollution*. Lecture conducted from Tallinn, Estonia.

Rosenfeld, P. E. (October 15-18, 2007). Moss Point Community Exposure To Contaminants From A Releasing Facility. *The 23rd Annual International Conferences on Soils Sediment and Water.* Platform lecture conducted from University of Massachusetts, Amherst MA.

Rosenfeld, P. E. (October 15-18, 2007). The Repeated Trespass of Tritium-Contaminated Water Into A Surrounding Community Form Repeated Waste Spills From A Nuclear Power Plant. *The 23rd Annual International*

Conferences on Soils Sediment and Water. Platform lecture conducted from University of Massachusetts, Amherst MA.

Rosenfeld, P. E. (October 15-18, 2007). Somerville Community Exposure To Contaminants From Wood Treatment Facility Emissions. The *23rd Annual International Conferences on Soils Sediment and Water*. Lecture conducted from University of Massachusetts, Amherst MA.

Rosenfeld P. E. (March 2007). Production, Chemical Properties, Toxicology, & Treatment Case Studies of 1,2,3-Trichloropropane (TCP). *The Association for Environmental Health and Sciences (AEHS) Annual Meeting*. Lecture conducted from San Diego, CA.

Rosenfeld P. E. (March 2007). Blood and Attic Sampling for Dioxin/Furan, PAH, and Metal Exposure in Florala, Alabama. *The AEHS Annual Meeting.* Lecture conducted from San Diego, CA.

Hensley A.R., Scott, A., **Rosenfeld P.E.,** Clark, J.J.J. (August 21 – 25, 2006). Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility. *The 26th International Symposium on Halogenated Persistent Organic Pollutants – DIOXIN2006*. Lecture conducted from Radisson SAS Scandinavia Hotel in Oslo Norway.

Hensley A.R., Scott, A., **Rosenfeld P.E.,** Clark, J.J.J. (November 4-8, 2006). Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility. *APHA 134 Annual Meeting & Exposition.* Lecture conducted from Boston Massachusetts.

Paul Rosenfeld Ph.D. (October 24-25, 2005). Fate, Transport and Persistence of PFOA and Related Chemicals. Mealey's C8/PFOA. *Science, Risk & Litigation Conference.* Lecture conducted from The Rittenhouse Hotel, Philadelphia, PA.

Paul Rosenfeld Ph.D. (September 19, 2005). Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, *Toxicology and Remediation PEMA Emerging Contaminant Conference*. Lecture conducted from Hilton Hotel, Irvine California.

Paul Rosenfeld Ph.D. (September 19, 2005). Fate, Transport, Toxicity, And Persistence of 1,2,3-TCP. *PEMA Emerging Contaminant Conference.* Lecture conducted from Hilton Hotel in Irvine, California.

Paul Rosenfeld Ph.D. (September 26-27, 2005). Fate, Transport and Persistence of PDBEs. *Mealey's Groundwater Conference.* Lecture conducted from Ritz Carlton Hotel, Marina Del Ray, California.

Paul Rosenfeld Ph.D. (June 7-8, 2005). Fate, Transport and Persistence of PFOA and Related Chemicals. *International Society of Environmental Forensics: Focus On Emerging Contaminants*. Lecture conducted from Sheraton Oceanfront Hotel, Virginia Beach, Virginia.

Paul Rosenfeld Ph.D. (July 21-22, 2005). Fate Transport, Persistence and Toxicology of PFOA and Related Perfluorochemicals. *2005 National Groundwater Association Ground Water And Environmental Law Conference*. Lecture conducted from Wyndham Baltimore Inner Harbor, Baltimore Maryland.

Paul Rosenfeld Ph.D. (July 21-22, 2005). Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, Toxicology and Remediation. *2005 National Groundwater Association Ground Water and Environmental Law Conference.* Lecture conducted from Wyndham Baltimore Inner Harbor, Baltimore Maryland.

Paul Rosenfeld, Ph.D. and James Clark Ph.D. and Rob Hesse R.G. (May 5-6, 2004). Tert-butyl Alcohol Liability and Toxicology, A National Problem and Unquantified Liability. *National Groundwater Association. Environmental Law Conference*. Lecture conducted from Congress Plaza Hotel, Chicago Illinois.

Paul Rosenfeld, Ph.D. (March 2004). Perchlorate Toxicology. *Meeting of the American Groundwater Trust*. Lecture conducted from Phoenix Arizona.

Hagemann, M.F., **Paul Rosenfeld, Ph.D.** and Rob Hesse (2004). Perchlorate Contamination of the Colorado River. *Meeting of tribal representatives*. Lecture conducted from Parker, AZ.

Paul Rosenfeld, Ph.D. (April 7, 2004). A National Damage Assessment Model For PCE and Dry Cleaners. *Drycleaner Symposium. California Ground Water Association*. Lecture conducted from Radison Hotel, Sacramento, California.

Rosenfeld, P. E., Grey, M., (June 2003) Two stage biofilter for biosolids composting odor control. *Seventh International In Situ And On Site Bioremediation Symposium Battelle Conference* Orlando, FL.

Paul Rosenfeld, Ph.D. and James Clark Ph.D. (February 20-21, 2003) Understanding Historical Use, Chemical Properties, Toxicity and Regulatory Guidance of 1,4 Dioxane. *National Groundwater Association. Southwest Focus Conference. Water Supply and Emerging Contaminants*.. Lecture conducted from Hyatt Regency Phoenix Arizona.

Paul Rosenfeld, Ph.D. (February 6-7, 2003). Underground Storage Tank Litigation and Remediation. *California CUPA Forum*. Lecture conducted from Marriott Hotel, Anaheim California.

Paul Rosenfeld, Ph.D. (October 23, 2002) Underground Storage Tank Litigation and Remediation. *EPA Underground Storage Tank Roundtable*. Lecture conducted from Sacramento California.

Rosenfeld, P.E. and Suffet, M. (October 7- 10, 2002). Understanding Odor from Compost, *Wastewater and Industrial Processes. Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association*. Lecture conducted from Barcelona Spain.

Rosenfeld, P.E. and Suffet, M. (October 7- 10, 2002). Using High Carbon Wood Ash to Control Compost Odor. *Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association*. Lecture conducted from Barcelona Spain.

Rosenfeld, P.E. and Grey, M. A. (September 22-24, 2002). Biocycle Composting For Coastal Sage Restoration. *Northwest Biosolids Management Association*. Lecture conducted from Vancouver Washington..

Rosenfeld, P.E. and Grey, M. A. (November 11-14, 2002). Using High-Carbon Wood Ash to Control Odor at a Green Materials Composting Facility. *Soil Science Society Annual Conferenc*e. Lecture conducted from Indianapolis, Maryland.

Rosenfeld. P.E. (September 16, 2000). Two stage biofilter for biosolids composting odor control. *Water Environment Federation.* Lecture conducted from Anaheim California.

Rosenfeld. P.E. (October 16, 2000). Wood ash and biofilter control of compost odor. *Biofest.* Lecture conducted from Ocean Shores, California.

Rosenfeld, P.E. (2000). Bioremediation Using Organic Soil Amendments. *California Resource Recovery Association*. Lecture conducted from Sacramento California.

Rosenfeld, P.E., C.L. Henry, R. Harrison. (1998). Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. *Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings*. Lecture conducted from Bellevue Washington.

Rosenfeld, P.E., and C.L. Henry. (1999). An evaluation of ash incorporation with biosolids for odor reduction. *Soil Science Society of America*. Lecture conducted from Salt Lake City Utah.

Rosenfeld, P.E., C.L. Henry, R. Harrison. (1998). Comparison of Microbial Activity and Odor Emissions from Three Different Biosolids Applied to Forest Soil. *Brown and Caldwell.* Lecture conducted from Seattle Washington.

Rosenfeld, P.E., C.L. Henry. (1998). Characterization, Quantification, and Control of Odor Emissions from Biosolids Application To Forest Soil. *Biofest.* Lecture conducted from Lake Chelan, Washington.

Rosenfeld, P.E, C.L. Henry, R. Harrison. (1998). Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings. Lecture conducted from Bellevue Washington.

Rosenfeld, P.E., C.L. Henry, R. B. Harrison, and R. Dills. (1997). Comparison of Odor Emissions From Three Different Biosolids Applied to Forest Soil. *Soil Science Society of America*. Lecture conducted from Anaheim California.

Teaching Experience:

UCLA Department of Environmental Health (Summer 2003 through 20010) Taught Environmental Health Science 100 to students, including undergrad, medical doctors, public health professionals and nurses. Course focused on the health effects of environmental contaminants.

National Ground Water Association, Successful Remediation Technologies. Custom Course in Sante Fe, New Mexico. May 21, 2002. Focused on fate and transport of fuel contaminants associated with underground storage tanks.

National Ground Water Association; Successful Remediation Technologies Course in Chicago Illinois. April 1, 2002. Focused on fate and transport of contaminants associated with Superfund and RCRA sites.

California Integrated Waste Management Board, April and May, 2001. Alternative Landfill Caps Seminar in San Diego, Ventura, and San Francisco. Focused on both prescriptive and innovative landfill cover design.

UCLA Department of Environmental Engineering, February 5, 2002. Seminar on Successful Remediation Technologies focusing on Groundwater Remediation.

University Of Washington, Soil Science Program, Teaching Assistant for several courses including: Soil Chemistry, Organic Soil Amendments, and Soil Stability.

U.C. Berkeley, Environmental Science Program Teaching Assistant for Environmental Science 10.

Academic Grants Awarded:

California Integrated Waste Management Board. $41,000 grant awarded to UCLA Institute of the Environment. Goal: To investigate effect of high carbon wood ash on volatile organic emissions from compost. 2001.

Synagro Technologies, Corona California: $10,000 grant awarded to San Diego State University.
Goal: investigate effect of biosolids for restoration and remediation of degraded coastal sage soils. 2000.

King County, Department of Research and Technology, Washington State. $100,000 grant awarded to University of Washington: Goal: To investigate odor emissions from biosolids application and the effect of polymers and ash on VOC emissions. 1998.

Northwest Biosolids Management Association, Washington State. $20,000 grant awarded to investigate effect of polymers and ash on VOC emissions from biosolids. 1997.

James River Corporation, Oregon: $10,000 grant was awarded to investigate the success of genetically engineered Poplar trees with resistance to round-up. 1996.

United State Forest Service, Tahoe National Forest: $15,000 grant was awarded to investigating fire ecology of the Tahoe National Forest. 1995.

Kellogg Foundation, Washington D.C. $500 grant was awarded to construct a large anaerobic digester on St. Kitts in West Indies. 1993

Deposition and/or Trial Testimony:

In the Circuit Court Of The Twentieth Judicial Circuit, St Clair County, Illinois
Martha Custer et al., Plaintiff vs. Cerro Flow Products, Inc., Defendants
Case No.: No. 0i9-L-2295
Rosenfeld Deposition, 5-14-2021
Trial, October 8-4-2021

In the Circuit Court of Cook County Illinois
Joseph Rafferty, Plaintiff vs. Consolidated Rail Corporation and National Railroad Passenger Corporation d/b/a AMTRAK,
Case No.: No. 18-L-6845
Rosenfeld Deposition, 6-28-2021

In the United States District Court For the Northern District of Illinois
Theresa Romcoe, Plaintiff vs. Northeast Illinois Regional Commuter Railroad Corporation d/b/a METRA Rail, Defendants
Case No.: No. 17-cv-8517
Rosenfeld Deposition, 5-25-2021

In the Superior Court of the State of Arizona In and For the Cunty of Maricopa
Mary Tryon et al., Plaintiff vs. The City of Pheonix v. Cox Cactus Farm, L.L.C., Utah Shelter Systems, Inc.
Case Number CV20127-094749
Rosenfeld Deposition: 5-7-2021

In the United States District Court for the Eastern District of Texas Beaumont Division
Robinson, Jeremy et al *Plaintiffs*, vs. CNA Insurance Company et al.
Case Number 1:17-cv-000508
Rosenfeld Deposition: 3-25-2021

In the Superior Court of the State of California, County of San Bernardino
Gary Garner, Personal Representative for the Estate of Melvin Garner vs. BNSF Railway Company.
Case No. 1720288
Rosenfeld Deposition 2-23-2021

In the Superior Court of the State of California, County of Los Angeles, Spring Street Courthouse
Benny M Rodriguez vs. Union Pacific Railroad, A Corporation, et al.
Case No. 18STCV01162
Rosenfeld Deposition 12-23-2020

In the Circuit Court of Jackson County, Missouri
Karen Cornwell, *Plaintiff,* vs. Marathon Petroleum, LP, *Defendant.*
Case No.: 1716-CV10006
Rosenfeld Deposition. 8-30-2019

In the United States District Court For The District of New Jersey
Duarte et al, *Plaintiffs,* vs. United States Metals Refining Company et. al. *Defendant.*
Case No.: 2:17-cv-01624-ES-SCM
Rosenfeld Deposition. 6-7-2019

In the United States District Court of Southern District of Texas Galveston Division
M/T Carla Maersk, *Plaintiffs,* vs. Conti 168., Schiffahrts-GMBH & Co. Bulker KG MS "Conti Perdido" *Defendant.*
Case No.: 3:15-CV-00106 consolidated with 3:15-CV-00237
Rosenfeld Deposition. 5-9-2019

In The Superior Court of the State of California In And For The County Of Los Angeles – Santa Monica
Carole-Taddeo-Bates et al., vs. Ifran Khan et al., Defendants
Case No.: No. BC615636
Rosenfeld Deposition, 1-26-2019

In The Superior Court of the State of California In And For The County Of Los Angeles – Santa Monica
The San Gabriel Valley Council of Governments et al. vs El Adobe Apts. Inc. et al., Defendants
Case No.: No. BC646857
Rosenfeld Deposition, 10-6-2018; Trial 3-7-19

In United States District Court For The District of Colorado
Bells et al. Plaintiff vs. The 3M Company et al., Defendants
Case No.: 1:16-cv-02531-RBJ
Rosenfeld Deposition, 3-15-2018 and 4-3-2018

In The District Court Of Regan County, Texas, 112th Judicial District
Phillip Bales et al., Plaintiff vs. Dow Agrosciences, LLC, et al., Defendants
Cause No.: 1923
Rosenfeld Deposition, 11-17-2017

In The Superior Court of the State of California In And For The County Of Contra Costa
Simons et al., Plaintiffs vs. Chevron Corporation, et al., Defendants
Cause No C12-01481
Rosenfeld Deposition, 11-20-2017

In The Circuit Court Of The Twentieth Judicial Circuit, St Clair County, Illinois
Martha Custer et al., Plaintiff vs. Cerro Flow Products, Inc., Defendants
Case No.: No. 0i9-L-2295
Rosenfeld Deposition, 8-23-2017

In United States District Court For The Southern District of Mississippi
Guy Manuel vs. The BP Exploration et al., Defendants
Case: No 1:19-cv-00315-RHW
Rosenfeld Deposition, 4-22-2020

In The Superior Court of the State of California, For The County of Los Angeles
Warrn Gilbert and Penny Gilber, Plaintiff vs. BMW of North America LLC
Case No.: LC102019 (c/w BC582154)
Rosenfeld Deposition, 8-16-2017, Trail 8-28-2018

In the Northern District Court of Mississippi, Greenville Division
Brenda J. Cooper, et al., *Plaintiffs,* vs. Meritor Inc., et al., *Defendants*
Case Number: 4:16-cv-52-DMB-JVM
Rosenfeld Deposition: July 2017

In The Superior Court of the State of Washington, County of Snohomish
Michael Davis and Julie Davis et al., Plaintiff vs. Cedar Grove Composting Inc., Defendants
Case No.: No. 13-2-03987-5
Rosenfeld Deposition, February 2017
Trial, March 2017

In The Superior Court of the State of California, County of Alameda
Charles Spain., Plaintiff vs. Thermo Fisher Scientific, et al., Defendants
Case No.: RG14711115
Rosenfeld Deposition, September 2015

In The Iowa District Court In And For Poweshiek County
Russell D. Winburn, et al., Plaintiffs vs. Doug Hoksbergen, et al., Defendants
Case No.: LALA002187
Rosenfeld Deposition, August 2015

In The Circuit Court of Ohio County, West Virginia
Robert Andrews, et al. v. Antero, et al.
Civil Action N0. 14-C-30000
Rosenfeld Deposition, June 2015

In The Iowa District Court For Muscatine County
Laurie Freeman et. al. Plaintiffs vs. Grain Processing Corporation, Defendant
Case No 4980
Rosenfeld Deposition: May 2015

In the Circuit Court of the 17th Judicial Circuit, in and For Broward County, Florida
Walter Hinton, et. al. Plaintiff, vs. City of Fort Lauderdale, Florida, a Municipality, Defendant.
Case Number CACE07030358 (26)
Rosenfeld Deposition: December 2014

In the County Court of Dallas County Texas
Lisa Parr et al, *Plaintiff*, vs. Aruba et al, *Defendant.*
Case Number cc-11-01650-E
Rosenfeld Deposition: March and September 2013
Rosenfeld Trial: April 2014

In the Court of Common Pleas of Tuscarawas County Ohio
John Michael Abicht, et al., *Plaintiffs,* vs. Republic Services, Inc., et al., *Defendants*
Case Number: 2008 CT 10 0741 (Cons. w/ 2009 CV 10 0987)
Rosenfeld Deposition: October 2012

In the United States District Court for the Middle District of Alabama, Northern Division
James K. Benefield, et al., *Plaintiffs*, vs. International Paper Company, *Defendant*.
Civil Action Number 2:09-cv-232-WHA-TFM
Rosenfeld Deposition: July 2010, June 2011

In the Circuit Court of Jefferson County Alabama
Jaeanette Moss Anthony, et al., *Plaintiffs*, vs. Drummond Company Inc., et al., *Defendants*
Civil Action No. CV 2008-2076
Rosenfeld Deposition: September 2010

In the United States District Court, Western District Lafayette Division
Ackle et al., *Plaintiffs*, vs. Citgo Petroleum Corporation, et al., *Defendants*.
Case Number 2:07CV1052
Rosenfeld Deposition: July 2009