Interoffice Memo

DATE: May 18, 2023 **PHONE:** 387-4234

FROM: **JIM MORRISSEY,** CONTRACT PLANNER
Land Use Services Department

TO: **HONORABLE PLANNING COMMISSION**

SUBJECT: **APPLICANT: LORD CONSTRUCTORS; PROJECT NUMBER: PROJ-2022-00147 (AGENDA ITEM #3)**

Since the distribution of the staff report, Staff has received additional comments for the above-referenced Project. These additional comments are attached for your consideration.

JM/lb

From:	Adam Frankel
To:	Planning Commission Comments
Subject:	Re: IS/MND for the Stewart Almond Warehouse Project (Agenda Item No. 3)
Date:	Monday, May 15, 2023 12:17:43 PM
Attachments:	2023.05.15 Stewart Almond - PC comments.pdf

Dear Honorable Planning Commissioners:

I am writing on behalf of Supporters Alliance for Environmental Responsibility ("SAFER") regarding the Initial Study and Mitigated Negative Declaration ("IS/MND" or "MND") prepared for the Stewart Almond Warehouse Project ("Project") (PROJ -2022-00147), for Applicant Stewart Development, LLC (hereinafter the "Applicant"), including all actions related or referring to the proposed construction and operation of an approximately 40,000-square-foot warehouse facility, to be located at 8531 Almond Avenue in San Bernardino County ("County") (APN No.: 230-131-010).

Please see the attached letter for details. I would appreciate if you could please confirm receipt of this email.

Best,
Adam

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May 15, 2023

Via E-mail

Jonathan Weldy, Chair
Michael Stoffel, Vice Chair
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Re: IS/MND for the Stewart Almond Warehouse Project (PROJ -2022-00147); San Bernardino County Planning Commission, Meeting of May 18, 2023, Agenda Item No. 3

Dear Honorable Planning Commissioners:

I am writing on behalf of Supporters Alliance for Environmental Responsibility ("SAFER") regarding the Initial Study and Mitigated Negative Declaration ("IS/MND" or "MND") prepared for the Stewart Almond Warehouse Project ("Project") (PROJ -2022-00147), for Applicant Stewart Development, LLC (hereinafter the "Applicant"), including all actions related or referring to the proposed construction and operation of an approximately 40,000-square-foot warehouse facility, to be located at 8531 Almond Avenue in San Bernardino County ("County") (APN No.: 230-131-010).

SAFER's review of the Project has been assisted by air quality experts Matt Hagemann, P.G., C.Hg. and Paul E. Rosenfeld, Ph.D., of the environmental consulting firm, Soil/Water/Air Protection Enterprise ("SWAPE"). SWAPE's expert comments and CVs are attached as Exhibit A.

After reviewing the IS/MND, with the assistance of SWAPE, it is evident that there is a fair argument that the Project may have unmitigated adverse environmental impacts. Therefore, CEQA requires that the County prepare an environmental impact report ("EIR") to analyze these impacts and to propose all feasible mitigation measure to reduce those impacts, pursuant to the California Environmental Quality Act ("CEQA"), Public Resources Code section 21000, et seq.

SAFER urges the County not to adopt the IS/MND and instead undertake the necessary efforts to prepare an EIR prior to any approvals, as required by CEQA.

LEGAL STANDARD

As the California Supreme Court has held, "[i]f no EIR has been prepared for a nonexempt project, but substantial evidence in the record supports a fair argument that the project may result in significant adverse impacts, the proper remedy is to order preparation of an EIR." (*Communities for a Better Env't v. South Coast Air Quality Mgmt. Dist.* (2010) 48 Cal.4th 310, 319-320 (*CBE v. SCAQMD*) (citing *No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal.3d 68, 75, 88; *Brentwood Assn. for No Drilling, Inc. v. City of Los Angeles* (1982) 134 Cal.App.3d 491, 504–505).) "Significant environmental effect" is defined very broadly as "a substantial or potentially substantial adverse change in the environment." (Pub. Res. Code ("PRC") § 21068; *see also* 14 CCR § 15382.) An effect on the environment need not be "momentous" to meet the CEQA test for significance; it is enough that the impacts are "not trivial." (*No Oil, Inc.*, 13 Cal.3d at 83.) "The 'foremost principle' in interpreting CEQA is that the Legislature intended the act to be read so as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language." (*Communities for a Better Env't v. Cal. Res. Agency* (2002) 103 Cal.App.4th 98, 109 (*CBE v. CRA*).)

The EIR is the very heart of CEQA. (*Bakersfield Citizens for Local Control v. City of Bakersfield (*2004) 124 Cal.App.4th 1184, 1214 (*Bakersfield Citizens*); *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 927.) The EIR is an "environmental 'alarm bell' whose purpose is to alert the public and its responsible officials to environmental changes before they have reached the ecological points of no return." (*Bakersfield Citizens*, 124 Cal.App.4th at 1220.) The EIR also functions as a "document of accountability," intended to "demonstrate to an apprehensive citizenry that the agency has, in fact, analyzed and considered the ecological implications of its action." (*Laurel Heights Improvements Assn. v. Regents of Univ. of Cal.* (1988) 47 Cal.3d 376, 392.) The EIR process "protects not only the environment but also informed self-government." (*Pocket Protectors*, 124 Cal.App.4th at 927.)

An EIR is required if "there is substantial evidence, in light of the whole record before the lead agency, that the project may have a significant effect on the environment." (PRC § 21080(d); *see also Pocket Protectors*, 124 Cal.App.4th at 927.) In very limited circumstances, an agency may avoid preparing an EIR by issuing a negative declaration, a written statement briefly indicating that a project will have no significant impact thus requiring no EIR (14 CCR § 15371), only if there is not even a "fair argument" that the project will have a significant environmental effect. (PRC §§ 21100, 21064.) Since "[t]he adoption of a negative declaration . . . has a terminal effect on the environmental review process," by allowing the agency "to dispense with the duty [to prepare an EIR]," negative declarations are allowed only in cases where "the proposed project will not affect the environment at all." (*Citizens of Lake Murray v. San Diego* (1989) 129 Cal.App.3d 436, 440.)

Where an initial study shows that the project may have a significant effect on the environment, a mitigated negative declaration may be appropriate. However, a mitigated negative declaration is proper *only* if the project revisions would avoid or mitigate the potentially significant effects identified in the initial study "to a point where clearly no significant effect on the environment would occur, and…there is no substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment." (PRC §§ 21064.5, 21080(c)(2); *Mejia v. City of Los Angeles* (2005) 130 Cal.App.4th 322, 331.) In that context, "may" means a reasonable possibility of a significant effect on the environment. (PRC §§ 21082.2(a), 21100, 21151(a); *Pocket Protectors*, 124 Cal.App.4th at 927; *League for Protection of Oakland's etc. Historic Res. v. City of Oakland* (1997) 52 Cal.App.4th 896, 904–05.)

Under the "fair argument" standard, an EIR is required if any substantial evidence in the record indicates that a project may have an adverse environmental effect—even if contrary evidence exists to support the agency's decision. (14 CCR § 15064(f)(1); *Pocket Protectors,* 124 Cal.App.4th at 931; *Stanislaus Audubon Society v. County of Stanislaus* (1995) 33 Cal.App.4th 144, 150-51; *Quail Botanical Gardens Found., Inc. v. City of Encinitas* (1994) 29 Cal.App.4th 1597, 1602.) The "fair argument" standard creates a "low threshold" favoring environmental review through an EIR rather than through issuance of negative declarations or notices of exemption from CEQA. (*Pocket Protectors*, 124 Cal.App.4th at 928.)

The "fair argument" standard is virtually the opposite of the typical deferential standard accorded to agencies. As a leading CEQA treatise explains:

> This 'fair argument' standard is very different from the standard normally followed by public agencies in their decision making. Ordinarily, public agencies weigh the evidence in the record and reach a decision based on a preponderance of the evidence. [Citation]. The fair argument standard, by contrast, prevents the lead agency from weighing competing evidence to determine who has a better argument concerning the likelihood or extent of a potential environmental impact.

(Kostka & Zishcke*, Practice Under the California Environmental Quality Act*, §6.37 (2d ed. Cal. CEB 2021).) The Courts have explained that "it is a question of law, not fact, whether a fair argument exists, and the courts owe no deference to the lead agency's determination. Review is de novo, with *a preference for resolving doubts in favor of environmental review*." (*Pocket Protectors*, 124 Cal.App.4th at 928 (emphasis in original).)

I. There is Substantial Evidence of a Fair Argument That the Project Will Have a Significant Impact on Air Quality, Human Health, and Greenhouse Gas Emissions.

Matt Hagemann, P.G., C.Hg., and Dr. Paul E. Rosenfeld, Ph.D., of the environmental consulting firm SWAPE reviewed the IS/MND's analysis of the Project's impacts on air quality, human health, and greenhouse gas emissions. SWAPE's comment letter and CVs are attached as Exhibit A.

A. Inaccurate Air Modeling Undermines the MND's Conclusions.

SWAPE reviewed the Project's CalEEMod output files – the underlying data files used to estimate a project's air emissions – and found that "several model inputs were not consistent with [the] information disclosed in the IS/MND." (Ex. A., p. 3.) For instance, SWAPE found various changes to the Project construction schedule as entered in CalEEMod – changes which were not explained in the MND.

Here, SWAPE notes, "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." (*Id*., p. 4.) "As a result, there will be less construction activities required per day and, consequently, less pollutants emitted per day." (*Id*.) Therefore, SWAPE writes, "the model may underestimate the peak daily emissions associated with some phases of construction and should not be relied upon to determine Project significance." (*Id*.) Without any justification for the changes, the MND's air quality and GHG analyses are not supported by substantial evidence.

B. Updated Modeling Shows the Project Will Have a Potentially Significant Air Quality Impact.

Provided that the Project documents did not accurately assess the Project's construction-related air quality impacts, SWAPE conducted its own analysis using CalEEMod and project-specific information disclosed in project documents. According to this updated analysis, SWAPE found that the Project would produce an estimated 77.5 lbs./day of VOC emissions. (*Id*., p. 4.) This estimate exceeds the SCAQMD significance threshold of 75 lbs./day and represents a potentially significant air quality impact that must be analyzed and mitigated in an EIR. As such, SWAPE writes, "the Project would result in a potentially significant air quality impact that was not previously identified or addressed in the IS/MND." (*Id*., p. 5.) Therefore, the Project should not be approved until an EIR is prepared and properly evaluates and mitigates the Project's significant air quality impacts.

C. Health Assessment Demonstrates that the Project Involves Significant Health Risk Impacts.

In addition to these modeling inaccuracies, the IS/MND concluded that the Project would have a less-than-significant health risk impact without conducting a quantified construction or operational health risk analysis ("HRA"). (*Id*., p. 9.) This is improper because CEQA requires an analysis to determine whether a Project's toxic air contaminant ("TAC") emissions—including diesel particulate matter ("DPM") emissions—will have potentially adverse impacts on human health. *Sierra Club v. Cty. of Fresno* (2018) 6 Cal. 5th 502, 518 (an EIR must make "a reasonable effort to substantively connect a project's air quality impacts to likely health consequences.") The failure to address potential health-related impacts resulting from the Project's likely air emissions is problematic because operation of construction equipment during construction, as well as truck trips during future operations, will release DPM emissions into the air, affecting local and regional air quality.

The IS/MND suggests that health risks from exposure to diesel particulate matter would not be significant because the project would not exceed the SCAQMD's Localized Significance Thresholds (LSTs) for construction-generated criteria pollutants. (*Id*., p. 9.) However, as SWAPE explains, LST only evaluates impacts from criteria air pollutants, which does not include DPM. "As a result, health impacts during Project operation from exposure to TACs, such as DPM, were not analyzed, thus leaving a gap in the AQ & GHG Memo's analysis." (*Id*., p. 10.)

DPM is a known human carcinogen which poses unique health risks to nearby sensitive receptors.. DPM contains 40 toxic chemicals, including benzene, arsenic and lead. (www.p65warnings.ca.gov/fact-sheets/diesel-engine-exhaust.) DPM is also listed by the State of California as a toxic air contaminant known to cause cancer in humans. (https://oehha.ca.gov/media/downloads/proposition-65//p65chemicalslistsinglelisttable2021p.pdf.) According to the U.S. Environmental Protection Agency, "Exposure to diesel exhaust can lead to serious health conditions like asthma and respiratory illnesses and can worsen existing heart and lung disease, especially in children and the elderly. These conditions can result in increased numbers of emergency room visits, hospital admissions, absences from work and school, and premature deaths." (https://www.epa.gov/dera/learn-about-impacts-diesel-exhaust-and-diesel-emissions-reduction-act-dera).

The failure to prepare an HRA is also directly contrary to applicable guidance from the California Department of Justice, which recommends that all warehouse projects prepare a quantitative HRA pursuant to guidance from the Office of Environmental Health Hazard Assessment ("OEHHA"). (*Id*., p. 10.) Here, OEHHA recommends that a quantified Health Risk Assessment ("HRA") be prepared to evaluate potential cancer risks for any short-term construction project lasting more than two months, and for the lifetime of any long-term project lasting more than six months. OEHHA guidance also recommends that an exposure duration of 30 years should be used to estimate the individual cancer risk affecting the maximally exposed individual resident ("MEIR") near a proposed Project site. (*Id*., pp. 10-11.)

Accordingly, because the Project will presumably operate for at least 30 years, the lifetime health risk to nearby sensitive receptors must be estimated by an HRA. "These recommendations reflect the most recent state health risk policies, and as such, an EIR should be prepared to include an analysis of health risk impacts posed to nearby sensitive receptors from Project-generated DPM emissions." (*Id*., p. 11.)

In failing to prepare a quantified construction or operational HRA to determine the impact on nearby sensitive receptors, the Project documents also failed to compare the potentially excess cancer risk beyond the SCAQMD significance threshold of 10 per million. (*Id*.) As such, the County lacks the necessary evidence to show that the Project will have a less-than-significant air quality impact. Therefore, an EIR must be prepared to include an assessment of the health risk posed to nearby existing receptors and provide additional mitigation to reduce this significant impact.

Provided that the IS/MND did not adequately assess the Project's significant adverse health impacts, SWAPE developed a screening-level risk assessment using AERSCREEN, a modeling tool which is recommended by OEHHA for the development of Level 2 Health Risk Screening Assessments ("Level 2 HRSA").

Following this recommended approach for modeling potential health risks, SWAPE estimated the cancer risk for the maximally exposed individual receptor ("MEIR"), in this case a residence located approximately 50 meters from the Project site. (*Id*., pp. 12.) SWAPE's analysis concluded that Project construction and operations would result in excess cancer risks for infants (19.5 per million) and lifetime residents (34 per million). (*Id*., p. 15.) These risk levels exceed the SCAQMD's health risk significance threshold of 10 per million.

SWAPE's comments constituted substantial evidence that the Project may have a significant impact on human health. An EIR is required to analyze and mitigate this potentially significant impact.

D. The MND Fails to Adequately Consider the Project's Cumulative Air Quality Impacts.

The IS/MND fails to adequately consider the Project's cumulative air quality impacts and their effect on the health of vulnerable area residents. SWAPE has observed that the Project will have significant cumulative health and air quality impacts when considered together with the high concentration of industrial activity in the surrounding area. (*Id*., pp. 5-9.)

Upon reviewing site-specific data for the proposed Project from CalEnviroScreen 4.0—the California Environmental Protection Agency's statewide screening tool which maps census tracts according to environmental burden and socioeconomic vulnerability—SWAPE found that the Project's census tract registers in the 96th percentile of most polluted census tracts in California. (*Id*., p. 6.) Similarly, data from the SCAQMD's MATES V data visualization tool shows that Project site's surrounding area residents face an existing cancer risk among the 86th percentile of the South Coast Air Basin residents across Southern California (*Id*.)

The California Department of Justice urges local agencies performing CEQA review of warehouse projects to fully analyze "all reasonably foreseeable project impacts, **including cumulative impacts**." (California Department of Justice, *Warehouse Projects: Best Practices and Mitigation Measures to Comply with the California Environmental Quality Act*, p. 6, *available at* https://oag.ca.gov/sites/all/files/agweb/pdfs/environment/warehouse-best-practices.pdf.) Furthermore, the guidance adds, "When analyzing cumulative impacts," agencies should thoroughly consider "the project's incremental impact in combination with past, present, and reasonably foreseeable future projects, even if the project's individual impacts alone do not exceed the applicable significance thresholds." (*Id*., emph. added.)

Nonetheless, the IS/MND does not evaluate the Project's cumulative effect on air quality and human health as it relates to existing industrial activity in the area. In order to evaluate the cumulative air quality impact from the several warehouse projects proposed or built in a one-mile radius of the Project site, "the EIR should prepare a cumulative health risk assessment ("HRA") to quantify the adverse health outcome from the effects of exposure to multiple warehouses in the immediate area in conjunction with the poor ambient air quality in the Project's census tract." (*Id*., p. 9.)

E. There is Substantial Evidence of a Fair Argument that the Project Will Have a Significant Impact on Greenhouse Gas Emissions.

The IS/MND estimates that the Project would generate net greenhouse gas ("GHG") emissions of 244.3 MTCO_2e/year and asserts that this impact would be less-than-significant. (*Id*., p. 16.) However, this conclusion is incorrect because the IS/MND relies upon an outdated GHG significance threshold to determine Project significance. The IS/MND also incorrectly asserts that the Project will comply with the California Air Resources Board's ("CARB") 2017 Scoping Plan and the Southern California Association of Governments' ("SCAG") 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy ("RTP/SCS"). This assertion is incorrect because the IS/MND fails to consider implementation of performance-based standards under both the CARB Scoping Plan and the RTP/SCS. (*Id*.) Because of these inaccuracies, the models may underestimate the Project's emissions and the IS/MND's quantitative analysis should not be relied upon to determine Project significance.

As noted above, the IS/MND relied upon an outdated quantitative threshold to determine project significance. Specifically, the IS/MND compared the Project's estimated GHG emissions to the South Coast Air Quality Management District ("SCAQMD") significance threshold of 3,000 MTCO_2e/year. However, SWAPE writes, this threshold is based upon outdated GHG emissions targets which California was required to have met by 2020. The threshold is thus irrelevant to significance determinations made in 2023. To more accurately determine the Project's GHG significance, potential emissions should be measured according to the SCAQMD 2035 service population efficiency target of 3.0 MT $C0_2$e/SP/year, which was calculated by applying a 40-percent reduction to the 2020 targets. (*Id*., p. 17).

When applying this updated calculation method, which accounts for the number of residents and/or jobs that will be served by a project, SWAPE determined that the Project would exceed the SCAQMD 2035 efficiency target of 3.0 MT $C0_2$e/SP/year, producing an estimated 8.93 MT $C0_2$e/SP/year. (*Id*., p. 18.) This is a potentially significant impact which is not identified or addressed in the IS/MND. Therefore, an EIR must be prepared to include an updated GHG analysis and should include additional mitigation measures to reduce the Project's GHG emissions to less-than-significant levels. SWAPE proposes a detailed list of feasible GHG mitigation measures to reduce this impact, including a requirement that the Project incorporate a solar power system for on-site energy production. (*Id*., pp. 20-23.)

CONCLUSION

Based on the foregoing, the MND for the Project must be withdrawn, and an EIR must be prepared and circulated for public review and comment.

Sincerely,

Adam Frankel
Lozeau Drury LLP

EXHIBIT A

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

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April 3, 2023

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Subject: Comments on the Stewart and Almond Warehouse Project

Dear Mr. Frankel,

We have reviewed the February 2023 Initial Study and Mitigated Negative Declaration ("IS/MND") for the Stewart Almond Warehouse Project ("Project") located in the City of Fontana ("City"). The Project proposes to construct 36,000-square-feet ("SF") of warehouse space, 4,000-SF of office space, and 52 parking spaces on the 2-acre site.

Our review concludes that the IS/MND 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 Environmental Impact Report ("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 environment.

Air Quality

Unsubstantiated Input Parameters Used to Estimate Project Emissions

The IS/MND's air quality analysis relies on emissions calculated with the California Emissions Estimator Model ("CalEEMod") Version 2020.4.0 (p. 24).[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 project-specific values, but the California Environmental

[1] "CalEEMod Version 2020.4.0." California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at:* https://www.aqmd.gov/caleemod/download-model.

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, Greenhouse Gas, and Energy Technical Memorandum ("AQ & GHG Memo") provided as Appendix B to the IS/MND, we found that several model inputs were not consistent with information disclosed in the IS/MND. As a result, the Project's construction-related emissions are underestimated. An EIR should be prepared to include an updated air quality analysis that adequately evaluates the impacts that construction of the Project will have on local and regional air quality.

Unsubstantiated Changes to Individual Construction Phase Lengths

Review of the CalEEMod output files demonstrates that the "Stewart Almond Warehouse Project" model includes several changes to the default individual construction phase lengths (see excerpt below) (Appendix B, pp. 48, 81, 108).

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	45.00
tblConstructionPhase	NumDays	200.00	90.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	4.00	5.00
tblConstructionPhase	NumDays	2.00	5.00

As a result of these changes, the model includes the following construction schedule (see excerpt below) (Appendix B, pp. 51, 52, 84, 111).

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days
1	Demolition	Demolition	5/1/2023	5/12/2023	5	10
2	Site Preparation	Site Preparation	5/15/2023	5/19/2023	5	5
3	Grading	Grading	5/22/2023	5/26/2023	5	5
4	Building Construction	Building Construction	5/29/2023	9/29/2023	5	90
5	Architectural Coating	Architectural Coating	8/14/2023	10/13/2023	5	45
6	Paving	Paving	10/2/2023	10/13/2023	5	10

As demonstrated above, the demolition phase is decreased by 50%, from the default value of 20 to 10 days; the site preparation phase is increased by 150%, from the default value of 2 to 5 days; the grading phase is increased by 25%, from the default value of 4 to 5 days; the building construction phase is decreased by 122%, from the default value of 200 to 90 days; and the architectural coating phase is increased by 350%, from the default value of 10 to 45 days. As previously mentioned, the CalEEMod

User's Guide requires any changes to model defaults be justified.[2] According to the "User Entered Comments & Non-Default Data" table, the justification provided for these changes is:

> "Construction will begin in May 2023 and end in October 2023. Overlap of building construction and architectural coating" (Appendix B, pp. 46, 79, 106).

Furthermore, the AQ & GHG Memo states:

> "Construction would begin on May 1, 2023, and would end on October 15, 2023. Construction would include demolition, site preparation, grading, building construction, paving, and architectural activities" (p. 2).

However, the model's revised construction schedule remains unsubstantiated as the IS/MND fails to mention the Project's proposed *individual* construction phases whatsoever. This is inconsistent with guidance provided by 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."[3]

As the IS/MND only justifies the total construction duration of 5.5 months, the IS/MND fails to provide substantial evidence to support the revised individual construction phase lengths. As such, we cannot verify the changes. Instead, the model should have proportionately altered all phase lengths to match the proposed construction duration of 5.5 months.[4]

The construction schedule included in the model presents 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).[5]

[2] "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.
[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. 13,14.
[4] See Attachment A for proportionately altered construction schedule.
[5] "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.

> ***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.

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 a result, there will be less construction activities required per day and, consequently, less pollutants emitted per day. Until we are able to verify the revised construction schedule, the model may underestimate the peak daily emissions associated with some phases of construction 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 the Project's construction-related emissions, we prepared an updated CalEEMod model, using the Project-specific information provided by the IS/MND. In our updated model, we proportionately altered the individual construction phase lengths to match the proposed construction duration of 5.5 months.[6]

Our updated analysis estimates that the Project's construction-related VOC emissions would exceed the applicable South Coast Air Quality Management District ("SCAQMD") threshold of 75-pounds per day ("lbs/day"), as referenced by the IS/MND (p. 25, Table C) (see table below).[7]

SWAPE Criteria Air Pollutant Emissions

Construction	**VOC** (lbs/day)
IS/MND	9.7
SWAPE	77.5
% Increase	699%
SCAQMD Threshold	**75**
Exceeds?	***Yes***

[6] See Attachment B for updated CalEEMod model.
[7] "South Coast AQMD Air Quality Significance Thresholds." SCAQMD, March 2023, *available at*: https://www.aqmd.gov/docs/default-source/ceqa/handbook/south-coast-aqmd-air-quality-significance-thresholds.pdf?sfvrsn=25.

As demonstrated above, the Project's construction-related VOC emissions, as estimated by SWAPE, increase by approximately 699% and exceed the applicable SCAQMD significance threshold. Thus, our updated model demonstrates that the Project would result in a potentially significant air quality impact that was not previously identified or addressed in the IS/MND. To reduce the Project's air quality impacts to the maximum extent possible, additional feasible mitigation measures should be incorporated, such as those suggested in the section of this letter titled "Feasible Mitigation Measures Available to Reduce Emissions." The Project should not be approved until an EIR is prepared, incorporating all feasible mitigation to reduce emissions to less-than-significant levels.

Disproportionate Health Risk Impacts of Warehouses on Surrounding Communities

Upon review of the IS/MND, we have determined that the development of the proposed Project would result in disproportionate health risk impacts on community members living, working, and going to school within the immediate area of the Project site. According to the SCAQMD:

> "Those living within a half mile of warehouses are more likely to include communities of color, have health impacts such as higher rates of asthma and heart attacks, and a greater environmental burden."[8]

In particular, the SCAQMD found that more than 2.4 million people live within a half mile radius of at least one warehouse, and that those areas not only experience increased rates of asthma and heart attacks, but are also disproportionately Black and Latino communities below the poverty line.[9] Another study similarly indicates that "neighborhoods with lower household income levels and higher percentages of minorities are expected to have higher probabilities of containing warehousing facilities."[10] Additionally, a report authored by the Inland Empire-based People's Collective for Environmental Justice and University of Redlands states:

> "As the warehouse and logistics industry continues to grow and net exponential profits at record rates, more warehouse projects are being approved and constructed in low-income communities of color and serving as a massive source of pollution by attracting thousands of polluting truck trips daily. Diesel trucks emit dangerous levels of nitrogen oxide and particulate matter that cause devastating health impacts including asthma, chronic obstructive pulmonary disease (COPD), cancer, and premature death. As a result, physicians consider these pollution-burdened areas 'diesel death zones."[11]

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[8] "South Coast AQMD Governing Board Adopts Warehouse Indirect Source Rule." SCAQMD, May 2021, *available at:* http://www.aqmd.gov/docs/default-source/news-archive/2021/board-adopts-waisr-may7-2021.pdf?sfvrsn=9.

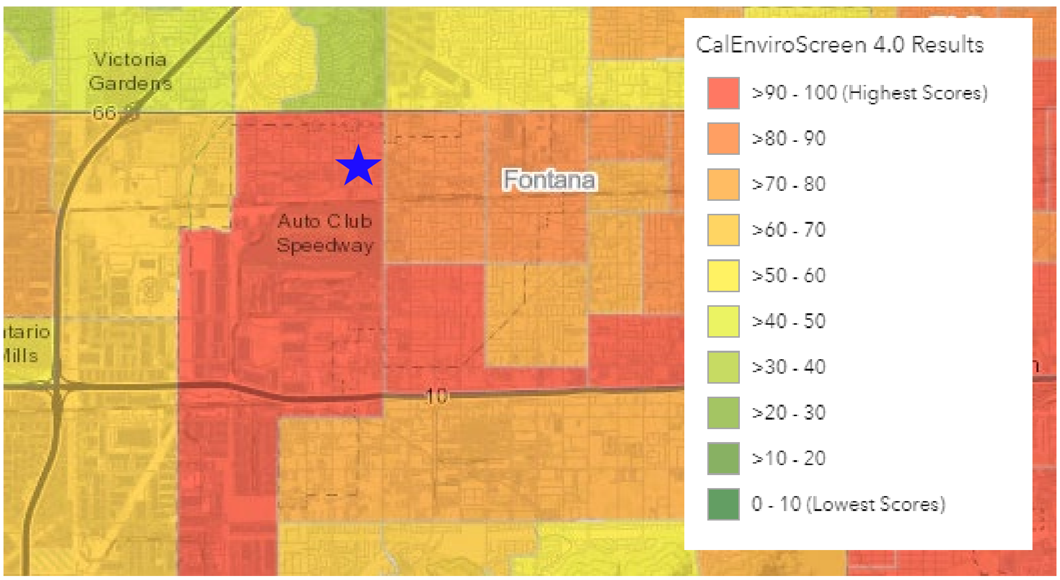
[9] "Southern California warehouse boom a huge source of pollution. Regulators are fighting back." Los Angeles Times, May 2021, *available at:* https://www.latimes.com/california/story/2021-05-05/air-quality-officials-target-warehouses-bid-to-curb-health-damaging-truck-pollution.

[10] "Location of warehouses and environmental justice: Evidence from four metros in California." Metro Freight Center of Excellence, January 2018, *available at:* https://www.metrans.org/assets/research/MF%201.1g_Location%20of%20warehouses%20and%20environmental%20justice_Final%20Report_021618.pdf, p. 21.

[11] "Warehouses, Pollution, and Social Disparities: An analytical view of the logistics industry's impacts

It is evident that the continued development of industrial warehouses within these communities poses a significant environmental justice challenge. However, the acceleration of warehouse development is only increasing despite the consequences on public health. The Inland Empire alone is adding 10 to 25 million SF of new industrial space each year.[12]

San Bernardino County, the setting of the proposed Project, has long borne a disproportionately high pollution burden compared to the rest of California. When using CalEnviroScreen 4.0, CalEPA's screening tool that ranks each census tract in the State for pollution and socioeconomic vulnerability, we found that the Project's census tract is in the 96th percentile of most polluted census tracts in the State (see excerpt below).[13]



Furthermore, the Data Visualization Tool for Mates V, a monitoring and evaluation study conducted by SCAQMD, demonstrates that the County already exhibits a heightened residential carcinogenic risk from exposure to air toxics.[14] Specifically, the location of the Project site is in the 86th percentile of highest cancer risks in the South Coast Air Basin, with a cancer risk of 552 in one million (see excerpt below).[15]

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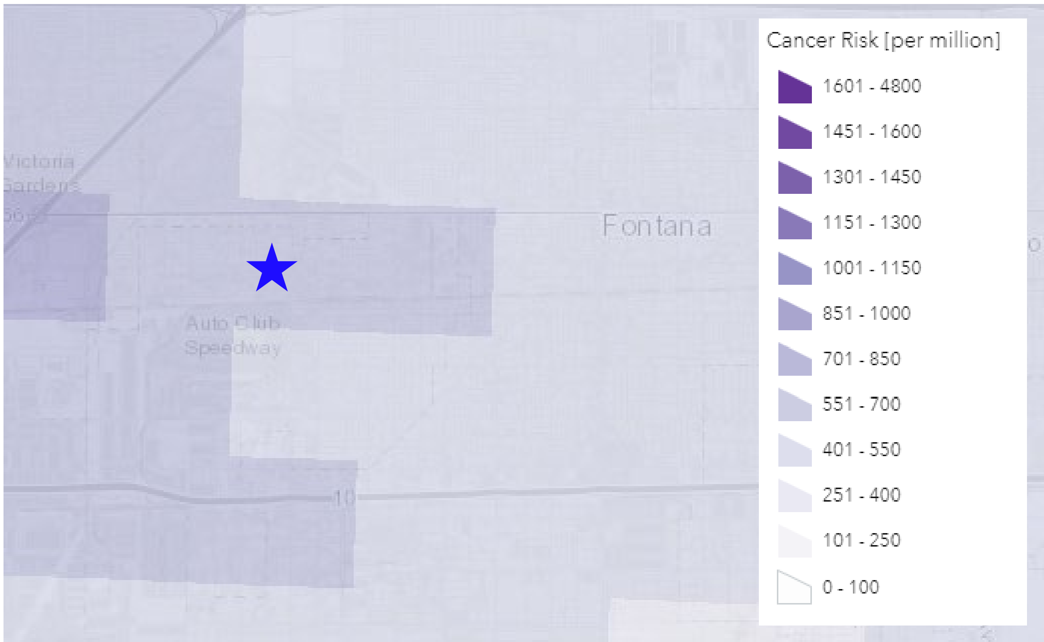
on environmental justice communities across Southern California." People's Collective for Environmental Justice, April 2021, *available at:* https://earthjustice.org/sites/default/files/files/warehouse_research_report_4.15.2021.pdf, p. 4.

[12] "2020 North America Industrial Big Box Review & Outlook." CBRE, 2020, *available at:* https://www.cbre.com/-/media/project/cbre/shared-site/insights/local-responses/industrial-big-box-report-inland-empire/local-response-2020-ibb-inland-empire-overview.pdf, p. 2.

[13] "CalEnviroScreen 4.0." California Office of Environmental Health Hazard Assessment (OEHHA), October 2021, *available at:* https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40, census tract #6071002204.

[14] "Residential Air Toxics Cancer Risk Calculated from Model Data in Grid Cells." MATES V, 2018, *available at:* https://experience.arcgis.com/experience/79d3b6304912414bb21ebdde80100b23/page/Main-Page/?views=Click-tabs-for-other-data%2CGridded-Cancer-Risk; see also: "MATES V Multiple Air Toxics Exposure Study." SCAQMD, *available at:* http://www.aqmd.gov/home/air-quality/air-quality-studies/health-studies/mates-v.

[15] "Gridded Cancer Risk." SCAQMD, *available at:* https://experience.arcgis.com/experience/79d3b6304912414bb21ebdde80100b23/page/Main-



Therefore, development of the proposed warehouse would disproportionately contribute to and exacerbate the health conditions of the residents in San Bernardino County.

In April 2022, the American Lung Association ranked San Bernadino County as the worst for ozone pollution in the nation.[16] The Los Angeles Times also reported that San Bernardino County had 130 bad air days for ozone pollution in 2020, violating federal health standards on nearly every summer day.[17] Downtown Los Angeles, by comparison, had 22 ozone violation days in 2020. This year, the County continues to face the worst ozone pollution, as it has seen the highest recorded Air Quality Index ("AQI") values for ground-level ozone in California.[18] The U.S. Environmental Protection Agency ("EPA") indicates that ozone, the main ingredient in "smog," can cause several health problems, which includes aggravating lung diseases and increasing the frequency of asthma attacks. The U.S. EPA states:

> "Children are at greatest risk from exposure to ozone because their lungs are still developing and they are more likely to be active outdoors when ozone levels are high, which increases their exposure. Children are also more likely than adults to have asthma."[19]

Page/?data_id=dataSource_112-7c8f2a4db79b4a918d46b4e8985a112b%3A20315&views=Click-tabs-for-other-data%2CGridded-Cancer-Risk

[16] "State of the Air 2022." American Lung Association, April 2022, *available at:* https://www.lung.org/research/sota/key-findings/most-polluted-places.

[17] "Southern California warehouse boom a huge source of pollution. Regulators are fighting back." Los Angeles Times, May 2021, *available at:* https://www.latimes.com/california/story/2021-05-05/air-quality-officials-target-warehouses-bid-to-curb-health-damaging-truck-pollution.

[18] "High Ozone Days." American Lung Association, 2022, *available at:* https://www.lung.org/research/sota/city-rankings/states/california.

[19] "Health Effects of Ozone Pollution." U.S. EPA, May 2021, *available at:* https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution.

Furthermore, regarding the increased sensitivity of early-life exposures to inhaled pollutants, the California Air Resources Board ("CARB") states:

> "Children are often at greater risk from inhaled pollutants, due to the following reasons:
>
> - Children have unique activity patterns and behavior. For example, they crawl and play on the ground, amidst dirt and dust that may carry a wide variety of toxicants. They often put their hands, toys, and other items into their mouths, ingesting harmful substances. Compared to adults, children typically spend more time outdoors and are more physically active. Time outdoors coupled with faster breathing during exercise increases children's relative exposure to air pollution.
>
> - Children are physiologically unique. Relative to body size, children eat, breathe, and drink more than adults, and their natural biological defenses are less developed. The protective barrier surrounding the brain is not fully developed, and children's nasal passages aren't as effective at filtering out pollutants. Developing lungs, immune, and metabolic systems are also at risk.
>
> - Children are particularly susceptible during development. Environmental exposures during fetal development, the first few years of life, and puberty have the greatest potential to influence later growth and development."[20]

A Stanford-led study also reveals that children exposed to high levels of air pollution are more susceptible to respiratory and cardiovascular diseases in adulthood.[21] Thus, given children's higher propensity to succumb to the negative health impacts of air pollutants, and as warehouses release more smog-forming pollution than any other sector, it is necessary to evaluate the specific health risk that warehouses pose to children in the nearby community.

According to the above-mentioned study by the People's Collective for Environmental Justice and University of Redlands, a half mile radius is more commonly utilized for identifying sensitive receptors. There are 640 schools in the South Coast Air Basin that are located within half a mile of a large warehouse, most of them in socio-economically disadvantaged areas.[22] Regarding the proposed Project itself, the IS/MND states:

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[20] "Children and Air Pollution." California Air Resources Board (CARB), *available at:* https://ww2.arb.ca.gov/resources/documents/children-and-air-pollution.

[21] "Air pollution puts children at higher risk of disease in adulthood, according to Stanford researchers and others." Stanford, February 2021, *available at:* https://news.stanford.edu/2021/02/22/air-pollution-impacts-childrens-health/.

[22] "Warehouses, Pollution, and Social Disparities: An analytical view of the logistics industry's impacts on environmental justice communities across Southern California." People's Collective for Environmental Justice, April 2021, *available at:* https://earthjustice.org/sites/default/files/files/warehouse_research_report_4.15.2021.pdf, p. 4.

> "The closest schools to the Project site are Almond Elementary School and Redwood Elementary School located approximately 0.42 miles north of the Project site" (p. 60).

The location of two elementary schools within half of a mile of the Project site poses a significant threat because, as outlined above, children are a vulnerable population that are more susceptible to the damaging side effects of air pollution. As such, the Project would have detrimental short-term and long-term health impacts on local children if approved.

An EIR should be prepared to evaluate the disproportionate impacts of the proposed warehouse on the community adjacent to the Project, including an analysis of the impact on children and people of color who live and attend school in the surrounding area. Finally, in order to evaluate the cumulative air quality impact from the several warehouse projects proposed or built in a one-mile radius of the Project site, the EIR should prepare a revised cumulative health risk assessment ("HRA") to quantify the adverse health outcome from the effects of exposure to multiple warehouses in the immediate area in conjunction with the poor ambient air quality in the Project's census tract. This recommendation is consistent with guidance provided by the California Department of Justice ("DOJ").[23]

Diesel Particulate Matter Emissions Inadequately Evaluated

The IS/MND concludes that the Project would have a less-than-significant health risk impact without conducting a quantified construction or operational health risk analysis ("HRA"). Regarding the health risk impacts associated with the Project, the IS/MND states:

> "The results of the LST analysis, summarized in Tables E and F, indicate that the proposed Project would not result in an exceedance of a SCAQMD LST during Project construction or operation. Therefore, impacts would be less than significant, and no mitigation is required" (p. 27)

As demonstrated above, the IS/MND concludes a less-than-significant health risk impact as emissions would not exceed SCAQMD's localized thresholds. However, the IS/MND's evaluation of the Project's potential health risk impacts, as well as the subsequent less-than-significant impact conclusion, is incorrect for four reasons.

First, the use of a LST analysis to determine the health risk impacts posed to nearby, existing sensitive receptors as a result of the Project's operational toxic air contaminant ("TAC") emissions is incorrect. While the LST method assesses the impact of pollutants at a local level, it only evaluates impacts from criteria air pollutants. According to the *Final Localized Significance Threshold Methodology* document prepared by the South Coast Air Quality Management District ("SCAQMD"), LST analyses are only applicable to NO_x, CO, PM_{10}, and $PM_{2.5}$ emissions, which are collectively referred to as criteria air

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[23] "Warehouse Projects: Best Practices and Mitigation Measures to Comply with the California Environmental Quality Act." State of California Department of Justice, September 2022, available at: https://oag.ca.gov/system/files/media/warehouse-best-practices.pdf, p. 6.

pollutants.[24] Because LST methods can only be applied to criteria air pollutants, they cannot be used to determine whether emissions from TACs, specifically Diesel Particulate Matter ("DPM"), a known human carcinogen, would result in a significant health risk impact to nearby sensitive receptors. As a result, health impacts during Project operation from exposure to TACs, such as DPM, were not analyzed, thus leaving a gap in the AQ & GHG Memo's analysis.

Second, by failing to prepare a quantified construction and operational HRA, the Project is inconsistent with CEQA's requirement to make "a reasonable effort to substantively connect a project's air quality impacts to likely health consequences." [25] This poses a problem, as construction of the Project would produce DPM emissions through the exhaust stacks of construction equipment over a duration of approximately 5.5 months (Appendix B, p. 2). Furthermore, according to the IS/MND, the operation of the Project is anticipated to generate 70 daily vehicle trips, which would produce additional exhaust emissions and continue to expose nearby, existing sensitive receptors to DPM emissions (p. 98, Table Q). However, the IS/MND fails to evaluate the TAC emissions associated with Project construction and operation or indicate the concentrations at which such pollutants would trigger adverse health effects. Thus, without making a reasonable effort to connect the Project's TAC emissions to the potential health risks posed to nearby receptors, the IS/MND is inconsistent with CEQA's requirement to correlate Project-generated emissions with potential adverse impacts on human health.

Third, the California DOJ recommends that warehouse projects prepare 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.[26] OEHHA released its most recent *Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments* in February 2015. This guidance document describes the types of projects that warrant the preparation of an HRA. Specifically, OEHHA recommends that all short-term projects lasting at least 2 months assess cancer risks.[27] Furthermore, according to OEHHA:

> "Exposure from projects lasting more than 6 months should be evaluated for the duration of the project. In all cases, for assessing risk to residential receptors, the exposure should be assumed to start in the third trimester to allow for the use of the ASFs (OEHHA, 2009)."[28]

As the Project's anticipated construction duration exceeds the 2-month and 6-month requirements set forth by OEHHA, construction of the Project meets the threshold warranting a quantified HRA under

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[24] "Final Localized Significance Threshold Methodology." South Coast Air Quality Management District (SCAQMD), Revised July 2008, *available at:* http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf.

[25] "Sierra Club v. County of Fresno." Supreme Court of California, December 2018, a*vailable at:* https://ceqaportal.org/decisions/1907/Sierra%20Club%20v.%20County%20of%20Fresno.pdf.

[26] "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.

[27] "Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf, p. 8-18.

[28] "Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf, p. 8-18.

OEHHA guidance and should be evaluated for the entire 5.5-month construction period. Furthermore, OEHHA recommends that an exposure duration of 30 years should be used to estimate the individual cancer risk at the maximally exposed individual resident ("MEIR").[29] While the IS/MND fails to provide the expected lifetime of the proposed Project, we can reasonably assume that the Project would operate for at least 30 years, if not more. Therefore, operation of the Project also exceeds the 2-month and 6-month requirements set forth by OEHHA and should be evaluated for the entire 30-year residential exposure duration, as indicated by OEHHA guidance. These recommendations reflect the most recent state health risk policies, and as such, an EIR should be prepared to include an analysis of health risk impacts posed to nearby sensitive receptors from Project-generated DPM emissions.

Fourth, by claiming a less-than-significant impact without conducting a quantified construction or operational HRA for nearby, existing sensitive receptors, the IS/MND fails to compare the Project's excess cancer risk to the SCAQMD's specific numeric threshold of 10 in one million.[30] In accordance with the most relevant guidance, an assessment of the health risk posed to nearby, existing receptors as a result of Project construction and operation should be conducted.

Screening-Level Analysis Demonstrates Potentially Significant Health Risk Impact

In order to conduct our screening-level risk assessment we relied upon AERSCREEN, which is a screening level air quality dispersion model.[31] The model replaced SCREEN3, and AERSCREEN is included in the OEHHA and the California Air Pollution Control Officers Associated ("CAPCOA") guidance as the appropriate air dispersion model for Level 2 health risk screening assessments ("HRSAs"). [32, 33] A Level 2 HRSA utilizes a limited amount of site-specific information to generate maximum reasonable downwind concentrations of air contaminants to which nearby sensitive receptors may be exposed. If an unacceptable air quality hazard is determined to be possible using AERSCREEN, a more refined modeling approach should be conducted prior to approval of the Project.

We prepared a preliminary HRA of the Project's construction and operational health risk impact to residential sensitive receptors using the annual PM_{10} exhaust estimates from the IS/MND's CalEEMod output files. Consistent with recommendations set forth by OEHHA, we assumed residential exposure begins during the third trimester stage of life.[34] The IS/MND's CalEEMod model indicates that construction activities will generate approximately 39 pounds of DPM over the 165-day construction

[29] "Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf, p. 2-4.
[30] "South Coast AQMD Air Quality Significance Thresholds." SCAQMD, March 2023, *available at*: https://www.aqmd.gov/docs/default-source/ceqa/handbook/south-coast-aqmd-air-quality-significance-thresholds.pdf?sfvrsn=25.
[31] "Air Quality Dispersion Modeling - Screening Models," U.S. EPA, *available at:* https://www.epa.gov/scram/air-quality-dispersion-modeling-screening-models.
[32] "Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.
[33] "Health Risk Assessments for Proposed Land Use Projects." CAPCOA, July 2009, *available at:* http://www.valleyair.org/transportation/CAPCOA_HRA_LU_Guidelines_8-6-09.pdf.
[34] "Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf, p. 8-18.

period.[35] The AERSCREEN model relies on a continuous average emission rate to simulate maximum downward concentrations from point, area, and volume emission sources. To account for the variability in equipment usage and truck trips over Project construction, we calculated an average DPM emission rate by the following equation:

$$Emission\ Rate\ \left(\frac{grams}{second}\right) = \frac{39\ lbs}{165\ days} \times \frac{453.6\ grams}{lbs} \times \frac{1\ day}{24\ hours} \times \frac{1\ hour}{3{,}600\ seconds} = \mathbf{0.00124\ g/s}$$

Using this equation, we estimated a construction emission rate of 0.00124 grams per second ("g/s"). Subtracting the 165-day construction period from the total residential duration of 30 years, we assumed that after Project construction, the sensitive receptor would be exposed to the Project's operational DPM for an additional 29.5 years. The IS/MND's operational CalEEMod emissions indicate that operational activities will generate approximately 5 pounds of DPM per year throughout operation. Applying the same equation used to estimate the construction DPM rate, we estimated the following emission rate for Project operation:

$$Emission\ Rate\ \left(\frac{grams}{second}\right) = \frac{4.58\ lbs}{365\ days} \times \frac{453.6\ grams}{lbs} \times \frac{1\ day}{24\ hours} \times \frac{1\ hour}{3{,}600\ seconds} = \mathbf{0.0000659\ g/s}$$

Using this equation, we estimated an operational emission rate of 0.0000659 g/s. Construction and operation were simulated as a 29.5-acre rectangular area source in AERSCREEN, with approximate dimensions of 127- by 64-meters. A release height of three meters was selected to represent the height of stacks of operational equipment and other heavy-duty vehicles, and an initial vertical dimension of one and a half meters was used to simulate instantaneous plume dispersion upon release. An urban meteorological setting was selected with model-default inputs for wind speed and direction distribution. The population of Fontana was obtained from U.S. 2020 Census data.[36]

The AERSCREEN model generates maximum reasonable estimates of single-hour DPM concentrations from the Project Site. The United States Environmental Protection Agency ("U.S. EPA") suggests that the annualized average concentration of an air pollutant be estimated by multiplying the single-hour concentration by 10% in screening procedures.[37] According to the IS/MND, the nearest sensitive receptors are residential uses located approximately 100 feet, or 30 meters, from the Project site (p. 27). However, according to the AERSCREEN output files, the Maximally Exposed Individual Receptor ("MEIR") is located approximately 50 meters downwind of the Project site. Thus, the single-hour concentration estimated by AERSCREEN for Project construction is approximately 3.828 µg/m^3 DPM at approximately 50 meters downwind. Multiplying this single-hour concentration by 10%, we get an annualized average concentration of 0.3828 µg/m^3 for Project construction at the MEIR. For Project operation, the single-hour concentration estimated by AERSCREEN is 0.2034 µg/m^3 DPM at

[35] See Attachment C for health risk calculations.
[36] "Fontana." U.S. Census Bureau, 2020, *available at:* https://datacommons.org/place/geoId/0624680.
[37] "Screening Procedures for Estimating the Air Quality Impact of Stationary Sources Revised." U.S. EPA, October 1992, *available at:* https://www.epa.gov/sites/default/files/2020-09/documents/epa-454r-92-019_ocr.pdf.

approximately 50 meters downwind. Multiplying this single-hour concentration by 10%, we get an annualized average concentration of 0.02034 μg/m^3 for Project operation at the MEIR.[38]

We calculated the excess cancer risk to the MEIR using applicable HRA methodologies prescribed by OEHHA, as recommended by SCAQMD.[39] Specifically, guidance from OEHHA and CARB recommends the use of a standard point estimate approach, including high-point estimate (i.e. 95th percentile) breathing rates and age sensitivity factors ("ASF") in order to account for the increased sensitivity to carcinogens during early-in-life exposure and accurately assess risk for susceptible subpopulations such as children. The residential exposure parameters utilized for the various age groups in our screening-level HRA are as follows:

Exposure Assumptions for Residential Individual Cancer Risk

Age Group	Breathing Rate (L/kg-day)[40]	Age Sensitivity Factor[41]	Exposure Duration (years)	Fraction of Time at Home[42]	Exposure Frequency (days/year)[43]	Exposure Time (hours/day)
3rd Trimester	361	10	0.25	1	350	24
Infant (0 - 2)	1090	10	2	1	350	24
Child (2 - 16)	572	3	14	1	350	24
Adult (16 - 30)	261	1	14	0.73	350	24

For the inhalation pathway, the procedure requires the incorporation of several discrete variates to effectively quantify dose for each age group. Once determined, contaminant dose is multiplied by the cancer potency factor ("CPF") in units of inverse dose expressed in milligrams per kilogram per day (mg/kg/day^{-1}) to derive the cancer risk estimate. Therefore, to assess exposures, we utilized the following dose algorithm:

[38] See Attachment D for AERSCREEN output files.
[39] "AB 2588 and Rule 1402 Supplemental Guidelines." SCAQMD, October 2020, *available at:* http://www.aqmd.gov/docs/default-source/planning/risk-assessment/ab-2588-supplemental-guidelines.pdf?sfvrsn=19, p. 2.
[40] "Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics 'Hot Spots' Information and Assessment Act." SCAQMD, October 2020, available at: http://www.aqmd.gov/docs/default-source/planning/risk-assessment/ab-2588-supplemental-guidelines.pdf?sfvrsn=19, p. 19; see also "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, available at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.
[41] "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, available at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf, p. 8-5 Table 8.3.
[42] "Risk Assessment Procedures." SCAQMD, August 2017, available at: http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1401/riskassessmentprocedures_2017_080717.pdf, p. 7.
[43] "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, available at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf, p. 5-24.

$$Dose_{AIR,per\ age\ group} = C_{air} \times EF \times \left[\frac{BR}{BW}\right] \times A \times CF$$

where:

$Dose_{AIR}$ = dose by inhalation (mg/kg/day), per age group
C_{air} = concentration of contaminant in air (µg/m3)
EF = exposure frequency (number of days/365 days)
BR/BW = daily breathing rate normalized to body weight (L/kg/day)
A = inhalation absorption factor (default = 1)
CF = conversion factor (1x10-6, µg to mg, L to m3)

To calculate the overall cancer risk, we used the following equation for each appropriate age group:

$$Cancer\ Risk_{AIR} = Dose_{AIR} \times CPF \times ASF \times FAH \times \frac{ED}{AT}$$

where:

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

Consistent with the 165-day construction schedule, the annualized average concentration for construction was used for the entire third trimester of pregnancy (0.25 years) and the first 0.2 years of the infantile stage of life (0 – 2 years). The annualized average concentration for operation was used for the remainder of the 30-year exposure period, which makes up the latter 1.8 years of the infantile stage of life, as well as the entire child stage of life (2 – 16 years) and the entire adult (16 – 30 years) stage of life. The results of our calculations are shown in the table below.

The Maximally Exposed Individual at an Existing Residential Receptor				
Age Group	**Emissions Source**	**Duration** (years)	**Concentration** (ug/m3)	**Cancer Risk**
3rd Trimester	Construction	0.25	0.3828	5.21E-06
	Construction	*0.20*	*0.3828*	*1.27E-05*
	Operation	*1.80*	*0.0230*	*6.80E-06*
Infant (0 - 2)	Total	2		1.95E-05
Child (2 - 16)	Operation	14	0.0230	8.34E-06
Adult (16 - 30)	Operation	14	0.0230	9.26E-07
Lifetime		**30**		**3.40E-05**

As demonstrated in the table above, the excess cancer risks for the 3rd trimester of pregnancy, infants, children, and adults at the MEIR located approximately 50 meters away, over the course of Project construction and operation, are approximately 5.21, 19.5, 8.34, and 0.926 in one million, respectively. The excess cancer risk over the course of a residential lifetime (30 years) is approximately 34.0 in one million, which exceeds the SCAQMD threshold of 10 in one million and thus results in a potentially significant impact not previously addressed or identified by the IS/MND.

Our analysis represents a screening-level HRA, which is known to be conservative and tends to err on the side of health protection. The purpose of the screening-level HRA is to demonstrate the potential link between Project-generated emissions and adverse health risk impacts. According to the U.S. EPA:

> "EPA's Exposure Assessment Guidelines recommend completing exposure assessments iteratively using a tiered approach to 'strike a balance between the costs of adding detail and refinement to an assessment and the benefits associated with that additional refinement' (U.S. EPA, 1992).
>
> In other words, an assessment using basic tools (e.g., simple exposure calculations, default values, rules of thumb, conservative assumptions) can be conducted as the first phase (or tier) of the overall assessment (i.e., a screening-level assessment).
>
> The exposure assessor or risk manager can then determine whether the results of the screening-level assessment warrant further evaluation through refinements of the input data and exposure assumptions or by using more advanced models."

As demonstrated above, screening-level analyses warrant further evaluation in a refined modeling approach. Thus, as our screening-level HRA demonstrates that construction and operation of the Project could result in a potentially significant health risk impact, an EIR should be prepared to include a refined health risk analysis which adequately and accurately evaluates health risk impacts associated with both Project construction and operation. If the refined analysis similarly concludes that the Project would result in a significant health risk impact, then mitigation measures should be incorporated, as described below in the "Feasible Mitigation Measures Available to Reduce Emissions" section.

Greenhouse Gas

Failure to Adequately Evaluate Greenhouse Gas Impacts

The IS/MND estimates that the Project would generate net annual greenhouse gas ("GHG") emissions of 244.3 metric tons of carbon dioxide equivalents per year ("MT CO_2e/year"), which would not exceed the SCAQMD bright-line threshold of 3,000 MT CO_2e/year (p. 53, Table I) (see excerpt below).

Table I: Project Greenhouse Gas Emissions (Metric Tons per Year)

Emission Type	Operational Emissions				
	CO_2	CH_4	N_2O	CO_2e	Percentage of Total
Area Source	<0.1	<0.1	0.0	<0.1	<1
Energy Source	13.3	<0.1	<0.1	13.4	7
Mobile Source	170.0	<0.1	<0.1	175.5	72
Waste Source	7.8	<0.1	0.0	19.4	8
Water Source	22.6	<0.1	<0.1	31.4	13
Total Operational Emissions				**239.7**	**100.0**
Amortized Construction Emissions				**4.6**	**—**
Total Annual Emissions				$\boxed{\textbf{244.3}}$	**—**
SCAQMD Threshold				**3,000**	
Exceeds Threshold?				**No**	

Source: Compiled by LSA (November 2022).

CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
N_2O = nitrous oxide
SCAQMD = South Coast Air Quality Management District

Furthermore, the IS/MND's analysis relies upon the Project's consistency with San Bernardino County's Greenhouse Gas Reduction Plan, CARB's 2017 Scoping Plan, and the 2020-2045 SCAG RTP/SCS to conclude that the Project would result in a less-than-significant GHG impact (p. 53 – 56). However, the IS/MND's analysis, as well as the subsequent less-than-significant impact conclusion, is incorrect for four reasons.

(1) The IS/MND's quantitative GHG analysis relies upon an outdated threshold;
(2) The IS/MND's unsubstantiated air model indicates a potentially significant impact; and
(3) The IS/MND fails to consider performance-based standards under CARB's scoping plan; and
(4) The IS/MND fails to consider performance-based standards under SCAG's *RTP/SCS*.

1) Incorrect Reliance on an Outdated Quantitative GHG Threshold

As previously stated, the IS/MND estimates that the Project would generate net annual GHG emissions of 244.3 MT CO_2e/year, which would not exceed the SCAQMD threshold of 3,000 MT CO_2e/year (p. 53, Table I). However, the guidance that provided the 3,000 MT CO_2e/year threshold, the SCAQMD's 2008 *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules, and Plans* report, was developed when the Global Warming Solutions Act of 2006, commonly known as "AB 32", was the governing statute for GHG reductions in California. AB 32 requires California to reduce GHG emissions to 1990 levels by 2020.[44] Furthermore, AEP guidance states:

> "[F]or evaluating projects with a post 2020 horizon, the threshold will need to be revised based on a new gap analysis that would examine 17 development and reduction potentials out to the next GHG reduction milestone."[45]

As it is currently April 2023, thresholds for 2020 are not applicable to the proposed Project and should be revised to reflect the current GHG reduction target. As such, the SCAQMD bright-line threshold of 3,000 MT CO_2e/year is outdated and inapplicable to the proposed Project, and the IS/MND's less-than-significant GHG impact conclusion should not be relied upon. Instead, we recommend that the Project apply the SCAQMD 2035 service population efficiency target of 3.0 metric tons of carbon dioxide equivalents per service population per year ("MT CO_2e/SP/year"), which was calculated by applying a 40% reduction to the 2020 targets.[46]

2) Failure to Identify a Potentially Significant GHG Impact

In an effort to quantitatively evaluate the Project's GHG emissions, we compared the Project's GHG emissions, as estimated by the IS/MND, to the SCAQMD 2035 service population efficiency target of 3.0 MT CO_2e/SP/year. When applying this threshold, the Project's air model indicates a potentially significant GHG impact. As previously stated, the IS/MND estimates that the Project would generate net annual GHG emissions of 244.3 MT CO_2e/year (p. 53, Table I). According to CAPCOA's *CEQA & Climate Change* report, a service population ("SP") is defined as "the sum of the number of residents and the number of jobs supported by the project."[47] As the Project does not propose any residential land uses, we estimate that the Project would support 0 residents. Furthermore, according to the IS/MND, the Project would support approximately 20 employees (p. 74). Based on this estimate, we estimate a SP of 20 people.[48] When dividing the Project's net annual GHG emissions, as estimated by the IS/MND, by an SP of 20 people, we find that the Project would emit approximately 8.93 MT CO_2e/SP/year (see table below).[49]

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[44] "Health & Safety Code 38550." California State Legislature, January 2007, *available at:* https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=HSC&sectionNum=38550.

[45] "Beyond Newhall and 2020: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California." Association of Environmental Professionals (AEP), October 2016, *available at:* https://califaep.org/docs/AEP-2016_Final_White_Paper.pdf, p. 39.

[46] "Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #15." SCAQMD, September 2010, *available at:* http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-minutes.pdf, p. 2.

[47] "CEQA & Climate Change." CAPCOA, January 2008, *available at:* https://www.placer.ca.gov/DocumentCenter/View/8483/Appendix-B---Attachments-to-the-Center-for-Biological-Diversity-Comment-Letter---Pages-202-through-302-PDF, p. 72.

[48] Calculated: 0 residents + 20 employees = 20 service population.

[49] Calculated: (178.54 MT CO_2e/year) / (20 service population) = (8.93 MT CO_2e/SP/year).

IS/MND Greenhouse Gas Emissions	
Annual Emissions (MT CO_2e/year)	178.54
Service Population	20
Service Population Efficiency (MT CO_2e/SP/year)	8.93
SCAQMD 2035 Threshold	**3.0**
Exceeds?	***Yes***

As demonstrated above, the Project's service population efficiency value, as estimated by the IS/MND's provided net annual GHG emission estimates and SP, exceeds the SCAQMD 2035 efficiency target of 3.0 MT CO_2e/SP/year, indicating a potentially significant impact not previously identified or addressed by the IS/MND. As a result, the IS/MND's less-than-significant GHG impact conclusion should not be relied upon. An EIR should be prepared, including an updated GHG analysis which incorporates additional mitigation measures to reduce the Project's GHG emissions to less-than-significant levels.

3) Failure to Demonstrate Consistency with CARB's 2017 Scoping Plans

The IS/MND concludes that the Project would be consistent with CARB's 2017 Climate Change Scoping Plan (p. 53 – 56). However, this is incorrect, as the IS/MND fails to consider the following 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.[50] 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."[51] 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).

[50] "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.
[51] "Supporting Calculations for 2017 Scoping Plan-Identified VMT Reductions," California Air Resources Board (CARB), January 2019, *available at*: https://ww2.arb.ca.gov/resources/documents/carb-2017-scoping-plan-identified-vmt-reductions-and-relationship-state-climate; *see also:* https://ww2.arb.ca.gov/sites/default/files/2019-01/sp_mss_vmt_calculations_jan19_0.xlsx.

2017 Scoping Plan Daily VMT Per Capita						
	San Bernardino County			State		
Year	Population	LDV VMT Baseline	VMT Per Capita	Population	LDV VMT Baseline	VMT Per Capita
2010	2,043,484	55,741,307.23	27.28	37,335,085	836,463,980.46	22.40
2023	2,302,993	62,347,922.72	27.07	41,659,526	924,184,228.61	22.18
2030	2,478,888	65,538,854.28	26.44	43,939,250	957,178,153.19	21.78

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

4) Failure to Consider Performance-based Standards under SCAG's RTP/SCS

As previously discussed, the IS/MND concludes that the Project would be consistent with SCAG's *RTP/SCS* (p. 53 – 56). However, the IS/MND fails to consider whether or not the Project meets any of the specific performance-based goals underlying SCAG's *RTP/SCS* and SB 375, such as: i) per capita GHG emission targets, or ii) daily vehicles miles traveled ("VMT") per capita benchmarks.

i. SB 375 Per Capita GHG Emission Goals

SB 375 was signed into law in September 2008 to enhance the state's ability to reach AB 32 goals by directing CARB to develop regional 2020 and 2035 GHG emission reduction targets for passenger vehicles (autos and light-duty trucks). In March 2018, CARB adopted updated regional targets requiring a 19 percent decrease in VMT for the SCAG region by 2035. This goal is reflected in SCAG's 2020 RTP/SCS Program Environmental Impact Report ("PEIR"), in which the 2020 RTP/SCS PEIR updates the per capita emissions to 18.8 lbs/day in 2035 (see excerpt below).[52]

[52] "Connect SoCal Certified Final Program Environmental Impact Report." SCAG, May 2020, *available at*: https://scag.ca.gov/sites/main/files/file-attachments/fpeir_connectsocal_complete.pdf?1607981618, p. 3.8-74.

Table 3.8-10
SB 375 Analysis

	2005 (Baseline)	2020 (Plan)	2035 (Plan)
Resident population (per 1,000)	17,161	19,194	21,110
CO2 emissions (per 1,000 tons)	204.0/a/	204.5/b/	198.6/b/
Per capita emissions (pounds/day)	23.8	21.3	18.8
% difference from Plan (2020) to Baseline (2005)			–8%
% difference from Plan (2035) to Baseline (2005)			–19%/c/

Note:
/a/ Based on EMFAC2007
/b/Based on EMFAC2014 and SCAG modeling, 2019.
/c/ Includes off-model adjustments for 2035 and 2045
Source: SCAG modeling, 2019.
http://www.scag.ca.gov/committees/CommitteeDocLibrary/jointRCPC110515fullagn.pdf

As the IS/MND fails to evaluate the Project's consistency with the SCAG's per capita emissions, the IS/MND's claim that the proposed Project would be consistent with SCAG's *RTP/SCS* is unsupported. An EIR should be prepared for the proposed Project to provide additional information and analysis to conclude less-than-significant GHG impacts.

ii. SB 375 RTP/SCS Daily VMT Per Capita Target

Under the SCAG's 2020 *RTP/SCS*, daily VMT per capita in the SCAG region should decrease from 23.2 VMT in 2016 to 20.7 VMT by 2045.[53] Daily VMT per capita in San Bernardino County should decrease from 26.1 to 24.5 VMT during that same period.[54] Here, however, the IS/MND fails to consider any of the above-mentioned performance-based VMT targets. As the IS/MND fails to evaluate the Project's consistency with the SCAG's performance-based daily VMT per capita projections, the IS/MND's claim that the proposed Project would not conflict with SCAG's *RTP/SCS* is unsupported. An EIR should be prepared to provide additional analysis to adequately support the less-than-significant GHG impact conclusion.

Mitigation

Feasible Mitigation Measures Available to Reduce Emissions

Our analysis demonstrates that the Project would result in potentially significant air quality, health risk, and GHG impacts that should be mitigated further. To reduce the Project's emissions, we identified the following mitigation measures that are applicable to the proposed Project as found in the California Department of Justice Warehouse Project Best Practices document.[55]

[53] "Connect SoCal." SCAG, September 2020, *available at*: https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocal-plan_0.pdf?1606001176, pp. 138.
[54] "Connect SoCal." SCAG, September 2020, *available at*: https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocal-plan_0.pdf?1606001176, pp. 138.
[55] "Warehouse Projects: Best Practices and Mitigation Measures to Comply with the California Environmental Quality Act." State of California Department of Justice, September 2022, *available at*: https://oag.ca.gov/system/files/media/warehouse-best-practices.pdf, p. 8 – 10.

- Requiring off-road construction equipment to be hybrid electric-diesel or 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.
- Prohibiting off-road diesel-powered equipment from being in the "on" position for more than 10 hours per day.
- Using electric-powered hand tools, forklifts, and pressure washers, and providing electrical hook ups to the power grid rather than use of diesel-fueled generators to supply their power.
- Designating an area in the construction site where electric-powered construction vehicles and equipment can charge.
- 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 three 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 information on transit and ridesharing programs and services to construction employees.
- Providing meal options onsite or shuttles between the facility and nearby meal destinations for construction employees.
- Requiring all heavy-duty vehicles engaged in drayage to or from the project site to be zero-emission beginning in 2030.
- Requiring all on-site motorized operational equipment, such as forklifts and yard trucks, to be zero-emission with the necessary charging or fueling stations provided.
- Requiring tenants to use zero-emission light- and medium-duty vehicles as part of business operations.
- Forbidding trucks from idling for more than three minutes and requiring operators to turn off engines when not in use.
- Posting both interior- and exterior-facing signs, including signs directed at all dock and delivery areas, identifying idling restrictions and contact information to report violations to CARB, the local air district, and the building manager.
- Installing solar photovoltaic systems on the project site of a specified electrical generation capacity that is equal to or greater than the building's projected energy needs, including all electrical chargers.

- Designing all project building roofs to accommodate the maximum future coverage of solar panels and installing the maximum solar power generation capacity feasible.
- Constructing zero-emission truck charging/fueling stations proportional to the number of dock doors at the project.
- Running conduit to designated locations for future electric truck charging stations.
- Unless the owner of the facility records a covenant on the title of the underlying property ensuring that the property cannot be used to provide refrigerated warehouse space, constructing electric plugs for electric transport refrigeration units at every dock door and requiring truck operators with transport refrigeration units to use the electric plugs when at loading docks.
- Oversizing electrical rooms by 25 percent or providing a secondary electrical room to accommodate future expansion of electric vehicle charging capability.
- Constructing and maintaining electric light-duty vehicle charging stations proportional to the number of employee parking spaces (for example, requiring at least 10% of all employee parking spaces to be equipped with electric vehicle charging stations of at least Level 2 charging performance)
- Running conduit to an additional proportion of employee parking spaces for a future increase in the number of electric light-duty charging stations.
- 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.
- 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.
- Designing to LEED green building certification 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 who own, operate, or hire trucking carriers with more than 100 trucks to use carriers that are SmartWay carriers.
- Providing tenants with information on incentive programs, such as the Carl Moyer Program and Voucher Incentive Program, to upgrade their fleets.

These measures offer a cost-effective, feasible way to incorporate lower-emitting design features into the proposed Project, which subsequently would reduce emissions released during Project construction and operation.

Furthermore, as it is policy of the State that eligible renewable energy resources and zero-carbon resources supply 100% of retail sales of electricity to California end-use customers by December 31, 2045, we emphasize the applicability of incorporating solar power system into the Project design. Until the feasibility of incorporating on-site renewable energy production is considered, the Project should not be approved.

An EIR should be prepared to include all feasible mitigation measures, as well as include updated air quality, health risk, and GHG analyses to ensure that the necessary mitigation measures are implemented to reduce emissions to below thresholds. The 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,

M Hagemann

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

Paul Rosenfeld

Paul E. Rosenfeld, Ph.D.

Attachment A: Updated Construction Schedule
Attachment B: Updated CalEEMod Output Files
Attachment C: Health Risk Calculations
Attachment D: AERSCREEN Output Files
Attachment E: Matt Hagemann CV
Attachment F: Paul Rosenfeld CV

Attachment A

Construction Schedule Calculations					
Phase	Default Phase Length	Construction Duration	%	Construction Duration	Revised Phase Length
Demolition	20	343	0.0583	166	10
Site Preparation	2	343	0.0058	166	1
Grading	4	343	0.0117	166	2
Construction	200	343	0.5831	166	97
Paving	10	343	0.0292	166	5
Architectural Coating	10	343	0.0292	166	5

	Total Default Construction Duration		Revised Construction Duration
Start Date	5/1/2023		5/1/2023
End Date	4/8/2024		10/14/2023
Total Days	343		166

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

Stewart Almond Warehouse Project

San Bernardino-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	41.00	1000sqft	1.25	41,000.00	0
Parking Lot	55.00	Space	0.39	22,000.00	0
City Park	0.36	Acre	0.36	15,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
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 IS/MND's model.

Land Use - Consistent with the IS/MND's model.

Construction Phase - Consistent with the IS/MND's model.

Demolition - Consistent with the IS/MND's model.

Grading - Left as default

Vehicle Trips - Consistent with the IS/MND's model.

Energy Use - Consistent with the IS/MND's model.

Construction Off-road Equipment Mitigation - Consistent with the IS/MND's model.

Area Mitigation - Consistent with the IS/MND's model.

Energy Mitigation - Consistent with the IS/MND's model.

Water Mitigation - Consistent with the IS/MND's model.

Fleet Mix - Consistent with the IS/MND's model.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2

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

tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	200.00	97.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	4.00	2.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	2.00	1.00
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24NG	1.98	0.00
tblFleetMix	HHD	0.02	0.19
tblFleetMix	LDA	0.54	0.33
tblFleetMix	MH	5.0710e-003	0.00
tblFleetMix	MHD	0.01	0.06
tblFleetMix	OBUS	5.5900e-004	0.00
tblFleetMix	SBUS	9.5400e-004	0.00
tblFleetMix	UBUS	2.5400e-004	0.00
tblLandUse	LandUseSquareFeet	15,681.60	15,000.00
tblLandUse	LotAcreage	0.94	1.25
tblLandUse	LotAcreage	0.49	0.39
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	ST_TR	1.74	1.71
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	SU_TR	1.74	1.71
tblVehicleTrips	WD_TR	0.78	0.00
tblVehicleTrips	WD_TR	1.74	1.71

2.0 Emissions Summary

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					
2023	0.2856	0.7072	0.7833	1.5400e-003	0.0340	0.0304	0.0644	0.0112	0.0292	0.0404	0.0000	130.7601	130.7601	0.0201	2.0600e-003	131.8758
Maximum	**0.2856**	**0.7072**	**0.7833**	**1.5400e-003**	**0.0340**	**0.0304**	**0.0644**	**0.0112**	**0.0292**	**0.0404**	**0.0000**	**130.7601**	**130.7601**	**0.0201**	**2.0600e-003**	**131.8758**

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					
2023	0.2480	1.0355	0.8429	1.5400e-003	0.0340	0.0413	0.0752	0.0112	0.0413	0.0525	0.0000	130.7600	130.7600	0.0201	2.0600e-003	131.8757
Maximum	**0.2480**	**1.0355**	**0.8429**	**1.5400e-003**	**0.0340**	**0.0413**	**0.0752**	**0.0112**	**0.0413**	**0.0525**	**0.0000**	**130.7600**	**130.7600**	**0.0201**	**2.0600e-003**	**131.8757**

	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	**13.15**	**-46.41**	**-7.61**	**0.00**	**0.00**	**-35.71**	**-16.89**	**0.00**	**-41.35**	**-29.85**	**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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	5-1-2023	7-31-2023	0.4669	0.6302
2	8-1-2023	9-30-2023	0.3007	0.4084
		Highest	0.4669	0.6302

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	0.1691	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3900e-003	2.3900e-003	1.0000e-005	0.0000	2.5500e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	18.2347	18.2347	1.5400e-003	1.9000e-004	18.3287
Mobile	0.0439	0.2498	0.4928	1.7700e-003	0.1173	2.2900e-003	0.1196	0.0317	2.1700e-003	0.0339	0.0000	170.0045	170.0045	7.9300e-003	0.0177	175.4781
Waste						0.0000	0.0000		0.0000	0.0000	7.8294	0.0000	7.8294	0.4627	0.0000	19.3969
Water						0.0000	0.0000		0.0000	0.0000	3.0080	22.7394	25.7474	0.3109	7.5300e-003	35.7622
Total	**0.2130**	**0.2498**	**0.4940**	**1.7700e-003**	**0.1173**	**2.2900e-003**	**0.1196**	**0.0317**	**2.1700e-003**	**0.0339**	**10.8373**	**210.9809**	**221.8183**	**0.7831**	**0.0254**	**248.9685**

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	0.1691	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3900e-003	2.3900e-003	1.0000e-005	0.0000	2.5500e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	18.2347	18.2347	1.5400e-003	1.9000e-004	18.3287
Mobile	0.0439	0.2498	0.4928	1.7700e-003	0.1173	2.2900e-003	0.1196	0.0317	2.1700e-003	0.0339	0.0000	170.0045	170.0045	7.9300e-003	0.0177	175.4781
Waste						0.0000	0.0000		0.0000	0.0000	7.8294	0.0000	7.8294	0.4627	0.0000	19.3969
Water						0.0000	0.0000		0.0000	0.0000	2.6362	19.9817	22.6179	0.2725	6.6000e-003	31.3952
Total	**0.2130**	**0.2498**	**0.4940**	**1.7700e-003**	**0.1173**	**2.2900e-003**	**0.1196**	**0.0317**	**2.1700e-003**	**0.0339**	**10.4655**	**208.2233**	**218.6888**	**0.7446**	**0.0245**	**244.6015**

	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**	**3.43**	**1.31**	**1.41**	**4.91**	**3.66**	**1.75**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2023	5/12/2023	5	10	
2	Site Preparation	Site Preparation	5/13/2023	5/15/2023	5	1	
3	Grading	Grading	5/16/2023	5/17/2023	5	2	

4	Building Construction	Building Construction	5/18/2023	9/29/2023	5	97	
5	Paving	Paving	9/30/2023	10/6/2023	5	5	
6	Architectural Coating	Architectural Coating	10/7/2023	10/13/2023	5	5	

Acres of Grading (Site Preparation Phase): 0.94

Acres of Grading (Grading Phase): 2

Acres of Paving: 0.39

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 61,500; Non-Residential Outdoor: 20,500; Striped Parking Area: 1,320 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36

Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	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
Demolition	5	13.00	0.00	7.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	33.00	13.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	7.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 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					7.5000e-004	0.0000	7.5000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.3600e-003	0.0716	0.0673	1.2000e-004		3.3800e-003	3.3800e-003		3.1600e-003	3.1600e-003	0.0000	10.5433	10.5433	2.6700e-003	0.0000	10.6101
Total	**7.3600e-003**	**0.0716**	**0.0673**	**1.2000e-004**	**7.5000e-004**	**3.3800e-003**	**4.1300e-003**	**1.1000e-004**	**3.1600e-003**	**3.2700e-003**	**0.0000**	**10.5433**	**10.5433**	**2.6700e-003**	**0.0000**	**10.6101**

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	1.0000e-005	4.1000e-004	1.2000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1945	0.1945	1.0000e-005	3.0000e-005	0.2039
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	2.3000e-004	1.7000e-004	2.1100e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5566	0.5566	1.0000e-005	2.0000e-005	0.5615
Total	**2.4000e-004**	**5.8000e-004**	**2.2300e-003**	**1.0000e-005**	**7.7000e-004**	**0.0000**	**7.8000e-004**	**2.1000e-004**	**0.0000**	**2.1000e-004**	**0.0000**	**0.7511**	**0.7511**	**2.0000e-005**	**5.0000e-005**	**0.7654**

3.2 Demolition - 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	tons/yr										MT/yr					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.4300e-003	0.1060	0.0771	1.2000e-004		3.5900e-003	3.5900e-003		3.5900e-003	3.5900e-003	0.0000	10.5433	10.5433	2.6700e-003	0.0000	10.6101
Total	**4.4300e-003**	**0.1060**	**0.0771**	**1.2000e-004**	**7.5000e-004**	**3.5900e-003**	**4.3400e-003**	**1.1000e-004**	**3.5900e-003**	**3.7000e-003**	**0.0000**	**10.5433**	**10.5433**	**2.6700e-003**	**0.0000**	**10.6101**

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	1.0000e-005	4.1000e-004	1.2000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1945	0.1945	1.0000e-005	3.0000e-005	0.2039
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	2.3000e-004	1.7000e-004	2.1100e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5566	0.5566	1.0000e-005	2.0000e-005	0.5615
Total	**2.4000e-004**	**5.8000e-004**	**2.2300e-003**	**1.0000e-005**	**7.7000e-004**	**0.0000**	**7.8000e-004**	**2.1000e-004**	**0.0000**	**2.1000e-004**	**0.0000**	**0.7511**	**0.7511**	**2.0000e-005**	**5.0000e-005**	**0.7654**

3.3 Site Preparation - 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					3.1300e-003	0.0000	3.1300e-003	1.5000e-003	0.0000	1.5000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.7000e-004	6.2100e-003	3.3200e-003	1.0000e-005		2.5000e-004	2.5000e-004		2.3000e-004	2.3000e-004	0.0000	0.7557	0.7557	2.4000e-004	0.0000	0.7618
Total	**5.7000e-004**	**6.2100e-003**	**3.3200e-003**	**1.0000e-005**	**3.1300e-003**	**2.5000e-004**	**3.3800e-003**	**1.5000e-003**	**2.3000e-004**	**1.7300e-003**	**0.0000**	**0.7557**	**0.7557**	**2.4000e-004**	**0.0000**	**0.7618**

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	1.0000e-005	1.0000e-005	1.3000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0343	0.0343	0.0000	0.0000	0.0346
Total	**1.0000e-005**	**1.0000e-005**	**1.3000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0343**	**0.0343**	**0.0000**	**0.0000**	**0.0346**

3.3 Site Preparation - 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	tons/yr										MT/yr					
Fugitive Dust					3.1300e-003	0.0000	3.1300e-003	1.5000e-003	0.0000	1.5000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5000e-004	7.4700e-003	4.9100e-003	1.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	0.7557	0.7557	2.4000e-004	0.0000	0.7618
Total	**2.5000e-004**	**7.4700e-003**	**4.9100e-003**	**1.0000e-005**	**3.1300e-003**	**1.9000e-004**	**3.3200e-003**	**1.5000e-003**	**1.9000e-004**	**1.6900e-003**	**0.0000**	**0.7557**	**0.7557**	**2.4000e-004**	**0.0000**	**0.7618**

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	1.0000e-005	1.0000e-005	1.3000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0343	0.0343	0.0000	0.0000	0.0346
Total	**1.0000e-005**	**1.0000e-005**	**1.3000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0343**	**0.0343**	**0.0000**	**0.0000**	**0.0346**

3.4 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					7.0800e-003	0.0000	7.0800e-003	3.4200e-003	0.0000	3.4200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3300e-003	0.0145	8.7000e-003	2.0000e-005		6.0000e-004	6.0000e-004		5.6000e-004	5.6000e-004	0.0000	1.8104	1.8104	5.9000e-004	0.0000	1.8250
Total	**1.3300e-003**	**0.0145**	**8.7000e-003**	**2.0000e-005**	**7.0800e-003**	**6.0000e-004**	**7.6800e-003**	**3.4200e-003**	**5.6000e-004**	**3.9800e-003**	**0.0000**	**1.8104**	**1.8104**	**5.9000e-004**	**0.0000**	**1.8250**

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	3.0000e-005	3.0000e-005	3.3000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0856	0.0856	0.0000	0.0000	0.0864
Total	**3.0000e-005**	**3.0000e-005**	**3.3000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0856**	**0.0856**	**0.0000**	**0.0000**	**0.0864**

3.4 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	tons/yr										MT/yr					
Fugitive Dust					7.0800e-003	0.0000	7.0800e-003	3.4200e-003	0.0000	3.4200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.3000e-004	0.0181	0.0121	2.0000e-005		4.9000e-004	4.9000e-004		4.9000e-004	4.9000e-004	0.0000	1.8104	1.8104	5.9000e-004	0.0000	1.8250
Total	**6.3000e-004**	**0.0181**	**0.0121**	**2.0000e-005**	**7.0800e-003**	**4.9000e-004**	**7.5700e-003**	**3.4200e-003**	**4.9000e-004**	**3.9100e-003**	**0.0000**	**1.8104**	**1.8104**	**5.9000e-004**	**0.0000**	**1.8250**

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	3.0000e-005	3.0000e-005	3.3000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0856	0.0856	0.0000	0.0000	0.0864
Total	**3.0000e-005**	**3.0000e-005**	**3.3000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0856**	**0.0856**	**0.0000**	**0.0000**	**0.0864**

3.5 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	0.0739	0.5680	0.6116	1.0700e-003		0.0250	0.0250		0.0241	0.0241	0.0000	88.0756	88.0756	0.0150	0.0000	88.4495
Total	**0.0739**	**0.5680**	**0.6116**	**1.0700e-003**		**0.0250**	**0.0250**		**0.0241**	**0.0241**	**0.0000**	**88.0756**	**88.0756**	**0.0150**	**0.0000**	**88.4495**

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	7.1000e-004	0.0233	9.4200e-003	1.1000e-004	3.9800e-003	1.7000e-004	4.1400e-003	1.1500e-003	1.6000e-004	1.3100e-003	0.0000	10.9885	10.9885	2.9000e-004	1.6200e-003	11.4796
Worker	5.5800e-003	4.1600e-003	0.0521	1.5000e-004	0.0176	9.0000e-005	0.0176	4.6600e-003	8.0000e-005	4.7400e-003	0.0000	13.7060	13.7060	3.6000e-004	3.7000e-004	13.8258
Total	**6.2900e-003**	**0.0274**	**0.0615**	**2.6000e-004**	**0.0215**	**2.6000e-004**	**0.0218**	**5.8100e-003**	**2.4000e-004**	**6.0500e-003**	**0.0000**	**24.6946**	**24.6946**	**6.5000e-004**	**1.9900e-003**	**25.3055**

3.5 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	tons/yr										MT/yr					
Off-Road	0.0407	0.8405	0.6537	1.0700e-003		0.0355	0.0355		0.0355	0.0355	0.0000	88.0755	88.0755	0.0150	0.0000	88.4494
Total	**0.0407**	**0.8405**	**0.6537**	**1.0700e-003**		**0.0355**	**0.0355**		**0.0355**	**0.0355**	**0.0000**	**88.0755**	**88.0755**	**0.0150**	**0.0000**	**88.4494**

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	7.1000e-004	0.0233	9.4200e-003	1.1000e-004	3.9800e-003	1.7000e-004	4.1400e-003	1.1500e-003	1.6000e-004	1.3100e-003	0.0000	10.9885	10.9885	2.9000e-004	1.6200e-003	11.4796
Worker	5.5800e-003	4.1600e-003	0.0521	1.5000e-004	0.0176	9.0000e-005	0.0176	4.6600e-003	8.0000e-005	4.7400e-003	0.0000	13.7060	13.7060	3.6000e-004	3.7000e-004	13.8258
Total	**6.2900e-003**	**0.0274**	**0.0615**	**2.6000e-004**	**0.0215**	**2.6000e-004**	**0.0218**	**5.8100e-003**	**2.4000e-004**	**6.0500e-003**	**0.0000**	**24.6946**	**24.6946**	**6.5000e-004**	**1.9900e-003**	**25.3055**

3.6 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	1.6100e-003	0.0156	0.0220	3.0000e-005		7.7000e-004	7.7000e-004		7.1000e-004	7.1000e-004	0.0000	2.9431	2.9431	9.3000e-004	0.0000	2.9664
Paving	5.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.1200e-003**	**0.0156**	**0.0220**	**3.0000e-005**		**7.7000e-004**	**7.7000e-004**		**7.1000e-004**	**7.1000e-004**	**0.0000**	**2.9431**	**2.9431**	**9.3000e-004**	**0.0000**	**2.9664**

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	1.1000e-004	8.0000e-005	1.0600e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.2783	0.2783	1.0000e-005	1.0000e-005	0.2808
Total	**1.1000e-004**	**8.0000e-005**	**1.0600e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2783**	**0.2783**	**1.0000e-005**	**1.0000e-005**	**0.2808**

3.6 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	tons/yr										MT/yr					
Off-Road	1.3700e-003	0.0294	0.0246	3.0000e-005		1.0300e-003	1.0300e-003		1.0300e-003	1.0300e-003	0.0000	2.9431	2.9431	9.3000e-004	0.0000	2.9664
Paving	5.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.8800e-003**	**0.0294**	**0.0246**	**3.0000e-005**		**1.0300e-003**	**1.0300e-003**		**1.0300e-003**	**1.0300e-003**	**0.0000**	**2.9431**	**2.9431**	**9.3000e-004**	**0.0000**	**2.9664**

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	1.1000e-004	8.0000e-005	1.0600e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.2783	0.2783	1.0000e-005	1.0000e-005	0.2808
Total	**1.1000e-004**	**8.0000e-005**	**1.0600e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2783**	**0.2783**	**1.0000e-005**	**1.0000e-005**	**0.2808**

3.7 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	0.1931					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8000e-004	3.2600e-003	4.5300e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6393
Total	**0.1936**	**3.2600e-003**	**4.5300e-003**	**1.0000e-005**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6393**

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	6.0000e-005	5.0000e-005	5.7000e-004	0.0000	1.9000e-004	0.0000	1.9000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1499	0.1499	0.0000	0.0000	0.1512
Total	**6.0000e-005**	**5.0000e-005**	**5.7000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1499**	**0.1499**	**0.0000**	**0.0000**	**0.1512**

3.7 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	tons/yr										MT/yr					
Archit. Coating	0.1931					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8000e-004	5.8800e-003	4.5800e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6393
Total	**0.1934**	**5.8800e-003**	**4.5800e-003**	**1.0000e-005**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6393**

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	6.0000e-005	5.0000e-005	5.7000e-004	0.0000	1.9000e-004	0.0000	1.9000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1499	0.1499	0.0000	0.0000	0.1512
Total	**6.0000e-005**	**5.0000e-005**	**5.7000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1499**	**0.1499**	**0.0000**	**0.0000**	**0.1512**

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	tons/yr										MT/yr					
Mitigated	0.0439	0.2498	0.4928	1.7700e-003	0.1173	2.2900e-003	0.1196	0.0317	2.1700e-003	0.0339	0.0000	170.0045	170.0045	7.9300e-003	0.0177	175.4781
Unmitigated	0.0439	0.2498	0.4928	1.7700e-003	0.1173	2.2900e-003	0.1196	0.0317	2.1700e-003	0.0339	0.0000	170.0045	170.0045	7.9300e-003	0.0177	175.4781

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		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	70.11	70.11	70.11	300,472	300,472
Total	70.11	70.11	70.11	300,472	300,472

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	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No Rail	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071
Parking Lot	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071
Unrefrigerated Warehouse-No Rail	0.330302	0.055838	0.172353	0.139003	0.027005	0.007196	0.057000	0.186000	0.000000	0.000000	0.025303	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	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	18.2347	18.2347	1.5400e-003	1.9000e-004	18.3287
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	18.2347	18.2347	1.5400e-003	1.9000e-004	18.3287
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

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
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**

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
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**

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
Parking Lot	7700	1.3656	1.2000e-004	1.0000e-005	1.3726
Unrefrigerated Warehouse-No Rail	95120	16.8691	1.4200e-003	1.7000e-004	16.9561
Total		**18.2347**	**1.5400e-003**	**1.8000e-004**	**18.3287**

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
Parking Lot	7700	1.3656	1.2000e-004	1.0000e-005	1.3726
Unrefrigerated Warehouse-No Rail	95120	16.8691	1.4200e-003	1.7000e-004	16.9561
Total		**18.2347**	**1.5400e-003**	**1.8000e-004**	**18.3287**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	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	0.1691	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3900e-003	2.3900e-003	1.0000e-005	0.0000	2.5500e-003
Unmitigated	0.1691	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3900e-003	2.3900e-003	1.0000e-005	0.0000	2.5500e-003

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	0.0193					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1497					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1000e-004	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3900e-003	2.3900e-003	1.0000e-005	0.0000	2.5500e-003
Total	**0.1691**	**1.0000e-005**	**1.2300e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.3900e-003**	**2.3900e-003**	**1.0000e-005**	**0.0000**	**2.5500e-003**

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	0.0193					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1497					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1000e-004	1.0000e-005	1.2300e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3900e-003	2.3900e-003	1.0000e-005	0.0000	2.5500e-003
Total	**0.1691**	**1.0000e-005**	**1.2300e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.3900e-003**	**2.3900e-003**	**1.0000e-005**	**0.0000**	**2.5500e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Toilet

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	22.6179	0.2725	6.6000e-003	31.3952
Unmitigated	25.7474	0.3109	7.5300e-003	35.7622

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.428933	0.8451	7.0000e-005	1.0000e-005	0.8495
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	9.48125 / 0	24.9022	0.3108	7.5200e-003	34.9127
Total		**25.7474**	**0.3109**	**7.5300e-003**	**35.7622**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.402768	0.7936	7.0000e-005	1.0000e-005	0.7977
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	8.30937 / 0	21.8243	0.2724	6.5900e-003	30.5975
Total		**22.6179**	**0.2725**	**6.6000e-003**	**31.3952**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	7.8294	0.4627	0.0000	19.3969
Unmitigated	7.8294	0.4627	0.0000	19.3969

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.03	6.0900e-003	3.6000e-004	0.0000	0.0151
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	38.54	7.8233	0.4623	0.0000	19.3818
Total		**7.8294**	**0.4627**	**0.0000**	**19.3969**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.03	6.0900e-003	3.6000e-004	0.0000	0.0151
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	38.54	7.8233	0.4623	0.0000	19.3818
Total		**7.8294**	**0.4627**	**0.0000**	**19.3969**

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

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

Stewart Almond Warehouse Project

San Bernardino-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	41.00	1000sqft	1.25	41,000.00	0
Parking Lot	55.00	Space	0.39	22,000.00	0
City Park	0.36	Acre	0.36	15,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
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 IS/MND's model.

Land Use - Consistent with the IS/MND's model.

Construction Phase - Consistent with the IS/MND's model.

Demolition - Consistent with the IS/MND's model.

Grading - Left as default

Vehicle Trips - Consistent with the IS/MND's model.

Energy Use - Consistent with the IS/MND's model.

Construction Off-road Equipment Mitigation - Consistent with the IS/MND's model.

Fleet Mix - Consistent with the IS/MND's model.

Area Mitigation - Consistent with the IS/MND's model.

Energy Mitigation - Consistent with the IS/MND's model.

Water Mitigation - Consistent with the IS/MND's model.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2

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

tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	2.00	1.00
tblConstructionPhase	NumDays	4.00	2.00
tblConstructionPhase	NumDays	200.00	97.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	10.00	5.00
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24NG	1.98	0.00
tblFleetMix	HHD	0.02	0.19
tblFleetMix	LDA	0.54	0.33
tblFleetMix	MH	5.0710e-003	0.00
tblFleetMix	MHD	0.01	0.06
tblFleetMix	OBUS	5.5900e-004	0.00
tblFleetMix	SBUS	9.5400e-004	0.00
tblFleetMix	UBUS	2.5400e-004	0.00
tblLandUse	LandUseSquareFeet	15,681.60	15,000.00
tblLandUse	LotAcreage	0.94	1.25
tblLandUse	LotAcreage	0.49	0.39
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	ST_TR	1.74	1.71
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	SU_TR	1.74	1.71
tblVehicleTrips	WD_TR	0.78	0.00
tblVehicleTrips	WD_TR	1.74	1.71

2.0 Emissions Summary

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					
2023	77.4567	14.4912	14.0469	0.0277	7.1944	0.6782	7.7993	3.4544	0.6342	4.0109	0.0000	2,588.4319	2,588.4319	0.6479	0.0448	2,610.6362
Maximum	**77.4567**	**14.4912**	**14.0469**	**0.0277**	**7.1944**	**0.6782**	**7.7993**	**3.4544**	**0.6342**	**4.0109**	**0.0000**	**2,588.4319**	**2,588.4319**	**0.6479**	**0.0448**	**2,610.6362**

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					
2023	77.3789	21.3130	15.9291	0.0277	7.1944	0.7368	7.6799	3.4544	0.7365	3.9399	0.0000	2,588.4319	2,588.4319	0.6479	0.0448	2,610.6362
Maximum	**77.3789**	**21.3130**	**15.9291**	**0.0277**	**7.1944**	**0.7368**	**7.6799**	**3.4544**	**0.7365**	**3.9399**	**0.0000**	**2,588.4319**	**2,588.4319**	**0.6479**	**0.0448**	**2,610.6362**

	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	**0.10**	**-47.08**	**-13.40**	**0.00**	**0.00**	**-8.64**	**1.53**	**0.00**	**-16.12**	**1.77**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	0.9271	9.0000e-005	9.8400e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0211	0.0211	6.0000e-005		0.0225
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	0.2699	1.2920	2.8935	0.0101	0.6563	0.0126	0.6689	0.1770	0.0119	0.1890		1,060.7463	1,060.7463	0.0473	0.1062	1,093.5791
Total	**1.1970**	**1.2921**	**2.9034**	**0.0101**	**0.6563**	**0.0126**	**0.6689**	**0.1770**	**0.0120**	**0.1890**		**1,060.7674**	**1,060.7674**	**0.0474**	**0.1062**	**1,093.6016**

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	0.9271	9.0000e-005	9.8400e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0211	0.0211	6.0000e-005		0.0225
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	0.2699	1.2920	2.8935	0.0101	0.6563	0.0126	0.6689	0.1770	0.0119	0.1890		1,060.7463	1,060.7463	0.0473	0.1062	1,093.5791
Total	**1.1970**	**1.2921**	**2.9034**	**0.0101**	**0.6563**	**0.0126**	**0.6689**	**0.1770**	**0.0120**	**0.1890**		**1,060.7674**	**1,060.7674**	**0.0474**	**0.1062**	**1,093.6016**

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	Demolition	Demolition	5/1/2023	5/12/2023	5	10	
2	Site Preparation	Site Preparation	5/13/2023	5/15/2023	5	1	
3	Grading	Grading	5/16/2023	5/17/2023	5	2	
4	Building Construction	Building Construction	5/18/2023	9/29/2023	5	97	
5	Paving	Paving	9/30/2023	10/6/2023	5	5	
6	Architectural Coating	Architectural Coating	10/7/2023	10/13/2023	5	5	

Acres of Grading (Site Preparation Phase): 0.94

Acres of Grading (Grading Phase): 2

Acres of Paving: 0.39

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 61,500; Non-Residential Outdoor: 20,500; Striped Parking Area: 1,320 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40

Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	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
Demolition	5	13.00	0.00	7.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	33.00	13.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	7.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 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					0.1498	0.0000	0.1498	0.0227	0.0000	0.0227			0.0000			0.0000
Off-Road	1.4725	14.3184	13.4577	0.0241		0.6766	0.6766		0.6328	0.6328		2,324.395 9	2,324.395 9	0.5893		2,339.127 8
Total	**1.4725**	**14.3184**	**13.4577**	**0.0241**	**0.1498**	**0.6766**	**0.8264**	**0.0227**	**0.6328**	**0.6555**		**2,324.395 9**	**2,324.395 9**	**0.5893**		**2,339.127 8**

3.2 Demolition - 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	lb/day										lb/day					
Hauling	1.6900e-003	0.0770	0.0235	3.9000e-004	0.0123	8.1000e-004	0.0131	3.3600e-003	7.7000e-004	4.1400e-003		42.8520	42.8520	1.8300e-003	6.7900e-003	44.9218
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	0.0508	0.0307	0.4902	1.3000e-003	0.1453	7.2000e-004	0.1460	0.0385	6.6000e-004	0.0392		132.8169	132.8169	3.1700e-003	3.1200e-003	133.8269
Total	**0.0525**	**0.1077**	**0.5137**	**1.6900e-003**	**0.1576**	**1.5300e-003**	**0.1591**	**0.0419**	**1.4300e-003**	**0.0433**		**175.6689**	**175.6689**	**5.0000e-003**	**9.9100e-003**	**178.7488**

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					0.1498	0.0000	0.1498	0.0227	0.0000	0.0227			0.0000			0.0000
Off-Road	0.8857	21.2053	15.4154	0.0241		0.7182	0.7182		0.7182	0.7182	0.0000	2,324.3959	2,324.3959	0.5893		2,339.1278
Total	**0.8857**	**21.2053**	**15.4154**	**0.0241**	**0.1498**	**0.7182**	**0.8680**	**0.0227**	**0.7182**	**0.7409**	**0.0000**	**2,324.3959**	**2,324.3959**	**0.5893**		**2,339.1278**

3.2 Demolition - 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	lb/day										lb/day					
Hauling	1.6900e-003	0.0770	0.0235	3.9000e-004	0.0123	8.1000e-004	0.0131	3.3600e-003	7.7000e-004	4.1400e-003		42.8520	42.8520	1.8300e-003	6.7900e-003	44.9218
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	0.0508	0.0307	0.4902	1.3000e-003	0.1453	7.2000e-004	0.1460	0.0385	6.6000e-004	0.0392		132.8169	132.8169	3.1700e-003	3.1200e-003	133.8269
Total	**0.0525**	**0.1077**	**0.5137**	**1.6900e-003**	**0.1576**	**1.5300e-003**	**0.1591**	**0.0419**	**1.4300e-003**	**0.0433**		**175.6689**	**175.6689**	**5.0000e-003**	**9.9100e-003**	**178.7488**

3.3 Site Preparation - 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					6.2662	0.0000	6.2662	3.0041	0.0000	3.0041			0.0000			0.0000
Off-Road	1.1339	12.4250	6.6420	0.0172		0.5074	0.5074		0.4668	0.4668		1,666.0573	1,666.0573	0.5388		1,679.5282
Total	**1.1339**	**12.4250**	**6.6420**	**0.0172**	**6.2662**	**0.5074**	**6.7736**	**3.0041**	**0.4668**	**3.4709**		**1,666.0573**	**1,666.0573**	**0.5388**		**1,679.5282**

3.3 Site Preparation - 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	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	0.0313	0.0189	0.3017	8.0000e-004	0.0894	4.4000e-004	0.0899	0.0237	4.1000e-004	0.0241		81.7335	81.7335	1.9500e-003	1.9200e-003	82.3550
Total	**0.0313**	**0.0189**	**0.3017**	**8.0000e-004**	**0.0894**	**4.4000e-004**	**0.0899**	**0.0237**	**4.1000e-004**	**0.0241**		**81.7335**	**81.7335**	**1.9500e-003**	**1.9200e-003**	**82.3550**

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					6.2662	0.0000	6.2662	3.0041	0.0000	3.0041			0.0000			0.0000
Off-Road	0.4908	14.9460	9.8221	0.0172		0.3747	0.3747		0.3747	0.3747	0.0000	1,666.0573	1,666.0573	0.5388		1,679.5282
Total	**0.4908**	**14.9460**	**9.8221**	**0.0172**	**6.2662**	**0.3747**	**6.6409**	**3.0041**	**0.3747**	**3.3788**	**0.0000**	**1,666.0573**	**1,666.0573**	**0.5388**		**1,679.5282**

3.3 Site Preparation - 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	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	0.0313	0.0189	0.3017	8.0000e-004	0.0894	4.4000e-004	0.0899	0.0237	4.1000e-004	0.0241		81.7335	81.7335	1.9500e-003	1.9200e-003	82.3550
Total	**0.0313**	**0.0189**	**0.3017**	**8.0000e-004**	**0.0894**	**4.4000e-004**	**0.0899**	**0.0237**	**4.1000e-004**	**0.0241**		**81.7335**	**81.7335**	**1.9500e-003**	**1.9200e-003**	**82.3550**

3.4 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					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.3330	14.4676	8.7038	0.0206		0.6044	0.6044		0.5560	0.5560		1,995.6147	1,995.6147	0.6454		2,011.7503
Total	**1.3330**	**14.4676**	**8.7038**	**0.0206**	**7.0826**	**0.6044**	**7.6869**	**3.4247**	**0.5560**	**3.9807**		**1,995.6147**	**1,995.6147**	**0.6454**		**2,011.7503**

3.4 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	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	0.0391	0.0236	0.3771	1.0000e-003	0.1118	5.5000e-004	0.1123	0.0296	5.1000e-004	0.0302		102.1669	102.1669	2.4400e-003	2.4000e-003	102.9438
Total	**0.0391**	**0.0236**	**0.3771**	**1.0000e-003**	**0.1118**	**5.5000e-004**	**0.1123**	**0.0296**	**5.1000e-004**	**0.0302**		**102.1669**	**102.1669**	**2.4400e-003**	**2.4000e-003**	**102.9438**

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					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	0.6262	18.1050	12.1450	0.0206		0.4850	0.4850		0.4850	0.4850	0.0000	1,995.6147	1,995.6147	0.6454		2,011.7503
Total	**0.6262**	**18.1050**	**12.1450**	**0.0206**	**7.0826**	**0.4850**	**7.5676**	**3.4247**	**0.4850**	**3.9098**	**0.0000**	**1,995.6147**	**1,995.6147**	**0.6454**		**2,011.7503**

3.4 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	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	0.0391	0.0236	0.3771	1.0000e-003	0.1118	5.5000e-004	0.1123	0.0296	5.1000e-004	0.0302		102.1669	102.1669	2.4400e-003	2.4000e-003	102.9438
Total	**0.0391**	**0.0236**	**0.3771**	**1.0000e-003**	**0.1118**	**5.5000e-004**	**0.1123**	**0.0296**	**5.1000e-004**	**0.0302**		**102.1669**	**102.1669**	**2.4400e-003**	**2.4000e-003**	**102.9438**

3.5 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	1.5233	11.7104	12.6111	0.0221		0.5145	0.5145		0.4968	0.4968		2,001.7877	2,001.7877	0.3399		2,010.2858
Total	**1.5233**	**11.7104**	**12.6111**	**0.0221**		**0.5145**	**0.5145**		**0.4968**	**0.4968**		**2,001.7877**	**2,001.7877**	**0.3399**		**2,010.2858**

3.5 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	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	0.0152	0.4560	0.1913	2.3300e-003	0.0833	3.4300e-003	0.0867	0.0240	3.2800e-003	0.0273		249.4936	249.4936	6.5200e-003	0.0368	260.6360
Worker	0.1290	0.0779	1.2445	3.2900e-003	0.3689	1.8200e-003	0.3707	0.0978	1.6800e-003	0.0995		337.1506	337.1506	8.0500e-003	7.9300e-003	339.7145
Total	**0.1443**	**0.5338**	**1.4358**	**5.6200e-003**	**0.4522**	**5.2500e-003**	**0.4574**	**0.1218**	**4.9600e-003**	**0.1268**		**586.6443**	**586.6443**	**0.0146**	**0.0448**	**600.3505**

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	0.8395	17.3294	13.4786	0.0221		0.7315	0.7315		0.7315	0.7315	0.0000	2,001.787 7	2,001.787 7	0.3399		2,010.285 8
Total	**0.8395**	**17.3294**	**13.4786**	**0.0221**		**0.7315**	**0.7315**		**0.7315**	**0.7315**	**0.0000**	**2,001.787 7**	**2,001.787 7**	**0.3399**		**2,010.285 8**

3.5 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	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	0.0152	0.4560	0.1913	2.3300e-003	0.0833	3.4300e-003	0.0867	0.0240	3.2800e-003	0.0273		249.4936	249.4936	6.5200e-003	0.0368	260.6360
Worker	0.1290	0.0779	1.2445	3.2900e-003	0.3689	1.8200e-003	0.3707	0.0978	1.6800e-003	0.0995		337.1506	337.1506	8.0500e-003	7.9300e-003	339.7145
Total	**0.1443**	**0.5338**	**1.4358**	**5.6200e-003**	**0.4522**	**5.2500e-003**	**0.4574**	**0.1218**	**4.9600e-003**	**0.1268**		**586.6443**	**586.6443**	**0.0146**	**0.0448**	**600.3505**

3.6 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	0.6446	6.2357	8.8024	0.0136		0.3084	0.3084		0.2846	0.2846		1,297.6880	1,297.6880	0.4114		1,307.9725
Paving	0.2044					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8490**	**6.2357**	**8.8024**	**0.0136**		**0.3084**	**0.3084**		**0.2846**	**0.2846**		**1,297.6880**	**1,297.6880**	**0.4114**		**1,307.9725**

3.6 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	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	0.0508	0.0307	0.4902	1.3000e-003	0.1453	7.2000e-004	0.1460	0.0385	6.6000e-004	0.0392		132.8169	132.8169	3.1700e-003	3.1200e-003	133.8269
Total	**0.0508**	**0.0307**	**0.4902**	**1.3000e-003**	**0.1453**	**7.2000e-004**	**0.1460**	**0.0385**	**6.6000e-004**	**0.0392**		**132.8169**	**132.8169**	**3.1700e-003**	**3.1200e-003**	**133.8269**

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	0.5500	11.7418	9.8512	0.0136		0.4113	0.4113		0.4113	0.4113	0.0000	1,297.6880	1,297.6880	0.4114		1,307.9725
Paving	0.2044					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7543**	**11.7418**	**9.8512**	**0.0136**		**0.4113**	**0.4113**		**0.4113**	**0.4113**	**0.0000**	**1,297.6880**	**1,297.6880**	**0.4114**		**1,307.9725**

3.6 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	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	0.0508	0.0307	0.4902	1.3000e-003	0.1453	7.2000e-004	0.1460	0.0385	6.6000e-004	0.0392		132.8169	132.8169	3.1700e-003	3.1200e-003	133.8269
Total	**0.0508**	**0.0307**	**0.4902**	**1.3000e-003**	**0.1453**	**7.2000e-004**	**0.1460**	**0.0385**	**6.6000e-004**	**0.0392**		**132.8169**	**132.8169**	**3.1700e-003**	**3.1200e-003**	**133.8269**

3.7 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	77.2376					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**77.4293**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 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	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	0.0274	0.0165	0.2640	7.0000e-004	0.0782	3.9000e-004	0.0786	0.0208	3.6000e-004	0.0211		71.5168	71.5168	1.7100e-003	1.6800e-003	72.0607
Total	**0.0274**	**0.0165**	**0.2640**	**7.0000e-004**	**0.0782**	**3.9000e-004**	**0.0786**	**0.0208**	**3.6000e-004**	**0.0211**		**71.5168**	**71.5168**	**1.7100e-003**	**1.6800e-003**	**72.0607**

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	77.2376					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1139	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**77.3516**	**2.3524**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 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	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	0.0274	0.0165	0.2640	7.0000e-004	0.0782	3.9000e-004	0.0786	0.0208	3.6000e-004	0.0211		71.5168	71.5168	1.7100e-003	1.6800e-003	72.0607
Total	**0.0274**	**0.0165**	**0.2640**	**7.0000e-004**	**0.0782**	**3.9000e-004**	**0.0786**	**0.0208**	**3.6000e-004**	**0.0211**		**71.5168**	**71.5168**	**1.7100e-003**	**1.6800e-003**	**72.0607**

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	0.2699	1.2920	2.8935	0.0101	0.6563	0.0126	0.6689	0.1770	0.0119	0.1890		1,060.746 3	1,060.746 3	0.0473	0.1062	1,093.579 1
Unmitigated	0.2699	1.2920	2.8935	0.0101	0.6563	0.0126	0.6689	0.1770	0.0119	0.1890		1,060.746 3	1,060.746 3	0.0473	0.1062	1,093.579 1

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		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	70.11	70.11	70.11	300,472	300,472
Total	70.11	70.11	70.11	300,472	300,472

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	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No Rail	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071
Parking Lot	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071

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

Unrefrigerated Warehouse-No Rail	0.330302	0.055838	0.172353	0.139003	0.027005	0.007196	0.057000	0.186000	0.000000	0.000000	0.025303	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	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
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**

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
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

No Hearths Installed

	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	0.9271	9.0000e-005	9.8400e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0211	0.0211	6.0000e-005		0.0225
Unmitigated	0.9271	9.0000e-005	9.8400e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0211	0.0211	6.0000e-005		0.0225

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	0.1058					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8204					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.1000e-004	9.0000e-005	9.8400e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0211	0.0211	6.0000e-005		0.0225
Total	**0.9271**	**9.0000e-005**	**9.8400e-003**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**		**0.0211**	**0.0211**	**6.0000e-005**		**0.0225**

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	0.1058					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8204					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.1000e-004	9.0000e-005	9.8400e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0211	0.0211	6.0000e-005		0.0225
Total	**0.9271**	**9.0000e-005**	**9.8400e-003**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**		**0.0211**	**0.0211**	**6.0000e-005**		**0.0225**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Toilet

Use Water Efficient Irrigation System

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

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

Stewart Almond Warehouse Project

San Bernardino-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	41.00	1000sqft	1.25	41,000.00	0
Parking Lot	55.00	Space	0.39	22,000.00	0
City Park	0.36	Acre	0.36	15,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
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 IS/MND's model.

Land Use - Consistent with the IS/MND's model.

Construction Phase - Consistent with the IS/MND's model.

Demolition - Consistent with the IS/MND's model.

Grading - Left as default

Vehicle Trips - Consistent with the IS/MND's model.

Energy Use - Consistent with the IS/MND's model.

Construction Off-road Equipment Mitigation - Consistent with the IS/MND's model.

Fleet Mix - Consistent with the IS/MND's model.

Area Mitigation - Consistent with the IS/MND's model.

Energy Mitigation - Consistent with the IS/MND's model.

Water Mitigation - Consistent with the IS/MND's model.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2

tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	2.00	1.00
tblConstructionPhase	NumDays	4.00	2.00
tblConstructionPhase	NumDays	200.00	97.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	10.00	5.00
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24NG	1.98	0.00
tblFleetMix	HHD	0.02	0.19
tblFleetMix	LDA	0.54	0.33
tblFleetMix	MH	5.0710e-003	0.00
tblFleetMix	MHD	0.01	0.06
tblFleetMix	OBUS	5.5900e-004	0.00
tblFleetMix	SBUS	9.5400e-004	0.00
tblFleetMix	UBUS	2.5400e-004	0.00
tblLandUse	LandUseSquareFeet	15,681.60	15,000.00
tblLandUse	LotAcreage	0.94	1.25
tblLandUse	LotAcreage	0.49	0.39
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	ST_TR	1.74	1.71
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	SU_TR	1.74	1.71
tblVehicleTrips	WD_TR	0.78	0.00
tblVehicleTrips	WD_TR	1.74	1.71

2.0 Emissions Summary

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					
2023	77.4557	14.4924	13.8850	0.0274	7.1944	0.6782	7.7993	3.4544	0.6342	4.0109	0.0000	2,557.3363	2,557.3363	0.6479	0.0451	2,579.6496
Maximum	**77.4557**	**14.4924**	**13.8850**	**0.0274**	**7.1944**	**0.6782**	**7.7993**	**3.4544**	**0.6342**	**4.0109**	**0.0000**	**2,557.3363**	**2,557.3363**	**0.6479**	**0.0451**	**2,579.6496**

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					
2023	77.3779	21.3187	15.8428	0.0274	7.1944	0.7368	7.6799	3.4544	0.7365	3.9399	0.0000	2,557.3363	2,557.3363	0.6479	0.0451	2,579.6496
Maximum	**77.3779**	**21.3187**	**15.8428**	**0.0274**	**7.1944**	**0.7368**	**7.6799**	**3.4544**	**0.7365**	**3.9399**	**0.0000**	**2,557.3363**	**2,557.3363**	**0.6479**	**0.0451**	**2,579.6496**

	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	**0.10**	**-47.10**	**-14.10**	**0.00**	**0.00**	**-8.64**	**1.53**	**0.00**	**-16.13**	**1.77**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	0.9271	9.0000e-005	9.8400e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0211	0.0211	6.0000e-005		0.0225
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	0.2406	1.3671	2.6144	9.7000e-003	0.6563	0.0126	0.6689	0.1770	0.0120	0.1890		1,024.318 2	1,024.318 2	0.0476	0.1070	1,057.405 8
Total	**1.1677**	**1.3672**	**2.6243**	**9.7000e-003**	**0.6563**	**0.0126**	**0.6689**	**0.1770**	**0.0120**	**0.1890**		**1,024.339 3**	**1,024.339 3**	**0.0477**	**0.1070**	**1,057.428 2**

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	0.9271	9.0000e-005	9.8400e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0211	0.0211	6.0000e-005		0.0225
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	0.2406	1.3671	2.6144	9.7000e-003	0.6563	0.0126	0.6689	0.1770	0.0120	0.1890		1,024.318 2	1,024.318 2	0.0476	0.1070	1,057.405 8
Total	**1.1677**	**1.3672**	**2.6243**	**9.7000e-003**	**0.6563**	**0.0126**	**0.6689**	**0.1770**	**0.0120**	**0.1890**		**1,024.339 3**	**1,024.339 3**	**0.0477**	**0.1070**	**1,057.428 2**

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	Demolition	Demolition	5/1/2023	5/12/2023	5	10	
2	Site Preparation	Site Preparation	5/13/2023	5/15/2023	5	1	
3	Grading	Grading	5/16/2023	5/17/2023	5	2	
4	Building Construction	Building Construction	5/18/2023	9/29/2023	5	97	
5	Paving	Paving	9/30/2023	10/6/2023	5	5	
6	Architectural Coating	Architectural Coating	10/7/2023	10/13/2023	5	5	

Acres of Grading (Site Preparation Phase): 0.94

Acres of Grading (Grading Phase): 2

Acres of Paving: 0.39

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 61,500; Non-Residential Outdoor: 20,500; Striped Parking Area: 1,320 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40

Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	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
Demolition	5	13.00	0.00	7.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	33.00	13.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	7.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 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					0.1498	0.0000	0.1498	0.0227	0.0000	0.0227			0.0000			0.0000
Off-Road	1.4725	14.3184	13.4577	0.0241		0.6766	0.6766		0.6328	0.6328		2,324.3959	2,324.3959	0.5893		2,339.1278
Total	**1.4725**	**14.3184**	**13.4577**	**0.0241**	**0.1498**	**0.6766**	**0.8264**	**0.0227**	**0.6328**	**0.6555**		**2,324.3959**	**2,324.3959**	**0.5893**		**2,339.1278**

3.2 Demolition - 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	lb/day										lb/day					
Hauling	1.5600e-003	0.0812	0.0239	3.9000e-004	0.0123	8.1000e-004	0.0131	3.3600e-003	7.8000e-004	4.1400e-003		42.9167	42.9167	1.8200e-003	6.8000e-003	44.9894
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	0.0490	0.0323	0.4035	1.1800e-003	0.1453	7.2000e-004	0.1460	0.0385	6.6000e-004	0.0392		120.3288	120.3288	3.1800e-003	3.2200e-003	121.3688
Total	**0.0505**	**0.1134**	**0.4274**	**1.5700e-003**	**0.1576**	**1.5300e-003**	**0.1591**	**0.0419**	**1.4400e-003**	**0.0433**		**163.2454**	**163.2454**	**5.0000e-003**	**0.0100**	**166.3582**

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					0.1498	0.0000	0.1498	0.0227	0.0000	0.0227			0.0000			0.0000
Off-Road	0.8857	21.2053	15.4154	0.0241		0.7182	0.7182		0.7182	0.7182	0.0000	2,324.3959	2,324.3959	0.5893		2,339.1278
Total	**0.8857**	**21.2053**	**15.4154**	**0.0241**	**0.1498**	**0.7182**	**0.8680**	**0.0227**	**0.7182**	**0.7409**	**0.0000**	**2,324.3959**	**2,324.3959**	**0.5893**		**2,339.1278**

3.2 Demolition - 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	lb/day										lb/day					
Hauling	1.5600e-003	0.0812	0.0239	3.9000e-004	0.0123	8.1000e-004	0.0131	3.3600e-003	7.8000e-004	4.1400e-003		42.9167	42.9167	1.8200e-003	6.8000e-003	44.9894
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	0.0490	0.0323	0.4035	1.1800e-003	0.1453	7.2000e-004	0.1460	0.0385	6.6000e-004	0.0392		120.3288	120.3288	3.1800e-003	3.2200e-003	121.3688
Total	**0.0505**	**0.1134**	**0.4274**	**1.5700e-003**	**0.1576**	**1.5300e-003**	**0.1591**	**0.0419**	**1.4400e-003**	**0.0433**		**163.2454**	**163.2454**	**5.0000e-003**	**0.0100**	**166.3582**

3.3 Site Preparation - 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					6.2662	0.0000	6.2662	3.0041	0.0000	3.0041			0.0000			0.0000
Off-Road	1.1339	12.4250	6.6420	0.0172		0.5074	0.5074		0.4668	0.4668		1,666.0573	1,666.0573	0.5388		1,679.5282
Total	**1.1339**	**12.4250**	**6.6420**	**0.0172**	**6.2662**	**0.5074**	**6.7736**	**3.0041**	**0.4668**	**3.4709**		**1,666.0573**	**1,666.0573**	**0.5388**		**1,679.5282**

3.3 Site Preparation - 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	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	0.0301	0.0199	0.2483	7.2000e-004	0.0894	4.4000e-004	0.0899	0.0237	4.1000e-004	0.0241		74.0485	74.0485	1.9500e-003	1.9800e-003	74.6885
Total	**0.0301**	**0.0199**	**0.2483**	**7.2000e-004**	**0.0894**	**4.4000e-004**	**0.0899**	**0.0237**	**4.1000e-004**	**0.0241**		**74.0485**	**74.0485**	**1.9500e-003**	**1.9800e-003**	**74.6885**

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					6.2662	0.0000	6.2662	3.0041	0.0000	3.0041			0.0000			0.0000
Off-Road	0.4908	14.9460	9.8221	0.0172		0.3747	0.3747		0.3747	0.3747	0.0000	1,666.0573	1,666.0573	0.5388		1,679.5282
Total	**0.4908**	**14.9460**	**9.8221**	**0.0172**	**6.2662**	**0.3747**	**6.6409**	**3.0041**	**0.3747**	**3.3788**	**0.0000**	**1,666.0573**	**1,666.0573**	**0.5388**		**1,679.5282**

3.3 Site Preparation - 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	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	0.0301	0.0199	0.2483	7.2000e-004	0.0894	4.4000e-004	0.0899	0.0237	4.1000e-004	0.0241		74.0485	74.0485	1.9500e-003	1.9800e-003	74.6885
Total	**0.0301**	**0.0199**	**0.2483**	**7.2000e-004**	**0.0894**	**4.4000e-004**	**0.0899**	**0.0237**	**4.1000e-004**	**0.0241**		**74.0485**	**74.0485**	**1.9500e-003**	**1.9800e-003**	**74.6885**

3.4 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					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.3330	14.4676	8.7038	0.0206		0.6044	0.6044		0.5560	0.5560		1,995.6147	1,995.6147	0.6454		2,011.7503
Total	**1.3330**	**14.4676**	**8.7038**	**0.0206**	**7.0826**	**0.6044**	**7.6869**	**3.4247**	**0.5560**	**3.9807**		**1,995.6147**	**1,995.6147**	**0.6454**		**2,011.7503**

3.4 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	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	0.0377	0.0248	0.3104	9.0000e-004	0.1118	5.5000e-004	0.1123	0.0296	5.1000e-004	0.0302		92.5606	92.5606	2.4400e-003	2.4800e-003	93.3606
Total	**0.0377**	**0.0248**	**0.3104**	**9.0000e-004**	**0.1118**	**5.5000e-004**	**0.1123**	**0.0296**	**5.1000e-004**	**0.0302**		**92.5606**	**92.5606**	**2.4400e-003**	**2.4800e-003**	**93.3606**

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					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	0.6262	18.1050	12.1450	0.0206		0.4850	0.4850		0.4850	0.4850	0.0000	1,995.6147	1,995.6147	0.6454		2,011.7503
Total	**0.6262**	**18.1050**	**12.1450**	**0.0206**	**7.0826**	**0.4850**	**7.5676**	**3.4247**	**0.4850**	**3.9098**	**0.0000**	**1,995.6147**	**1,995.6147**	**0.6454**		**2,011.7503**

3.4 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	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	0.0377	0.0248	0.3104	9.0000e-004	0.1118	5.5000e-004	0.1123	0.0296	5.1000e-004	0.0302		92.5606	92.5606	2.4400e-003	2.4800e-003	93.3606
Total	**0.0377**	**0.0248**	**0.3104**	**9.0000e-004**	**0.1118**	**5.5000e-004**	**0.1123**	**0.0296**	**5.1000e-004**	**0.0302**		**92.5606**	**92.5606**	**2.4400e-003**	**2.4800e-003**	**93.3606**

3.5 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	1.5233	11.7104	12.6111	0.0221		0.5145	0.5145		0.4968	0.4968		2,001.7877	2,001.7877	0.3399		2,010.2858
Total	**1.5233**	**11.7104**	**12.6111**	**0.0221**		**0.5145**	**0.5145**		**0.4968**	**0.4968**		**2,001.7877**	**2,001.7877**	**0.3399**		**2,010.2858**

3.5 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	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	0.0142	0.4816	0.1972	2.3300e-003	0.0833	3.4400e-003	0.0867	0.0240	3.2900e-003	0.0273		250.0987	250.0987	6.4700e-003	0.0370	261.2738
Worker	0.1243	0.0819	1.0243	2.9800e-003	0.3689	1.8200e-003	0.3707	0.0978	1.6800e-003	0.0995		305.4499	305.4499	8.0600e-003	8.1800e-003	308.0900
Total	**0.1385**	**0.5635**	**1.2215**	**5.3100e-003**	**0.4522**	**5.2600e-003**	**0.4574**	**0.1218**	**4.9700e-003**	**0.1268**		**555.5486**	**555.5486**	**0.0145**	**0.0451**	**569.3638**

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	0.8395	17.3294	13.4786	0.0221		0.7315	0.7315		0.7315	0.7315	0.0000	2,001.7877	2,001.7877	0.3399		2,010.2858
Total	**0.8395**	**17.3294**	**13.4786**	**0.0221**		**0.7315**	**0.7315**		**0.7315**	**0.7315**	**0.0000**	**2,001.7877**	**2,001.7877**	**0.3399**		**2,010.2858**

3.5 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	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	0.0142	0.4816	0.1972	2.3300e-003	0.0833	3.4400e-003	0.0867	0.0240	3.2900e-003	0.0273		250.0987	250.0987	6.4700e-003	0.0370	261.2738
Worker	0.1243	0.0819	1.0243	2.9800e-003	0.3689	1.8200e-003	0.3707	0.0978	1.6800e-003	0.0995		305.4499	305.4499	8.0600e-003	8.1800e-003	308.0900
Total	**0.1385**	**0.5635**	**1.2215**	**5.3100e-003**	**0.4522**	**5.2600e-003**	**0.4574**	**0.1218**	**4.9700e-003**	**0.1268**		**555.5486**	**555.5486**	**0.0145**	**0.0451**	**569.3638**

3.6 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	0.6446	6.2357	8.8024	0.0136		0.3084	0.3084		0.2846	0.2846		1,297.6880	1,297.6880	0.4114		1,307.9725
Paving	0.2044					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8490**	**6.2357**	**8.8024**	**0.0136**		**0.3084**	**0.3084**		**0.2846**	**0.2846**		**1,297.6880**	**1,297.6880**	**0.4114**		**1,307.9725**

3.6 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	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	0.0490	0.0323	0.4035	1.1800e-003	0.1453	7.2000e-004	0.1460	0.0385	6.6000e-004	0.0392		120.3288	120.3288	3.1800e-003	3.2200e-003	121.3688
Total	**0.0490**	**0.0323**	**0.4035**	**1.1800e-003**	**0.1453**	**7.2000e-004**	**0.1460**	**0.0385**	**6.6000e-004**	**0.0392**		**120.3288**	**120.3288**	**3.1800e-003**	**3.2200e-003**	**121.3688**

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	0.5500	11.7418	9.8512	0.0136		0.4113	0.4113		0.4113	0.4113	0.0000	1,297.6880	1,297.6880	0.4114		1,307.9725
Paving	0.2044					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7543**	**11.7418**	**9.8512**	**0.0136**		**0.4113**	**0.4113**		**0.4113**	**0.4113**	**0.0000**	**1,297.6880**	**1,297.6880**	**0.4114**		**1,307.9725**

3.6 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	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	0.0490	0.0323	0.4035	1.1800e-003	0.1453	7.2000e-004	0.1460	0.0385	6.6000e-004	0.0392		120.3288	120.3288	3.1800e-003	3.2200e-003	121.3688
Total	**0.0490**	**0.0323**	**0.4035**	**1.1800e-003**	**0.1453**	**7.2000e-004**	**0.1460**	**0.0385**	**6.6000e-004**	**0.0392**		**120.3288**	**120.3288**	**3.1800e-003**	**3.2200e-003**	**121.3688**

3.7 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	77.2376					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**77.4293**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 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	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	0.0264	0.0174	0.2173	6.3000e-004	0.0782	3.9000e-004	0.0786	0.0208	3.6000e-004	0.0211		64.7924	64.7924	1.7100e-003	1.7400e-003	65.3524
Total	**0.0264**	**0.0174**	**0.2173**	**6.3000e-004**	**0.0782**	**3.9000e-004**	**0.0786**	**0.0208**	**3.6000e-004**	**0.0211**		**64.7924**	**64.7924**	**1.7100e-003**	**1.7400e-003**	**65.3524**

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	77.2376					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1139	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**77.3516**	**2.3524**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 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	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	0.0264	0.0174	0.2173	6.3000e-004	0.0782	3.9000e-004	0.0786	0.0208	3.6000e-004	0.0211		64.7924	64.7924	1.7100e-003	1.7400e-003	65.3524
Total	**0.0264**	**0.0174**	**0.2173**	**6.3000e-004**	**0.0782**	**3.9000e-004**	**0.0786**	**0.0208**	**3.6000e-004**	**0.0211**		**64.7924**	**64.7924**	**1.7100e-003**	**1.7400e-003**	**65.3524**

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	0.2406	1.3671	2.6144	9.7000e-003	0.6563	0.0126	0.6689	0.1770	0.0120	0.1890		1,024.3182	1,024.3182	0.0476	0.1070	1,057.4058
Unmitigated	0.2406	1.3671	2.6144	9.7000e-003	0.6563	0.0126	0.6689	0.1770	0.0120	0.1890		1,024.3182	1,024.3182	0.0476	0.1070	1,057.4058

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		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	70.11	70.11	70.11	300,472	300,472
Total	70.11	70.11	70.11	300,472	300,472

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	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No Rail	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071
Parking Lot	0.537785	0.055838	0.172353	0.139003	0.027005	0.007196	0.011392	0.017285	0.000559	0.000254	0.025303	0.000954	0.005071

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

Unrefrigerated Warehouse-No Rail	0.330302	0.055838	0.172353	0.139003	0.027005	0.007196	0.057000	0.186000	0.000000	0.000000	0.025303	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	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
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**

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
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

No Hearths Installed

	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	0.9271	9.0000e-005	9.8400e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0211	0.0211	6.0000e-005		0.0225
Unmitigated	0.9271	9.0000e-005	9.8400e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0211	0.0211	6.0000e-005		0.0225

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	0.1058					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8204					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.1000e-004	9.0000e-005	9.8400e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0211	0.0211	6.0000e-005		0.0225
Total	**0.9271**	**9.0000e-005**	**9.8400e-003**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**		**0.0211**	**0.0211**	**6.0000e-005**		**0.0225**

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	0.1058					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8204					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.1000e-004	9.0000e-005	9.8400e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0211	0.0211	6.0000e-005		0.0225
Total	**0.9271**	**9.0000e-005**	**9.8400e-003**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**		**0.0211**	**0.0211**	**6.0000e-005**		**0.0225**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Toilet

Use Water Efficient Irrigation System

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

Construction	
2023	
Annual Emissions (tons/year)	0.0431
Daily Emissions (lbs/day)	0.236164384
Construction Duration (days)	165
Total DPM (lbs)	38.96712329
Total DPM (g)	17675.48712
Start Date	5/1/2023
End Date	10/13/2023
Construction Days	165
Total	
Total DPM (lbs)	38.96712329
Total DPM (g)	17675.48712
Emission Rate (g/s)	0.001239863
Release Height (meters)	3
Total Acreage	2
Max Horizontal (meters)	127.23
Min Horizontal (meters)	63.61
Initial Vertical Dimension (meters)	1.5
Setting	Urban
Population	210,761
Start Date	5/1/2023
End Date	10/13/2023
Total Construction Days	165
Total Years of Construction	0.45
Total Years of Operation	29.55

Operation	
Emission Rate	
Annual Emissions (tons/year)	0.00229
Daily Emissions (lbs/day)	0.012547945
Total DPM (lbs)	4.58
Emission Rate (g/s)	6.58767E-05
Release Height (meters)	3
Total Acreage	2
Max Horizontal (meters)	127.23
Min Horizontal (meters)	63.61
Initial Vertical Dimension (meters)	1.5
Setting	Urban
Population	210,761

```
AERSCREEN 21112 / AERMOD 21112                                            03/31/23
                                                                          12:24:42

TITLE: Stewart Almond, Construction

----------------------------------------------------------------------------
******************************  AREA PARAMETERS  ****************************
----------------------------------------------------------------------------

SOURCE EMISSION RATE:         0.124E-02 g/s            0.984E-02 lb/hr

AREA EMISSION RATE:           0.153E-06 g/(s-m2)       0.122E-05 lb/(hr-m2)
AREA HEIGHT:                       3.00 meters              9.84 feet
AREA SOURCE LONG SIDE:           127.23 meters            417.42 feet
AREA SOURCE SHORT SIDE:           63.61 meters            208.69 feet
INITIAL VERTICAL DIMENSION:        1.50 meters              4.92 feet
RURAL OR URBAN:                   URBAN
POPULATION:                      210761

INITIAL PROBE DISTANCE =          5000. meters            16404. feet


----------------------------------------------------------------------------
***********************  BUILDING DOWNWASH PARAMETERS  **********************
----------------------------------------------------------------------------

               BUILDING DOWNWASH NOT USED FOR NON-POINT SOURCES


----------------------------------------------------------------------------
**************************  FLOW SECTOR ANALYSIS  ***************************
                 25 meter receptor spacing: 1. meters - 5000. meters
----------------------------------------------------------------------------


   MAXIMUM  IMPACT  RECEPTOR

   Zo         SURFACE   1-HR CONC  RADIAL  DIST   TEMPORAL
   SECTOR    ROUGHNESS  (ug/m3)    (deg)   (m)    PERIOD
  ----------------------------------------------------
      1*       1.000     3.828       0    50.0     WIN
* = worst case diagonal


----------------------------------------------------------------------------
```

```
**********************  MAKEMET METEOROLOGY PARAMETERS  *********************
-----------------------------------------------------------------------------

MIN/MAX TEMPERATURE:    250.0 / 310.0 (K)

MINIMUM WIND SPEED:       0.5 m/s

ANEMOMETER HEIGHT:     10.000 meters

SURFACE CHARACTERISTICS INPUT: AERMET SEASONAL TABLES

DOMINANT SURFACE PROFILE: Urban
DOMINANT CLIMATE TYPE:    Average Moisture
DOMINANT SEASON:          Winter

ALBEDO:                  0.35
BOWEN RATIO:             1.50
ROUGHNESS LENGTH:       1.000 (meters)

SURFACE FRICTION VELOCITY (U*) NOT ADUSTED


       METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT
       -------------------------------------------------------------

 YR MO DY JDY HR
 -- -- -- --- --
 10 01 10  10 01

    H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 -1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50

    HT  REF TA     HT
- - - - - - - - - - -
  10.0   310.0    2.0


-----------------------------------------------------------------------------
*********************** AERSCREEN AUTOMATED DISTANCES ***********************
                  OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE
-----------------------------------------------------------------------------


                MAXIMUM                              MAXIMUM
      DIST     1-HR CONC                   DIST     1-HR CONC
       (m)      (ug/m3)                     (m)      (ug/m3)
   ---------------------                ---------------------
      1.00     3.012                   2525.00    0.2451E-01
```

25.00	3.455	2550.00	0.2418E-01
50.00	3.828	2575.00	0.2386E-01
75.00	3.475	2600.00	0.2355E-01
100.00	2.092	2625.00	0.2324E-01
125.00	1.524	2650.00	0.2294E-01
150.00	1.179	2675.00	0.2265E-01
175.00	0.9495	2700.00	0.2236E-01
200.00	0.7890	2725.00	0.2208E-01
225.00	0.6701	2750.00	0.2181E-01
250.00	0.5792	2775.00	0.2154E-01
275.00	0.5084	2800.00	0.2128E-01
300.00	0.4506	2825.00	0.2102E-01
325.00	0.4037	2850.00	0.2077E-01
350.00	0.3648	2875.00	0.2052E-01
375.00	0.3319	2900.00	0.2028E-01
400.00	0.3038	2925.00	0.2004E-01
425.00	0.2795	2950.00	0.1981E-01
450.00	0.2586	2975.00	0.1958E-01
475.00	0.2401	3000.00	0.1936E-01
500.00	0.2237	3025.00	0.1914E-01
525.00	0.2092	3050.00	0.1893E-01
550.00	0.1963	3075.00	0.1871E-01
575.00	0.1848	3100.00	0.1851E-01
600.00	0.1744	3125.00	0.1831E-01
625.00	0.1649	3150.00	0.1811E-01
650.00	0.1563	3175.00	0.1791E-01
675.00	0.1484	3200.00	0.1772E-01
700.00	0.1412	3225.00	0.1753E-01
725.00	0.1346	3250.00	0.1735E-01
750.00	0.1285	3275.00	0.1717E-01
775.00	0.1228	3300.00	0.1699E-01
800.00	0.1176	3325.00	0.1682E-01
825.00	0.1128	3350.00	0.1664E-01
850.00	0.1083	3375.00	0.1648E-01
875.00	0.1041	3400.00	0.1631E-01
900.00	0.1001	3425.00	0.1615E-01
925.00	0.9647E-01	3450.00	0.1599E-01
950.00	0.9302E-01	3475.00	0.1583E-01
975.00	0.8979E-01	3500.00	0.1568E-01
1000.00	0.8675E-01	3525.00	0.1552E-01
1025.00	0.8388E-01	3550.00	0.1537E-01
1050.00	0.8117E-01	3575.00	0.1523E-01
1075.00	0.7862E-01	3600.00	0.1508E-01
1100.00	0.7620E-01	3625.00	0.1494E-01
1125.00	0.7390E-01	3650.00	0.1480E-01
1150.00	0.7171E-01	3675.00	0.1466E-01
1175.00	0.6963E-01	3700.00	0.1453E-01
1200.00	0.6795E-01	3724.99	0.1440E-01
1225.00	0.6606E-01	3750.00	0.1426E-01
1250.00	0.6425E-01	3775.00	0.1413E-01

1275.00	0.6253E-01	3800.00	0.1401E-01
1300.00	0.6088E-01	3825.00	0.1388E-01
1325.00	0.5931E-01	3850.00	0.1376E-01
1350.00	0.5781E-01	3875.00	0.1364E-01
1375.00	0.5637E-01	3900.00	0.1352E-01
1400.00	0.5500E-01	3925.00	0.1340E-01
1425.00	0.5368E-01	3950.00	0.1328E-01
1450.00	0.5241E-01	3975.00	0.1317E-01
1475.00	0.5120E-01	4000.00	0.1306E-01
1500.00	0.5003E-01	4025.00	0.1295E-01
1525.00	0.4891E-01	4050.00	0.1284E-01
1550.00	0.4783E-01	4075.00	0.1273E-01
1575.00	0.4679E-01	4100.00	0.1262E-01
1600.00	0.4580E-01	4125.00	0.1252E-01
1625.00	0.4483E-01	4150.00	0.1242E-01
1650.00	0.4390E-01	4175.00	0.1232E-01
1675.00	0.4301E-01	4200.00	0.1222E-01
1700.00	0.4214E-01	4225.00	0.1212E-01
1725.00	0.4131E-01	4250.00	0.1202E-01
1750.00	0.4050E-01	4275.00	0.1192E-01
1775.00	0.3972E-01	4300.00	0.1183E-01
1800.00	0.3897E-01	4325.00	0.1173E-01
1824.99	0.3824E-01	4350.00	0.1164E-01
1850.00	0.3753E-01	4375.00	0.1155E-01
1875.00	0.3685E-01	4400.00	0.1146E-01
1900.00	0.3619E-01	4425.00	0.1137E-01
1924.99	0.3554E-01	4450.00	0.1129E-01
1950.00	0.3492E-01	4475.00	0.1120E-01
1975.00	0.3432E-01	4500.00	0.1111E-01
2000.00	0.3373E-01	4525.00	0.1103E-01
2025.00	0.3316E-01	4550.00	0.1095E-01
2050.00	0.3261E-01	4575.00	0.1087E-01
2075.00	0.3207E-01	4600.00	0.1079E-01
2100.00	0.3155E-01	4625.00	0.1071E-01
2125.00	0.3104E-01	4650.00	0.1063E-01
2150.00	0.3055E-01	4675.00	0.1055E-01
2175.00	0.3007E-01	4700.00	0.1047E-01
2200.00	0.2960E-01	4725.00	0.1040E-01
2225.00	0.2915E-01	4750.00	0.1032E-01
2250.00	0.2870E-01	4775.00	0.1025E-01
2275.00	0.2827E-01	4800.00	0.1018E-01
2300.00	0.2785E-01	4825.00	0.1010E-01
2325.00	0.2744E-01	4850.00	0.1003E-01
2350.00	0.2704E-01	4875.00	0.9962E-02
2375.00	0.2665E-01	4900.00	0.9893E-02
2400.00	0.2628E-01	4924.99	0.9824E-02
2425.00	0.2591E-01	4950.00	0.9756E-02
2450.00	0.2554E-01	4975.00	0.9689E-02
2475.00	0.2519E-01	5000.00	0.9623E-02
2500.00	0.2485E-01		

```
---------------------------------------------------------------------------
*********************  AERSCREEN MAXIMUM IMPACT SUMMARY  ********************
---------------------------------------------------------------------------
```

3-hour, 8-hour, and 24-hour scaled
concentrations are equal to the 1-hour concentration as referenced in
SCREENING PROCEDURES FOR ESTIMATING THE AIR QUALITY
IMPACT OF STATIONARY SOURCES, REVISED (Section 4.5.4)
Report number EPA-454/R-92-019
http://www.epa.gov/scram001/guidance_permit.htm
under Screening Guidance

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
FLAT TERRAIN	3.985	3.985	3.985	3.985	N/A

DISTANCE FROM SOURCE 64.00 meters

IMPACT AT THE AMBIENT BOUNDARY	3.012	3.012	3.012	3.012	N/A

DISTANCE FROM SOURCE 1.00 meters

```
AERSCREEN 21112 / AERMOD 21112                                      03/31/23
                                                                    12:26:32

TITLE: Stewart Almond, Operations


----------------------------------------------------------------------------
******************************  AREA PARAMETERS  ****************************
----------------------------------------------------------------------------

SOURCE EMISSION RATE:         0.659E-04 g/s            0.523E-03 lb/hr

AREA EMISSION RATE:           0.814E-08 g/(s-m2)       0.646E-07 lb/(hr-m2)
AREA HEIGHT:                       3.00 meters              9.84 feet
AREA SOURCE LONG SIDE:           127.23 meters            417.42 feet
AREA SOURCE SHORT SIDE:           63.61 meters            208.69 feet
INITIAL VERTICAL DIMENSION:        1.50 meters              4.92 feet
RURAL OR URBAN:                   URBAN
POPULATION:                      210761

INITIAL PROBE DISTANCE =          5000. meters            16404. feet



----------------------------------------------------------------------------
***********************  BUILDING DOWNWASH PARAMETERS  *********************
----------------------------------------------------------------------------

               BUILDING DOWNWASH NOT USED FOR NON-POINT SOURCES



----------------------------------------------------------------------------
**************************  FLOW SECTOR ANALYSIS  **************************
                 25 meter receptor spacing: 1. meters - 5000. meters
----------------------------------------------------------------------------


   MAXIMUM  IMPACT  RECEPTOR

   Zo         SURFACE   1-HR CONC  RADIAL  DIST   TEMPORAL
   SECTOR    ROUGHNESS  (ug/m3)    (deg)   (m)    PERIOD
  -----------------------------------------------------
      1*       1.000    0.2034       0    50.0     WIN
* = worst case diagonal



----------------------------------------------------------------------------
```

```
*********************  MAKEMET METEOROLOGY PARAMETERS  ********************
---------------------------------------------------------------------------

MIN/MAX TEMPERATURE:    250.0 / 310.0 (K)

MINIMUM WIND SPEED:       0.5 m/s

ANEMOMETER HEIGHT:     10.000 meters

SURFACE CHARACTERISTICS INPUT: AERMET SEASONAL TABLES

DOMINANT SURFACE PROFILE: Urban
DOMINANT CLIMATE TYPE:    Average Moisture
DOMINANT SEASON:          Winter

ALBEDO:                  0.35
BOWEN RATIO:             1.50
ROUGHNESS LENGTH:       1.000 (meters)

SURFACE FRICTION VELOCITY (U*) NOT ADUSTED


       METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT
       -------------------------------------------------------------

 YR MO DY JDY HR
 -- -- -- --- --
 10 01 10  10 01

    H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 -1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35    0.50

    HT  REF TA     HT
- - - - - - - - - - -
  10.0   310.0    2.0


---------------------------------------------------------------------------
*********************** AERSCREEN AUTOMATED DISTANCES *********************
                 OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE
---------------------------------------------------------------------------


                MAXIMUM                              MAXIMUM
          DIST     1-HR CONC                  DIST     1-HR CONC
           (m)      (ug/m3)                    (m)      (ug/m3)
        ---------------------              ---------------------
          1.00    0.1601                   2525.00    0.1302E-02
```

25.00	0.1836	2550.00	0.1285E-02
50.00	0.2034	2575.00	0.1268E-02
75.00	0.1847	2600.00	0.1251E-02
100.00	0.1111	2625.00	0.1235E-02
125.00	0.8097E-01	2650.00	0.1219E-02
150.00	0.6263E-01	2675.00	0.1203E-02
175.00	0.5045E-01	2700.00	0.1188E-02
200.00	0.4192E-01	2725.00	0.1173E-02
225.00	0.3561E-01	2750.00	0.1159E-02
250.00	0.3077E-01	2775.00	0.1144E-02
275.00	0.2701E-01	2800.00	0.1130E-02
300.00	0.2394E-01	2825.00	0.1117E-02
325.00	0.2145E-01	2850.00	0.1103E-02
350.00	0.1939E-01	2875.00	0.1090E-02
375.00	0.1763E-01	2900.00	0.1077E-02
400.00	0.1614E-01	2925.00	0.1065E-02
425.00	0.1485E-01	2950.00	0.1052E-02
450.00	0.1374E-01	2975.00	0.1040E-02
475.00	0.1276E-01	3000.00	0.1029E-02
500.00	0.1189E-01	3025.00	0.1017E-02
525.00	0.1112E-01	3050.00	0.1006E-02
550.00	0.1043E-01	3075.00	0.9944E-03
575.00	0.9818E-02	3100.00	0.9834E-03
600.00	0.9265E-02	3125.00	0.9727E-03
625.00	0.8761E-02	3150.00	0.9621E-03
650.00	0.8304E-02	3174.99	0.9518E-03
675.00	0.7887E-02	3199.99	0.9416E-03
700.00	0.7503E-02	3225.00	0.9316E-03
725.00	0.7150E-02	3250.00	0.9218E-03
750.00	0.6826E-02	3275.00	0.9122E-03
775.00	0.6526E-02	3300.00	0.9028E-03
800.00	0.6249E-02	3325.00	0.8935E-03
825.00	0.5992E-02	3350.00	0.8844E-03
850.00	0.5752E-02	3375.00	0.8754E-03
875.00	0.5529E-02	3400.00	0.8666E-03
900.00	0.5321E-02	3425.00	0.8580E-03
925.00	0.5126E-02	3450.00	0.8495E-03
950.00	0.4942E-02	3475.00	0.8411E-03
975.00	0.4771E-02	3500.00	0.8329E-03
1000.00	0.4609E-02	3525.00	0.8248E-03
1025.00	0.4457E-02	3550.00	0.8169E-03
1050.00	0.4313E-02	3575.00	0.8091E-03
1075.00	0.4177E-02	3600.00	0.8014E-03
1100.00	0.4049E-02	3625.00	0.7939E-03
1125.00	0.3926E-02	3650.00	0.7864E-03
1150.00	0.3810E-02	3675.00	0.7791E-03
1175.00	0.3700E-02	3700.00	0.7719E-03
1200.00	0.3611E-02	3724.99	0.7649E-03
1225.00	0.3510E-02	3750.00	0.7579E-03
1250.00	0.3414E-02	3775.00	0.7510E-03

1275.00	0.3322E-02
1300.00	0.3235E-02
1325.00	0.3151E-02
1350.00	0.3072E-02
1375.00	0.2995E-02
1400.00	0.2922E-02
1425.00	0.2852E-02
1450.00	0.2785E-02
1475.00	0.2720E-02
1500.00	0.2658E-02
1525.00	0.2599E-02
1550.00	0.2542E-02
1575.00	0.2486E-02
1600.00	0.2433E-02
1625.00	0.2382E-02
1650.00	0.2333E-02
1675.00	0.2285E-02
1700.00	0.2239E-02
1725.00	0.2195E-02
1750.00	0.2152E-02
1775.00	0.2111E-02
1800.00	0.2070E-02
1825.00	0.2032E-02
1850.00	0.1994E-02
1875.00	0.1958E-02
1900.00	0.1923E-02
1925.00	0.1888E-02
1950.00	0.1855E-02
1975.00	0.1823E-02
2000.00	0.1792E-02
2025.00	0.1762E-02
2050.00	0.1733E-02
2075.00	0.1704E-02
2100.00	0.1676E-02
2125.00	0.1649E-02
2150.00	0.1623E-02
2175.00	0.1598E-02
2200.00	0.1573E-02
2225.00	0.1549E-02
2250.00	0.1525E-02
2275.00	0.1502E-02
2300.00	0.1480E-02
2325.00	0.1458E-02
2350.00	0.1437E-02
2375.00	0.1416E-02
2400.00	0.1396E-02
2425.00	0.1376E-02
2449.99	0.1357E-02
2475.00	0.1338E-02
2500.00	0.1320E-02
3800.00	0.7443E-03
3825.00	0.7376E-03
3849.99	0.7311E-03
3875.00	0.7246E-03
3900.00	0.7183E-03
3925.00	0.7120E-03
3950.00	0.7059E-03
3975.00	0.6998E-03
4000.00	0.6938E-03
4025.00	0.6879E-03
4050.00	0.6821E-03
4075.00	0.6764E-03
4100.00	0.6708E-03
4125.00	0.6652E-03
4150.00	0.6598E-03
4175.00	0.6544E-03
4200.00	0.6490E-03
4225.00	0.6438E-03
4250.00	0.6386E-03
4275.00	0.6335E-03
4300.00	0.6285E-03
4325.00	0.6235E-03
4350.00	0.6186E-03
4375.00	0.6138E-03
4400.00	0.6090E-03
4425.00	0.6043E-03
4450.00	0.5997E-03
4475.00	0.5951E-03
4500.00	0.5906E-03
4525.00	0.5861E-03
4550.00	0.5817E-03
4575.00	0.5774E-03
4600.00	0.5731E-03
4625.00	0.5688E-03
4650.00	0.5647E-03
4675.00	0.5605E-03
4700.00	0.5565E-03
4725.00	0.5524E-03
4750.00	0.5485E-03
4775.00	0.5445E-03
4800.00	0.5407E-03
4825.00	0.5368E-03
4850.00	0.5331E-03
4875.00	0.5293E-03
4900.00	0.5256E-03
4925.00	0.5220E-03
4950.00	0.5184E-03
4975.00	0.5148E-03
5000.00	0.5113E-03

********************* AERSCREEN MAXIMUM IMPACT SUMMARY ********************

3-hour, 8-hour, and 24-hour scaled
concentrations are equal to the 1-hour concentration as referenced in
SCREENING PROCEDURES FOR ESTIMATING THE AIR QUALITY
IMPACT OF STATIONARY SOURCES, REVISED (Section 4.5.4)
Report number EPA-454/R-92-019
http://www.epa.gov/scram001/guidance_permit.htm
under Screening Guidance

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
FLAT TERRAIN	0.2117	0.2117	0.2117	0.2117	N/A

DISTANCE FROM SOURCE 64.00 meters

IMPACT AT THE AMBIENT BOUNDARY	0.1601	0.1601	0.1601	0.1601	N/A

DISTANCE FROM SOURCE 1.00 meters

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).

<u>Senior Regulatory and Litigation Support Analyst:</u>

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.

<u>Policy:</u>

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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Email: prosenfeld@swape.com

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. Focus on wastewater treatment.

Professional Experience

Dr. Rosenfeld has over 25 years of 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:

Rosenfeld P. E., Spaeth K., Hallman R., Bressler R., Smith, G., (2022) Cancer Risk and Diesel Exhaust Exposure Among Railroad Workers. *Water Air Soil Pollution.* **233,** 171.

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 Superior Court of the State of California, County of San Bernardino
Billy Wildrick, Plaintiff vs. BNSF Railway Company
Case No. CIVDS1711810
Rosenfeld Deposition 10-17-2022

In the State Court of Bibb County, State of Georgia
Richard Hutcherson, Plaintiff vs Norfolk Southern Railway Company
Case No. 10-SCCV-092007
Rosenfeld Deposition 10-6-2022

In the Civil District Court of the Parish of Orleans, State of Louisiana
Millard Clark, Plaintiff vs. Dixie Carriers, Inc. et al.
Case No. 2020-03891
Rosenfeld Deposition 9-15-2022

In The Circuit Court of Livingston County, State of Missouri, Circuit Civil Division
Shirley Ralls, Plaintiff vs. Canadian Pacific Railway and Soo Line Railroad
Case No. 18-LV-CC0020
Rosenfeld Deposition 9-7-2022

In The Circuit Court of the 13th Judicial Circuit Court, Hillsborough County, Florida Civil Division
Jonny C. Daniels, Plaintiff vs. CSX Transportation Inc.
Case No. 20-CA-5502
Rosenfeld Deposition 9-1-2022

In The Circuit Court of St. Louis County, State of Missouri
Kieth Luke et. al. Plaintiff vs. Monsanto Company et. al.
Case No. 19SL-CC03191
Rosenfeld Deposition 8-25-2022

In The Circuit Court of the 13th Judicial Circuit Court, Hillsborough County, Florida Civil Division
Jeffery S. Lamotte, Plaintiff vs. CSX Transportation Inc.
Case No. NO. 20-CA-0049
Rosenfeld Deposition 8-22-2022

In State of Minnesota District Court, County of St. Louis Sixth Judicial District
Greg Bean, Plaintiff vs. Soo Line Railroad Company
Case No. 69-DU-CV-21-760
Rosenfeld Deposition 8-17-2022

In United States District Court Western District of Washington at Tacoma, Washington
John D. Fitzgerald Plaintiff vs. BNSF
Case No. 3:21-cv-05288-RJB
Rosenfeld Deposition 8-11-2022

In Circuit Court of the Sixth Judicial Circuit, Macon Illinois
Rocky Bennyhoff Plaintiff vs. Norfolk Southern
Case No. 20-L-56
Rosenfeld Deposition 8-3-2022

In Court of Common Pleas, Hamilton County Ohio
Joe Briggins Plaintiff vs. CSX
Case No. A2004464
Rosenfeld Deposition 6-17-2022

In the Superior Court of the State of California, County of Kern
George LaFazia vs. BNSF Railway Company.
Case No. BCV-19-103087
Rosenfeld Deposition 5-17-2022

In the Circuit Court of Cook County Illinois
Bobby Earles vs. Penn Central et. al.
Case No. 2020-L-000550
Rosenfeld Deposition 4-16-2022

In United States District Court Easter District of Florida
Albert Hartman Plaintiff vs. Illinois Central
Case No. 2:20-cv-1633
Rosenfeld Deposition 4-4-2022

In the Circuit Court of the 4th Judicial Circuit, in and For Duval County, Florida
Barbara Steele vs. CSX Transportation
Case No.16-219-Ca-008796
Rosenfeld Deposition 3-15-2022

In United States District Court Easter District of New York
Romano et al. vs. Northrup Grumman Corporation
Case No. 16-cv-5760
Rosenfeld Deposition 3-10-2022

In the Circuit Court of Cook County Illinois
Linda Benjamin vs. Illinois Central
Case No. No. 2019 L 007599
Rosenfeld Deposition 1-26-2022

In the Circuit Court of Cook County Illinois
Donald Smith vs. Illinois Central
Case No. No. 2019 L 003426
Rosenfeld Deposition 1-24-2022

In the Circuit Court of Cook County Illinois
Jan Holeman vs. BNSF
Case No. 2019 L 000675
Rosenfeld Deposition 1-18-2022

In the State Court of Bibb County State of Georgia
Dwayne B. Garrett vs. Norfolk Southern
Case No. 20-SCCV-091232
Rosenfeld Deposition 11-10-2021

In the Circuit Court of Cook County Illinois
Joseph Ruepke vs. BNSF
Case No. 2019 L 007730
Rosenfeld Deposition 11-5-2021

In the United States District Court For the District of Nebraska
Steven Gillett vs. BNSF
Case No. 4:20-cv-03120
Rosenfeld Deposition 10-28-2021

In the Montana Thirteenth District Court of Yellowstone County
James Eadus vs. Soo Line Railroad and BNSF
Case No. DV 19-1056
Rosenfeld Deposition 10-21-2021

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

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

In the United States District Court For the Northern District of Illinois
Theresa Romcoe vs. Northeast Illinois Regional Commuter Railroad Corporation d/b/a METRA Rail
Case 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. vs. The City of Pheonix v. Cox Cactus Farm, L.L.C., Utah Shelter Systems, Inc.
Case No. 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 vs. CNA Insurance Company et al.
Case No. 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 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. 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. BC646857
Rosenfeld Deposition 10-6-2018; Trial 3-7-19

In United States District Court For The District of Colorado
Bells et al. Plaintiffs 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., Plaintifs 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 No. 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. 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 No. 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 No. 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 No. 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 No. 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 No. 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 No. 2:07CV1052
Rosenfeld Deposition July 2009

From:	Lois P Sicking
To:	Planning Commission Comments
Subject:	Comments Re: Stewart Almond Warehouse Project (PROJ-2022-00147)
Date:	Thursday, May 18, 2023 8:06:04 AM
Attachments:	Comments to SBC PC May 18.pdf

Dear SB County Land Use Services Dept. Planning Commissioners-

The Inland Valley Advocates for the Environment (IVAE), upon review of the Stewart Almond Warehouse Project (PROJ-2022-00147) Initial Study and Mitigated Negative Declaration (IS/MND), provides the attached comments to the SB County Land Use Services Dept. Planning Commission (PC) Hearing of May 18, 2023.

In summary, the IVAE is in opposition to the project and requests the SB County Land Use Services Dept. Planning Commission to vote No and deny adoption of all the following staff recommendations:

Do Not ADOPT the Mitigated Negative Declaration,

Do Not ADOPT the Findings as contained in the staff report,

Do Not ADOPT the Policy Plan Amendment,

Do Not ADOPT the Zoning Amendment,

Do Not APPROVE the Conditional Use Permit, and

Do Not DIRECT the Clerk of the Board of Supervisors to file a Notice of Determination.

Furthermore, IVAE asks the PC request an EIR be prepared, distributed to the public for review, and a public hearing be held prior to any PC vote on adoption/approval.

Sincerely;

s/

Lois Sicking Dieter
Inland Valley Advocates for the Environment

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Dear SB County Land Use Services Dept. Planning Commissioners-

The Inland Valley Advocates for the Environment (IVAE), upon review of the Stewart Almond Warehouse Project (PROJ-2022-00147) Initial Study and Mitigated Negative Declaration (IS/MND), provides the following comments to the SB County Land Use Services Dept. Planning Commission (PC) Hearing of May 18, 2023.

The project's air quality, greenhouse gas emissions, health assessment are inaccurately analyzed and underestimated and an Environmental Impact Report (EIR) needs to be prepared. In addition, there has not been a proper analysis of the direct and in-direct cumulative impacts to air quality, green-house gases, noise, other California Environmental Quality Act (CEQA) required environmental aspects of this project.

The environmental analysis documents do not include results of any biological surveys. There is a need for California Dept. of Fish and Wildlife (CDFW) protocol surveys for burrowing owl, a species of special concern in California, since suitable habitat (open fields) appears to be present on the project site, which is located within the habitat range of burrowing owls.

The policy plan category designation for the project site is medium density residential and zoning district of multiple residential. The parcels to the north, east and west of the project site also have a policy plan category designation of medium density residential and zoning district of multiple residential.

Staff recommends adoption of a:
Policy Plan Amendment from Medium Density Residential to Limited Industrial and
Zoning Amendment from Multiple Residential to Community Industrial.

The proposed Policy Plan and Zoning Amendment do Not reflect the existing land use and zoning for properties to the north, east, and west.

There is a fair argument that this project will cause significant unmitigated adverse environmental impacts. As such, CEQA requires that an EIR be prepared, distributed to the public for review, and a public hearing be held prior to any PC vote on adoption/approval.

Therefore, the Inland Valley Advocates for the Environment is in opposition to the project, ask the SB County Land Use Services Dept. Planning Commission to vote No and deny adoption of all the following staff recommendations:

Do Not ADOPT the Mitigated Negative Declaration,
Do Not ADOPT the Findings as contained in the staff report,
Do Not ADOPT the Policy Plan Amendment,
Do Not ADOPT the Zoning Amendment,
Do Not APPROVE the Conditional Use Permit, and
Do Not DIRECT the Clerk of the Board of Supervisors to file a Notice of Determination.

Furthermore, IVAE asks the PC request an EIR be prepared, distributed to the public for review, and a public hearing be held prior to any PC vote on adoption/approval.

Respectfully Submitted;

Lois Sicking Dieter
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