ADDENDUM 1
to the
Environmental Impact Report
for the Reina Ranch Project

Original Final EIR (SCH# 2007041068) (by Jensen Design & Survey, Inc.)

Affentranger Farms, LLC (PP 22114)
Zone Change Case No. 199, Map 101
Vesting Tentative Tract Map No. 6812

Kern County
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Bakersfield, California
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December 1, 2021

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1.1 Introduction

Approved Project

As Lead Agency, the Kern County Planning and Community Development Department (now Kern County Planning and Natural Resources Department) prepared an Environmental Impact Report (EIR) for the Reina Ranch project (referred to herein as the "approved project") which evaluated the development of the 76.36-acre project site, in unincorporated Kern County. The approved development project consists of the following:

- Site plan with a circulation system that provides access by linear streets for 253 single-family dwelling units with an average density of 7,200 to 9,600 square feet on approximately 72.0 net acres for a net average density of 3.51 dwelling unit/acre;
- Two storm water retention basins in the north central and northwest corner of the project site, respectively, totaling 2.45 acres; and
- A centrally located 2.57-acre drilling island on the project site preserved as undeveloped land for future oil drilling.

The approved project would realign Reina Road between Rudd Avenue and Santa Fe Way so that it intersects Santa Fe Way at a 90-degree angle, approximately 650 feet north of the existing intersection. In addition, the approved project would provide for connections to the Vaughn Water Company and NOR Sanitary District to provide domestic water and public sewer services to the project site.

The Kern County Board of Supervisors certified the Reina Ranch Final EIR (referred to herein as the "certified EIR" or "EIR") (State Clearinghouse No. 2007041068) and approved the Reina Ranch project on September 22, 2009. The approved project provides the following entitlements:

- Western Rosedale Specific Plan Amendment (SPA) No. 66, Map No. 101 consisting of a change in the land use map code designation from Resource-Intensive Agriculture (R-IA) to Low Medium Residential Density (LMR) (Resolution 2009-356);
- Amendment of Zone Map 101, Zone Change Case (ZCC) No. 160 consisting of changes in the zone classification from A (Exclusive Agriculture) to DI (Drilling Island) and R-1 (Low-density Residential) Cluster (CL) Combining Overlay (Resolution 2009-357 and Ordinance G-7947);
- Exclusion of the project site from administrative boundaries of Agricultural Preserve No. 9 (Resolution 2009-358); and
- Approval of Vesting Tentative Tract Map No. 6812 (with changes in the zone classification held in suspense pending the recordation of the Vesting Tentative Tract Map).

On October 17, 2018, the City of Bakersfield City Council approved an amendment to the Circulation Element map of the Metropolitan Bakersfield General Plan (GPA No. 17-0382) to remove and realign the collector road alignment at Reina Road (Resolution 140-18).

1.2 Project Overview

Proposed Modified Project

On April 22, 2020, modifications to Vesting Tentative Map No. 6812 were proposed by Affentranger Farms, LLC for the approved project. The proposed changes to the approved project are referred to herein

as the "proposed modified project" or "proposed project modifications." The proposed project modifications consist of the following:

- Redesign of the site plan with a circulation system with linear streets and cul-de-sacs resulting in an increase from 253 to 263 single-family residential dwelling units with an average density of 7,200 to 9,600 square feet on approximately 72.0 net acres for a net average density of 3.65 dwelling unit/acre;
- Reduction from two storm water retention basins totaling 2.45 acres to one 1.24-acre storm water retention basin in the northwest corner of the project site;
- Relocation of a 2.57-acre drilling island in the center of the site plan to a 2.64-acre drilling island in the northeast corner of the project site to provide access to undeveloped land for any future oil drilling; and
- Removal of the Cluster (CL) Combining Overlay on the project site.

The proposed modified project, similar to the approved project, would provide for connections to the Vaughn Water Company and NOR Sanitary District to provide domestic water and public sewer services to the project site.

The proposed modified project would require the approval of the following entitlements:

- Changes in zone classification (ZCC 101, Map 199) to relocate the DI (Drilling Island) and remove the Cluster (CL) Combining Overlay, specifically:
    - A* (Exclusive Agriculture) – DI (Drilling Island) In Suspense District to R-1 (Low-Density Residential);
    - A* (Exclusive Agriculture) – R-1, CL (Low-Density Residential, Cluster Combining) In Suspense District to DI (Drilling Island); and
    - A* (Exclusive Agriculture) – R-1 CL (Low-Density Residential, Cluster Combining) In Suspense District to R-1 (Low-Density Residential);
- Approval of redesigned Vesting Tentative Tract Map No. 6812 (with changes in the zone classification addressed in the Certified EIR for the approved project held in suspense pending the recordation of the Vesting Tentative Tract Map);
- Approval of Addendum to the certified Final EIR to evaluate the proposed modified project, updates to CEQA and the CEQA Guidelines, as amended, and the elimination or revision of mitigation measures as evidenced in the evaluation of the proposed modified project in the Addendum and/or updated technical reports; and
- Approval of revised Mitigation Monitoring and Reporting Program to reflect changes to mitigation measures.

This Addendum has been prepared to determine whether the proposed modified project would result in new or substantially more severe significant environmental impacts compared with the impacts disclosed for the approved project in the certified EIR.

1.3 Contact Information

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1.4 Addendum Organization

This document is organized as follows pursuant to the requirements of the CEQA Guidelines:

- Chapter 1, Introduction and Overview, describes the background of the proposed modified project; explains the rationale for preparing an Addendum to the EIR as the appropriate form of environmental review pursuant to CEQA; and explains the purpose, scope, and content of the Addendum.
- Chapter 2, Modified Project Description, describes the location and details of the proposed modified project.
- Chapter 3, Environmental Analysis, evaluates whether the proposed modifications to the approved project would result in new or substantially more severe significant environmental impacts compared with the impacts disclosed in the certified EIR.
- Chapter 4, List of Preparers, lists the individuals involved in preparing the Addendum.
- Chapter 5, References, lists the documents and individuals consulted during preparation of the Addendum.

1.5 Addendum Scope of Environmental Review

This Addendum evaluates whether the proposed modifications to the approved project (resulting in the modified proposed project) would result in new or substantially more severe significant environmental impacts compared to the impacts disclosed in the certified EIR.

The certified EIR assessed the environmental impacts of the Reina Ranch Project, a 253 single-family dwelling unit development located on approximately 72.0 net acres in unincorporated Kern County. The components of the approved project included:

- Site plan with a circulation system that provides access by linear streets for 253 single-family dwelling units with an average density of 7,200 to 9,600 square feet on approximately 72.0 net acres for a net average density of 3.51 dwelling unit/acre;
- Two storm water retention basins in the north central and northwest corner of the project site, respectively, totaling 2.45 acres; and

- A centrally located 2.57-acre drilling island on the project site preserved as undeveloped land for future oil drilling.

In addition, the approved project would provide for connections to the Vaughn Water Company and NOR Sanitary District to provide domestic water and public sewer services to the project site.

It is to be noted that the City of Bakersfield City Council subsequently approved an amendment to the Circulation Element map of the Metropolitan General Plan to realign Reina Road so that it intersects Santa Fe Road at a 90-degree angle, approximately 650 feet north of the existing intersection.

As discussed in the certified EIR, the approved project was not determined to have no impact with regard to any specific environmental resource topic area. Therefore, each environmental resource topic area will be discussed in this Addendum. However, certain impact thresholds within specific environmental resources topic area may have been found to have no impact or a less than significant impact without mitigation. Since the proposed modified project would have the same type of single-family residential development located on the same project site and would only result in the addition of 10 single-family dwelling units, the impacts of the proposed modified project would also have no impact with regard to these impact thresholds. These impact thresholds will be disclosed in the respective environmental resource topic analyses but will not be further analyzed in this Addendum.

The certified EIR established that, with mitigation incorporated, the approved project would result in less-than-significant impacts related to the following environmental impact areas:

- Aesthetics (Project and Cumulative)
- Air Quality (Project)
- Biological Resources (Project and Cumulative)
- Cultural Resources (Project and Cumulative)
- Geology and Soils (Project and Cumulative)
- Hazards and Hazardous Materials (Project and Cumulative)
- Hydrology and Water Quality (Project and Cumulative)
- Land Use and Planning (Project and Cumulative)
- Mineral Resources (Project and Cumulative)
- Noise (Project)
- Public Services (Project and Cumulative)
- Recreation (Project and Cumulative)
- Utilities and Service Systems (Project and Cumulative)

The certified EIR established that the approved project would result in significant and unavoidable impacts with regard to the following environmental impact areas:

- Agricultural Resources (Project and Cumulative)
    - Project would result in significant project-level impact as a result of the development of the project site to a non-agricultural use that would result in the conversion of prime farmland, unique farmland, or farmland of statewide importance to non-agricultural use.
    - Project would result in significant cumulative impact as a result of the development of the project site to a non-agricultural use combined with development of other agricultural lands within the surrounding Planning Area that would result in the conversion of prime farmland, unique farmland, or farmland of statewide importance to non-agricultural use.

- Air Quality (Cumulative)
  - Project would result in significant cumulative impacts to air quality and related health effects as a result of construction-related air emissions and continued contribution to existing air pollution.
- Global Climate Change (Project and Cumulative)
  - Project would result in significant project-level and cumulative impacts as a result of contribution of greenhouse gases.
- Noise (Cumulative)
  - Project would result in significant long-term mobile impacts as a result of traffic-generated noise levels that would exceed the MBGP thresholds of significance.
- Population Growth-Inducing (Project and Cumulative)
  - Project would result in significant population growth-inducing impacts as a result of expected increase to population of the area by extending growth-inducing infrastructure (wastewater, utilities, etc.) into a predominantly undeveloped area.
  - Project would result in significant cumulative impacts related to induced population growth from the project in conjunction with current and foreseeable projects.
- Transportation and Traffic (Project and Cumulative)
  - Project would result in a considerable increase in traffic congestion and contribution to the exceedance of level of service standards. This would be a significant and unavoidable impact.

This Addendum will address changes resulting from implementation of the proposed modified project on each of the environmental resource areas previously analyzed in the EIR, as well as changes in the circumstances under which the project, as modified, will be undertaken. It will examine whether there is any new information of substantial importance not known with the exercise of reasonable diligence when the EIR was Certified that concerns the items detailed in CEQA Guidelines Section 15162(a)(3), detailed below.

1.6 Basis for an EIR Addendum

An agency may prepare an addendum to a certified EIR pursuant to CEQA Guidelines Section 15164 that states, in pertinent part, that "if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred." Section 15162 states that a subsequent EIR is required if any of the following conditions exist:

(1) Substantial changes are proposed in the project which will require major revisions of the previous EIR … due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;

(2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR … due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or

(3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete… shows any of the following:

(A) The project will have one or more significant effects not discussed in the previous EIR;

(B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;

(C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or

(D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

Based on the evaluation provided in this Addendum, no new significant impacts would occur as a result of the proposed modified project, nor would there be any substantial increase in the severity of any previously identified significant environmental impact. In addition, no new information of substantial importance shows that mitigation measures or alternatives that were previously found not to be feasible or that are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment alternative. Therefore, none of the conditions described in Section 15162 of the CEQA Guidelines has occurred. For this reason, an addendum is the appropriate document to comply with CEQA requirements for the proposed modified project.

1.7 Evaluation of Alternatives

CEQA requires a comparative evaluation of a proposed project and alternatives to the proposed project, including the "No Project" alternative. The certified EIR addressed a reasonable range of alternatives for the approved project. There is no new information indicating that an alternative that was previously rejected as infeasible is in fact feasible, or that a considerably different alternative than those previously studied would substantially reduce one or more significant effects on the environment.

1.8 Adoption and Availability of Addendum

In accordance with CEQA Guidelines Section 15164(c), an addendum to an EIR need not be circulated for public review but can be included in or attached to the certified EIR. The decision-making body shall consider the Addendum with the certified EIR prior to making a decision on the project per CEQA Guidelines Section 15164(d). Although not required, this Addendum is available for public review at the Kern County Planning and Natural Resources Department, 2700 "M" Street, Bakersfield, California 93301.

2.1 Introduction and Background

This chapter of the Addendum describes the modifications to the approved project that have been proposed by the project proponent. The proposed modified project would revise the site plan to include a circulation system with linear streets and cul-de-sacs, increase from 253 to 263 single-family dwelling units, reduce the acreage and amount of storm water retention basins from two to one basin, and relocate the drilling island, provided as undeveloped land for future oil drilling, from the center of the project site to the northeast corner.

The proposed modified project would require a zone change to relocate the DI (Drilling Island) and remove the Cluster (CL) Combining Overlay to the R-1 (Low Density Residential) zone classification.

Proposed Modified Project Location

The regional setting for the proposed modified project would be unchanged from the approved project. The project site is located in the southern San Joaquin Valley in unincorporated Kern County (County), northwest of the City of Bakersfield (City) corporate boundaries, but within the City's sphere of influence. Regional access to the project site is provided by Interstate 5 (I-5), State Route 99 (SR-99), and State Route 58 (SR-58). Figure 2-1 shows the regional location of the project site.

The boundaries of the project site for the proposed modified project would be unchanged from the approved project. The project site consists of 76.36 net acres (79.75 gross acres) bounded by Rudd Avenue to the west, Reina Road to the north, Leonard Alvarado Road to the east, and agricultural land and a single-family residential development to the south. Figure 2-2 provides the local vicinity of the project site.

The project site is comprised of two rectangular-shaped adjoining parcels with Assessor Parcel Numbers (APNs) 463-052-05 and 463-052-06 located on the Rosedale, California United States Geological Survey (USGS) 7.5-minute topographic map, Section 15, Township 29 South, Range 26 East, M.D.M. Figure 2-3 provides the project site boundaries on the USGS topographic map.

Specific Plan land use designations, and zone classifications for the proposed modified project and surrounding areas is provided in Table 2-1, *Proposed Modified Project Site and Surrounding Land Uses, Designations, and Zoning.*

Table 2-1. Proposed Modified Project Site and Surrounding Land Uses, Designations, and Zoning			
Direction from Project Sites	Existing Land Use	Existing Land Use Designations	Existing Zoning
Project Site	Agricultural Land, alfalfa/wheat fields	LMR	A* (County)
North	Agricultural and Vacant Land	GC	C-2 (City of Bakersfield)
East	Vacant Land and Warehouse Buildings	R-IA	A (County)
West	Agricultural Land, orchard	R-IA	A (County)
South	Single-Family Residences and Vacant Land	LMR	R-1 (County)
Western Rosedale Specific Plan Land Use Designations R-IA = Resource-Intensive Agriculture LR = Low Density Residential LMR = Low Medium Density Residential GC = General Commercial LI = Light Industrial		Zoning Classifications (County): A = Exclusive Agriculture A* = Exclusive Agriculture (In Suspense) Zoning Classifications (City): C-2 City = General Commercial	

Existing Land Uses

Figure 2-4 provides an aerial photograph that shows the existing land uses on and surrounding the project site. The project site has been historically used for agriculture and has been farmed since the 1940s with crops such as alfalfa hay, cotton, wheat silage, and corn silage. Currently, the project site contains wheat, which is grown for forage/fodder for dairy feed.

There are two plugged and abandoned (in 1980 and 1985) oil wells located in the south-central portion of the project site and in the western portion of the project site. Additionally, in the southeast corner of the project site, there is an agricultural water well and irrigation piping that serves as the primary source of water for agricultural operations. There are no structures located on the project site.

The land uses surrounding the project site consist of agricultural and residential. To the west of Rudd Road, north of Reina Road, and east of Leonard Alvarado Road, there is land being utilized for agricultural purposes. Over many decades, these fields have been cultivated with grains, alfalfa, and cotton (depending on the farm operator's crop rotation program) as well as almond orchards. Additionally, immediately to the south of the project site there is a single-family residential development.

Northeast of the project site, is Santa Fe Way and the Burlington Northern Santa Fe (BNSF) Railroad right of way which serves as the north-south mainline for BNSF Railway freight trains and Amtrak California passenger trains in the San Joaquin Valley.

Figure 2-1
Regional Location

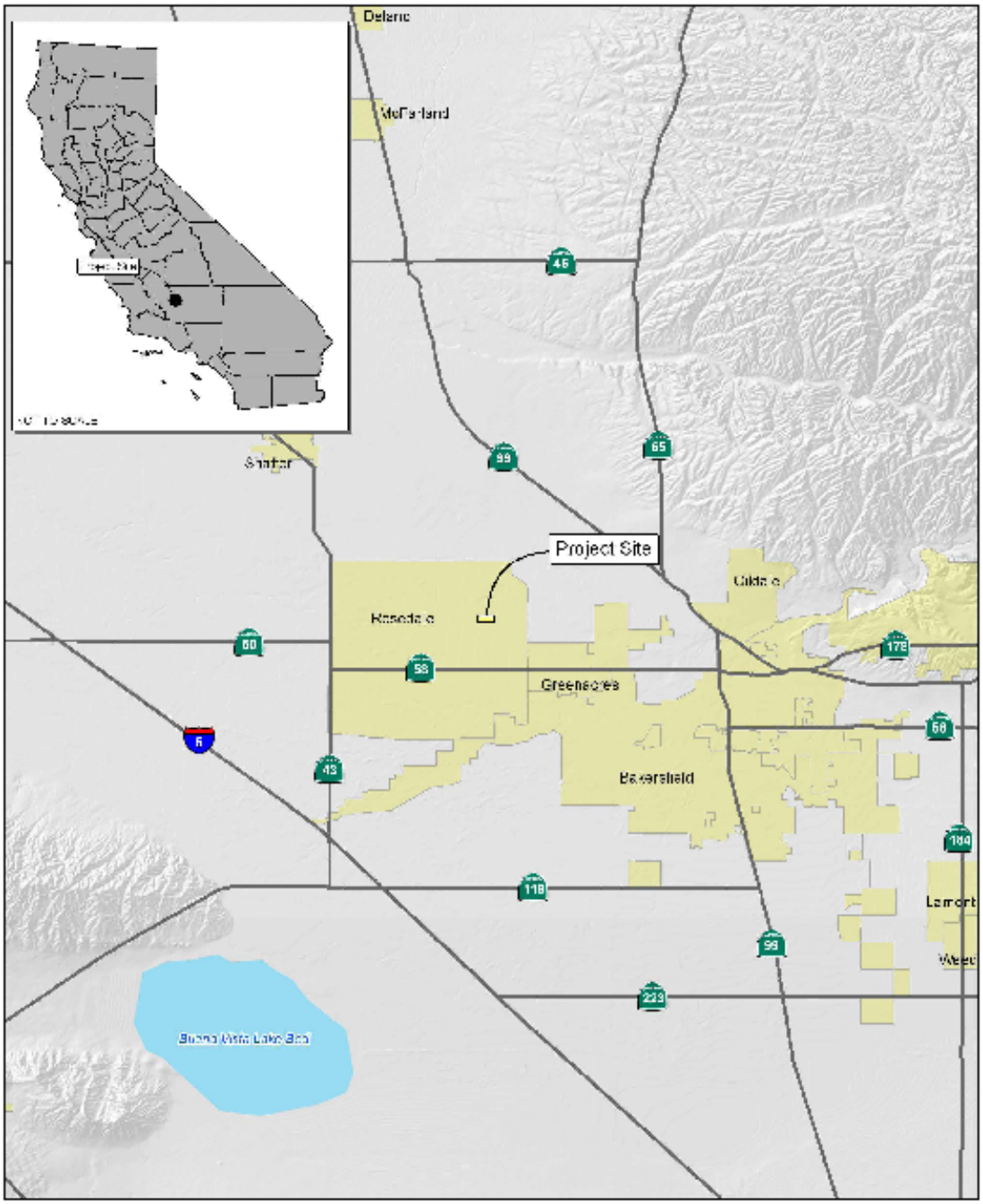

Figure 2-2
Local Vicinity

Source: Google Earth, Imagery Dated April 26, 2020.

0 500 1,000 1,500 N
Scale in Feet

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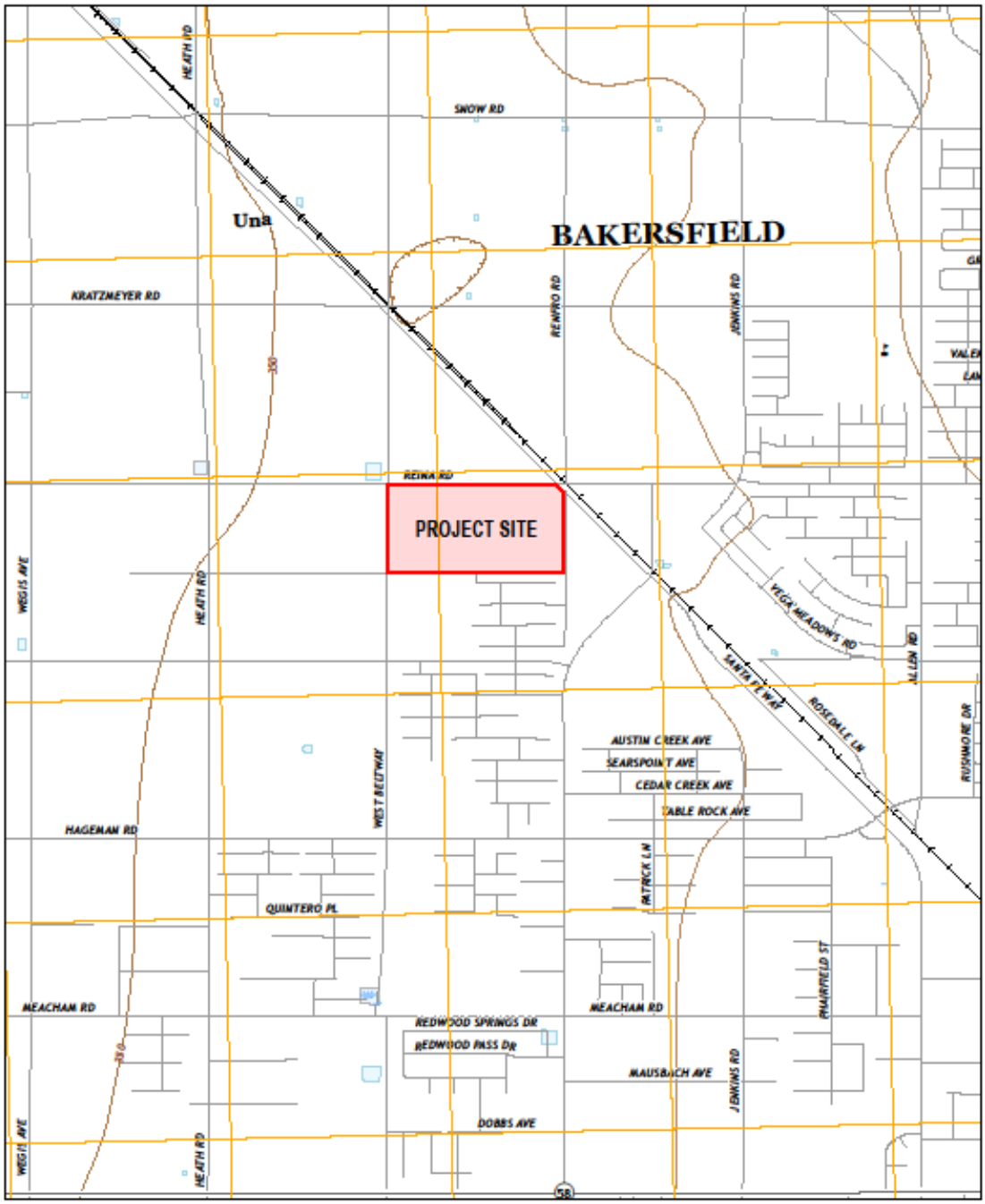
Figure 2-2
Local Vicinity

Figure 2-3
USGS Topographic Map



Source: USGS Rosedale, CA (2018) 7.5-minute series.

0 1,000 2,000 3,000 N
Scale in Feet

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Figure 2-3
USGS Topographic Map

Figure 2-4
Existing Land Uses

Existing Land Use Designations

The project site is within the MBGP, jointly adopted by the City and County in December 2002, and in the WRSP, adopted by the County in September 1994 and revised in December 2007 with the approved project.

As a result of the approval of the Vesting Tentative Tract Map 6812 and certification of the Final EIR in September 2009, the project site has a land use designation of Low Medium Residential Density (LMR) and zoning of DI (Drilling Island) and R-1 (Low-density Residential) Cluster (CL) Combining Overlay. The zoning approvals were held in suspense, pending recordation of the Vesting Tentative Tract Map. Figures 2-5 and 2-6 provide the existing WRSP land use designation and County zoning district classifications, respectively, for the project site since the approved Vesting Tentative Tract map was not recorded.

The project site is located within the boundaries of the MBHCP.

2.2 Modified Project Characteristics

The proposed modified project would result in the following modifications to the approved project:

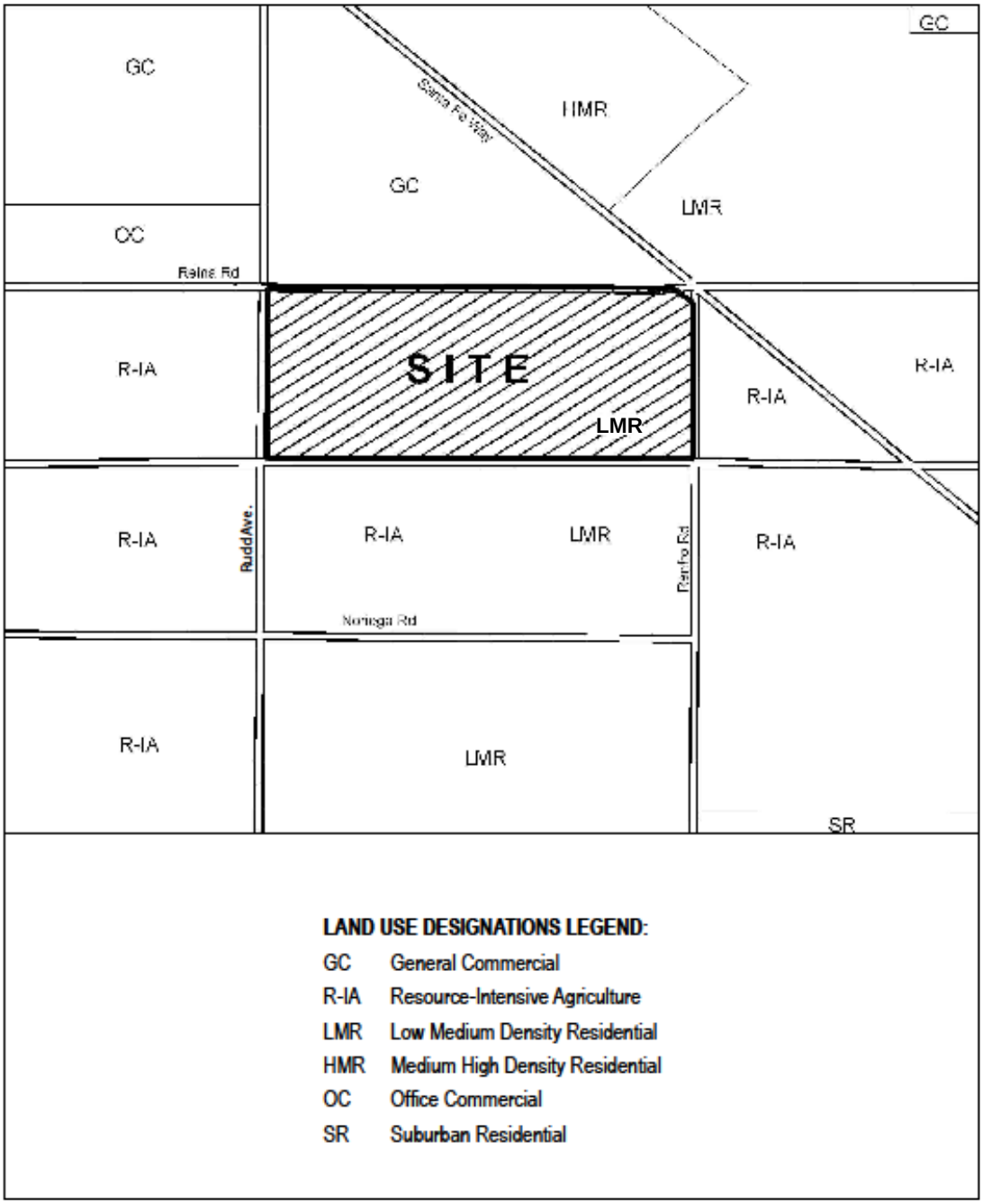
- Redesign of the site plan with a circulation system that provides access by linear streets and cul-de-sacs resulting in an increase from 253 to 263 single-family dwelling units with an average density of 7,200 to 9,600 square feet on approximately 72.0 net acres for a net average density of 3.65 dwelling unit/acre;
- Reduction from two storm water retention basins totaling 2.45 acres to one 1.24-acre storm water retention basin in the northwest corner of the project site;
- Relocation and resizing of a 2.57-acre drilling island in the center of the site plan to a 2.64-acre drilling island in the northeast corner of the project site; and
- Removal of the Cluster (CL) Combining Overlay on the project site.

The proposed modified project, similar to the approved project, would provide for connections to the Vaughn Water Company and NOR Sanitary District to provide domestic water and public sewer services to the project site.

Inclusive of these changes, the proposed modified project would result in an increase of 10 single-family dwelling units compared to the approved project. Additionally, the proposed modified project would reduce the acreage and amount of storm water retention basins from two to one basin and relocate and reduce the acreage of the drilling island. Relocation of the drilling island to the northeastern corner of the project site would serve as a noise buffer from the existing noise levels produced by Santa Fe Way and trains on the BNSF Railroad BNSF Railroad right of way. As a result, the noise levels from Santa Fe Way and the railroad right of way would be less at the closest dwelling units with the proposed modified project than the approved project analyzed in the certified Final EIR.

The construction activities for the proposed modified project would be similar to the activities described in the certified Final EIR. Similar to the approved project, the modified project would require minimized grading due to the relatively level to gently sloping topography on the project site. The amount and duration of construction activities for the proposed modified project would be similar to those analyzed for the approved project in the certified Final EIR. The operation and maintenance activities of the proposed modified project would be similar to the activities analyzed for the approved project in the certified Final EIR.

Figure 2-5
Western Rosedale Specific Plan Land Use



Source: Environmental Impact Report, Reina Ranch Project, September 22, 2009.

0 500 1,000 1,500 N
Scale in Feet

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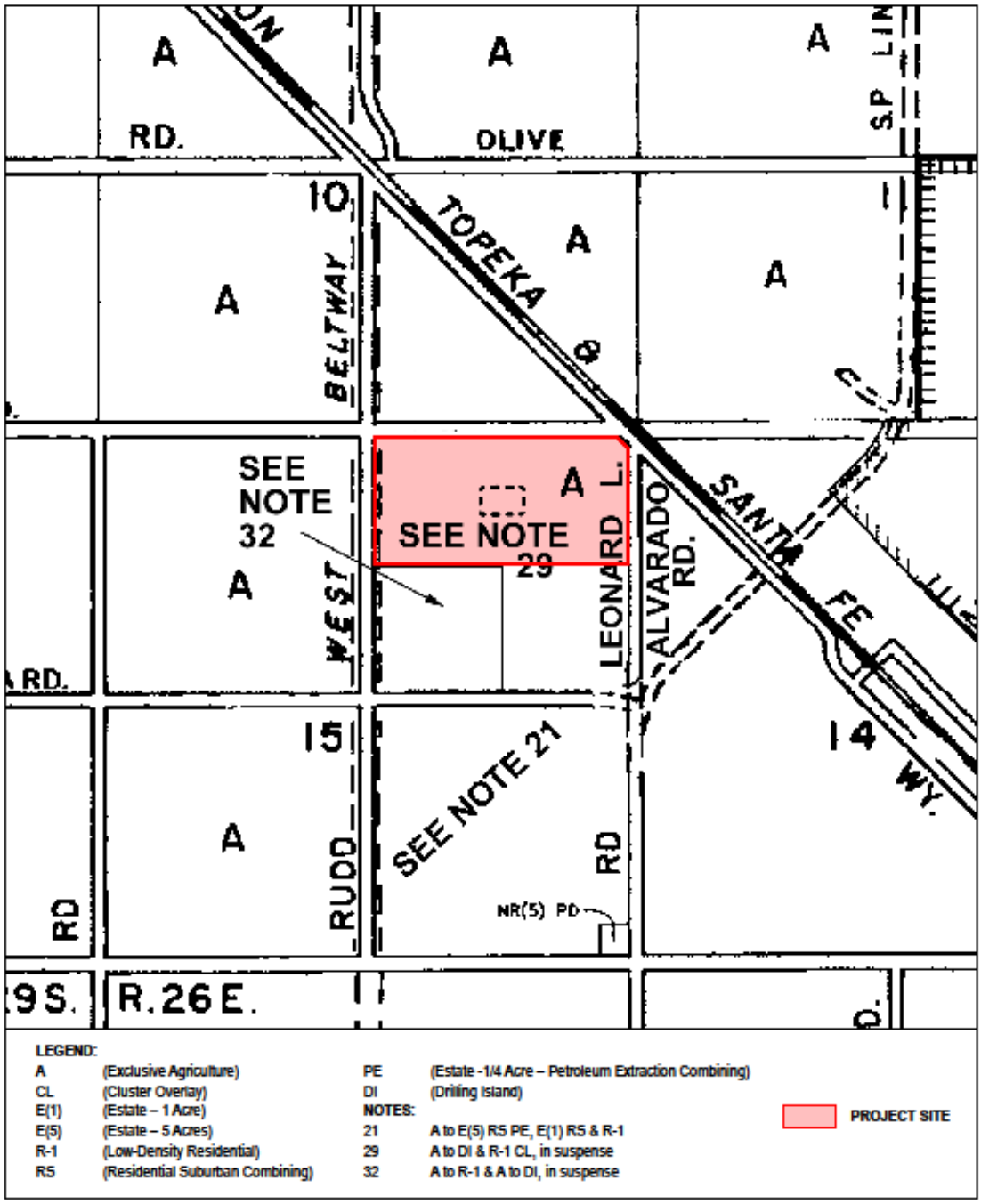
Figure 2-5
Western Rosedale Specific Plan
Land Use

Figure 2-6
Existing Zoning



Source: Zoning Map 101, Dept. of Planning & Development Services, Kern County.

0 1,000 1,500 2,000
Scale in Feet

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Figure 2-6
Existing Zoning

2.3 Entitlement Required

The discretionary approvals required for the implementation of the proposed modified project include:

- Changes in zone classification (ZCC 101, Map 199) to relocate the DI (Drilling Island) and remove the Cluster (CL) Combining Overlay, specifically:
    - A* (Exclusive Agriculture) – DI (Drilling Island) In Suspense District to R-1 (Low-Density Residential);
    - A* (Exclusive Agriculture) – R-1, CL (Low-Density Residential, Cluster Combining) In Suspense District to DI (Drilling Island); and
    - A* (Exclusive Agriculture) – R-1 CL (Low-Density Residential, Cluster Combining) In Suspense District to R-1 (Low-Density Residential);
- Approval of redesigned Vesting Tentative Tract Map No. 6812 (with changes in the zone classification addressed in the Certified EIR for the approved project held in suspense pending the recordation of the modified Vesting Tentative Tract Map);
- Approval of Addendum to the certified Final EIR to evaluate the proposed modified project, updates to CEQA and the CEQA Guidelines, as Amended, and the elimination or revision of mitigation measures as evidenced in the evaluation of the proposed modified project in the Addendum and/or updated technical reports; and
- Approval of revised Mitigation Monitoring and Reporting Program to reflect changes to mitigation measures.

Figure 2-7 provides the proposed change in the zone classification for the modified project. Figure 2-8 provides the site plan for the redesigned Vesting Tentative Tract Map No. 6812 for the modified proposed project.

Figure 2-7
Proposed Zoning

Source: Zoning Map 101, Dept. of Planning & Development Services, Kern County.

0 1,000 1,500 2,000
Scale in Feet

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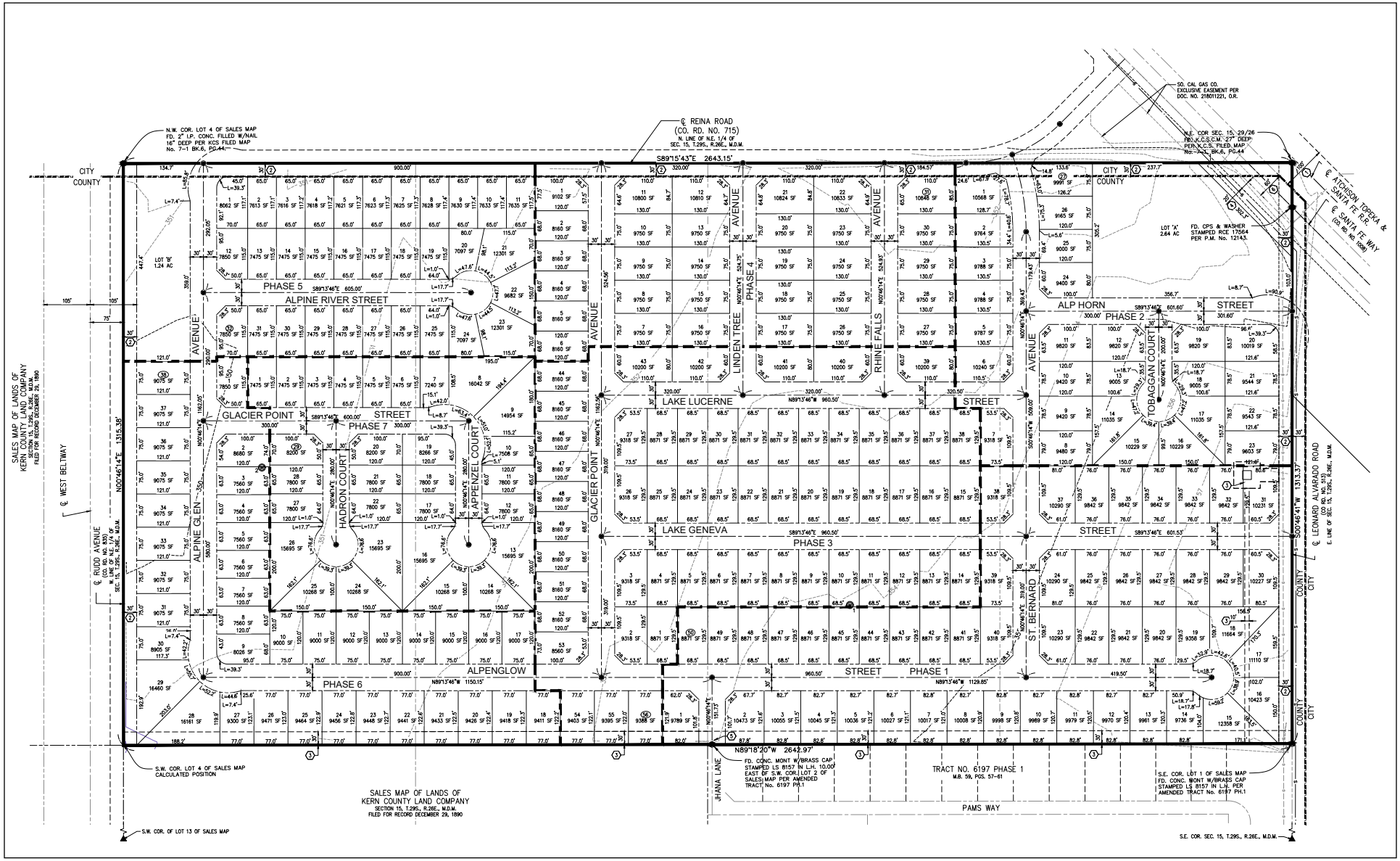
Figure 2-7
Proposed Zoning

Figure 2-8
Site Plan



Source: MacIntosh & Associates, February 25, 2020.

0 50 100 200 300 400 500 N
Scale in Feet

This Addendum evaluates the potential for the proposed modified project to result in new or substantially more severe significant impacts compared to the impacts disclosed in the certified EIR. The environmental analysis provided in this section describes the information that was considered in evaluating the questions contained in the Kern County California Environmental Quality Act (CEQA) Appendix G Guidelines Checklist. Since certification of the 2009 Final EIR for the approved project, the CEQA Appendix G Guidelines have been revised to include analysis of energy, greenhouse gas emissions, tribal cultural resources, and wildfire. These new resource sections have been incorporated into this Addendum, consistent with the Kern County CEQA Appendix G Guidelines checklist, as revised in 2019. Additionally, in 2019, the CEQA Appendix G Guidelines revised the transportation significance criteria; however, this Addendum retains the extended transportation significance criteria applied in the 2009 certified EIR analysis, and also discusses the updated transportation significance criteria regarding vehicle miles traveled. The information used in this evaluation includes the certified EIR, the proposed modified project description, new technical studies, literature reviews, and field reconnaissance.

The proposed modified project would incorporate and implement all mitigation measures identified in the certified Reina Ranch Project EIR as noted below. Specific mitigation measures relevant to a particular impact of the proposed modified project are cited in the same manner as in the EIR and the associated Mitigation Measure Monitoring Program adopted in conjunction with the Reina Ranch Project approvals.

3.1 AESTHETICS

3.1.1 Setting

The visual setting of the proposed modified project and its surrounding area is the same as that of the approved project site. The project site has been historically used for agriculture and is currently used for cultivation of wheat grown for forage/fodder for dairy feed. Views across the project site are unobstructed due to the vacant nature of the site and the level terrain. In the southeast corner of the project site there is an agricultural water well and irrigation piping that serves as the primary water source for the agricultural operations. There are no structures on the project site.

Lands in the vicinity of the proposed modified project area are generally the same as those described in the certified EIR. The land uses surrounding the project site consist of agriculture and residential development. There is agriculture to the west of Rudd Avenue, north of Reina Road, east of Leonard Alvarado Road, and immediately to the south of the project site. This agricultural land use contains cultivated fields that have been planted with grains, alfalfa, and cotton (depending on the farm operator's crop rotation program), and almond orchards. The residential development to the south of the project site consists of single-family residential that has been constructed since the approval of the Reina Ranch Project and certification of the Final EIR. To the northeast of the project site, there is the Burlington Northern Santa Fe (BNSF) Railroad right of way which serves as the north-south mainline for BNSF Railway freight trains and Amtrak California passenger trains in the San Joaquin Valley. Figure 2-4 in Chapter 2, Proposed Modified Project Description, of this Addendum provides an aerial of the project site and its surroundings.

There are no sensitive receptors or aesthetic resources, such as scenic vistas, scenic highways, trails, or parkland, in the area immediately surrounding the project site.

3.1.2 Impact Analysis

This section evaluates the potential for the proposed modified project to result in new or substantially more severe significant impacts to aesthetics not previously identified in the certified EIR for the approved project. As discussed in Chapter 1, Section 1.5 Addendum Scope of Environmental Review of this

Addendum, in the certified EIR, the approved project was determined to have no impact or a less than significant impact with regard to the impact thresholds listed below for the environmental topic aesthetics. Since the proposed modified project would have the same type of single-family residential development located on the same project site and would only result in the addition of 10 single-family dwelling units, the impacts of the proposed modified project would also have no impact or a less than significant impact with regard to the following impact thresholds as stated in the Kern County CEQA Checklist. Therefore, the following is not further analyzed for the proposed modified project in this Addendum:

- *Project would not result in a substantial adverse effect on a scenic vista;*
- *Project would not substantially damage scenic resources in a State scenic highway;* and
- *Project would not substantially degrade the existing visual character or quality of the project site or its surroundings.*

The following provides an analysis of the potential impacts to aesthetics that were identified in the certified EIR as significant impacts and, with mitigation measures incorporated, would be reduced to less than significant. The analysis below addresses the questions as stated in the CEQA Checklist.

Project Impact

Would the project:

- *Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?*

The certified EIR determined that, with implementation of Mitigation Measure MM 4.1-1, the approved project impacts would be reduced to less than significant. Lighting on the approved project site would be required to comply with Title 19.81 of the Kern County Zoning Ordinance and requirements would be enforced by County building officials.

The proposed modified project would implement Mitigation Measure MM 4.1-1 and would not result in a change to the conclusions regarding aesthetics in the certified EIR.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of less than significant. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

Cumulative Impact

The certified EIR determined that the construction of currently approved and pending projects in the project vicinity would permanently alter the nature and appearance of the area through the loss of open space. As development occurs in the Western Rosedale area, residents and visitors would notice the visual effects of urbanization. Therefore, there would be a significant cumulative impact resulting from changes to visual character. With implementation of Mitigation Measure MM 4.1-1, the approved project contribution to this impact would be reduced to less than significant.

The proposed project modifications would not generate substantially more adverse cumulative impacts to aesthetics and visual resources than those disclosed in the certified EIR and would be mitigated to the maximum extent practicable by the incorporation of all feasible and applicable mitigation measures.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of a less than significant cumulative impact. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

3.2 AGRICULTURE

3.2.1 Setting

The agricultural setting of the proposed modified project and its surrounding area is the same as that of the approved project site. The project site does not contain any forestry resources and there are no forestry resources in the surrounding area; therefore, only agricultural resources are addressed in this analysis.

The project site has been historically used for agriculture and is currently used for cultivation of wheat grown for forage/fodder for dairy feed. In the southeast corner there is an agricultural water well and irrigation piping that serves as the primary source of water for the agricultural operations.

Lands in the vicinity of the proposed modified project area are generally the same as those described in the certified EIR. The land uses surrounding the project site consist of agricultural and residential. There is agriculture to the west of Rudd Avenue, north of Reina Road, east of Leonard Alvarado Road, and immediately to the south of the project site. This agricultural land use contains cultivated fields that have been planted with grains, alfalfa, and cotton (depending on the farm operator's crop rotation program) as well as almond orchards. The development to the south of the project site consists of single-family residential that has been constructed since the approval of the Reina Ranch Project and certification of the Final EIR. Figure 2-4 in Chapter 2, Proposed Modified Project Description, of this Addendum provides an aerial of the project site and its surroundings, including the existing remaining agricultural lands.

The project site is designated as prime farmland by the California Department of Conservation. As a part of the approved project entitlements analyzed in the certified EIR, the exclusion of the project site from the administrative boundaries of Agricultural Preserve No. 9 was approved. Additionally, the project site was not within the Williamson Act contracting program at the time of EIR certification and is not currently under a Williamson Act contract.

3.2.2 Impact Analysis

This section evaluates the potential for the proposed modified project to result in new or substantially more severe significant impacts to agricultural resources not previously identified in the certified EIR for the approved project. As discussed in Chapter 1, Section 1.5 Addendum Scope of Environmental Review of this Addendum, in the certified EIR, the approved project was determined to have no impact or a less than significant impact with regard to some of the impact thresholds listed below for the environmental topic agriculture. Since the proposed modified project would have the same type of single-family residential development located on the same project site and would only result in the addition of 10 single-family dwelling units, the impacts of the proposed modified project would also have no impact or a less than significant impact with regard to the following impact thresholds as stated in the Kern County CEQA Checklist. Therefore, the following is not further analyzed for the proposed modified project in this Addendum:

- *Project would not conflict with the existing zoning for agricultural use or an existing Williamson Act contract;*
- *Project would not result in change in the existing environment that, due to the project site location or nature, could result in conversion of farmland to non-agricultural use; and*
- *Project would not result in cancellation of an open space contract made pursuant to the California Land Conservation Act of 1965 or Farmland Security Zone Contract for any parcel of 100 acres (Section 15206(b)(3) Public Resources Code).*

The following provides an analysis of the potential impacts to agriculture that were identified in the certified EIR as significant impacts that, with incorporation of mitigation measures, would be reduced to a less than

significant impact, and significant impacts that, with incorporation of mitigation measures, would remain significant and unavoidable. The analysis below addresses the questions as stated in the CEQA Checklist.

Project Impact

Would the project:

- *Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?*

The certified EIR determined that, with implementation of Mitigation Measures MM 4.2-1 and MM 4.2-2, the approved project's impacts would remain significant and unavoidable. The approved project does not contain buffers between the proposed development and the existing adjacent agricultural lands. In addition, the mitigation requires that an equivalent amount of farmland be conserved, however, this mitigation would only preserve existing Prime Farmland and not create new farmland.

CEQA requires that all feasible and reasonable mitigation be reviewed and applied to projects. CEQA Section 15364 defines feasible to mean "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." The standard of applicability also includes CEQA case law and determinations on the ability to impose specific mitigation on projects. Agricultural conservation easements are legally recorded deed restrictions that are placed on a specific property used for agricultural production. The goal of an agricultural conservation easement is to maintain agricultural land in active production by removing the development pressures from the land. Such an easement prohibits practices that would damage or interfere with the agricultural use of the land. Because the easement is a restriction on the deed of the property, the easement remains in effect even when the land changes ownership. While such voluntary easements are an important tool for land owners for tax purposes and land trust groups encourage agricultural uses and protect land from urban encroachment, they are no longer considered mitigation under CEQA.

Subsequent certification of the EIR for the approved project, the Fifth Appellate District February 25, 2020 decision in King and Gardiner Farms, LLC et al. v County of Kern et al. [F077656 (Superior Ct Nos. BCV-15-101666, BCV-15-101679) determined that mitigation to require placing other lands at a 1:1 ratio, or any other ratio, under an agricultural easement does not mitigate for the loss of farmland as it does not create new farmland. The court also concluded that allowing purchase of credits for conversion of agricultural lands from an established agricultural farmland mitigation bank or equivalent program or allowing participation in an agricultural land mitigation program adopted by the County that "provides equal or more effective mitigation" did not provide effective mitigation for the conversion of agricultural land. The court found that no such programs currently exist, and, if they did, like conservation easements, such programs would not actually offset the conversion of agricultural land.

A number of jurisdictions such as San Joaquin County, Stanislaus County, Yolo County, and the Cities of Davis, Livermore, and Stockton have adopted General or Specific Plan policies or zoning code prevision, as exercise of their police power, that require agricultural conservation easements as a condition of development that converts agricultural land. However, Kern County has not done so.

Therefore, because the court of appeal rejected agricultural conservation easements, and other measures discussed above, and concluded that agricultural conservation easements do not offset the loss of agricultural land in whole or in part, and therefore do not reduce a project's impact on agricultural land, Mitigation Measure MM 4.2-1 that was originally included in the certified EIR has been deleted as a CEQA mitigation measure for the proposed modified project in this Addendum. This revision is shown below in ~~strikeout~~. This revision does not reflect new information or substantial changes with respect to the circumstances under which the project is undertaken that involve new significant environmental effects or a substantial increase in the severity of previously analyzed impacts related to the above-described

agricultural resources impact evaluation standards. No new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified, relevant to such agricultural resources impact evaluation, has been identified. Therefore, with respect to this criterion, the modified project would not result in any new significant impacts already analyzed in the certified EIR, and the modified project would not increase the severity of a significant impact as previously identified and analyzed in the certified EIR.

The proposed modified project would remove Mitigation Measure MM 4.2-1, but implement Mitigation Measure MM 4.2-2 and would not result in a change to the conclusions regarding agriculture in the certified EIR.

Mitigation Measures

No new mitigation measures are required beyond those included in the previously certified EIR. However, the proposed modified project would remove Mitigation Measure MM 4.2-1, as shown below.

MM 4.2-1 (removed): ~~Prior to issuance of a grading or building permit, whichever occurs first, the applicant shall provide written evidence of completion of one or more of the following measures to mitigate the loss of agricultural land at a ratio of 1:1 for net acreage before conversion. Net acreage is to be calculated based on excluding existing roads and areas already developed with structures. A plot plan shall be submitted substantiating the net acreage calculations along with written evidence of compliance.~~

1. ~~Funding and purchase of agricultural conservation easements (will be managed and maintained by an appropriate entity);~~
2. ~~Purchase of credits from an established agricultural farmland mitigation bank;~~
3. ~~Contribution of agricultural land or equivalent funding to an organization that provides for the preservation of farmland in California;~~
4. ~~Participation in any agricultural land mitigation program adopted by Kern County that provides equal or more effective mitigation than the measures listed above.~~

~~Mitigation land will meet the definition of prime farmland or farmland of statewide importance established by the State Department of Conservation. Completion of the selected measure(s) can be on qualifying land within the San Joaquin Valley (San Joaquin, Stanislaus, Merce, Fresno, Madera, Kings, Tulare, or Kern counties) or outside the San Joaquin Valley with written evidence that the same or equivalent crops can be produced on the mitigation land.~~

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of a significant and unavoidable impact. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

Cumulative Impact

The certified EIR determined that, with implementation of Mitigation Measures MM 4.2-1 and MM 4.2-2, the approved project's cumulative impacts would remain significant and unavoidable.

The proposed modified project would remove Mitigation Measure MM 4.2-1, as discussed above, but would implement Mitigation Measure MM 4.2-2 and would not result in a change to the conclusions regarding agriculture in the certified EIR.

The proposed project modifications would not generate substantially more adverse cumulative impacts to agricultural resources than those disclosed in the certified EIR and would be mitigated to the maximum extent practicable by the incorporation of all feasible and applicable mitigation measures.

Mitigation Measures

No new mitigation measures are required beyond those included in the previously certified EIR. The proposed modified project would remove Mitigation Measure MM 4.2-1, as shown above.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of a significant and unavoidable cumulative impact. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

3.3 AIR QUALITY

3.3.1 Setting

The air quality setting of the proposed modified project and its surrounding area is the same as that of the approved project site. The project site is located within the Kern County portion of the San Joaquin Valley Air Basin (SJVAB or Basin). Kern County is included among the eight counties that comprise the San Joaquin Valley Air Pollution Control District (SJVAPCD). The SJVAPCD acts as the regulatory agency for air pollution control in the Basin and is the local agency empowered to regulate air pollutant emissions for the project site and surrounding area. Refer to Table 3-1 in the Air Quality Impact Analysis (AQIA) in Appendix A to this Addendum for the National Ambient Air Quality Standards (NAAQS) established by the U.S. Environmental Protection Agency (EPA) and California Ambient Air Quality Standards (CAAQS) established by the California Air Resources Board (CARB).

Under the provisions of the U.S. Clean Air Act, the Kern County portion of the SJVAB has been classified as nonattainment/extreme, nonattainment/severe, nonattainment, attainment/unclassified, attainment, or unclassified under the established NAAQS and CAAQS for various criteria pollutants. Refer to Table 3-2 in the AQIA in Appendix A to this Addendum for the SJVAB's designation and classification based on the various criteria pollutants under both NAAQS and CAAQS. In summary, the SJVAB is currently classified as:

- Non-attainment for the one-hour state O_3 standard,
- Non-attainment for the federal and state eight-hour O_3 standard,
- Non-attainment for the state PM_{10} standard,
- Non-attainment for the federal and state $PM_{2.5}$ standard, and
- In attainment or unclassified for all other ambient air quality standards.

3.3.2 Impact Analysis

This section evaluates the potential for the proposed modified project to result in new or substantially more severe significant impacts related to air quality not previously identified in the certified EIR for the approved project. As discussed in Chapter 1, Section 1.5 Addendum Scope of Environmental Review of this Addendum, in the certified EIR, the approved project was determined to have no impact or a less than significant impact with regard to the impact thresholds listed below for the environmental topic air quality. Since the proposed modified project would have the same type of single-family residential development located on the same project site and would only result in the addition of 10 single-family dwelling units, the impacts of the proposed modified project would also have no impact or a less than significant impact with regard to the following impact thresholds as stated in the Kern County CEQA Checklist. Therefore, the following is not further analyzed for the proposed modified project in this Addendum:

- *Project would not result in conflict with or obstruct implementation of the applicable Air Quality Attainment Plan;*
- *Project would not violate any air quality standard as adopted or established by EPA or air District or contribute substantially to an existing or project air quality violation;*
- *Project would not expose sensitive receptors to substantial pollutant concentrations; and*
- *Project would not create objectionable odors that affect a substantial number of people.*

The following provides an analysis of the potential impacts to air quality and GHG that were identified in the certified EIR as potentially significant impacts with mitigation measures incorporated that would be reduced to a less than significant impact, and significant impacts with mitigation measures incorporated that would remain significant and unavoidable. The analysis below addresses the questions as stated in the CEQA Checklist.

A technical report providing an air quality analysis for the modified project was prepared. This Air Quality Impact Analysis is included in Appendix A of this Addendum.

Project Impact

Would the project:

- *Result in a cumulatively considerable net increase of any criteria pollutant for which the region is non-attainment under an applicable federal or state ambient air quality standard?*

Project Construction-Related Activities

The certified EIR discussed that the short-term construction-related activities for the approved project would generate emissions both onsite and offsite. The onsite emissions consist of: exhaust emissions from heavy duty construction equipment and motor vehicle operation; fugitive dust from disturbed soil; and emissions from paving operations and the application of architectural coatings. Offsite emissions would be cause by motor exhaust from delivery vehicles and worker traffic as well as dust on the road. These emissions consist of Nitrogen Oxide (NO_x), Sulfur Oxide (SO_X), Carbon Monoxide (CO), reactive organic gases (ROG), and suspended particulate matter (PM_{10} and $PM_{2.5}$). The certified EIR, Subsection 4.3.4 Impacts and Mitigation Measures, provides a detailed discussion of the short-term construction activities for the approved project. The certified EIR concluded that, while the short-term construction emissions were below the applicable SJVAPCD and County significance thresholds, there would be health impacts that require mitigation. The certified EIR determined that, with implementation of Mitigation Measures MM 4.3-1, MM 4.3-2, and MM 4.3-3, the short-term construction air quality impacts would be less than significant.

The proposed modified project would implement Mitigation Measures MM 4.3-1, MM 4.3-2, and MM 4.3-3 and would not result in a change to the conclusions regarding short-term construction air quality impacts in the certified EIR.

Project Operations-Related Activities

The certified EIR discussed that the operations of the approved project would generate emissions from on-road vehicle travel resulting in mobile source emissions including precursors to Ozone (ROG and NO_x) and PM_{10}. The unmitigated ROG and NO_x emissions would not exceed the SJVAPCD significance thresholds and were considered a less than significant impact. The certified EIR, Subsection 4.3.4 Impacts and Mitigation Measures, provides a detailed discussion of the operational activities for the approved project. The certified EIR concluded that, while the operational emissions were below the applicable SJVAPCD significance thresholds, there would be health impacts that require mitigation. The certified EIR determined that, with implementation of Mitigation Measures MM 4.3-4 and MM 4.3-5, the operational air quality impacts would be less than significant.

The proposed modified project would implement Mitigation Measures MM 4.3-4 and MM 4.3-5 and would not result in a change to the conclusions regarding operational air quality impacts in the certified EIR.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of less than significant. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

Cumulative Impact

The certified EIR discussed that the cumulative analysis was based on a quantitative cumulative analysis of planned projects submitted for review or approved by the County or City of Bakersfield located with a 1-mile and 6-mile radius of the project site. The list of cumulative projects identified is provided in the Chapter 3 of the certified EIR. Appendix C to the certified EIR provided the results of the analysis of the planned projects in the cumulative analysis.

The certified EIR indicated that the approved project, along with other with other past, present, and reasonably foreseeable future projects, would result in cumulative short-term impacts to air quality as well as cumulative long-term impacts to air quality. The certified EIR concluded that, although all feasible and reasonable mitigation had been imposed, there may be remaining contributions of pollutants and related health impacts from the project. Due to the serious problems and projections in the Basin, cumulative impacts remain significant and unavoidable.

The proposed modified project would implement Mitigation Measure MM 4.3-6 and would not result in a change to the conclusions regarding cumulative air quality impacts in the certified EIR.

The proposed project modifications would not generate substantially more adverse cumulative impacts to air quality than those disclosed in the certified EIR and would be mitigated to the maximum extent practicable by the incorporation of all feasible and applicable mitigation measures.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of significant and unavoidable. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

3.4 BIOLOGICAL RESOURCES

3.4.1 Setting

The setting of the proposed modified project and its surrounding area related to biological resources is the same as that of the approved project site. The project site has been historically used for agriculture and is currently used for cultivation of wheat grown for forage/fodder for dairy feed. In the southeast corner of the project site there is an agricultural water well and irrigation piping that serves as the primary source of water for the agricultural operations.

Lands in the vicinity of the proposed modified project area are generally the same as those described in the certified EIR. The land uses surrounding the project site consist of agricultural and residential. There is agriculture to the west of Rudd Avenue, north of Reina Road, east of Leonard Alvarado Road, and immediately to the south of the project site. This agricultural land use contains cultivated fields that have been planted with grains, alfalfa, and cotton (depending on the farm operator's crop rotation program) as well as almond orchards. The development to the south of the project site consists of single-family residential that has been constructed since the approval of the Reina Ranch Project and certification of the Final EIR. Figure 2-4 in Chapter 1, Introduction and Overview of this Addendum provides an aerial of the project site and its surroundings, including the existing land uses and the remaining agricultural lands.

The project site is located in the San Joaquin Valley in an unincorporated area of Kern County known as Western Rosedale in northwestern Metropolitan Bakersfield. The project site is located in the lower Sonoran life zone of the San Joaquin Valley which is characterized by relatively low rainfall and average temperatures that are relatively high. At the time that the certified EIR was prepared, the project site was planted with alfalfa fields with common weedy species around the perimeter. The project site provides habitat for wildlife species that occur within disturbed land and areas of agricultural use.

3.4.2 Impact Analysis

This section evaluates the potential for the proposed modified project to result in new or substantially more severe significant impacts to biological resources not previously identified in the certified EIR for the approved project. As discussed in Chapter 1, Section 1.5 Addendum Scope of Environmental Review of this Addendum, in the certified EIR, the approved project was determined to have no impact or a less than significant impact with regard to the impact thresholds listed below for the environmental topic biological resources. Since the proposed modified project would have the same type of single-family residential development located on the same project site and would only result in the addition of 10 single-family dwelling units, the impacts of the proposed modified project would also have no impact or a less than significant impact with regard to the following impact thresholds as stated in the Kern County CEQA Checklist. Therefore, the following is not further analyzed for the proposed modified project in this Addendum:

- *Project would not result in a substantial adverse impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS;*
- *Project would not result in substantial adverse impact on federally protected wetlands as defined by Section 404 of the Clean Water Act;*
- *Project would not interfere substantially with movement of resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors or impede the use of wildlife nursery sites; and*
- *Project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.*

- *Project would not conflict with provisions of an adopted habitat conservation plan, natural community conservation plan, or approved plan local, regional, or State habitat conservation plan.*

The following provides an analysis of the potential impacts to biological resources that were identified in the certified EIR as potentially significant impacts with mitigation measures incorporated that would be reduced to a less than significant impact, and significant impacts with mitigation measures incorporated that would remain significant and unavoidable. The analysis below addresses the questions as stated in the CEQA Checklist.

A technical report providing an analysis of biological resources for the modified project was prepared. This Biological Resource Evaluation (BRE) is provided in Appendix B of this Addendum.

Project Impact

Would the project:

- *Have a substantial adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?*

The analysis in the certified EIR concluded that the project site could provide suitable habitat for ground-dwelling avian species and foraging habitat for the Swainson's hawk. Although the existing conditions on the project site had a high level of disturbance, the site could still provide foraging habitat for the San Joaquin kit fox. Therefore, development of the project site would have the potential to result in significant impacts to these biological species. The certified EIR determined that, with implementation of the mitigation and compensation requirements of the MBHCP and Mitigation Measures MM 4.4-1, MM 4.4-2, and MM 4.4-3, the approved project impacts would be reduced to less than significant.

The CEQA Appendix G thresholds have been used to evaluate the potential impacts to the biological resources from the development of the proposed modified project. The project site is within the Metropolitan Bakersfield Habitat Conservation Plan (MBHCP). A field study was conducted in accordance with the Federal Endangered Species Act Section 10(a)(1)(B) permit and the California Endangered Species Act incidental take permit (ITP) issued by the California Department of Fish and Wildlife, pursuant to Fish and Game Code Section 2081(b)(ITP No. 2081-2013-058-04), for the MBHCP. Evaluation of potential impacts to plant and animal species are required under federal and State regulation. The development of the proposed modified project would not conflict with the existing or adopted habitat conservation plans, natural community conservation plans, local or regional conservation plans, or local ordinances protecting biological resources.

The impacts to covered plant and animal species, other than blunt-nosed leopard lizard or bird species afforded protection under the Migratory Bird Treaty Act (MBTA), would be fully mitigated by participation in the MBHCP. Recommendations included in the BRE in Appendix B of this Addendum are consistent with the language and intent of the mitigation measures in the certified EIR. The mitigation measures in the certified EIR, when implemented in concert with the MBHCP, would be expected to mitigate the impacts of the approved project to biological resources to less than significant.

The proposed modified project would implement Mitigation Measures MM 4.4-1, MM 4.4-2, and MM 4.4-3 and would not result in a change to the conclusions regarding biological resources in the certified EIR.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of less than significant. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

Cumulative Impact

The certified EIR determined that, with implementation of the mitigation and compensation requirements of the MBHCP and Mitigation Measures MM 4.4-1, MM 4.4-2, and MM 4.4-3, the approved project impact's incremental impact to the cumulative impact would be reduced to less than significant. Additionally, the certified EIR concluded that the past, present, and reasonably foreseeable future projects within the vicinity of the project site are also subject to compliance with the MBGP, WRSP, and MBHCP to reduce the potential significant cumulative impact to less than significant.

The proposed modified project would implement Mitigation Measures MM 4.4-1, MM 4.4-2, and MM 4.4-3 and would not result in a change to the conclusions regarding biological resources in the certified EIR.

The proposed project modifications would not generate substantially more adverse cumulative impacts to biological resources than those disclosed in the certified EIR and would be mitigated to the maximum extent practicable by the incorporation of all feasible and applicable mitigation measures.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance after Mitigation

The proposed modifications to the project do not change the findings in the certified EIR of a less than significant cumulative impact. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

3.5 CULTURAL RESOURCES

3.5.1 Setting

The cultural resources setting of the proposed modified project and its surrounding area is the same as that of the approved project site. The project site has been historically used since the 1940s for agriculture and is currently used for cultivation of wheat grown for forage/fodder for dairy feed. In the southeast corner of the project there is an agricultural water well and irrigation piping that serves as the primary source of water for the agricultural operations. In addition, there are two abandoned and plugged oil wells in the central portion of the project site. There are no structures on the project site.

Lands in the vicinity of the proposed modified project area are generally the same as those described in the certified EIR. The land uses surrounding the project site consist of agricultural and residential. There is agriculture to the west of Rudd Avenue, north of Reina Road, east of Leonard Alvarado Road, and immediately to the south of the project site. Figure 2-4 in Chapter 2 Proposed Modified Project Description of this Addendum, provides an aerial of the project site and its surroundings, including the existing remaining agricultural lands.

A records search of the project site and the surrounding radius (within a 0.25-mile radius) conducted during preparation of the certified EIR revealed that no surveys had been conducted within the project site. Four cultural resources studies had been conducted within 0.25 mile of the project site and no cultural resources were identified. During a prehistoric cultural resources Phase I conducted for the project site and the surrounding radius (within a (0.25-mile radius) during preparation of the certified EIR, no prehistoric cultural resources were found or recorded within the project site.

An updated records search was conducted for the proposed modified project and is included in Appendix C to this Addendum. This records search concluded that three historical cultural resources have been identified within 0.5 mile of the project site. None were identified for the project site.

3.5.2 Impact Analysis

This section evaluates the potential for the proposed modified project to result in new or substantially more severe significant impacts to cultural resources not previously identified in the certified EIR for the approved project. As discussed in Chapter 1, Section 1.5 Addendum Scope of Environmental Review in this Addendum, in the certified EIR, the approved project was determined to have no impact or a less than significant impact with regard to the impact thresholds listed below for the environmental topic cultural resources. Since the proposed modified project would have the same type of single-family residential development located on the same project site and would only result in the addition of 10 single-family dwelling units, the impacts of the proposed modified project would also have no impact or a less than significant impact with regard to the following impact thresholds as stated in the Kern County CEQA Checklist. Therefore, the following is not further analyzed for the proposed modified project in this Addendum:

- *Project would not cause a substantial adverse change in the significance of known historical or archeological resource.*

The following provides an analysis of the potential impacts to cultural resources that were identified in the certified EIR as potentially significant impacts with mitigation measures incorporated that would be reduced to a less than significant impact. The analysis below addresses the questions as stated in the CEQA Checklist.

A current cultural resource records search was conducted for the modified project. This results of this records search are provided in Appendix C of this Addendum. Refer to that document for the detailed

records search and an analysis of the findings. The conclusions of the current analysis concurred with the conclusions of the certified EIR.

Project Impacts

Would the project:

- *Damage or destroy a previously unknown significant archeological resource?*

The analysis in the certified EIR concluded that construction and operation of the approved project could encounter and result in damage or destroy a previously unknown significant buried archeological resource. The certified EIR determined that, with implementation of the Mitigation Measures MM 4.5-1, MM 4.5-2, and MM 4.5-3, this significant impact would be reduced to less than significant.

The proposed modified project would implement Mitigation Measures MM 4.5-1, MM 4.5-2, and MM 4.5-3 and would not result in a change to the conclusions regarding cultural resources in the certified EIR.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of less than significant. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

- *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

The analysis in the certified EIR concluded that construction activities consisting excavations 5 to 10 feet or more in-depth during construction of the approved project could encounter and result in damage or destroy a previously unknown significant buried paleontological resource. The certified EIR determined that, with implementation of the Mitigation Measure MM 4.5-4 this significant impact would be reduced to less than significant.

The proposed modified project would implement Mitigation Measure MM 4.5-4 and would not result in a change to the conclusions regarding cultural resources in the certified EIR.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of less than significant. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

- *Disturb any human remains, including those interred outside of dedicated cemeteries?*

The analysis in the certified EIR concluded that ground disturbing activities anticipated to include excavation and grading at shallow depths for the approved project could unearth previously undocumented human remains. The certified EIR determined that, with implementation of the Mitigation Measure MM 4.5-5, this significant impact would be reduced to less than significant.

The proposed modified project would implement Mitigation Measure MM 4.5-5 and would not result in a change to the conclusions regarding cultural resources in the certified EIR.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance after Mitigation

The proposed modifications to the project do not change the findings in the certified EIR of less than significant. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

Cumulative Impact

The certified EIR determined that, with implementation of Mitigation Measures MM 4.5-1, MM 4.5-2, MM 4.5-3, and MM 4.5-4, the approved project impact's incremental contribution to these potential cumulative impacts would be reduced to less than significant. Additionally, the certified EIR concluded that the past, present, and reasonably foreseeable future projects within the vicinity of the project site are also subject to similar mitigation measures to reduce the potential significant cumulative impact to less than significant.

The proposed modified project would implement Mitigation Measures MM 4.5-1 through MM 4.5-4 and would not result in a change to the conclusions regarding cultural resources in the certified EIR.

The proposed project modifications would not generate substantially more adverse cumulative impacts to cultural resources than those disclosed in the certified EIR and would be mitigated to the maximum extent practicable by the incorporation of all feasible and applicable mitigation measures.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of a less than significant cumulative impact. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

3.6 ENERGY

3.6.1 Setting

The energy setting of the proposed modified project and its surrounding area is the same as that of the approved project site. The project site has been historically used for agriculture and is currently used for cultivation of wheat grown for forage/fodder for dairy feed. Lands in the vicinity of the proposed modified project area are generally the same as those described in the certified EIR. The land uses surrounding the project site consist of agricultural and residential. There is agriculture to the west of Rudd Avenue, north of Reina Road, east of Leonard Alvarado Road, and immediately to the south of the project site. This agricultural land use contains cultivated fields that have been planted with grains, alfalfa, and cotton (depending on the farm operator's crop rotation program) as well as almond orchards. The residential development to the south of the project site consists of single-family residential that has been constructed since the approval of the Reina Ranch Project and certification of the Final EIR. Figure 2-4 in Chapter 2, Proposed Modified Project Description, of this Addendum provides an aerial of the project site and its surroundings, including the existing land uses.

3.6.2 Impact Analysis

The 2009 certified EIR did not analyze the impacts of energy as a standalone category because this resource section had not yet been adopted as part of the CEQA Appendix G: Environmental Checklist Form until January 2019. The absence of an energy impact analysis in the certified EIR does not require preparation of such an analysis for the proposed project because "new information, which was not known and could not have been known at the time the [previous analysis] was certified as complete" per Public Resources Code Section 21166(c).

The modified project has incorporated an enhanced design to minimize energy consumption, reduce solid waste, increase water conservation features, offset electricity consumption through employing solar technology, and decrease transportation energy in promoting site walkability. Conserving energy will promote an overall decrease per capita in energy consumption and decrease reliance on fossil fuels such as coal, natural gas and oil. The proposed project will comply with the most recent 2019 version of the California Building Standards Code and California Green Code, including the applicable provisions pertaining to Title 24 Building Energy Efficiency Standards for new construction, as the certified EIR referenced the 2008 version. Short-term construction air quality impacts while building the residential dwelling units would be a less than significant impact. The proposed project's energy usage would be similar to the project analyzed in the certified EIR because only ten additional dwelling units are being proposed, which would be unavoidable, but not surpass the energy threshold of significance to a less than significant impact.

The Energy Utilization Memo analyzed the annual electric demand for the proposed project is estimated at 2.07 Megawatts. During the construction phases of the project, temporary electrical power will be required to supply certain equipment and street lighting along the roadway. Each proposed dwelling unit within the project will comply with the performance standards in the "energy budget" calculation for the Standard Design Building using the CEC's Alternative Calculation Methods Approval Manual. Additionally, renewable solar electric generation systems will be equipped on each dwelling unit. In conjunction with clean fleet construction equipment, the short term air quality and energy impacts will be less than significant.

Project Impact

Would the project:

- *Result in potentially significant environmental impact due to wasteful, inefficient or unnecessary consumption of energy resources, during project construction or operation?*
- *Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?*

The project would comply with Cal Green construction management purposes during construction of the project that would not amount to wasteful or inefficient energy consumption resources. Kern County does not have an implemented Climate Action Plan and the construction and operation on-site will adhere to all state plans for renewable energy best practices. The modified project's energy usage would be similar to energy usage by the 2009 project.

Mitigation Measures

Consequently, no impact analysis was performed and no corresponding mitigation measures were provided in the previously certified EIR since the Energy analysis was not a requirement of CEQA at that time.

Level of Significance After Mitigation

No mitigation measures are required. The proposed modified project addressed in the Addendum to the EIR would have a less than significant impact related to Energy. Therefore, no new mitigation measures would be required for the proposed modified project.

Cumulative Impacts

The 2009 certified EIR did not analyze the cumulative project's energy consumption impact. However, the proposed project's energy usage would be similar to energy usage by the 2009 project. The project's energy consumption will not be wasteful or unnecessary nor conflict with or obstruct state or local plans for renewable energy efficiency.

Mitigation Measures

No mitigation measures were provided in the previously certified EIR since the Energy analysis was not a requirement of CEQA at that time.

Level of Significance After Mitigation

No mitigation measures are required. The proposed modified project addressed in the Addendum to the EIR would have a less than significant impact related to Energy. Therefore, no new mitigation measures would be required for the proposed modified project.

3.7 GEOLOGY AND SOILS

3.7.1 Setting

The geology and soils setting of the proposed modified project is the same as that of the approved project site. The Metropolitan Bakersfield area is located near the base of the eastern edge of the Sierra Nevada Mountains, in a historically active seismic area of California. The San Joaquin Valley is bordered by major fault system including the San Andreas, Breckenridge, Kern Canyon, Garlock, and White Wolf faults. According to the KCGP Safety Element, Kern County is located in one of the more seismically active areas of California and, at any time, may be subject to moderate to severe ground shaking.

The project site is not located within an Earthquake Fault Zone (Special Studies Zone). The project area is located within Seismic Zone 4. According to the certified EIR, the closest known fault to the project site is an unnamed fault located 1.5 miles to the southwest.

The near-surface sediments in the project area consisted of disturbed silty sand, silty sand/sand, or sand with trace amounts of clay. The soils are disturbed, have low strength characteristics, and are highly compressible. The deposited sediments within the project site and the wider regional area are generally large coalescing alluvial fans with gentle slopes. According to the geotechnical analysis prepared for the certified EIR, the groundwater in the area has been reported to be at a depth of approximately 100 feet below ground surface, with groundwater generally flowing toward the southwest.

3.7.2 Impact Analysis

This section evaluates the potential for the proposed modified project to result in new or substantially more severe significant impacts related to geology and soils not previously identified in the certified EIR for the approved project. As discussed in Chapter 1, Section 1.5 Addendum Scope of Environmental Review in this Addendum, in the certified EIR, the approved project was determined to have no impact or a less than significant impact with regard to the impact thresholds listed below for the environmental topic geology and soils. Since the proposed modified project would have the same type of single-family residential development located on the same project site and would only result in the addition of 10 single-family dwelling units, the impacts of the proposed modified project would also have no impact or a less than significant impact with regard to the following impact thresholds as stated in the CEQA Checklist. Therefore, the following is not further analyzed for the proposed modified project in this Addendum:

- *Project would not be located where the rupture of a known earthquake fault would expose people or structures to substantial adverse effects, including the risk of loss, injury, or death.*
- *Project construction activities would not result in soil erosion or loss of topsoil.*
- *Project would not be located where an unstable geologic unit or soil would result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse.*
- *Project would not result in impacts from being located on expansive soil, creating substantial risks to life or property.*
- *Project would not result in an impact from soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.*

The following provides an analysis of the potential impact related to geology and soils that was identified in the certified EIR as potentially significant impacts that, with mitigation measures incorporated, would be reduced to less than significant. The analysis below addresses the questions stated in the CEQA Checklist.

A technical report providing review of the geotechnical analysis for the modified project was prepared. This technical report is provided in Appendix D of this Addendum. The report concluded the following:

- The investigations and the majority of the recommendations in the geotechnical investigation prepared for the certified EIR appear to be consistent with other "feasibility level" projects performed in the general area and timeframe and is suitable for inclusion in the Addendum to the EIR.
- There is concurrence with the recommendation that a "design level" geotechnical engineering investigation be performed prior to the start of construction in order to provide site-specific recommendations for grading, foundation design, retaining walls, utility trenches, slabs-on-grade, etc. (Note that this recommendation was provided as Mitigation Measure MM 4.6-1 of the certified EIR.)
- The possibility exists that site grading operations could expose reported clayey soils and relatively clean sands in various locations on the project site. Due to lack of cohesion to stand vertically, even in shallow excavations, if encountered, it would be necessary to over excavate the affected area(s) to a minimum of 1-foot below the proposed bearing surface. These areas may be backfilled using a mixture of silty sand and sand soils that contain at least 20 percent fines and meets the requirements for Engineered Fill. (Note that this would be determined by the "design level" geotechnical engineering investigation performed prior to the start of construction consistent with Mitigation Measure MM 4.6-1 of the certified EIR.)
- Due to changes to the most recent California Building Code cycle/update, the "design level" geotechnical engineering investigation provided as Mitigation Measure MM 4.6-1 of the certified EIR would address the change in peak ground acceleration.

Project Impact

Would the project:

- *Directly or indirectly cause potential adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?*

The analysis in the certified EIR concluded that the project site is susceptible to strong ground motions produced by moderate to large earthquakes originating from numerous regional faults. Structures would be required to be designed and built in accordance with the California Building Code. Since codes are not site specific, there may be additional factors (such as soil characteristics) that can affect the site and the stability of structures after the application of the Building Code. Therefore, development of the project site would have the potential to result in significant impacts due to strong seismic ground shaking. In addition, the analysis concluded that broken gas lines during strong ground shaking would result in a significant potential impact from risk of injury or loss of life. The certified EIR determined that, with implementation of Mitigation Measures MM 4.6-1 and MM 4.6-2, the approved project's impacts would be reduced to less than significant.

The proposed modified project would implement Mitigation Measures MM 4.6-1 and MM 4.6-2 and would not result in a change to the conclusions regarding geology and soils in the certified EIR.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of less than significant. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

Cumulative Impact

The certified EIR determined that, with implementation of Mitigation Measures MM 4.6-1 and MM 4.6-2, the approved project's impact would not contribute to any cumulative impact for seismic hazards or related seismic events, including liquefaction, subsidence, or unstable slopes.

The proposed modified project would implement Mitigation Measures MM 4.6-1 and MM 4.6-2 and would not result in a change to the conclusions regarding geology and soils in the certified EIR.

The proposed project modifications would not generate substantially more adverse cumulative impacts to geology and soils resources than those disclosed in the certified EIR and would be mitigated to the maximum extent practicable by the incorporation of all feasible and applicable mitigation measures.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of a less than significant cumulative impact. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

3.8 GREENHOUSE GAS EMISSIONS

3.8.1 Setting

The greenhouse gas emission setting of the proposed modified project and its surrounding area is the same as that of the air quality setting of the approved project site. The project site has been historically used for agriculture and is currently used for cultivation of wheat grown for forage/fodder for dairy feed. Lands in the vicinity of the proposed modified project area are generally the same as those described in the certified EIR. The land uses surrounding the project site consist of agricultural and residential. There is agriculture to the west of Rudd Avenue, north of Reina Road, east of Leonard Alvarado Road, and immediately to the south of the project site. This agricultural land use contains cultivated fields that have been planted with grains, alfalfa, and cotton (depending on the farm operator's crop rotation program) as well as almond orchards. The residential development to the south of the project site consists of single-family residential that has been constructed since the approval of the Reina Ranch Project and certification of the Final EIR. Figure 2-4 in Chapter 2, Proposed Modified Project Description, of this Addendum provides an aerial of the project site and its surroundings, including the existing land uses.

The project site is located within the Kern County portion of the San Joaquin Valley Air Basin (SJVAB or Basin). Kern County is included among the eight counties that comprise the San Joaquin Valley Air Pollution Control District (SJVAPCD). The enactment of the California Clean Air Act (CAA) produced the structure and administration of air quality management programs in California. Regulatory oversight for air quality in the basin rests at the regional level with the SJVAPCD, the CARB at the state level, and the EPA Region IX office at the federal level. The SJVAPCD provides guidance to local lead agencies on determining significance for greenhouse gas (GHG) emissions with thresholds and monitoring objectives.

"Global climate change" refers to change in average meteorological conditions on the earth with respect to temperature, precipitation, and storms, lasting for decades or longer. The term "global climate change" is often used interchangeably with the term "global warming," but "global climate change" is preferred by some scientists and policy makers because it helps convey the notion that in addition to rising temperatures, other changes in global climate may occur.

Human activities, including fossil fuel combustion and land use changes, release carbon dioxide (CO_2) and other compounds cumulatively termed greenhouse gases (GHGs). GHGs are effective at trapping radiation that would otherwise escape the atmosphere. This trapped radiation warms the atmosphere, the oceans, and the earth's surface. Many scientists believe "most of the warming observed over the last 50 years is attributable to human activities." The increased amount of CO_2 and other GHGs in the atmosphere is the alleged primary result of human-induced warming.

3.8.2 Impact Analysis

This section evaluates the potential for the proposed modified project to result in new or substantially more severe significant impacts related to GHG emissions not previously identified in the certified EIR for the approved project. The 2009 certified EIR did not analyze the impacts of GHG emissions as a standalone category because this resource section had not yet been adopted as part of the CEQA Appendix G: Environmental Checklist Form until January 2019. However, the project's GHG emissions and global climate change were identified within Section 4.3, Air Quality.

The following provides an analysis of the potential impacts to GHG emissions that were identified in the certified EIR as potentially significant impacts with mitigation measures incorporated that would be reduced to a less than significant impact and significant impacts with mitigation measures incorporated that would remain significant and unavoidable. The analysis below addresses the questions as stated in the CEQA Checklist.

A technical report providing a GHG analysis is included in the Air Quality Impact Analysis, in Appendix A of this Addendum. The conclusions of the Air Quality Impact Analysis indicated concurrence with the analysis of air quality and GHG in the certified EIR.

Project Impact

Would the project:

- *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*
- *Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?*

The certified EIR Impact 4.3-9 discussed the potential of project emissions to contribute to global climate change. It further assessed that the short-term construction-related activities and operations of the approved project would generate emissions onsite, offsite and mobile source emissions including precursors to Ozone (ROG and NO_x) and PM_{10}. Long-term emissions are related to the activities that occur as a result of the project operations and consist of the area source and the operational emissions. The proposed project's construction and operational GHG emissions were estimated using the CalEEMod program and summarized in the Air Quality Impact Analysis. At least a 29% reduction of GHG emissions from business as usual must be achieved by 2020 for the proposed project to conform to the goals of AB32. As concluded in the model, the proposed project with mitigation would reduce GHG emissions by 69.98%, and thus meet the required 29% reduction to meet the AB32 goals. The certified EIR concluded that a focused air analysis will quantify reductions of GHG emissions as part of the mitigation.

The certified EIR analyzed the project will emit GHGs such as carbon dioxide, methane, and nitrous oxide from the exhaust of equipment used during construction and exhaust of vehicles during operation, as well as energy used for treatment and transport of water, and energy generation. The main sources of GHG emissions from the project is the same as the largest source of criteria pollutants-on-road vehicles. However, this would not significantly hinder the state of California's ability to meet its reduction targets. The certified EIR concluded that, while the short-term construction emissions were below the applicable SJVAPCD and County significance thresholds, there would be health impacts that require mitigation. The Air Quality Impact Analysis conducted in 2021 concluded the modified proposed project's operations emissions would have a less than significant air quality impact on the San Joaquin Valley Air Basin. With the application of the various mitigation measures, the modified project's GHG emissions would be reduced by more than the 29% reduction target for GHGs. The certified EIR determined that, with implementation of Mitigation Measures MM 4.3-1, MM 4.3-2, MM 4.3-3, MM 4.3-4, MM 4.3-5, 4.3-6 and MM 4.3-7 the short-term construction, long-term emissions and air quality impacts would be less than significant.

The proposed modified project would implement Mitigation Measures MM 4.3-1, MM 4.3-2, MM 4.3-3, 4.3-4, 4.3-6, and 4.3-7, which would not result in a change to the conclusions regarding short-term construction, long-term emissions and air quality impacts in the certified EIR.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance After Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of less than significant. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

Cumulative Impacts

By its very nature, air pollution has a cumulative impact. The certified EIR discusses that the approved project would contribute to climate change impacts through its contribution of GHG. The approved project's inventory of GHG generation from construction and operation is provided in the analysis of impacts related to GHG emissions (Impact 4.3-9 in Section 4.3 Air Quality in the certified EIR). The approved project would emit GHG emissions such as CO, methane, and NO_x from the exhaust of equipment used during construction and the exhaust of vehicles during project operation. In addition, the approved project would create offsite emissions through the transport and treatment of water, manufacture and transport of building materials, manufacture of cement, natural gas consumption, emissions from air conditioning units, and offsite energy generation. Table 4.3-18 and Table 4.3-19 in the certified EIR provide summaries of the construction exhaust CO_2 and operational GHG emissions, respectively. The primary GHG emission generated by the approved project would be carbon dioxide.

The certified EIR indicates that the thresholds of significance in the analysis considers: if the project would result in an increase in GHG emissions; and if the project would result in an increase in GHG emissions that would significantly hinder or delay the State's ability to meet the reduction targets contained in Assembly Bill 32 (AB 32). Reductions in CO_2 emissions with implementation of Mitigation Measure MM 4.3-6 requiring mitigation to under 2 tons of NO_x would contribute to the 29 percent reduction. To achieve the 29 percent reduction, the project would need to achieve a 29 percent reduction of 1,637 tons per year of operations-related CO_2 emissions. The certified EIR discussed that the cumulative effects of climate change are global and not site-specific. Therefore, the certified EIR provided a conclusion regarding cumulative impacts and not project impacts.

The certified EIR determined that, although all feasible and reasonable mitigation measures (Mitigation Measures MM 4.3-1 through MM 4.3-7) would be incorporated, the approved project related to GHG impacts would be significant and unavoidable.

The proposed modified project would implement Mitigation Measures MM 4.3-1 through MM 4.3-7 and would not result in a change to the conclusions regarding GHG impacts in the certified EIR.

The proposed project modifications would not generate substantially more adverse cumulative impacts to greenhouse gas emissions than those disclosed in the certified EIR and would be mitigated to the maximum extent practicable by the incorporation of all feasible and applicable mitigation measures.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of significant and unavoidable. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

3.9 HAZARDS AND HAZARDOUS MATERIALS

3.9.1 Setting

The hazards and hazardous materials setting of the proposed modified project and its surrounding area is the same as that of the approved project site. The project site has been historically used since the 1940s for agriculture and is currently used for cultivation of wheat grown for forage/fodder for dairy feed. In the southeast corner there is an agricultural water well and irrigation piping that serves as the primary source of water for the agricultural operations. In addition, there are two abandoned and plugged oil wells in the central portion of the project site. There are no structures on the project site.

As discussed in the certified EIR, the environmental assessments conducted as a part of the process of developing the design of the approved project did not identify any reports on the project site with the exception of the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR, now California Geologic Energy Management Division [CalGEM]) which indicated that two plugged and abandoned oil wells were present on the project site. Site reconnaissance for the assessments indicated the presence of a 1,000-gallon plastic container used to store fertilizer, a water well with associated structure and irrigation system, a transformer that may contain PCBs, and small power poles. There were no signs of leaks or soil staining associated with these.

The certified EIR indicated that on the project site there was no know presence of onsite natural gas transmission or distribution lines as well as unmarked pipeline easements associated with oil and gas production in the Rosedale Oil Field. The project site is located in an area with generally level topography that has been cultivated with agriculture and experiencing urban growth. Therefore, it is not in an area subject to hazards associated with wildland fires.

3.9.2 Impact Analysis

This section evaluates the potential for the proposed modified project to result in new or substantially more severe significant impacts related to hazards and hazardous materials not previously identified in the certified EIR for the approved project. As discussed in Chapter 1, Section 1.5 Addendum Scope of Environmental Review in this Addendum, in the certified EIR, the approved project was determined to have no impact or a less than significant impact with regard to the impact thresholds listed below for the environmental topic hazards and hazardous materials. Since the proposed modified project would have the same type of single-family residential development located on the same project site and would only result in the addition of 10 single-family dwelling units, the impacts of the proposed modified project would also have no impact or a less than significant impact with regard to the following impact thresholds as stated in the CEQA Checklist. Therefore, the following is not further analyzed for the proposed modified project in this Addendum:

- *Project would not result in significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.*
- *Project would not emit hazardous emissions or handle hazardous or acutely hazardous substances, or waste, within one-quarter mile of an existing or proposed school.*
- *Project would not be located within an airport land use plan or within two miles of a public airport.*
- *Project would not be located within the vicinity of a private airstrip.*
- *Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.*
- *Project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires.*

- *Project would not generate vectors or have a component that includes agricultural waste.*

The following provides an analysis of the potential impacts related to hazards and hazardous materials that were identified in the certified EIR as potentially significant impacts with mitigation measures incorporated that would be reduced to a less than significant impact. The analysis below addresses the questions stated in the CEQA Checklist.

Project Impact

Would the project:

- *Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident condition involving the release of hazardous materials into the environment?*
- *Be located on a site which is included on a list of hazardous materials compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

The analysis in the certified EIR indicated that due to the presence of a 1,000-gallon plastic container used to store fertilizer, a transformer that may contain PCBs, the two abandoned and plugged oil wells, and a 24-inch-diameter high pressure main transmission pipeline along the eastern boundary of the project site currently operated by Southern California Gas Company (SCGC), the construction of the approved project would have the potential to result in significant potential impacts related to hazards and hazardous materials. The certified EIR determined that, with implementation of Mitigation Measures MM 4.7-1 through MM 4.7-6, the approved project's significant impacts would be reduced to less than significant.

The approved project would be located on a project site, that due to past uses and existing conditions (past agricultural use, transformer with PBCs, two plugged and abandoned oil wells, and gas line), could be included on the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. As a result, the approved project would have the potential to create a significant hazard to the public or the environment. The certified EIR determined that, with implementation of Mitigation Measures MM 4.7-1 through MM 4.7-6, the approved project's significant impacts would be reduced to less than significant.

The proposed modified project would implement Mitigation Measures MM 4.7-1 through MM 4.7-6 and would not result in a change to the conclusions regarding hazards and hazardous materials in the certified EIR.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of less than significant. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

Cumulative Impacts

The certified EIR indicated that cumulative effect of the surrounding proposed or planned projects would more than likely be a net benefit to the approved project and surrounding area because any contaminated sites would require remediation; therefore, cumulative impacts would not be cumulatively considerable. The certified EIR determined that, with implementation of Mitigation Measures MM 4.7-1 through MM 4.7-5, the approved project's significant impacts would be reduced to less than significant.

The proposed modified project would implement Mitigation Measures MM 4.7-1 through MM 4.7-5 and would not result in a change to the conclusions regarding hazards and hazardous materials in the certified EIR.

The proposed project modifications would not generate substantially more adverse cumulative impacts to hazards and hazardous materials than those disclosed in the certified EIR and would be mitigated to the maximum extent practicable by the incorporation of all feasible and applicable mitigation measures.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of less than significant cumulative impacts. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

3.10 HYDROLOGY AND WATER QUALITY

3.10.1 Setting

The hydrology and water quality setting of the proposed modified project is the same as that of the approved project site. The project site lies within the southern Central Valley of California which has rainy winters and dry summers characteristic of a Mediterranean climate. Average annual precipitation is about 5.7 inches, which is a relatively small amount.

Flooding in the project area originates from the Kern River watershed upstream from Bakersfield and the Caliente Creek stream group that drains off the west slopes of the Tehachapi Mountains. However, flooding in the Bakersfield area from rainfall and snowmelt in the mountains has been remote since the construction of the Isabella Dam and Reservoir in the 1950s. According to Kern County, the project site does not lie within the 100-year floodplain that comprises the Kern River Floodway. The certified EIR indicated that, according to Federal Insurance Rate Maps (FIRMs) developed by the Federal Emergency Management Agency (FEMA), the project site is not within a FEMA-mapped Flood Hazard Area.

The project site lies within the Tulare Lake Basin. The Tulare Lake Basin is within the jurisdiction of the Central Valley Regional Water Quality Control Board (RWQCB), which is responsible for designing and implementing the Tulare Basin Plan. The Basin is generally a closed system as it is situated in the topographic horseshoe formed by the Diablo and Temblor Ranges on the west, by San Emigdio and Tehachapi Mountains on the south, and by the Sierra Nevada Mountains on the east and southeast.

The project site is located in the Kern County sub-basin of the San Joaquin Valley Groundwater Basin. This is a non-adjudicated basin with various agencies and agricultural users pumping groundwater for agriculture and urban uses. The Rosedale-Rio Bravo Water Storage District (RRBWSD) is responsible for operating a groundwater recharge project in the basin. The RRBWSD Groundwater Management Plan, adopted in 2003, indicates that the District is operating in a long-term overall balance. Currently the groundwater recharge consists primarily of the percolation of excess irrigation applications, with lesser contributions from river and canal seepage, artificial recharge programs of water agencies, and municipal and industrial wastewater.

Historically, water quality degradation has been noticed in many wells in Kern County. There are three primary sources for ongoing groundwater contamination that exists in the WRSP area: septic systems; cultivated agriculture; and the petroleum industry.

The project site is generally level with very little offsite drainage. The occurrence of precipitation is typically not enough to cause standing water that flows offsite. Additionally, the project site is currently irrigated, but the irrigation water is prevented from flowing offsite. Any flow that does leave the project site drains into the local irrigation ditches and does not reach the Kern River which lies approximately 4.75 miles to the south. The irrigation water typically percolates down through the underlying soil column into the groundwater aquifer.

3.10.2 Impact Analysis

This section evaluates the potential for the proposed modified project to result in new or substantially more severe significant impacts related to hydrology and water quality not previously identified in the certified EIR for the approved project. As discussed in Chapter 1, Section 1.5 Addendum Scope of Environmental Review in this Addendum, in the certified EIR, the approved project was determined to have no impact or a less than significant impact with regard to the impact thresholds listed below for the environmental topic hydrology and water quality. Since the proposed modified project would have the same type of single-family residential development located on the same project site and would only result in the addition of 10 single-family dwelling units, the impacts of the proposed modified project would also have no impact or a less than significant impact with regard to the following impact thresholds stated in the Kern County CEQA

Checklist. Therefore, the following is not further analyzed for the proposed modified project in this Addendum:

- Project would not deplete groundwater supplies or interfere substantially with groundwater recharge.
- Project would not substantially alter existing drainage pattern of the site or area substantially resulting in an increase in surface runoff, causing flooding.
- Project would not create runoff water that would exceed capacity of the storm drainage system.
- Project would not expose people or structures to a significant risk of loss, injury, or death involving flooding as a result of the failure of a levee or dam.
- Project would not place housing or structures within a 100-year flood hazard area.

The following provides an analysis of the potential impacts related to hydrology and water quality that were identified in the certified EIR as potentially significant impacts and, with mitigation measures incorporated, would be reduced to less than significant. The analysis below addresses the questions as stated in the CEQA Checklist.

Project Impact

Would the project:

- *Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?*
- *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in a substantial erosion or siltation on- or off-site?*

The analysis in the certified EIR indicated the development of the project site would increase urban pollutant discharge, particularly during short-term grading and construction activities. The discharge of pollutants other than stormwater from the developed project site would be prohibited. With urban development, the pollutants of concern include: silt and sedimentation; oil and grease; floatable trash; nutrients (including fertilizers); heavy metals; pathogens (such as coliform bacteria); and other substances. The discharge of these substances (referred to as controlled pollutants) into waters of the United States is prohibited.

The construction activities for the approved project would have the potential to result in significant impacts related to water quality including from erosion that could cause siltation of surface water. The certified EIR determined that, with implementation of Mitigation Measure MM 4.8-1, the impacts of the approved project would be reduced to less than significant. Mitigation Measure MM 4.8-1 requires that prior to issuance of a grading permit, the Applicant will file a Notice of Intent regarding stormwater discharges associated with construction activities. The Applicant would be required to obtain coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit for Construction Activities, which requires the Applicant to file a Notice of Intent to discharge stormwater and implement a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP would include: project information and description of the proposed construction activities; demonstration of compliance with local ordinances, regulations, and Best Management Practices (BMPs) that would be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water sources. This would include annual monitoring and reporting to ensure BMPs are controlling construction-related stormwater pollutants.

The ongoing operation of the approved project would have the potential to result in significant impacts related to erosion. The certified EIR determined that, with implementation of Mitigation Measures MM

4.8-2 and MM 4.8-3, the impacts of the approved project would be reduced to less than significant. The project site is relatively flat with limited potential for runoff. The potential for erosion during operations would be addressed by post-development compliance with the NPDES Program through the incorporation of the Kern County Standard Urban Stormwater Mitigation Plan (SUSMP) into the project design and operation.

The proposed modified project would implement Mitigation Measures MM 4.8-1 through MM 4.8-3 and would not result in a change to the conclusions regarding hydrology and water quality in the certified EIR.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of less than significant. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

Cumulative Impacts

The EIR concluded that the impacts of the approved project when combined with impacts of past, present, and reasonably foreseeable projects will not create a substantial adverse effect on the hydrology and water quality of the project site and its surroundings, and would, therefore, have a less than significant cumulative impact. The proposed project modification would not generate substantially more adverse cumulative impacts to hydrology and water quality than those disclosed in the certified EIR and would be mitigated to the maximum extent practicable by the incorporation of all feasible and applicable mitigation measures.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified Final EIR.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding in the certified Final EIR of less than significant. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

3.11 LAND USE AND PLANNING

3.11.1 Setting

The land use and planning setting of the proposed modified project and its surrounding area is the same as that of the approved project site. The project site has been historically used for agriculture and is currently used for cultivation of wheat grown for forage/fodder for dairy feed. In the southeast corner of the project site there is an agricultural water well and irrigation piping that serves as the primary source of water for the agricultural operations. Additionally, there are two abandoned and plugged oil wells in the central portion of the project site. There are no structures on the project site.

Lands in the vicinity of the proposed modified project area are generally the same as those described in the certified EIR. The land uses surrounding the project site consist of agricultural and residential. There is agriculture to the west of Rudd Avenue, north of Reina Road, east of Leonard Alvarado Road, and immediately to the south of the project site. This agricultural land use contains cultivated fields that have been planted with grains, alfalfa, and cotton (depending on the farm operators crop rotation program), and almond orchards. The development to the south of the project site consists of single-family residential that has been constructed since the approval of the Reina Ranch Project and certification of the Final EIR. To the northeast of the project site, is the Burlington Northern Santa Fe (BNSF) Railroad right-of-way which serves as the north-south mainline for BNSF Railway freight trains and Amtrak California passenger trains in the San Joaquin Valley.

Figure 2-4 in Chapter 2, Proposed Modified Project Description, of this Addendum provides an aerial of the existing land uses on the project site and the surrounding properties. Figure 2-5 provides the existing WRSP land use designations for the project site and Figure 2-6 provides the existing Kern County zoning for the project site.

3.11.2 Impact Analysis

This section evaluates the potential for the proposed modified project to result in new or substantially more severe significant impacts related to land use and planning not previously identified in the certified EIR for the approved project. As discussed in Chapter 1, Section 1.5 Addendum Scope of Environmental Review in this Addendum, in the certified EIR, the approved project was determined to have no impact or a less than significant impact with regard to the impact thresholds listed below for the environmental topic land use and planning. Since the proposed modified project would have the same type of single-family residential development located on the same project site and would only result in the addition of 10 single-family dwelling units, the impacts of the proposed modified project would also have no impact or a less than significant impact with regard to the following impact thresholds as stated in the CEQA Checklist. Therefore, the following is not further analyzed for the proposed modified project in this Addendum:

- Project would not physically divide an existing community or contribute to a decline of an existing community.
- Project would not conflict with applicable land use plan, policy, or regulation of an agency with jurisdiction over the project site.
- Project would not conflict with applicable habitat conservation plans or natural community conservation plans.

There were no potential significant project level or cumulative impacts related to land use and planning identified in the certified EIR. Therefore, the proposed modifications to the project do not change the findings in the certified EIR of less than significant. As indicated in the certified EIR, upon compliance with the required goals, policies, and implementation measures of the MBGP, WRSP, and MBHCP, no new or revised mitigation measures would be required for the proposed modified project.

Mitigation Measures

There were no feasible mitigation measures identified in the certified EIR. No new measures are required.

Level of Significance after Mitigation

The proposed modifications to the project do not change the findings in the certified EIR as less than significant. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

3.12 NOISE

3.12.1 Setting

The noise setting of the proposed modified project and its surrounding area is generally the same as that of the approved project. The project site is bounded by Rudd Avenue to the west, Reina Road to the north, Leonard Alvarado Road to the east, and agricultural land and a single-family residential development to the south. The project site is exposed to railroad noise associated with train operations along the BNSF Railway mainline to the northeast of the project site and traffic noise associated with vehicles along the roads adjacent to and surrounding the project site. Santa Fe Way, a two-lane road located immediately to the northeast, runs between the railroad tracks and the northeastern portion of the project site.

The BNSF Railway mainline consists of a single-track mainline with continuously welded rail. The nearest at grade crossing is currently located at Reina Road to the northeast of the project site. To address safety of vehicular traffic crossing the railroad track, the train engineers are required to sound warning horns when within approximately ¼ mile of an at grade crossing. The estimated speed of trains passing the project site is 25 to 70 mph for freight trains and 55 to 79 mph for passenger (Amtrak) trains. The railroad is elevated approximately 4 to 5 feet above the northeastern portion of the project site.

The discussion of the noise sensitive land uses and the existing noise environment (including noise levels from the railroad and traffic) in 4.10.2 Environmental Setting of the certified EIR provides the setting for the proposed modified project. The information provided in 4.10.3 Regulatory Setting of the certified EIR is also applicable to the proposed modified project. Refer to these subsections of the certified EIR for a detailed discussion.

An acoustical analysis technical report was prepared for the proposed modified project. The Acoustical Analysis report is provided in Appendix E of this Addendum. Refer to that document for additional discussion of the existing noise conditions on the project site and in the surrounding area.

3.12.2 Impact Analysis

This section evaluates the potential for the proposed modified project to result in new or substantially more severe significant impacts related to noise not previously identified in the certified EIR for the approved project. As discussed in Chapter 1, Section 1.5 Addendum Scope of Environmental Review in this Addendum, in the certified EIR, the approved project was determined to have no impact or a less than significant impact with regard to the impact thresholds listed below for the environmental topic noise. Since the proposed modified project would have the same type of single-family residential development located on the same project site and would only result in the addition of 10 single-family dwelling units, the impacts of the proposed modified project would also have no impact or a less than significant impact with regard to the following impact threshold stated as in the CEQA Checklist (related to offsite land uses from permanent increase in noise). Therefore, the following is not further analyzed for the proposed modified project in this Addendum:

- Project would not expose offsite, noise-sensitive land uses to increased traffic noise.

The following provides an analysis of the impacts that were identified in the certified EIR as significant impacts that, with mitigation measures incorporated, would be reduced to less than significant and significant impacts that, with mitigation measures incorporated, would remain significant and unavoidable. The analysis below addresses the questions as stated in the CEQA Checklist.

Project Impact

Would the project:

- *Expose existing residential uses to noise from grading and building construction activities?*
- *Expose persons to excessive ground borne vibration or ground borne noise levels from grading and building construction activities?*
- *Expose offsite, noise-sensitive land uses to increased traffic noise? Create new noise-sensitive land uses?*

Construction Noise

The certified EIR indicated that the approved project would expose the existing residential uses in the immediate area, including the residential units located to the south of the project site, to construction-related noise from grading and building construction activities. As construction commences through different phases, the construction noise would also move with each phase. Although construction activities would be required to comply with the Kern County Noise Ordinance that limits the hours of construction, the construction activities would still generate substantial noise that could impact sensitive receptors. The certified EIR determined that, with implementation of Mitigation Measures MM 4.10-1 through MM 4.10-3, the construction-related noise impacts would be less than significant.

Construction Vibration

The certified EIR indicated that the approved project would expose the existing residential uses in the immediate area to vibration annoyance to construction-related noise from grading and building construction activities. The primary vibratory sources during construction would be large bulldozers and loaded trucks which could generate approximate vibration levels of 66 to 87 vibration decibel (VdB). Previously constructed project phases and offsite dwelling units in close proximity to the project site would experience ground borne vibration and this would result in a temporary significant impact. The certified EIR determined that, with implementation of Mitigation Measures MM 4.10-1 through MM 4.10-3, the construction-related vibration impacts would be less than significant.

The proposed modified project would not result in a change to the conclusions regarding construction-related vibration in the certified EIR.

Project Operations – Effect of Traffic Noise to Onsite Sensitive Receptors

The certified EIR indicated that the approved project would result in the addition of noise sensitive receptors on the project site that would result in a significant impact. The certified EIR shows that, in the existing conditions, two noise sources cause the onsite noise levels to exceed the general plan standard of 65 dB CNEL: railroad noise; and traffic noise along the roads that border the project site. The railroad noise (including the use of the train warning horns) is in the range of approximately 66 to 72 dB CNEL on the northeastern portion of the project site. As provided in Table 4.10-6 on page 4.10-18 of the certified EIR, the traffic noise from roads that border the project site are in the range of 47 to 65 dB CNEL on the project site. This is based on noise monitoring conducted in 2009 for the noise analysis in Appendix H to the certified EIR.

Table 4.10-7 in the certified EIR provides the predicted year 2030 with project noise levels on the project site. As shown, the predicted noise levels would be below the 65 dB CNEL criteria along Reina Road and Renfro Road, but greater than 65 dB CNL along Santa Fe Way. The certified EIR concluded this impact to the onsite sensitive receptors would be significant and, with implementation of Mitigation Measure MM 4.10-4, this significant impact would be reduced to less than significant.

Mitigation Measure MM 4.10-4 requires that, prior to project occupancy, the installation of a sound wall along the north and east boundaries of the project site would be required to reduce the combined roadway and train noise below the 65 dB criterion. The extent and height of the sound walls need would be determined based on an acoustical analysis conducted for the Tentative Tract Map. Re-design of the Tentative Tract Map placed the drainage basin to the northeast corner of the site to serve as a buffer between the residential and the railroad line. Nevertheless, based on the new layout, mitigation for noise attenuation of several of the lots in the northeast portion of the Tentative Tract Map is necessary. Mitigation Measure MM 4.10-4 indicates the specific lots where noise attenuation would be needed and the height of the sound walls. Additionally, Mitigation Measure MM 4.10-4 includes language that states, "The project applicant shall implement recommendations of the acoustical analysis as necessary to bring the project into compliance with the noise performance standards."

Similar to the certified EIR, the acoustical analysis in Appendix E of this Addendum prepared for the proposed modified project provides the existing conditions for the two noise sources that cause the onsite noise levels to exceed the general plan standard of 65 dB CNEL: traffic noise; and railroad noise. The existing traffic noise source would be traffic on Santa Fe Way to the northeast of the project site. The acoustical analysis uses calculated traffic noise exposures for the year 2042 traffic conditions to provide a worst-case assessment. The updated acoustical analysis addresses train noise for the existing conditions where Reina Road would intersect an at grading crossing with the rail line which requires train warning horns for approaching cross traffic. The updated acoustical analysis also provides analysis of an option where Reina Road would be elevated and, therefore, the at grade crossing would be eliminated. With this option, train engineers would not be required to sound the warning horns. The analysis concludes the noise exposure would range from 50 dB CNEL to 56 dB CNEL.

Table III of the acoustical analysis in Appendix E to this Addendum provides the combined noise exposure for the current conditions with the rail line with the at grade rail crossing and traffic noise levels from Santa Fe Way. The estimated combined noise levels would exceed the applicable 65 dB CNEL exterior noise level standard for certain lots with the modified proposed project. As stated in Mitigation Measure 4.10-4, "The project applicant shall implement recommendations of the acoustical analysis as necessary to bring the project into compliance with the noise performance standards." Recommended clarifications to Mitigation Measure MM 4.10-4 based on the findings of the acoustical analysis provided in Appendix E to this Addendum are shown below (with clarifications shown in underline/~~strikeout~~). Table 3-1 and Figure 3-1 on the following pages provide information on the phase, lot number, and wall height as defined in the revised Mitigation Measure MM 4.10-4.

The minor revisions as shown do not reflect new information or substantial changes with respect to the circumstances under which the project is undertaken that involve new significant environmental effects or a substantial increase in the severity of impacts related to the above-described noise impact evaluation standards. No new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified, relevant to such noise impact evaluation has been identified. Therefore, with respect to this criterion, the proposed modified project would not result in any new impacts not already analyzed in the certified EIR, and the modified project would not increase the severity of a significant impact as previously identified in the certified EIR.

Mitigation Measures

MM 4.10-4 (revised): Prior to project occupancy, a sound wall shall be constructed along various lots along the north and east boundaries of the project site. The extent and height of the wall needed to adequately reduce rail noise shall be as defined in the ~~determined by an~~ acoustical analysis of the tentative tract map. The project applicant shall implement recommendations of the acoustical analysis as necessary to bring the project into compliance with the noise performance standards. Assuming no change in existing grade and the lot design, wall heights sufficient to reduce noise levels to below the 65-dB criterion are projected to be:

- ~~Lots 19 and 20: 20 feet~~
- ~~Lots 17, 18, 21, and 22: 17 feet~~
- ~~Lots 15, 16, 23, and 24: 14 feet~~
- ~~Lots 12 to 14 and 25 to 27: 10 feet~~
- ~~Lots 9 to 11, 29, and 30: 8 feet~~
- ~~Lots 4 to 8 and 121 to 124: 6 feet~~

Phase 1

- Lots 15, 16, 17, 18, 30, and 31: 6 feet

Phase 2

- Lot 23: 6 feet
- Lot 1: 7 feet
- Lot 22: 8 feet
- Lot 11, 12, 21, 22, 24, and 25: 9 feet
- Lot 26: 9.5 feet
- Lot 27: 10 feet
- Lots 19 and 20: 11 feet

Phase 4

- Lots 21 and 22: 6 feet
- Lot 31: 7 feet

If two-story homes will be constructed in the first row of homes nearest the BNSF railroad line and Santa Fe Way (Lots 16 and 17 of Phase 1 and Lots 24-27 of Phase 2), balconies facing the BNSF railroad line and Santa Fe Way will not be incorporated into the project design.

If two-story homes are proposed for the lots with anticipated exterior noise levels at or exceeding 70 dB CNEL (Lot 31 of Phase 1 and Lots 19-27 of Phase 2), a detailed acoustical analysis will be required once specific construction plans are known, to ensure compliance with the applicable 45 dB CNEL interior noise level standard.

All proposed residential lots will comply with applicable exterior noise level standards without the need for mitigation measures should the Reina Road at grade crossing be removed.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding of the certified EIR of a less than significant project-related impact. Therefore, no new mitigation measures would be required for the proposed modified project.

Cumulative Impacts

The certified EIR indicated that the short-term construction noise impacts would be a localized activity and would affect only the land uses that are immediately adjacent to the cumulative project sites. Therefore, the cumulative construction impacts would be less than significant. The proposed modified project would not result in a change to the conclusions regarding cumulative construction noise impacts in the certified EIR.

The certified EIR indicated that a significant increase in ambient noise levels could occur affecting noise-sensitive land uses. The approved project, in combination with cumulative background traffic noise levels, would result in a significant cumulative impact. Additionally, because significant cumulative mobile noise impacts would occur along offsite roadways, mitigation measures are not considered feasible since the

project cannot impose mitigation on offsite uses. Therefore, the cumulative impacts remain significant and unavoidable.

Mitigation Measures

No new mitigation measures are required beyond those included in the previously certified EIR, as revised.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding of the certified EIR of cumulatively significant and unavoidable. Therefore, no new mitigation measures would be required for the proposed modified project.

Table 3-1

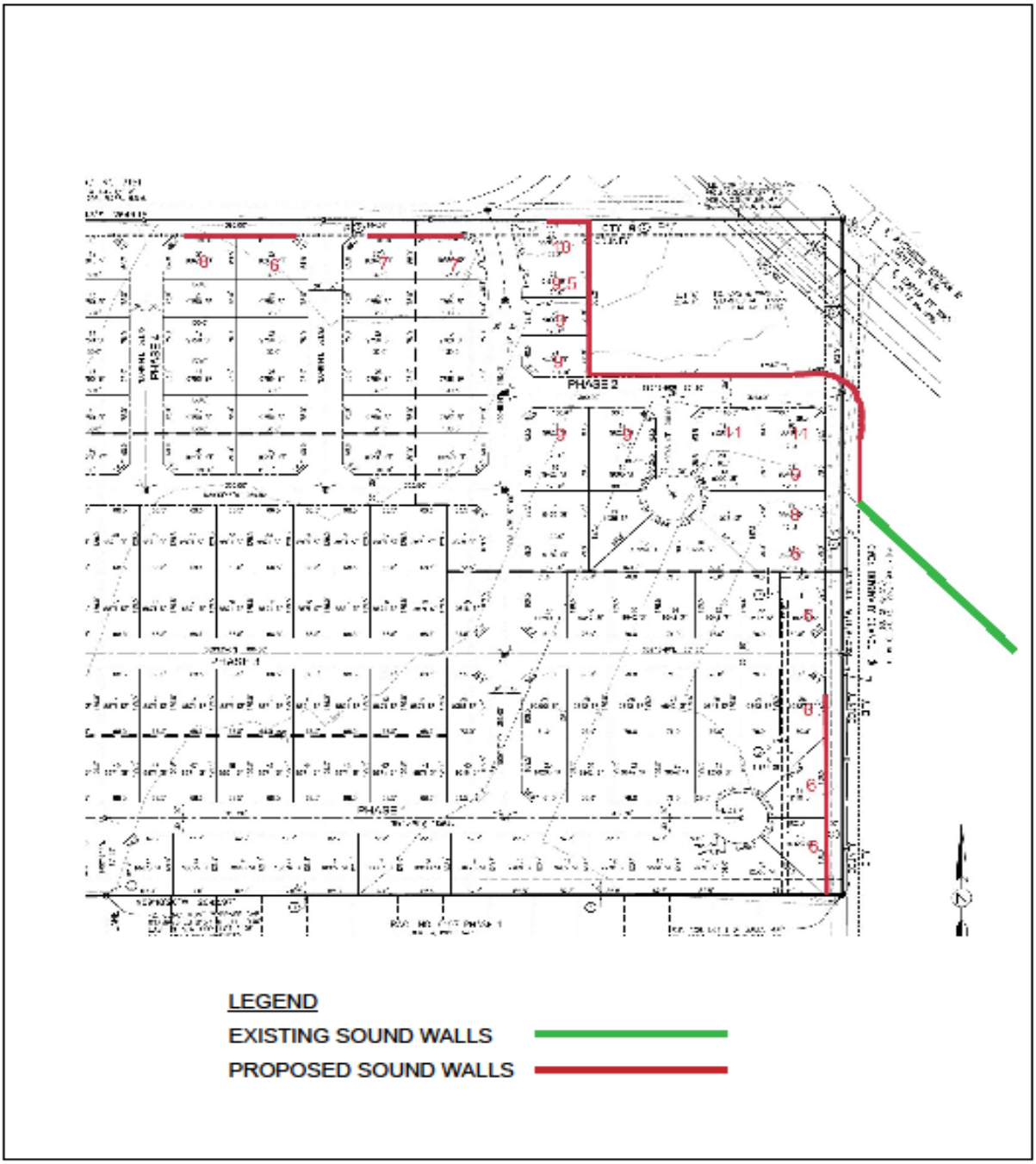
SOUND WALL HEIGHTS FOR MITIGATION MEASURE MM 4.10-4

Phase	Lot Number	Minimum Sound Wall Height, Feet Above Lot Pad Elevation (At Location Shown on Figure 3-1)
4	21	6
4	22	6
4	31	7
2	1	7
2	27	10
2	26	9.5
2	25	9
2	24	9
2	11	9
2	12	9
2	19	11
2	20	11
2	21	9
2	22	8*
2	23	6*
1	31	6*
1	30	6
1	18	6
1	17	6
1	16	6
1	15	6

Source: WJV Acoustics, Inc., July 28, 2021.

Footnote:
* Off-site existing sound wall.

Figure 3-1
Sound Wall Locations and Minimum Height Requirements



Source: WJV Acoustics, Inc., July 28, 2021.

3.13 POPULATION AND HOUSING

3.13.1 Setting

The population and housing setting of the proposed modified project and its surrounding area is generally the same as that of the approved project. There are no structures (including housing and associated residents) on the project site.

As discussed in the certified EIR, according to the California Department of Finance (DOF), the population in Kern County was 732,390 persons as of January 1, 2004 and 801,648 persons as of January 1, 2007. This represents a growth rate of 9.4 percent over three years. Population growth is expected to continue in the Kern County. According to DOF projections, the County's population is anticipated to grow to 1,086,113 persons by the year 2020 and up to 1,352,627 persons by 2030. The Kern Council of Government's (KernCOG) 2000 Regional Transportation Plan (RTP) stated, "population growth in the County has been significant and sustained. The trend in population growth in Kern County over the last 15-20 years has been outward expansion of existing urban centers (KernCOG 2000). This trend is anticipated to continue." In addition, KernCOG's 2004 RTP indicates, "the combined General Plans of the region designates sufficient land to absorb growth at current rates to beyond 2070, assuming water and urban services are available" (Kern COG 2004).

According to the KernCOG statistical information and the DOF, population for Kern County in 2019 was estimated to be 900,202 persons. In 2020, the City of Bakersfield had an estimated population of 389,007. This is slightly lower than the population projections included in the certified EIR, but remains generally on track as previously described, and is consistent with projections and growth rate included in the certified EIR.

Figure 2-4 in Chapter 2, Proposed Modified Project Description, of this Addendum provides an aerial of the existing land uses on the project site and the surrounding properties. Figure 2-5 provides the existing WRSP land use designations for the project site and Figure 2-6 provides the existing Kern County zoning classification for the project site.

3.13.2 Impact Analysis

This section evaluates the potential for the proposed modified project to result in new or substantially more severe significant impacts related to population and housing not previously identified in the certified EIR for the approved project. As discussed in Chapter 1, Section 1.5 Addendum Scope of Environmental Review in this Addendum, in the certified EIR, the approved project was determined to have no impact or a less than significant impact with regard to the impact thresholds listed below for the environmental topic population and housing. Since the proposed modified project would have the same type of single-family residential development located on the same project site and would only result in the addition of 10 single-family dwelling units, the impacts of the proposed modified project would also have no impact or a less than significant impact with regard to the following impact as thresholds stated in the CEQA Checklist. Therefore, the following is not further analyzed for the proposed modified project in this Addendum:

- Project would not displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere, as there are no dwelling units on the project site.
- Project would not displace substantial numbers of people as there are no dwelling units on the project site.

The impacts would directly induce substantial population growth which would be significant and unavoidable. There are no feasible mitigation measures for project level impacts related to population and housing identified in the certified EIR. The following provides an analysis of the cumulative impacts that

were identified in the certified EIR as significant and unavoidable. The analysis below addresses the questions as stated in the CEQA Checklist.

Cumulative Impacts

The certified EIR determined that, prior to the approval addressed in the EIR, "the project would result in substantial population growth in an area currently designated for agricultural." The approval on April 22, 2009 of the Reina Ranch Project included Vesting Tentative Tract Map No. 6812, the amendment of the WRSP land use designation from Resource Intensive-Agriculture (R-IA) to Low Medium Residential Density (LMR), and changes in the zone classification from A (Exclusive Agriculture) to DI (Drilling Island) and R-1 (Low-density Residential Cluster (CL) Combining Overlay. However, as addressed in detail in the certified EIR and Chapter 1 Introduction and Overview of this Addendum, the amendment of the land use designation and the changes in the zone classification is held in suspense pending the recordation of the Vesting Tentative Tract Map. Therefore, the statement above from the certified EIR should in fact be revised to state, "the project would result in substantial population growth in an area currently designated for agricultural but is experiencing changes in land use from agriculture to residential in response to a need for housing supply in the region." This addition to the language in the certified EIR would not change the conclusions of the analysis but would further supports the conclusion reached that the project, in conjunction with current and reasonably foreseeable projects, would lead to continued population growth in the region. The certified EIR further indicates that the associated extension of infrastructure, roadway and circulation system improvements, and completion of development proposals into the predominately undeveloped areas would further induce growth and that this cumulative impact to population would be significant. Although the certified EIR discussed that the provision of housing supply in the region would be beneficial in addressing the documented demand for housing, there are no feasible mitigation measures to address the cumulative significant impact related to population and the cumulative impact would remain significant and unavoidable.

The proposed modified project would not result in a change to the conclusions regarding population in the certified EIR.

Mitigation Measures

There were no feasible mitigation measures identified in the certified EIR. No new measures are required.

Level of Significance after Mitigation

The proposed modifications to the project do not change the findings in the certified EIR as a significant and unavoidable cumulative impact. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

3.14 PUBLIC SERVICES

3.14.1 Setting

The provision of public services in the vicinity of the proposed modified project area are generally the same as those described in the certified EIR. The project site receives public services from the following agencies and entities:

- Kern County Fire Department (KCFD) provides primary fire protection to unincorporated areas of the County and on regional transportation corridors. The project site is within the service area of Station 67 (located in the Rosedale area) and this station would provide the primary response. Stations 65 and 15, located in Kern County and the City of Bakersfield, respectively, would be on call to share fire protection services for emergency situations within the area.
- Kern County Sheriff's Department provides law enforcement services through enforcement of local, State, and Federal laws. This involves crime prevention, field patrol (by land and air), crime investigation, apprehension of offenders, regulation of noncriminal activity, performance of related support services, and traffic and parking control. In addition, the Sheriff's Department administers police services including the jail system, bailiff and prisoner transportation services, search and rescue, coroner, and civil processing. Primary police protection for the project site and surrounding unincorporated areas of the County are also provided by the Sheriff's Department. Secondary support is provided by the City of Bakersfield Police Department.
- California Highway Patrol (CHP) provides law enforcement services consisting of traffic regulation enforcement, emergency incident management, and service and assistance on regional transportation corridors and other major roadways in the unincorporated areas of the County. The CHP maintains a mutual aid agreement with the Kern County Sheriff's Department.
- The project area is served by the Rosedale Union School District (Kindergarten - 8th grade) and by the Kern High School District for high school students (9th – 12th grade).
- The project area is within the boundaries of the NOR Recreation and Parks District. In addition, there are numerous recreational facilities managed by the City of Bakersfield Recreation and Parks Department.
- Library services to the project area are provided by the Kern County Library system with the main branch, Beale Memorial Library, located in the City of Bakersfield.

3.14.2 Impact Analysis

This section evaluates the potential for the proposed modified project to result in new or substantially more severe significant impacts related to public services not previously identified in the certified EIR for the approved project. As discussed in Chapter 1, Section 1.5 Addendum Scope of Environmental Review in this Addendum, in the certified EIR, the approved project was determined to have no impact or a less than significant impact with regard to the impact threshold listed below for the environmental topic public services. Since the proposed modified project would have the same type of single-family residential development located on the same project site and would only result in the addition of 10 single-family dwelling units, the impacts of the proposed modified project would also have no impact or a less than significant impact with regard to the following impact threshold as stated in the CEQA Checklist. Therefore, the following is not further analyzed for the proposed modified project in this Addendum:

- Contribution to cumulative impacts on public services would be less than significant.

The following provides an analysis of the potential impacts related to public services that were identified in the certified EIR as potentially significant impacts and, with mitigation measures incorporated, would be

reduced to a less than significant impact. The analysis below addresses the questions as stated in the CEQA Checklist.

Project Impact

Would the project:

- *Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:*

The first section of the analysis in the certified EIR addressed the requirement of the Kern County Guidelines for the Preparation of EIRs that an economic development fiscal analysis be prepared for any proposed project considering 250 or more housing units. The analysis reviewed the residential funding sources available in Kern County: the general fund (receives revenue from property taxes, sales taxes, cable franchising fees, and utility franchising fees); and the fire protection fund (receives revenue from property tax). The analysis concluded that there was an unfunded deficit that was considered significant and requires mitigation under CEQA.

The certified EIR determined that, with implementation of Mitigation Measure MM 4.12-1, the approved project's impacts would be less than significant.

The proposed modified project would implement Mitigation Measure MM 4.12-1 and would not result in a change to the conclusions regarding public services in the certified EIR.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of less than significant. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

Project Impact (Fire Protection)

Would the project:

- *Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:*

  Fire Protection?

The certified EIR determined that, with payment of appropriate development fees as required by Mitigation Measure MM 4.12-1, impacts of the approved project to fire protection services would be less than significant. As no new or altered facilities had been identified, the certified EIR concluded that any future KCFD facilities would be required to comply with CEQA and any impacts identified through that process would be mitigated.

The certified EIR analyzed the potential impacts to fire protection response times and other levels of service. The analysis indicated that, it is anticipated that construction activities and population growth from the approved project would increase the number of medical aid calls and traffic in the project vicinity, which would create delays in emergency response. Based on the KCFD target service ratio and the potential population increase resulting from the approved project, 0.40 additional County fire personnel would be necessary to accommodate growth from the approved project. The certified EIR concluded that this was considered a significant impact. With project construction subject to the provisions of the Uniform Fire Code and local amendments, Titles 19, 22, and 27 of the California Safety Code Regulations, the Kern County Ordinance Code, and the National Fire prevention Associated Standards as well as implementation of Mitigation Measure MM 4.12-1, adequate fire protection services would be maintained. The impacts to fire protection level of service would be less than significant.

The temporary impacts during construction related to delays on the access roads in the project vicinity used by emergency vehicles and potential delays in response times would be mitigated to less than significant with implementation of mitigation measures provided in the Transportation and Traffic Section of the certified EIR.

The proposed modified project would implement Mitigation Measure MM 4.12-1 and would not result in a change to the conclusions regarding public services in the certified EIR.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of less than significant. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

Project Impact (Police Protection)

Would the project:

- *Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:*

  Police Protection?

The certified EIR determined that, with payment of appropriate development fees as required by Mitigation Measure MM 4.12-1, impacts of the approved project to police protection services would be less than significant. As no new or altered facilities had been identified, the certified EIR concluded that any future police or Sheriff's Department facilities would be required to comply with CEQA and any impacts identified through that process would be mitigated.

In addition, the certified EIR analyzed the potential impacts to police protection response times and other levels of service. The analysis indicated that the construction of the approved project has the potential to create a demand for police services by the Kern County Sheriff's Department due to increased urban development. Based on the Sheriff's Department target personnel ratio, implementation of the approved project would result in the need for one additional officer. With implementation of Mitigation Measure MM 4.12-1 this impact would be less than significant.

The construction of the approved project has the potential to create temporary impacts. This would include the need for additional police monitoring during both day and nighttime, the need to redirect or block access routes, and delays on the access roads in the project vicinity would result in potential delays in response times. This would be mitigated to less than significant with implementation of mitigation measures provided in the Transportation and Traffic Section of the certified EIR.

The proposed modified project would implement Mitigation Measure MM 4.12-1 and would not result in a change to the conclusions regarding public services in the certified EIR.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of less than significant. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

Project Impact (Schools)

Would the project:

- *Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:*

  Schools?

The certified EIR determined that, with payment of required school fees in accordance with Government Code Section 65996 as indicated by Mitigation Measure MM 4.12-2, the impacts of the approved project to schools would be less than significant. This would include potential impacts related to level of service.

The proposed modified project would implement Mitigation Measure MM 4.12-2 and would not result in a change to the conclusions regarding schools in the certified EIR.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of less than significant. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

Project Impact (Parks and Recreation)

Would the project:

- *Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain*

acceptable service ratios, response times, or other performance objectives for any of the public services:

Parks?

The certified EIR determined that, with payment of appropriate development fees as required by Mitigation Measures MM 4.12-3 and MM 4.12-4, impacts of the approved project to parks and recreation facilities would be less than significant. This would include potential impacts related to level of service. Although the certified EIR did not have a specific threshold for the environmental topic of recreation as specified in the current CEQA Environmental Checklist Form environmental topic issues XVI. (a) and (b), the analysis of impacts in the certified EIR included both parks and the recreation facilities provided by the NOR Recreation and Park District and the need for compliance with the MBGP. These requirements stipulate that the project applicant shall dedicate land for recreation facilities onsite or pay in-lieu fees to the NOR Recreation and Park District in compliance with Government Code Section 66477 (Quimby Act) and Kern County Zoning Ordinance 18.96.040 and 18.96.060 as identified in Mitigation Measures MM 4.12-3 and MM 4.12-4.

The proposed modified project would implement Mitigation Measures MM 4.12-3 and MM 4.12-4 and would not result in a change to the conclusions regarding parks in the certified EIR.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of less than significant. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

Project Impacts (Library, Fire Protection, Police Protect, and Parks and Recreation)

Would the project:

- *Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services?*

Refer to the discussion of fire protection, police protection, schools, and parks above.

The certified EIR indicated that it is not reasonably foreseeable that the approved project would result in the need for a new library. Since new or altered facilities are not foreseen, nor is it expected to result in physical environmental impacts associated with the construction of a facility, no impact was anticipated.

The proposed modified project would not result in a change to the conclusions regarding public services in the certified EIR.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of less than significant. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

Cumulative Impact

The certified EIR determined that, with implementation of Mitigation Measures MM 4.12-1 through MM 4.12-4, the approved project's impact would not contribute to any cumulative impact related public services.

The proposed modified project would implement Mitigation Measures MM 4.12-1 through MM 4.12-4 and would not result in a change to the conclusions regarding public services in the certified EIR.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of a less than significant cumulative impact. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

3.15 MINERAL RESOURCES

3.15.1 Setting

The mineral resources setting of the proposed modified project and its surrounding area is the same as that of the approved project site. The project site has been historically used for agriculture and is currently used for cultivation of wheat grown for forage/fodder for dairy feed. In the southeast corner of the project site there is an agricultural water well and irrigation piping that serves as the primary source of water for the agricultural operations. There are no structures on the project site. The land uses surrounding the project site are agricultural and residential.

There are two abandoned and plugged oil wells in the central portion of the project site. This occurred in the 1980s. The certified EIR indicated that there was no production data available for these two wells.

The project site is within the boundaries of the Rosedale oil field. The principal mineral resource under production in the project area is oil. According to the certified EIR, the oil field properties in Kern County, including in the vicinity of the City of Bakersfield, are among the few areas in the County available for urban development. Economic pressures to redevelop oil field properties have included declining oil production and increased land value. These economic influences can reduce the incentives for operators to continue oil production from aging fields.

Figure 2-4 in Chapter 2, Proposed Modified Project Description, of this Addendum provides an aerial of the existing land uses on the project site and surrounding properties. Figure 2-6 provides the existing Kern County zoning classifications for the project site, including the location of the DI (Drilling Island) zoning. This classification preserved part of the project site as undeveloped land to allow for future mineral resource extraction, including oil drilling. It should be noted that the proposed modified project relocates the DI (Drilling Island) zone to the northeast corner of the project site and decreased the size from 2.57 acres for the approved project to 2.46 acres for the modified project.

3.15.2 Impact Analysis

This section evaluates the potential for the proposed modified project to result in new or substantially more severe significant impacts related to mineral resources not previously identified in the certified EIR for the approved project. As discussed in Chapter 1, Section 1.5 Addendum Scope of Environmental Review in this Addendum, in the certified EIR, the approved project was determined to have less than significant impacts with regard to the impact thresholds listed below for the environmental topic mineral resources. Since the proposed modified project would have the same type of single-family residential development located on the same project site and would only result in the addition of 10 single-family dwelling units, the impacts of the proposed modified project would also have no impact or a less than significant impact with regard to the following impact thresholds as stated in the CEQA Checklist. Therefore, the following is not further analyzed for the proposed modified project in this Addendum:

- Project would not result in a loss of availability of a known mineral resource that would be of value to the region and residents of the State.
- Project would not result in a loss of availability of a local important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

There were no potential significant project level or cumulative impacts related to mineral resources identified in the certified EIR. As indicated in the certified EIR, upon compliance with the required goals, policies, and implementation measures of the MBGP, WRSP, and MBHCP, no new or revised mitigation measures would be required for the proposed modified project.

Mitigation Measures

There were no feasible mitigation measures identified in the certified EIR. No new measures are required.

Level of Significance after Mitigation

The proposed modifications to the project do not change the findings in the certified EIR as less than significant. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

3.16 TRANSPORTATION AND TRAFFIC

3.16.1 Setting

The transportation and traffic setting of the proposed modified project and its surrounding area is generally the same as that of the approved project. The project site is bounded by Rudd Avenue to the west, Reina Road to the north, Leonard Alvarado Road to the east (which turns west into the approved project), and agricultural land and a single-family residential development to the south. The discussion of the existing and proposed streets and intersections, performance criteria, existing roadway conditions, public transportation, non-motorized transportation (pedestrian pathways and bikeways), railroad operations, and airport facilities in 4.14.2 Environmental Setting of the certified EIR provides the setting for the proposed modified project. The information provided in 4.14.3 Regulatory Setting of the certified EIR is also applicable to the proposed modified project. Refer to these subsections of the certified EIR for a detailed discussion.

3.16.2 Impact Analysis

This section evaluates the potential for the proposed modified project to result in new or substantially more severe significant impacts to transportation and traffic not previously identified in the certified EIR for the approved project. As discussed in Chapter 1, Section 1.5 Addendum Scope of Environmental Review of this Addendum, in the certified EIR, the approved project was determined to have no impact or a less than significant impact with regard to the impact thresholds listed below for the environmental topic transportation and traffic. Since the proposed modified project would have the same type of single-family residential development located on the same project site and would only result in the addition of 10 single-family dwelling units, the impacts of the proposed modified project would also have no impact or a less than significant impact with regard to the following impact thresholds provided below (which are no longer stated in the current CEQA Checklist). Therefore, the following is not further analyzed for the proposed modified project in this Addendum:

- Project would not cause an increase in operation-related safety hazards or result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that would result in substantial safety risks.
- Project would not result in inadequate parking capacity.

The following provides an analysis of the potential impacts to transportation and traffic that were identified in the certified EIR as significant impacts and, with mitigation measures incorporated, would be reduced to less than significant. The analysis addresses the questions as stated in the CEQA Checklist.

Project Impact

Would the project:

- *Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?*
- *Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?*

Vehicle Trips

A Traffic Impact Study (TIS) was prepared in 2008 by Peters Engineering Group and included in Appendix J of the certified EIR. A review of the 2008 TIS was prepared by Ruettgers & Schuler to evaluate if any changes occur in the analysis as a result of the proposed modified project. The review of the 2008 TIS is included in Appendix F to this Addendum. Five main sections of the 2008 TIS were evaluated by Ruettgers

& Schuler and summary statements are provided about the adequacy for inclusion in the Addendum to the Reina Ranch Project EIR. The following provides the evaluation of the 2018 TIS by section.

(1) Trip Generation

Project trip generation in the 2008 TIS was estimated using the 7th Edition of the ITE Trip Generation Manual. With the analysis of 253 single-family dwelling units, the 2008 TIS estimated 2,422 daily trips and 256 PM peak hour trips for the approved project in the certified EIR. The proposed modified project would contain 263 single-family dwelling units, which would have an estimated daily and PM peak hour trip generation of 2,483 and 260, respectively, using the 10th Edition of the ITE Manual. Given the directional splits in traffic distribution, the increase in 10 single-family dwelling units would result in a maximum increase of 1 or 2 trips in any direction. This increase in trip generation would not be significant. Therefore, the analysis of the 2008 TIS trip generation would be adequate for the Addendum to the EIR.

(2) Trip Distribution

There have been no major changes in trip destinations or shifts in regional traffic patterns within the project vicinity since the preparation of the 2008 TIS. Therefore, the project trip distribution in the 2008 TIS would remain applicable and would be adequate for the Addendum to the EIR.

(3) Existing and Future Traffic Volumes

Existing traffic was counted in 2008 and future traffic was projected for the years 2010 and 2030. Future projections included known pending projects, KernCOG traffic model projections, and assumptions from other approved traffic studies, including the Rosedale Ranch project (approved in 2005). These projections were made prior to the downturn of the housing market and subsequent recession in 2008 and following years. Most of the anticipated development and growth has yet to occur, therefore, the study generally overstates the cumulative traffic conditions.

Since the 2008 TIS, the traffic pattern in the immediate project vicinity has been altered due to the realignment of Renfro Road south of Santa Fe Way and the construction of the BNSF railroad grade separation at Hageman Road/Allen Road/Santa Fe Way. These changes have been positive, with additional capacity being added to the local street system.

Therefore, the traffic volumes identified in the 2008 TIS prepared for the certified EIR would be adequate for the Addendum to the EIR.

(4) Vehicle Miles Traveled

In 2013, the State of California changed the CEQA metric for the assessment of traffic impacts from LOS to Vehicle Miles Traveled (VMT) (Senate Bill 743). Guidelines for implementation of SB 743 were issued in December 2018 and final implementation by local agencies was required by July 2020. Kern County is currently in the process of developing its policies for evaluation of VMT impacts in accordance with the guidelines provided by the Governor's Office of Planning and Research (OPR).

Having been prepared in 2008, the TIS does not address the VMT metric. For purposes of this evaluation of the proposed modified project, a VMT assessment is included to address the current standards. The OPR "Technical Advisory on Evaluating Transportation Impacts in CEQA," dated December 2018, was used as the basis for evaluation of VMT impacts for the proposed modified project. OPR recommends a minimum reduction of 15 percent in the baseline (regional) VMT as the significance threshold for residential developments.

The analysis involved comparing an estimate of VMT attributable to the modified proposed project to a baseline VMT for the Kern County region and assessing whether the project-related VMT would result in a significant transportation impact based on the above stated criteria.

KernCOG maintains a regional traffic model, from which daily VMT can be estimated. Data was obtained

from KernCOG from their base year model, 2018, in order to establish a baseline for daily VMT within Kern County. Based on household and employment populations in the Bakersfield metropolitan area, as well as travel patterns throughout the region, KernCOG data shows an average residential VMT of 9.76 miles per trip.

An average VMT of 6.75 miles per trip was estimated for the proposed modified project based on several factors, including project location, trip generation and distribution, trip type, and probable trip destination. As discussed above, OPR guidelines recommend a minimum reduction of 15 percent in the baseline (regional) VMT as the significance threshold for residential developments. The proposed modified project VMT of 6.75 miles per trip reflects a 31 percent reduction from the residential baseline VMT of 9.76 miles per trip. Therefore, the modified proposed project addressed in this Addendum to the EIR would have a less than significant impact related to VMT under CEQA.

(5) Impact Analysis and Assessment of Impact

The 2008 TIS determined the levels of service (LOS) of the intersections using the computer program Synchro 6, which was based on the 2000 Highway Capacity Manual (HCM) procedures. Roadway LOS determination was based on the Florida Department of Transportation (DOT) Generalized Peak Hour table for urban roadways. The current versions of Synchro 6 and the HCM are 11 and Edition 6 (2016), respectively, which reflect changes in multimodal analysis and active transportation. For purposes of evaluating LOS impacts based on vehicle delay and associated operational parameters, in accordance with the County's adopted criteria of significance, the procedures and methods used in the 2008 TIS are adequate for this Addendum to the EIR. Intersection and roadway LOS analysis was tabulated in Tables 6-11 and 14-19 of the 2008 TIS with LOS impacts highlighted. The discussion section of the 2008 TIS summarizes the findings and identifies impacts for each of the scenarios. These findings and impacts in the 2008 TIS prepared for the certified EIR remain adequate for the Addendum to the EIR.

(6) Mitigation

The 2008 TIS states that, "All of the impacted intersections listed above, with the exception of the intersection of Hageman and Heath Roads, are included in the Metropolitan Bakersfield Transportation Impact Fee Program Facilities List. Therefore, the Project will mitigate its fair share of the cumulative impacts with payment of traffic impact fees and with payment of a fair share of the cost of future signal improvements at the intersection of Hageman and Heath Roads."

For road segments, Santa Fe Way and Renfro Road are stated as being included in the Regional Traffic Impact Fee (RTIF). Allen Road and Reina Road are not on the RTIF Facilities list and, therefore, an equitable share cost was calculated.

The Phase III RTIF has been superseded by the Phase IV program and facilities list. The Phase IV RTIF facilities list was approved in 2009 and contains additional facilities, including: the intersection of Hageman and Heath Roads, the road segments of Allen Road; and the future Renfro Road/BNSF grade separation. Reina Road will be terminated from the west at Santa Fe Way and easterly traffic will use the future Renfro Road/BNSF grade separation.

Additionally, it should be noted that, since the preparation of the 2008 TIS, a number of significant roadway project have been completed in the project vicinity, including the Hageman-Allen underpass at the BNSF Railway, realignment of Renfro Road north of Noriega Road, and signalization of the intersection of Allen Road at Meacham Road and Rosedale Highway at Heath Road.

With the implementation of Mitigation Measures in the certified EIR, it is assumed that the proposed modified project addressed in this Addendum to the EIR will participate in the RTIF program at the Phase IV rates and the associated facilities list. Therefore, the mitigation requirements for both intersection and roadway impacts and improvements is payment of the current traffic impact fees, with no additional equitable share contributions. Therefore, with the implementation of the Phase IV RTIF, the assessment of

impacts in the 2008 TIS prepared for the certified EIR remains adequate for this Addendum to the EIR.

(7) Conclusions Related Vehicle Traffic

As discussed in the certified EIR for the approved project, Mitigation Measures MM 4.14-1 and MM 4.14-2 are required to address the significant impacts of adding 253 new homes to the regional traffic network. Although these Mitigation Measures would reduce the local impacts to less than significant, the project depends on a regional network that, while planned, is not fully constructed or funded for construction. Therefore, although the certified EIR for the approved project concluded that the project impacts would be mitigated to the extent feasible with implementation of Mitigation Measures MM 4.14-1 and MM 4.14-2, the impact related to vehicular traffic would remain significant and unavoidable.

The proposed modified project would implement Mitigation Measures MM4.14-1 and 4.14-2 and would not result in a change to the conclusions regarding vehicular traffic impacts in the certified EIR.

Temporary Construction Traffic

The certified EIR concluded that the approved project would cause temporary increases in traffic because of construction activities that have the potential to worsen the LOS on the study area roadways. With implementation of Mitigation Measure MM 4.14-3, this impact would be reduced to less than significant.

The certified EIR concluded that the approved project would require the maneuvering of construction-related vehicles and equipment among general purpose traffic on area roadways which could cause safety hazards. With implementation of Mitigation Measure MM 4.14-3, this impact would be reduced to less than significant.

The certified EIR concluded that the approved project would require construction-related traffic that could result in road closures, detours, and other activities that could interfere with emergency response or evacuation plans. With implementation of Mitigation Measure MM 4.14-4, this impact would be reduced to less than significant.

The proposed modified project would implement Mitigation Measures MM 4.14-3 through MM 4.14-5 and would not result in a change to the conclusions regarding construction-related traffic impacts in the certified EIR.

Policies, Plans, or Programs Supporting Alternative Transportation

The certified EIR concluded that the approved project is located within the WRSP that has policies requiring expansion of transit facilities in the area of new projects. With implementation of Mitigation Measure MM 4.14-5, this impact would be reduced to less than significant.

The proposed modified project would implement Mitigation Measure MM 4.14-5 and would not result in a change to the conclusions regarding impacts related to policies, plans, or programs supporting alternative transportation in the certified EIR.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR since the VMT analysis was not a requirement of CEQA at that time.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding in the certified EIR related to vehicle traffic of a significant and unavoidable impact. The proposed modifications to the project do not change the findings in the certified EIR regarding temporary construction traffic and alternative transportation of less than significant. The proposed modified project addressed in the Addendum to the EIR would have a less than significant impact related to VMT. Therefore, no new mitigation measures would be required for

the proposed modified project.

Cumulative Impacts

The certified EIR concluded that the cumulative impacts from all existing and reasonably foreseeable projects, as well as the MBGP update, are considered significant and unavoidable. Mitigation Measure MM 4.14-6 would reduce this cumulative impact; however, this cumulative impact remains significant and unavoidable.

The proposed modified project would implement Mitigation Measure MM 4.14-6 and would not result in a change to the conclusions regarding cumulative traffic impacts in the certified EIR.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance after Mitigation

The proposed modifications to the project do not change the findings in the certified EIR as a significant and unavoidable cumulative impact. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

Mitigation Measures

No mitigation measures were provided in the previously certified EIR since the VMT analysis was not a requirement of CEQA at that time.

Level of Significance after Mitigation

No mitigation measures are required. The proposed modified project addressed in the Addendum to the EIR would have a less than significant impact related to VMT. Therefore, no new mitigation measures would be required for the proposed modified project.

3.17 TRIBAL CULTURAL RESOURCES

3.17.1 Setting

The tribal cultural resource setting of the proposed modified project is the same as that of the cultural resources setting of the approved project site. Lands in the vicinity of the proposed modified project area are generally the same as those described in the certified EIR. The project lies in the southern portion of the San Joaquin Basin Province, within the southern portion of the Great Valley geomorphic province of California. The Great Valley is a nearly flat northwest-to-southeast-trending structural basin bound by the Sierra Nevada and Coast Ranges of California. An immense volume of sediments have filled the eastern valley, derived from the erosion of the Sierra Nevada, deposited by major and minor west-flowing drainages and their tributaries. The project site is located at 350 feet above mean sea level. The San Joaquin Valley is one of the least known archaeological areas in California.

3.17.2 Impact Analysis

The 2009 certified EIR did not analyze the impacts of tribal cultural resources as a standalone category because this resource section had not yet been adopted as part of the CEQA Appendix G: Environmental Checklist Form until 2016. In 2015 legislature added new requirements regarding tribal cultural resources in Assembly Bill 52, and subsequently in Appendix G the following year. The absence of tribal cultural resource impact analysis in the certified EIR does not require preparation of such an analysis for the proposed project because "new information, which was not known and could not have been known at the time the [previous analysis] was certified as complete" per Public Resources Code Section 21166(c).

Section 4.5 of the 2009 certified EIR analyzed potential cultural resources impacts associated with construction and operation of the project. The National Register of Historic Places is a guide used to identify the Nation's cultural resources and indicate what properties should be considered for protection from destruction or impairment. Similarly, Assembly Bill 2881 established the California Register as a guide used to identify the State's historical resources and indicate what properties are to be protected from substantial adverse change. No prehistoric or cultural resources were found on the project site during Phase I cultural surveys, according to the certified EIR. As required by Senate Bill 18, the Native American Heritage Commission (NAHC) and California Native American tribes were notified of the proposed project. In 2007, the NAHC indicated that no cultural sites or traditional cultural properties were recorded in the Sacred Lands files.

Project Impact

- *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:*
- *Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources defined in Public Resources Code section 5020.1 (k) or*
- *A recourse determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.*

An updated cultural resource record search, sacred lands search and paleontological survey were conducted at the Southern San Joaquin Information Center in January 2021 of the project area and the environs within

one-half mile. The search revealed that no cultural resources have been recorded within the project area, no paleontological finds have occurred within the project area, and no Native American cultural resources are located in close proximity to the project area. The updated study is in harmony with the initial search that was analyzed in the certified EIR. The proposed modified project would implement Mitigation Measures MM 4.5-1, MM 4.5-2, and MM 4.5-3 for tribal cultural resources to reduce potential impacts to less than significant.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance After Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of less than significant. Therefore, no new mitigation measures would be required for the proposed modified project.

Cumulative Impacts

- *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:*
- *Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources defined in Public Resources Code section 5020.1 (k) or*
- *A recourse determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.*

The proposed project will follow relevant goals and policies to protect and preserve areas of significant cultural or archaeological potential for future use by conducting the cultural studies. The proposed modified project would implement Mitigation Measures MM 4.5-1, MM 4.5-2, and MM 4.5-3 for tribal cultural resources to reduce cumulative impacts to less than significant.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance After Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of less than significant impact. Therefore, no new mitigation measures would be required for the proposed modified project.

3.18 UTILITIES

3.18.1 Setting

The provision of utilities in the vicinity of the proposed modified project area are generally the same as those described in the certified EIR. The following discusses the utilities and agencies/entities that provide these services.

Water Service

Vaughn Water Company (VWC) would provide water service to the project site for domestic use including irrigation. The VWC service area overlays portions of the Kern County Water Agency (KCWA) Improvement District No. 4 and the RRBWSD. Water provided would be from wells owned and maintained by VWC. The groundwater that would be pumped for the project site is managed by RRBWSD. The well installations with associated storage facilities and the delivery systems that serve existing developments are located in the vicinity of the project site. The developer, with oversite by VWC, would install the water system under the conditions specified in a Water Service Agreement with VWC. All piping within the project site would be required to meet the Kern County fire flow requirements and the VWC main line policy. VWC would maintain the water distribution system that would serve the project site.

The project site is located in the southwestern potion of the RRBWSD service area. RRBWSD exists to secure and provide an adequate long-term, reliable, and affordable supply of water to landowners and customers over a forecast project life, which in the case of the Reina Ranch Project in the certified EIR was forecast to be 37 years.

The certified EIR indicated that, in 2003, the RRBWSD conducted an evaluation of its long-term water supply. The purpose of the report was to "evaluate the sufficiency and reliability of the long-term water supply which is projected to exist by the …District." The report made the following findings: 1) The forecast supply of water was found to be reliable based on neutral estimates of all flow terms and reasonable statistics criteria; and 2) There is a 99 percent probability that the forecast water supply would meet or exceed the total forecast water demand.

According to the Kern Groundwater Authority (KGA) website, the KGA was established in 2014 to provide a framework for the active, comprehensive management of the groundwater basin underlying the San Joaquin Valley portion of Kern County, to preserve and maintain local control of groundwater resources and provide long-term surety for all basin users. The RRBWSD is a member of the KGA.

Since the preparation of the analysis in the certified EIR, California has experienced prolonged drought conditions. In response to California's recent drought conditions and increased reliance on groundwater, in November 2014, the State legislature passed the Sustainable Groundwater Management Act (SGMA). SGMA mandates that groundwater basins designated by the Department of Water Resources (DWR) as high or medium priority develop Groundwater Sustainability Plans (GSPs) to become sustainable. The Kern Sub-unit of the Tulare Lake Basin, overlying the San Joaquin Valley portion of Kern County, is designated as high priority.

The RRBWSD staff prepared and, in December 2019, the Board of Directors adopted a Sustainable Groundwater Management Plan Chapter for the RRBWSD, which became part of the KGA's Sustainable Groundwater Management Plan submitted to the State Water Resources Control Board for review and approval.

The Rosedale-Rio Bravo Management Area (RRBMA) of the groundwater basin has a projected potential long-term water supply deficiency of about 20,116-acre feet per year (AFY). The RRBMA seeks to eliminate that shortage over the next 20 years by a combination of projects and water management actions. Projects include water supply transfers, construction of direct recharge projects, and demand reduction.

Wastewater

NOR Sanitary District No. 1 would provide sewer service, including wastewater collection and treatment, for the project site. The certified EIR indicated that the approved project would connect to an existing NOR Sanitary District 15-inch trunk line that runs north and south along Renfro Road adjacent to the project site.

Stormwater Drainage

Kern County regulates development through the Kern County Land Division Ordinance, Development Standards, and the Zoning Ordinance. Development sites are required to provide for their own onsite stormwater drainage and retention, show that existing facilities have sufficient capacity to carry the additional runoff, and provide and execute a Stormwater Pollution Prevention Plan (SWPPP). These onsite retention basins are maintained by Kern County as specified in Vesting Tentative Tract Map conditions of approval.

Solid Waste and Landfills

The project site is located within the Central Refuse Universal Collection service area. Solid waste generated on the project site would be collected by Varner Brothers, a solid waste hauler.

Kern County Waste Management Department operates a total of seven landfills, five transfer stations, four bin sites, and two special waste facilities. The solid waste from the project site would be disposed of at the Shafter-Wasco Landfill, a Class III landfill owned and operated by the Kern County Waste Management Department. The landfill is located on Scofield Avenue, approximately 18 miles to the northwest, in the City of Shafter. At the time of the preparation of the certified EIR, under the current permits this landfill had an estimated closure date of 2027. The Kern County Public Health Department, Environmental Health Division is currently processing a full Solid Waste Facility Permit (SWFP) for the Shafter-Wasco Recycling and Sanitary Landfill. The proposed SWFP would increase the boundaries of the facility, increase the hours of operation, increase composting design capacity, and extend the life of the facility to 2054. The Bakersfield Metropolitan (Bena) Sanitary Landfill, another Class III landfill, is located approximately 17 miles to the east of Bakersfield. This landfill has an estimated closure date of 2038.

Electrical Services

Electrical power supply and distribution for the project area are furnished by Pacific Gas & Electric (PG&E). The project site would be served by PG&E's Renfro Road Substation located on the west side of Renfro Road approximately 0.25 mile north of Rosedale Highway approximately 2.5 miles to the south of the project site. There are existing lines along Renfro Road near the project site.

Natural Gas

Southern California Gas Company (SCGC) has a natural gas pipeline located adjacent to the project site. The SCGC operates a 24-inch diameter, high pressure main transmission pipeline that runs along the eastern boundary of the project site, within the right-of-way for Renfro Road.

Telecommunications

The provision of telecommunications services was not addressed in the certified EIR. Cable television systems operating in the unincorporated areas of Kern County are administered through a franchise agreement with companies which allow facilities to be installed within public rights-of-way. In incorporated areas, the franchise agreements are administered by the individual cities. Regardless of the governmental jurisdiction, cable television systems are regulated by the Federal Communications Commission (FCC).

Microwave facilities (such as towers) required for cable television and other communications activities are installed and sited per the requirements of the individual jurisdictions that have land use authority. Major telecommunications companies providing services to the project site include: AT&T, Spectrum, Direct TV, Charter Communications, and Dish Network.

This topic is not included in the analysis below because it is regulated by the FCC and addressed through franchise agreements between the local jurisdictions and the telecommunications companies.

3.18.2 Impact Analysis

This section evaluates the potential for the proposed modified project to result in new or substantially more severe significant impacts related to utilities not previously identified in the certified EIR for the approved project. As discussed in Chapter 1, Section 1.5 Addendum Scope of Environmental Review of this Addendum, in the certified EIR, the approved project was determined to have no impact or a less than significant impact with regard to the impact threshold below provided for the environmental topic utilities and service systems. Since the proposed modified project would have the same type of single-family residential development located on the same project site and would only result in the addition of 10 single-family dwelling units, the impacts of the proposed modified project would also have no impact or a less than significant impact with regard to the impact threshold stated below. Therefore, the following is not further analyzed for the proposed modified project in this Addendum:

- Project would not exceed wastewater treatment requirements of the applicable regional water quality control board.

The following provides an analysis of the potential impacts related to utilities and service systems that were identified in the certified EIR as potentially significant impacts with mitigation measures incorporated that would be reduced to a less than significant impact. The analysis below addresses the questions as stated in the CEQA Checklist.

Project Impact

Would the project:

- *Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electrical power, natural gas, or telecommunications facilities, the construction or relocation of which would cause significant environmental effects?*
- *Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*
- *Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?*
- *Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair attainment of solid waste reduction goals?*
- *Comply with federal, state, and local management and reduction statues and regulations related to solid waste?*

Water Services

The VWC would provide water service to the approved project for domestic use and irrigation. The certified EIR indicated that water demand for the approved project is 319 AFY (based on 253 single-family dwelling units). A water demand factor of 1.26 acre-feet for each dwelling unit was used based on the Table 12 of VWC's 2005 Urban Water Management Plan (2005 UWMP). The VWC 2005 UWMP

anticipates that there is adequate water supply to meet projected demand through the year 2025. The VWC plans to ensure an adequate water supply during dry years and multiple dry years by supplementing ongoing conservation programs for reducing demand during those periods. Such plans have resulted in a reduction of water used by customers during drought years.

The certified EIR discussed that the VWC provided a "will serve" letter, dated February 8, 2006, confirming that it would provide the approved project with potable water. The letter was provided in Appendix K to the certified EIR.

The certified EIR indicated that additional infrastructure, including transmission line, distribution system, meters, and a meter reading system, would be necessary to reach and distribute water to the approved project. This infrastructure would be installed as a part of the development of the approved project. The responsibilities for funding and construction of this infrastructure would be addressed in a development agreement between the Applicant and VWC.

The certified EIR determined that, with implementation of Mitigation Measures MM 4.15-1 and 4.15-2, the approved project's impacts would be less than significant.

The proposed modified project would result in the development of 263 single-family dwelling units. Applying the same methodology used in the certified EIR to address the approved project to determine the water demand for the proposed modified project, the revised water demand would be an estimated 331 AFY (or an increase in 12 AFY). This represents a 3.8 percent increase from the estimated water demand for the approved project. In addition, the VWC provided a "will serve" letter, dated July 8, 2020, confirming that it would provide the proposed modified project with potable water. The letter is provided in Appendix G to this Addendum. The proposed modified project would implement Mitigation Measures MM 4.15-1 and 4.15-2 and would not result in a change to the conclusions regarding water supply provided in the certified EIR.

Wastewater

The certified EIR discussed that NOR Sanitary District No. 1 would provide wastewater collection and treatment to the approved project. The certified EIR indicated that the NOR Sanitary District No. 1 provided a letter, dated January 6, 2006, indicating it could serve the approved project. The discussion in the certified EIR indicated that the existing capacity of the NOR Sanitary District No. 1 would be adequate to serve the expected 75,900 gallons per day (gpd) of wastewater that would be generated by the approved project. The certified EIR concluded that the existing wastewater facilities should be adequate to service the approved project. The approved project would connect to an existing 15-inch trunk line that runs along Renfro Road adjacent to the project site and ultimately connects to a 48-inch trunk line.

The certified EIR discussed that the NOR Sanitary District No. 1 Wastewater Treatment Plant would serve the project site when the approved project is constructed. The plant had a capacity of 6 million gallons per day (mgd) at the time of the preparation of the certified EIR, however, it was undergoing an expansion project to increase the plant treatment capacity by 1.5 mgd. The certified EIR determined that, with implementation of Mitigation Measure MM 4.15-3, the approved project's impacts related to wastewater collection and treatment would be less than significant.

The proposed modified project would result in the development of 263 single-family dwelling units. Applying the same methodology used in the certified EIR to address the approved project to determine the expected wastewater flow for the proposed modified project, the revised wastewater flow would be an estimated 78,900 gpd (or an increase in demand of 3,000 gpd). This represents a 4 percent increase from the estimated wastewater generation for the approved project in the certified EIR. The proposed modified project would implement Mitigation Measures MM 4.15-3 and would not result in a change to the conclusions regarding wastewater collection and treatment provided in the certified EIR.

Stormwater Drainage

The certified EIR did not address the potential impacts to stormwater drainage.

Similar to the approved project, the proposed modified project would provide its own onsite stormwater retention. The proposed modified project would provide a 1.24-acre stormwater retention basin in the northwest corner of the project site. The onsite retention basin has been designed consistent with the Kern County Land Division Ordinance, Development Standards, and the Zoning Ordinance and has sufficient design capacity to accommodate the runoff from the developed proposed modified project. Therefore, there would be no impact.

Electrical Services

The project site is currently served by PG&E's Renfro Road Substation. The certified EIR indicated that electrical demand for the approved project would be approximately 2.0 Megawatts (Mw) based on a generation factor of 7.9 Kilowatt (Kw) per dwelling unit. In addition, the construction activities for the approved project would require temporary electrical power supply for equipment and lighting. The completed approved project would require lighting along the roadways.

PG&E indicated the existing electrical facilities were adequate to accommodate the approved project. However, the existing lines on Reina Road would be required to be updated to accommodate main line requirements. The certified EIR discussed that the impacts related to the required electrical changes would be minimized if: the main lines adjacent to roadways brought to the ultimate width at the initiation of the approved project; and utility easements are made available as needed. The certified EIR concluded that, with implementation of Mitigation Measure 4.15-5, the approved project would have a less than significant impact related to electrical service.

The proposed modified project would result in the development of 263 single-family dwelling units. Applying the same methodology used in the certified EIR to address the approved project to determine the expected electrical demand for the proposed modified project, the revised total electrical demand would be approximately 2.1 Mw. This represents a 5 percent increase from the estimated total electrical demand for the approved project. The proposed modified project would need electricity for construction equipment and lighting as well as for street lighting at project completion similar to the approved project. The proposed modified project would implement Mitigation Measure MM 4.15-5 and would not result in a change to the conclusions regarding electrical services provided in the certified EIR.

Natural Gas

SCGC operates a 24-inch diameter, high pressure main transmission pipeline that runs along the eastern boundary of the project site, within the right of way for Renfro Road. The certified EIR discussed that new distribution and transmission pipelines would be required to accommodate the approved project. The gas pipelines would be installed at the expense of the Applicant. New connections would be constructed in accordance with the requirements of Kern County and SCGC requirements. The certified EIR concluded that, with implementation of Mitigation Measure 4.15-6, the approved project would have a less than significant impact related to natural gas service.

The proposed modified project would result in the development of 263 single-family dwelling units. The proposed modified project would implement Mitigation Measure MM 4.15-6 and would not result in a change to the conclusions regarding natural gas services provided in the certified EIR.

Water Supply

The certified EIR indicated that implementation of the approved project would require an expansion of the existing water supply facilities. The expansion would include extending the existing offsite mainline pipelines to the project site. The Water Supply Assessment included in Appendix K to the certified EIR identified that the total projected average daily demand for the approved project would be 319 AFY.

Compared with the existing conditions on the project site (agriculture), the approved project would result in a net decrease in water demand of 101 AFY. Once developed, the water demand for the approved project would vary due to the climate on the project site and the use of conservation measures.

According to the Water Supply Assessment, VWC proposes to deliver water to the project site from groundwater extracted from the San Joaquin Valley Basin/Kern County sub-basin. The certified EIR concluded that the VWC has adequate water supplies to serve the approved project without impacts to domestic water supply.

In addition, RRBWSD and KCWA Improvement District No. 4 have entered into a Joint Use Ground Water Recovery Program. The program includes the construction of well water recovery capacity and transmission pipeline capacity for the Cross Valley Canal (CVC). The certified EIR indicated that coordination with the KCWA Improvement District No. 4, RRBWSD, City of Bakersfield, and the California Water Service Company would ensure adequate water supply by VWC for the approved project. The analysis in the certified EIR concluded that the VWC had no supply deficiencies that would occur for normal, single, and multiple dry year scenarios as the groundwater supply would be maintained as a reliable source through recharge.

The water supply would have to conform to water quality standards of the Federal, State, and local agencies. The certified EIR concluded that, with compliance with these standards and implementation of Mitigation Measures MM 4.15-1 and MM 4.15-2, the approved project's impacts related to water supply would be less than significant.

The proposed modified project would result in the development of 263 single-family dwelling units. Refer to the discussion of water demand and supply provided above for the proposed modified project. As discussed, the VWC provided a "will serve" letter, dated July 8, 2020, confirming that it would provide the proposed modified project with potable water. The letter is provided in Appendix G to this Addendum. The proposed modified project would implement Mitigation Measures MM 4.15-1 and 4.15-2 and would not result in change to the conclusions regarding water supply provided in the certified EIR.

Solid Waste

The project site is located within the Central Refuse Universal Collection service area. Solid waste generated on the project site would be collected by Varner Brothers, a solid waste hauler.

The certified EIR indicated that the solid waste from the project site would be disposed of at the Shafter-Wasco Landfill, a Class III landfill owned and operated by the Kern County Waste Management Department. Although the landfill has an estimated closure date of 2027 under the current permits. As discussed above, he Kern County Public Health Department, Environmental Health Division is currently processing a full SWFP for the Shafter-Wasco Recycling and Sanitary Landfill. The improvements as a result of the proposed SWFP would extend the life of the landfill to 2054. Additionally, the Bakersfield Metropolitan (Bena) Sanitary Landfill, another Class III landfill, is located approximately 17 miles to the east of Bakersfield. This landfill has an estimated closure date of 2038.

The certified EIR indicated that the approved project would generate an estimated 253 tons of solid waste per year (based on 253 single-family dwelling units). A solid waste generation factor of 1 ton per year was used based on waste generation information projections by the California Integrated Waste Management Board. The analysis concluded that the approved project's contribution of solid waste to the Shafter-Wasco Landfill would be minimal and represents a very small fraction of available capacity. Future residents would be enrolled in the Kern County curbside recycling program for green waste. These recycling efforts would be expected to reduce waste to landfills by 50 percent. The recycling of construction waste would also be a requirement. The certified EIR concluded that the existing landfills are considered to have an adequate volume of landfill capacity. Therefore, the impacts of the approved project associated with solid waste disposal would be less than significant.

Based on the methodology provided above, the proposed modified project would generate 263 tons of solid waste per year, representing a 4 percent increase in solid waste from the approved project. This would represent a small fraction of the availability capacity at the Shafter-Wasco Landfill similar to the approved project.

The certified EIR indicated that the approved project would be required to comply with all Federal, State, and local statues and regulations related to solid waste. This would include implementation of compliance with Assembly Bill 939. The certified EIR concluded that compliance with these standards and implementation of Mitigation Measure MM 4.15-4 would result in less than significant impacts.

The proposed modified project would implement Mitigation Measure MM 4.15-4 and would not result in changes to the conclusions regarding solid waste disposal or compliance with statues and regulations related to solid waste in the certified EIR.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of less than significant. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

Cumulative Impact

The certified EIR determined that the cumulative project would increase the demand for utilities. However, applicant constructed facilities, payment of connection or service fees, and other development fees will mitigate the increase in demand on utilities. Incorporation of Mitigation Measure MM 4.15-4 would reduce the cumulative impacts from the approved project in conjunction with other projects in the area to less than significant. The proposed modified project would implement Mitigation Measure MM 4.15-4 and would not change the conclusions of the certified EIR.

Mitigation Measures

No new or revised mitigation measures are required beyond those included in the previously certified EIR.

Level of Significance after Mitigation

The proposed modifications to the project do not change the finding in the certified EIR of less than significant. Therefore, no new or revised mitigation measures would be required for the proposed modified project.

3.19 WILDFIRE

3.19.1 Setting

The wildfire setting of the proposed modified project and its surrounding area is the same as that of the hazards setting of the approved project site. The project site has been historically used for agriculture and is currently used for cultivation of wheat grown for forage/fodder for dairy feed. In the southeast corner of the project site there is an agricultural water well and irrigation piping that serves as the primary source of water for the agricultural operations. There are no structures on the project site. The land uses surrounding the project site are agricultural and residential.

The project is located in a CAL FIRE Local Responsibility Area (LRA) because the county has no Very High Fire Hazard Severity Zones within the LRA. The site's topography is mainly flat with little to no slope. Floodplain, coastal or wildland-urban interface development are susceptible to hazardous conditions, and do not apply to the proposed project location.

3.19.2 Impact Analysis

California is experiencing a wildfire crisis. Wildfire hazards have been increasing in magnitude, destructiveness and deadliness. The trend is predicted to continue as the effects of climate change worsen. Development creates an increased number of ignition sources which may exacerbate wildfire risk, particularly in the wildland-urban interface.

In the case California Building Industry Association v. Bay Area Air Quality Management District (2015) 62 Cal.4th 369, the court held "…agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents." The proposed project is not in a high severity fire zone, and does not risk exacerbating environmental hazards or conditions that already exist.

Project Impact

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

- *Substantially impair an adopted emergency response plan or emergency evacuation plan?*
- *Due to slope, prevailing winds, or other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*
- *Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*
- *Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*

The 2009 certified EIR did not analyze the impacts of wildfire as a standalone category because this resource section had not yet been adopted to the CEQA Appendix G: Environmental Checklist Form until January 2019. Wildfire impacts are less than significant because the project site is not located in or near any state responsibility areas or lands classified as very high fire hazard severity zones. The proposed project will construct roads to current California Building Code and California Fire Code standards with appropriate ingress/egress that will not impair emergency response or evacuation plans. There will be defensible space strategically designed for emergency responders to arrive and water utilities for firefighters to make a stand and address any fire before growing. The proposed project is on relatively flat land, lacking

slope, and would not pose risk to flooding or landslides. The proposed project would not require the installation or maintenance of associated infrastructure that may exacerbate fire risk or result in ongoing impacts to the environment.

Mitigation Measures

No mitigation measures were provided in the previously certified EIR since the Wildfire analysis was not a requirement of CEQA at that time.

Level of Significance After Mitigation

The proposed modified project addressed in the Addendum to the EIR would have a less than significant impact related to Wildfire. Therefore, no new mitigation measures would be required for the proposed modified project.

Cumulative Impacts

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

- *Substantially impair an adopted emergency response plan or emergency evacuation plan?*
- *Due to slope, prevailing winds, or other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*
- *Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*
- *Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*

The 2009 certified EIR did not analyze the cumulative impacts of the project in relation to wildfire. The proposed modified project would increase ten dwelling units from the certified EIR, though all structures are subject to wildfire risk, the cumulative impact would still be than less than significant.

Mitigation Measures

No mitigation measures were provided in the previously certified EIR since the Wildfire analysis was not a requirement of CEQA at that time.

Level of Significance After Mitigation

The proposed modified project addressed in the Addendum to the EIR would have a less than significant impact related to Wildfire. Therefore, no new mitigation measures would be required for the proposed modified project.

4.1 Lead Agency

Kern County Planning & Natural Resources Department

- Lorelei Oviatt, AICP - Director
- Craig Murphy – Assistant Director
- Katrina Slatyon – Division Chief

4.2 Project Proponent

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APPENDIX A
Air Quality Report

AIR QUALITY IMPACT ANALYSIS

For Addendum to the Reina Ranch Project Environmental Impact Report Kern County, CA

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June 2021 (revised July 2021)

Project 200505.0237

Trinity Consultants

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1. EXECUTIVE SUMMARY

Trinity Consultants has completed an Air Quality Impact Analysis (AQIA) for the construction of the modified Reina Ranch Project, a single-family residential community located in the southern San Joaquin Valley in unincorporated Kern County, northwest of the City of Bakersfield corporate boundaries, but within the City's sphere of influence. This is a modified proposed Project for 263 single-family residential homes.

The modified proposed Project's construction would include the following criteria pollutant emissions: reactive organic gases (ROG), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and suspended particulate matter (PM_{10} and $PM_{2.5}$). Project operations would generate air pollutant emissions from mobile sources (vehicle activity from residents), energy sources (natural gas usage), and area sources (incidental activities related to architectural coating, consumer products, and landscape maintenance). Project construction and operational activities would also generate greenhouse gas (GHG) emissions. Criteria and GHG emissions were estimated using the California Emissions Estimator Model (CalEEMod) version 2016.3.2 (California Air Pollution Control Officers Association (CAPCOA) 2017), which is the most current version of the model approved for use by the San Joaquin Valley Air Pollution Control District (SJVAPCD).

Table 4-3 presents the modified proposed Project's construction emissions and provides substantial evidence to support a *less than significant* air quality impact on the San Joaquin Valley Air Basin. Table 4-4 presents the modified proposed Project's operations emissions and provides substantial evidence to support a *less than significant* air quality impact on the San Joaquin Valley Air Basin. With the application of various mitigation measures, the modified proposed Project's GHG emissions would be reduced by more than the 29% reduction target for GHGs. Based on the foregoing conclusions, the modified proposed Project is considered to have *less than significant* air quality impacts on the San Joaquin Valley Air Basin.

Cumulative impacts were also evaluated. A list of tentative development projects provided by the Kern County Planning and Natural Resources Department identified tentative projects within a one-mile radius of the modified proposed Project. Cumulative emissions were not quantified because the details provided for these projects do not provide enough information to accurately estimate their potential emissions. Owing to the inherently cumulative nature of air quality impacts, the threshold for whether a project would make a cumulatively considerable contribution to a significant cumulative impact is simply whether the project would exceed project-level thresholds. As such, a qualitative evaluation of the cumulative projects supports a finding that the modified proposed Project's contribution would not be cumulatively considerable because the modified proposed Project's incremental emissions would be *less than significant*.

The approved Project found several environmental effects that are potentially significant but that can be mitigated to a less than significant level. The modified proposed Project provides substantial evidence to support a less than significant air quality impact on the San Joaquin Valley Air Basin. Between the approved Project and the modified proposed Project, there have been emission model updates and technology improvements that contribute to more accurate and fewer emissions.

2. INTRODUCTION

2.1 Purpose

This AQIA was prepared pursuant to the SJVAPCD Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI) (SJVAPCD 2015), the Kern County Planning and Community Development Department's (KCPD) Air Quality Preparation Guidelines (KCPD 2006), and the California Environmental Quality Act (CEQA) Statute and Guidelines (CEQA 2021).

2.2 General Project Description

The modified proposed Reina Ranch Project (Project) is the redesign of a single-family residential community from 253 to 263 units in Kern County, CA. This modified proposed Project includes the following:

- Redesign of the site plan resulting in an increase from 253 to 263 single-family residential dwelling units.
- Reduction from two storm water retention basins totaling 3.65 acres to one 1.24-acre storm water retention basin.
- Relocation of a 2.57-acre drilling island preserve to a 2.64-acre drilling island
- Removal of the Cluster (CL) Combining Overlay on the project site.

Construction for Phase 1 is estimated to begin in April 2022, with construction completing after one year. Phase 2 through 7 will each have a 6-month construction schedule, starting after the previous phase has been completed. There are no specific development or phasing dates; therefore, most of the defaults in the CalEEMod emissions model were applied to estimate a construction schedule. **Figure 2-1** depicts the regional location and **Figure 2-2** depicts an aerial view of the Project location.

Figure 2-1. Regional Location

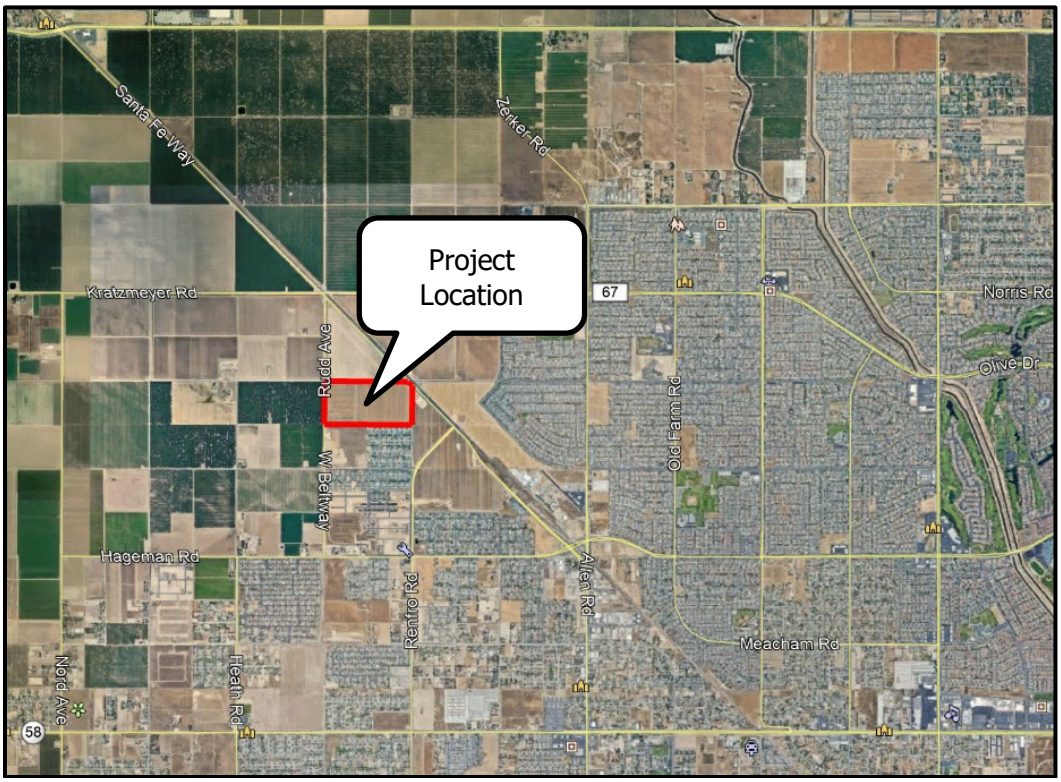


Figure 2-2. Project Location

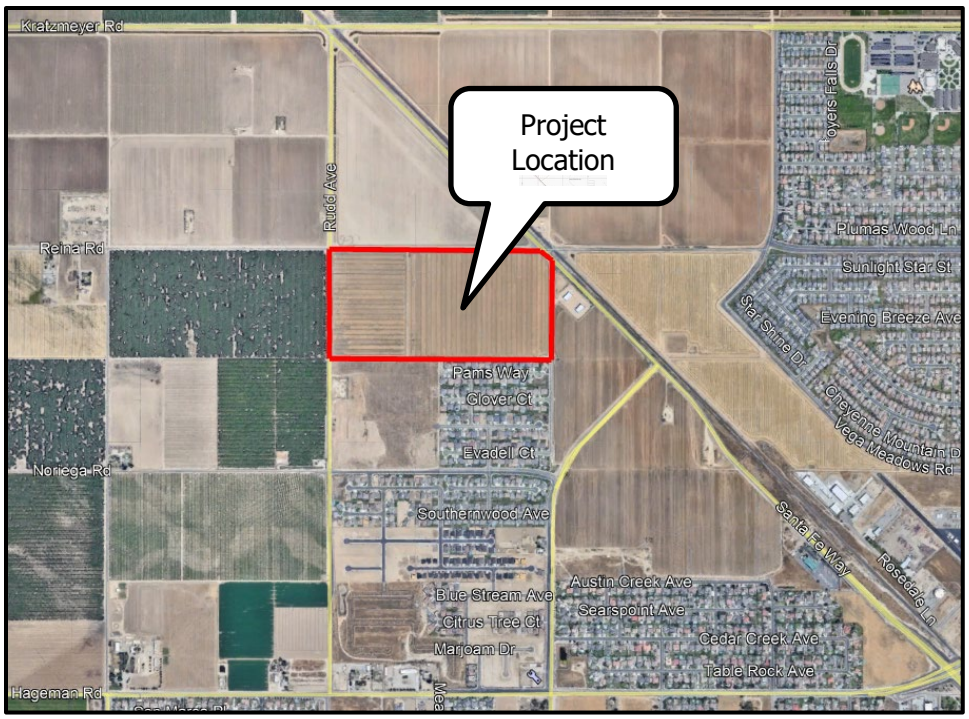
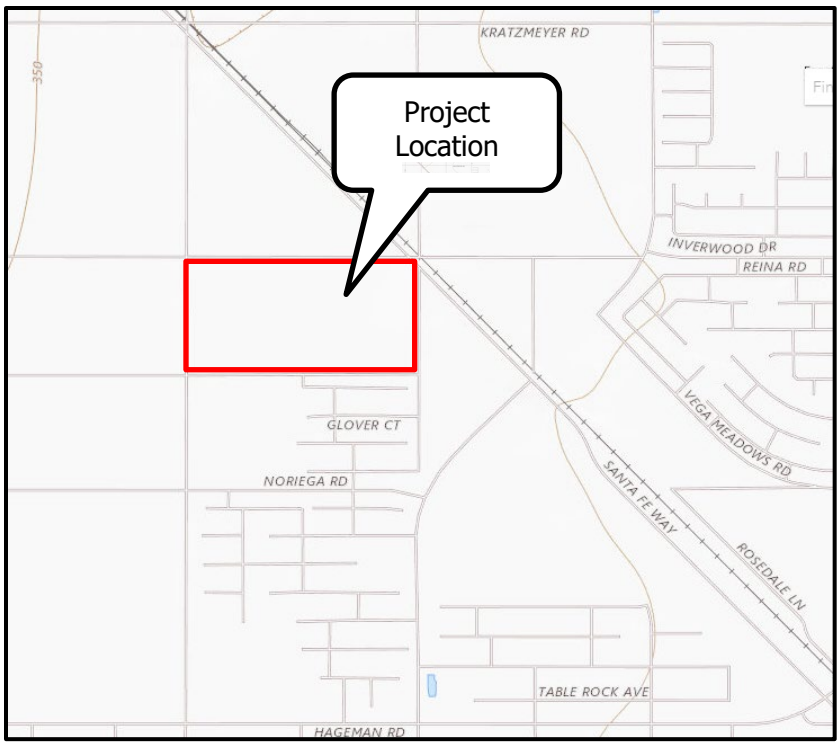


Figure 2-3 depicts the Project site's topography based on United States Geological Survey's (USGS) National Map (USGS 2019). The Project site is located at an elevation of approximately 355 feet above mean sea level and is surrounded by residential and agricultural land uses. The Project site is bounded by Rudd Avenue to the west, Reina Road to the north, Leonard Alvarado Road to the east, and agricultural land and a single-family residential development to the south.

Figure 2-3. Project Site Topography



3. SETTING

Protection of the public health is maintained through the attainment and maintenance of ambient air quality standards for various atmospheric compounds and the enforcement of emissions limits for individual stationary sources. The Federal Clean Air Act requires that the U.S. Environmental Protection Agency (EPA) establish National Ambient Air Quality Standards (NAAQS) to protect the health, safety, and welfare of the public. NAAQS have been established for ozone (O_3), CO, NO_2, SO_2, PM_{10} and $PM_{2.5}$, and lead (Pb). California has also adopted ambient air quality standards (CAAQS) for these "criteria" air pollutants. CAAQS are more stringent than the corresponding NAAQS and include standards for hydrogen sulfide (H_2S), vinyl chloride (chloroethene), and visibility reducing particles. The U.S. Clean Air Act Amendments of 1977 required each state to identify areas that were in non-attainment of the NAAQS and to develop State Implementation Plans (SIP's) containing strategies to bring these non-attainment areas into compliance. NAAQS and CAAQS designation/classification for Kern County are presented in **Section 3.1** below.

Responsibility for regulation of air quality in California lies with the California Air Resources Board (CARB) and the 35 local air districts with oversight responsibility held by the EPA. CARB is responsible for regulating mobile source emissions, establishing CAAQS, conducting research, managing regulation development, and providing oversight and coordination of the activities of the 35 air districts. The air districts are primarily responsible for regulating stationary source emissions and monitoring ambient pollutant concentrations. CARB also determines whether air basins, or portions thereof, are "unclassified," in "attainment" or in "non-attainment" for the NAAQS and CAAQS relying on statewide air quality monitoring data.

3.1 Air Quality Standards

The Project area is located within Kern County's portion of the San Joaquin Valley Air Basin (SJVAB or Basin). Kern County is included among the eight counties that comprise the SJVAPCD. The SJVAPCD acts as the regulatory agency for air pollution control in the Basin and is the local agency empowered to regulate air pollutant emissions for the Project area. **Table 3-1** provides the NAAQS and CAAQS.

Table 3-1. Federal & California Air Quality Standards

Pollutant	Averaging Time	NAAQS	CAAQS
		Concentration	
O_3	8-hour	0.070 ppm (137 µg/m^3)[a]	0.070 ppm (137 µg/m^3)
	1-hour		0.09 ppm (180 µg/m^3)
CO	8-hour	9 ppm (10 µg/m^3)	9 ppm (10 µg/m^3)
	1-hour	35 ppm (40 µg/m^3)	20 ppm (23 µg/m^3)
NO_2	Annual Average	53 ppb (100 µg/m^3)	0.030 ppm (57 µg/m^3)
	1-Hour	100 ppb (188.68 µg/m^3)	0.18 ppm (339 µg/m^3)
SO_2	3-Hour	0.5 ppm (1,300 µg/m^3)	
	24 Hour	0.14 ppm (365 µg/m^3)	0.04 ppm (105 µg/m^3)
	1-Hour	75 ppb (196 µg/m^3)	0.25 ppm (655 µg/m^3)
Particulate Matter (PM_{10})	Annual Arithmetic Mean		20 µg/m^3
	24-Hour	150 µg/m^3	50 µg/m^3
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3
	24-Hour	35 µg/m^3	
Sulfates	24-Hour		25 µg/m^3
Pb[d]	Rolling Three-Month Average	0.15 µg/m^3	
	30 Day Average		1.5 µg/m^3
H_2S	1-Hour		0.03 ppm (42 µg/m^3)
Vinyl Chloride (chloroethene)	24-Hour		0.010 ppm (26 µg/m^3)
Visibility Reducing particles	8 Hour (1000 to 1800 PST)		[b]

ppm = parts per million
ppb = parts per billion
mg/m^3 = milligrams per cubic meter
µg/m^3 = micrograms per cubic meter

Source: CARB 2016

a. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm

b. In 1989, CARB converted both the general statewide 10-mile visibility standards and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Under the provisions of the U.S. Clean Air Act, the Kern County portion of the SJVAB has been classified as nonattainment/extreme, nonattainment/severe, nonattainment, attainment/unclassified, attainment, or unclassified under the established NAAQS and CAAQS for various criteria pollutants. Table 3-2 provides the SJVAB's designation and classification based on the various criteria pollutants under both NAAQS and CAAQS.

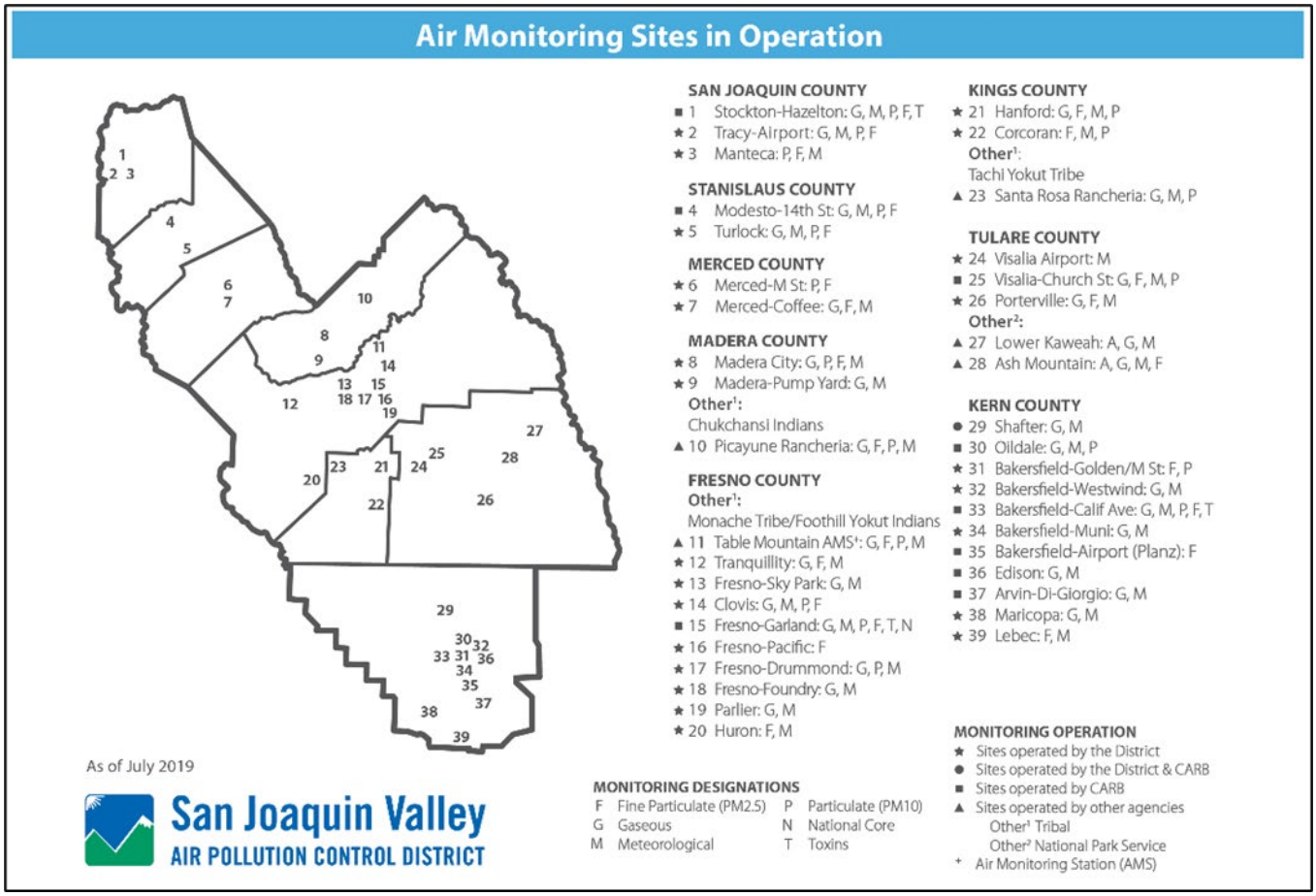
Table 3-2. SJVAB Attainment Status

Pollutant	NAAQS[a]	CAAQS[b]
O_3, 1-hour	No Federal Standard[f]	Nonattainment/Severe
O_3, 8-hour	Nonattainment/Extreme[e]	Nonattainment
PM_{10}	Attainment[c]	Nonattainment
$PM_{2.5}$	Nonattainment[d]	Nonattainment
CO	Attainment/Unclassified	Attainment/Unclassified
NO_2	Attainment/Unclassified	Attainment
SO_2	Attainment/Unclassified	Attainment
Pb (Particulate)	No Designation/Classification	Attainment
H_2S	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particulates	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment

Source: SJVAPCD 2021a
Note:
a. See 40 CFR Part 81
b. See CCR Title 17 Sections 60200-60210
c. On September 25, 2008, EPA redesignated the San Joaquin Valley to attainment for the PM_{10} National Ambient Air Quality Standard (NAAQS) and approved the PM_{10} Maintenance Plan.
d. The Valley is designated nonattainment for the 1997 $PM_{2.5}$ NAAQS. EPA designated the Valley as nonattainment for the 2006 $PM_{2.5}$ NAAQS on November 13, 2009 (effective December 14, 2009).
e. Though the Valley was initially classified as serious nonattainment for the 1997 8-hour O_3 standard, EPA approved Valley reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010).
f. Effective June 15, 2005, the EPA revoked the federal 1-hour O_3 standard, including associated designations and classifications. EPA had previously classified the SJVAB as extreme nonattainment for this standard. EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan on March 8, 2010 (effective April 7, 2010). Many applicable requirements for extreme 1-hour O3 nonattainment areas continue to apply to the SJVAB.

The SJVAPCD, along with CARB, operates an air quality monitoring network that provides information on average concentrations of those pollutants for which Federal or State agencies have established NAAQS and CAAQS, respectively. The monitoring stations in the San Joaquin Valley are depicted in **Figure 3-1**.

Figure 3-1. SJVAPCD Monitoring Network



Source: SJVAPCD 2021b

3.2 Existing Air Quality

For the purposes of background data and this air quality analysis, this analysis relied on data collected in the last three years for the CARB monitoring stations that are located in the closest proximity to the project site. **Table 3-3** provides the background concentrations for O_3, particulate matter of 10 microns (PM_{10}), particulate matter of less than 2.5 microns ($PM_{2.5}$), CO, NO_2, SO_2, and Pb. Information is provided for the Bakersfield-5558 California Avenue, Bakersfield-Golden State Highway, Bakersfield-Municipal Airport, and Oildale-3311 Manor Street monitoring stations for 2017 through 2019. No data is available for H_2S, Vinyl Chloride or other toxic air contaminants in Kern County.

Table 3-3. Existing Air Quality Monitoring Data in Project Area

Pollutant and Monitoring Station Location	Maximum Concentration			Days Exceeding Standard		
	2017	2018	2019	2017	2018	2019
O_3 – 1-hour CAAQS (0.09 ppm)						
Bakersfield – 5558 California Ave	0.122	0.107	0.097	11	8	2
Bakersfield – Municipal Airport	0.118	0.111	0.092	9	9	0
Oildale – 3311 Manor Street	0.110	0.113	0.099	4	5	1
O_3 – 8-hour CAAQS (0.07 ppm)						
Bakersfield – 5558 California Ave	0.104	0.098	0.088	87	64	28
Bakersfield – Municipal Airport	0.101	0.098	0.080	57	59	24
Oildale – 3311 Manor Street	0.099	0.098	0.087	68	57	20
O_3 – 8-hour NAAQS (0.070 ppm)						
Bakersfield – 5558 California Ave	0.104	0.098	0.088	85	60	24
Bakersfield – Municipal Airport	0.101	0.098	0.080	55	54	19
Oildale – 3311 Manor Street	0.099	0.097	0.086	65	54	16
PM_{10} – 24-hour CAAQS (50 µg/m^3)						
Bakersfield – 5558 California Ave	143.6	142.0	125.9	16	13	17
Bakersfield – Golden State Hwy	165.1	159.0	664.2	24	27	21
Oildale – 3311 Manor Street	210.0	179.0	392.1	80	161	118
PM_{10} – 24-hour NAAQS (150 µg/m^3)						
Bakersfield – 5558 California Ave	138.0	136.1	116.3	0	0	0
Bakersfield – Golden State Hwy	158.2	155.2	652.2	1	1	1
Oildale – 3311 Manor Street	59.4	174.9	389.3	0	4	8
$PM_{2.5}$ - 24-hour NAAQS (35 µg/m^3)						
Bakersfield – 5558 California Ave	101.8	98.5	59.1	28	36	12
Bakersfield – Golden State Highway	74.3	99.1	66.1	9	11	4
CO - 8-Hour CAAQS & NAAQS (9.0 ppm)						
No data collected	*	*	*	*	*	*
NO_2 - 1-Hour CAAQS (0.18 ppm)						
Bakersfield – Municipal Airport	0.062	0.057	0.064	0	0	0
Bakersfield – 5558 California Ave	0.066	0.061	0.067	0	0	0
NO_2 - 1-Hour NAAQS (0.10 ppm)						
Bakersfield – Municipal Airport	0.063	0.057	0.064	0	0	0
Bakersfield – 5558 California Ave	0.066	0.062	0.067	0	0	0
SO_2 – 24-hour Concentration - CAAQS (0.04 ppm) & NAAQS (0.14 ppm)						
No data collected	*	*	*	*	*	*
Pb - Maximum 30-Day Concentration CAAQS (1500 ng/m^3)						
Bakersfield - 5558 California Ave	12.6	9.3	*	*	*	*

Source: CARB 2021a
Notes: ppm= parts per million
* There was insufficient (or no) data available to determine the value.

The following is a description of criteria air pollutants, typical sources and health effects and the recently documented pollutant levels in the project vicinity.

3.2.1 Ozone (O_3)

The most severe air quality problem in the San Joaquin Valley is high concentrations of O_3. High levels of O_3 cause eye irritation and can impair respiratory functions. High levels of O_3 can also affect plants and materials. Grapes, lettuce, spinach and many types of garden flowers and shrubs are particularly vulnerable to O_3 damage. O_3 is not emitted directly into the atmosphere but is a secondary pollutant produced through photochemical reactions involving hydrocarbons and nitrogen oxides (NOx). Significant O_3 generation requires about one to three hours in a stable atmosphere with strong sunlight. For this reason, the months of April through October comprise the "ozone season." O_3 is a regional pollutant because O_3 precursors are transported and diffused by wind concurrently with the reaction process. The data contained in **Table 3-3** shows that the Bakersfield area exceeded the 1-hour average ambient O_3 CAAQS and the 8-hour average ambient O_3 NAAQS and CAAQS for the 2017 through 2019 period.

3.2.2 Suspended Particulate Matter (PM_{10} and $PM_{2.5}$)

Both State and Federal particulate standards now apply to particulates under 10 microns (PM_{10}) rather than to total suspended particulate (TSP), which includes particulates up to 30 microns in diameter. Continuing studies have shown that the smaller-diameter fraction of TSP represents the greatest health hazard posed by the pollutant; therefore, EPA has recently established NAAQS for $PM_{2.5}$. The project area is classified as attainment for PM_{10} and non-attainment for particulates under 2.5 microns ($PM_{2.5}$) for NAAQS.

Particulate matter consists of particles in the atmosphere resulting from many kinds of dust and fume-producing industrial and agricultural operations, from combustion, and from atmospheric photochemical reactions. Natural activities also increase the level of particulates in the atmosphere; wind-raised dust and ocean spray are two sources of naturally occurring particulates. The largest sources of PM_{10} and $PM_{2.5}$ in Kern County are vehicle movement over paved and unpaved roads, demolition and construction activities, farming operations, and unplanned fires. PM_{10} and $PM_{2.5}$ are considered regional pollutants with elevated levels typically occurring over a wide geographic area. Concentrations tend to be highest in the winter, during periods of high atmospheric stability and low wind speed. In the respiratory tract, very small particles of certain substances may produce injury by themselves or may contain absorbed gases that are injurious. Particulates of aerosol size suspended in the air can both scatter and absorb sunlight, producing haze and reducing visibility. They can also cause a wide range of damage to materials.

Table 3-3 shows that shows that PM_{10} levels regularly exceeded the CAAQS but not the NAAQS at two monitoring stations over the three-year period of 2017 through 2019. **Table 3-3** shows that shows that PM2.5 NAAQS were exceeded from 2017 through 2019. Similar levels can be expected to occur in the vicinity of the Project site.

3.2.3 Carbon Monoxide (CO)

Ambient CO concentrations normally correspond closely to the spatial and temporal distributions of vehicular traffic. Relatively high concentrations of CO would be expected along heavily traveled roads and near busy intersections. Wind speed and atmospheric mixing also influence CO concentrations; however, under inversion conditions prevalent in the San Joaquin Valley, CO concentrations may be more uniformly distributed over a broad area.

Internal combustion engines, principally in vehicles, produce CO due to incomplete fuel combustion. Various industrial processes also produce CO emissions through incomplete combustion. Gasoline-powered motor

vehicles are typically the major source of this contaminant. CO does not irritate the respiratory tract but passes through the lungs directly into the blood stream, and by interfering with the transfer of fresh oxygen to the blood, deprives sensitive tissues of oxygen, thereby aggravate cardiovascular disease, causing fatigue, headaches, and dizziness. CO is not known to have adverse effects on vegetation, visibility, or materials.

Table 3-3 reports no CO data is available for the three-year period from 2017 through 2019; historically Bakersfield area data for CO has been below the CAAQS and NAAQS.

3.2.4 Nitrogen Dioxide (NO_2) and Hydrocarbons

Kern County has been designated as an attainment area for the NAAQS for NO_2. NO_2 is the "whiskey brown" colored gas readily visible during periods of heavy air pollution. Mobile sources and oil and gas production account for nearly all of the County's NOx emissions, most of which is emitted as NO_2. Combustion in motor vehicle engines, power plants, refineries and other industrial operations are the primary sources in the region. Railroads and aircraft are other potentially significant sources of combustion air contaminants. Oxides of nitrogen are direct participants in photochemical smog reactions. The emitted compound, nitric oxide, combines with oxygen in the atmosphere in the presence of hydrocarbons and sunlight to form NO_2 and O_3. NO_2, the most significant of these pollutants, can color the atmosphere at concentrations as low as 0.5 ppm on days of 10-mile visibility. NOx is an important air pollutant in the region because it is a primary receptor of ultraviolet light, which initiates the reactions producing photochemical smog. It also reacts in the air to form nitrate particulates.

Motor vehicles are the major source of reactive hydrocarbons in the basin. Other sources include evaporation of organic solvents and petroleum production and refining operations. Certain hydrocarbons can damage plants by inhibiting growth and by causing flowers and leaves to fall. Levels of hydrocarbons currently measured in urban areas are not known to cause adverse effects in humans. However, certain members of this contaminant group are important components in the reactions, which produce photochemical oxidants.

Table 3-3 shows that the Federal and State NO_2 standards have not been exceeded at the Edison or the Bakersfield area-monitoring stations over the three-year period of 2017 through 2019. Hydrocarbons are not currently monitored.

3.2.5 Sulfur Dioxide (SO_2)

Kern County has been designated as an attainment area for the NAAQS for SO_2. SO_2 is the primary combustion product of sulfur, or sulfur containing fuels. Fuel combustion is the major source of this pollutant, while chemical plants, sulfur recovery plants, and metal processing facilities are minor contributors. Gaseous fuels (natural gas, propane, etc.) typically have lower percentages of sulfur containing compounds than liquid fuels such as diesel or crude oil. SO_2 levels are generally higher in the winter months. Decreasing levels of SO_2 in the atmosphere reflect the use of natural gas in power plants and boilers.

At high concentrations, SO_2 irritates the upper respiratory tract. At lower concentrations, when respirated in combination with particulates, SO_2 can result in greater harm by injuring lung tissues. Sulfur oxides (SOx), in combination with moisture and oxygen, results in the formation of sulfuric acid, which can yellow the leaves of plants, dissolve marble, and oxidize iron and steel. SOx can also react to produce sulfates that reduce visibility and sunlight.

Table 3-3 shows no data has been reported over the three-year period in Kern County.

3.2.6 Lead (Pb) and Suspended Sulfate

Ambient Pb levels have dropped dramatically due to the increase in the percentage of motor vehicles that run exclusively on unleaded fuel. Ambient Pb levels in Bakersfield are well below the ambient standard and are expected to continue to decline; the data reported in **Table 3-3** only shows the highest concentration as the number of days exceeding standards are not reported. Suspended sulfate levels have stabilized to the point where no excesses of the State standard are expected in any given year.

3.3 Climate

The most significant single control on the weather pattern of the San Joaquin Valley is the semi-permanent subtropical high-pressure cell, referred to as the "Pacific High." During the summer, the Pacific High is positioned off the coast of northern California, diverting ocean-derived storms to the north. Hence, the summer months are virtually rainless. During the winter, the Pacific High moves southward allowing storms to pass through the San Joaquin Valley. Almost all of the precipitation expected during a given year occurs from December through April. During the summer, the predominant surface winds are out of the northwest. Air enters the Valley through the Carquinez strait and flows toward the Tehachapi Mountains. This up-valley (northwesterly) wind flow is interrupted in early fall by the emergence of nocturnal, down-valley (southeasterly) winds which become progressively more predominant as winter approaches. Wind speeds are generally highest during the spring and lightest in fall and winter. The relatively cool air flowing through the Carquinez strait is warmed on its journey south through the Valley. On reaching the southern end of the Valley, the average high temperature during the summer is nearly 100 degrees Fahrenheit (°F). Relative humidity during the summer is quite low, causing large diurnal temperature variations. Temperatures during the summer often drop into the upper 60s. In winter, the average high temperatures reach into the mid-50s and the average low drops to the mid-30s. In addition, another high-pressure cell, known as the "Great Basin High," develops east of the Sierra Nevada Mountain Range during winter. When this cell is weak, a layer of cool, damp air becomes trapped in the basin and extensive fog results. During inversions, vertical dispersion is restricted, and pollutant emissions are trapped beneath the inversion and pushed against the mountains, adversely affecting regional air quality. Surface-based inversions, while shallow and typically short-lived, are present most mornings. Elevated inversions, while less frequent than ground-based inversions, are typically longer lasting and create the more severe air stagnation problems. The winter season characteristically has the poorest conditions for vertical mixing of the entire year.

Meteorological data for various monitoring stations is maintained by the Western Regional Climate Center. Meteorological data for the Project site is expected to be similar to the data recorded at the Bakersfield Airport (AP) monitoring station. This data is provided in **Table 3-4**, which contains average precipitation data recorded at the Bakersfield AP monitoring station. Over the 79-year period from October 1937 through June of 2016 (the most recent data available), the average annual precipitation was 6.17 inches.

Table 3-4. Bakersfield AP Weather Data

Period of Record Monthly Climate Summary for the Period 10/01/1937 to 6/09/2016													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Avg. Maximum Temp (F)	57.4	63.6	69.0	75.7	84.2	92.1	98.6	96.7	91.0	80.5	67.3	57.8	77.8
Avg. Minimum Temp (F)	38.5	42.1	45.4	49.7	56.6	63.3	69.2	67.7	63.1	54.0	44.1	38.5	52.7
Average Total Precipitation (in.)	1.04	1.16	1.12	0.67	0.21	0.07	0.01	0.04	0.10	0.30	0.59	0.85	6.17
Average Snowfall (in.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent of possible observations for period of record: Max. Temp.: 99.6% Min. Temp.: 99.6% Precipitation: 99.7% Snowfall: 92.4% Snow Depth: 92.2%													
Source: Western Regional Climate Center, 2021.													

3.4 Climate Change and Greenhouse Gases

3.4.1 Global Climate Change

"Global climate change" refers to change in average meteorological conditions on the earth with respect to temperature, precipitation, and storms, lasting for decades or longer. The term "global climate change" is often used interchangeably with the term "global warming," but "global climate change" is preferred by some scientists and policy makers to "global warming" because it helps convey the notion that in addition to rising temperatures, other changes in global climate may occur. Climate change may result from the following influences:

- Natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun;
- Natural processes within the climate system (e.g., changes in ocean circulation); and/or
- Human activities that change the atmosphere's composition (e.g., through burning fossil fuels) and the land surface (e.g., deforestation, reforestation, urbanization, and desertification).

As determined from worldwide meteorological measurements between 1990 and 2005, the primary observed effect of global climate change has been a rise in the average global tropospheric temperature of 0.36 degree Fahrenheit (°F) per decade. Climate change modeling shows that further warming could occur, which could induce additional changes in the global climate system during the current century. Changes to the global climate system, ecosystems, and the environment of California could include higher sea levels, drier or wetter weather, changes in ocean salinity, changes in wind patterns or more energetic aspects of extreme weather (e.g., droughts, heavy precipitation, heat waves, extreme cold, and increased intensity of tropical cyclones). Specific effects from climate change in California may include a decline in the Sierra Nevada snowpack, erosion of California's coastline, and seawater intrusion in the Sacramento-San Joaquin River Delta.

Human activities, including fossil fuel combustion and land use changes, release carbon dioxide (CO_2) and other compounds cumulatively termed greenhouse gases (GHGs). GHGs are effective at trapping radiation that would otherwise escape the atmosphere. This trapped radiation warms the atmosphere, the oceans, and the earth's surface (USGCRP, 2014). Many scientists believe "most of the warming observed over the last 50 years is attributable to human activities" (IPCC, 2017). The increased amount of CO_2 and other GHGs in the atmosphere is the alleged primary result of human-induced warming.

GHGs are present in the atmosphere naturally, released by natural sources, or formed from secondary reactions taking place in the atmosphere. They include CO_2, methane (CH_4), nitrous oxide (N_2O), and O_3. In the last 200 years, substantial quantities of GHGs have been released into the atmosphere, primarily from fossil fuel combustion. These human-induced emissions are increasing GHG concentrations in the atmosphere, therefore enhancing the natural greenhouse effect. The GHGs resulting from human activity are believed to be causing global climate change. While human-made GHGs include CO_2, CH_4, and N_2O, some (like chlorofluorocarbons [CFCs]) are completely new to the atmosphere. GHGs vary considerably in terms of Global Warming Potential (GWP), the comparative ability of each GHG to trap heat in the atmosphere. The GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and the length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to CO_2, the most abundant GHG. The definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of pounds or tons of "CO_2 equivalents" (CO_2e).

Natural sources of CO_2 include the respiration (breathing) of humans and animals and evaporation from the oceans. Together, these natural sources release approximately 150 billion metric tons of CO_2 each year, far outweighing the 7 billion metric tons of GHG emissions from fossil fuel burning, waste incineration, deforestation, cement manufacturing, and other human activity. Nevertheless, natural GHG removal processes such as photosynthesis cannot keep pace with the additional output of CO_2 from human activities. Consequently, GHGs are building up in the atmosphere (Enviropedia, 2017).

Methane is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources of CH_4 production include wetlands, termites, and oceans. Human activity accounts for the majority of the approximately 500 million metric tons of CH_4 emitted annually. These anthropogenic sources include the mining and burning of fossil fuels; digestive processes in ruminant livestock such as cattle; rice cultivation; and the decomposition of waste in landfills. The major removal process for atmospheric CH_4, the chemical breakdown in the atmosphere, cannot keep pace with source emissions; therefore, CH_4 concentrations in the atmosphere are rising.

Worldwide emissions of GHGs in 2008 were 30.1 billion metric tons of CO_2e and have increased considerably since that time (United Nations, 2011). It is important to note that the global emissions inventory data are not all from the same year and may vary depending on the source of the data (U.S. EPA, 2019). Emissions from the top five emitting countries and the European Union accounted for approximately 70% of total global GHG emissions in 2014. The United States was the number two producer of GHG emissions behind China. The primary GHG emitted by human activities was CO_2, representing approximately 76% of total global GHG emissions (U.S. EPA, 2019).

In 2017, the United States emitted approximately 6.5 million metric tons of CO_2e. Of the six major sectors nationwide (electric power industry, transportation, industry, agriculture, commercial, and residential), the electric power industry and transportation sectors combined account for approximately 57% of the GHG emissions; the majority of the electrical power industry and all of the transportation emissions are generated from direct fossil fuel combustion. Between 1990 and 2017, total United States GHG emissions rose approximately 1.3% (U.S. EPA, 2019).

Worldwide, energy-related CO_2 emissions are expected to increase at an average rate of 0.6% annually between 2018 and 2050, compared with the average growth rate of 1.8% per year from 1990 to 2018. Much of the increase in these emissions is expected to occur in the developing world where emerging economies, such as China and India, fuel economic development with fossil fuel energy. Developing countries' emissions are expected to grow above the world average at a rate of approximately 1% annually between 2018 and 2050 and surpass emissions of industrialized countries by 2025 (U.S. EIA, 2019).

CARB is responsible for developing and maintaining the California GHG emissions inventory. This inventory estimates the amount of GHGs emitted into and removed from the atmosphere by human activities within the state of California and supports the Assembly Bill (AB) 32 Climate Change Program. CARB's current GHG emission inventory covers the years 2000 through 2017 and is based on fuel use, equipment activity, industrial processes, and other relevant data (e.g., housing, landfill activity, and agricultural lands).

In 2017, emissions from statewide emitting activities were 424 million metric tons of CO_2 equivalent (MMT CO_2e), which is 5 MMT CO_2e lower than 2016 levels. 2017 emissions have decreased by 14% since peak levels in 2004 and are 7 MMT CO_2e below the 1990 emissions level and the State's 2020 GHG limit. Per capita GHG emissions in California have dropped from a 2001 peak of 14.1 tonnes per person to 10.7 tonnes per person in 2017, a 24% decrease (CARB 2019).

CARB estimates that transportation was the source of approximately 40% of California's GHG emissions in 2017, followed by electricity generation at 15%. Other sources of GHG emissions were industrial sources at 21%, residential plus commercial activities at 10%, and agriculture at 8% (CARB 2019).

CARB previously projected the estimated statewide GHG emissions for the year 2020, which represent the emissions that would be expected to occur with reductions anticipated from Pavley I and the Renewables Electricity Standard (30 MMT CO_2e total), would be 509 MMT of CO_2e (CARB, 2014). GHG emissions from the transportation and electricity sectors as a whole were expected to increase at approximately 36% and 20% of total CO_2e emissions, respectively, as compared to 2009. The industrial sector consists of large stationary sources of GHG emissions and the percentage of the total 2020 emissions were projected to be 18% of total CO_2e emissions. The remaining sources of GHG emissions in 2020 are high global warming potential gases at 6%, residential and commercial activities at 10%, agriculture at 7%, and recycling and waste at 2%.

3.4.2 Effects of Global Climate Change

Changes in the global climate are assessed using historical records of temperature changes that have occurred in the past. Climate change scientists use this temperature data to extrapolate a level of statistical significance specifically focusing on temperature records from the last 150 years (the Industrial Age) that differ from past climate changes in rate and magnitude.

The Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. In its Fifth Assessment Report, the IPCC predicted that the global mean temperature change from 1990 to 2100 could range from 1.1 degree Celsius (°C) to 6.4 °C (8 to 10.4 °Fahrenheit) (IPCC, 2013). Global average temperatures and sea levels are expected to rise under all scenarios (IPCC, 2014). The IPCC concluded that global climate change was largely the result of human activity, mainly the burning of fossil fuels. However, the scientific literature is not consistent regarding many of the aspects of climate change, the actual temperature changes during the 20th century, and contributions from human versus non-human activities.

Effects from global climate change may arise from temperature increases, climate sensitive diseases, extreme weather events, and degradation of air quality. There may be direct temperature effects through increases in average temperature leading to more extreme heat waves and less extreme cold spells. Those living in warmer climates are likely to experience more stress and heat-related problems. Heat-related problems include heat rash and heat stroke, drought, etc. In addition, climate-sensitive diseases may increase, such as those spread by mosquitoes and other disease-carrying insects. Such diseases include malaria, dengue fever, yellow fever, and encephalitis. Extreme events such as flooding and hurricanes can displace people and agriculture. Global warming may also contribute to air quality problems from increased frequency of smog and particulate air pollution.

According to the 2006 California Climate Action Team (CAT) Report, several climate change effects can be expected in California over the course of the next century (CalEPA, 2006). These are based on trends established by the IPCC and are summarized below.

- A diminishing Sierra snowpack declining by 70% to 90%, threatening the state's water supply.
- A rise in sea levels, resulting in the displacement of coastal businesses and residences. During the past century, sea levels along California's coast have risen about seven inches. If emissions continue unabated and temperatures rise into the higher anticipated warming range, sea level is expected to rise an additional 22 to 35 inches by the end of the century. Sea level rises of this magnitude would inundate coastal areas with salt water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats. (Note: This condition would not affect the Proposed Project area, as it is a significant distance away from coastal areas.)
- An increase in temperature and extreme weather events. Climate change is expected to lead to increases in the frequency, intensity, and duration of extreme heat events and heat waves in California. More heat waves can exacerbate chronic disease or heat-related illness.
- Increased risk of large wildfires if rain increases as temperatures rise. Wildfires in the grasslands and chaparral ecosystems of southern California are estimated to increase by approximately 30% toward the end of the 21st century because more winter rain will stimulate the growth of more plant fuel available to burn in the fall. In contrast, a hotter, drier climate could promote up to 90% more northern California fires by the end of the century by drying out and increasing the flammability of forest vegetation.
- Increasing temperatures from 8 to 10.4 °F under the higher emission scenarios, leading to a 25% to 35% increase in the number of days that ozone pollution levels are exceeded in most urban areas (see below).
- Increased vulnerability of forests due to forest fires, pest infestation, and increased temperatures.
- Reductions in the quality and quantity of certain agricultural products. The crops and products likely to be adversely affected include wine grapes, fruit, nuts, and milk.
- Exacerbation of air quality problems. If temperatures rise to the medium warming range, there could be 75 to 85% more days with weather conducive to ozone formation in Los Angeles and the San Joaquin Valley, relative to today's conditions. This is more than twice the increase expected if rising temperatures remain in the lower warming range. This increase in air quality problems could result in an increase in asthma and other health-related problems.
- A decrease in the health and productivity of California's forests. Climate change can cause an increase in wildfires, an enhanced insect population, and establishment of non-native species.
- Increased electricity demand, particularly in the hot summer months.
- Increased ground-level ozone formation due to higher reaction rates of ozone precursors.

3.4.3 Global Climate Change Regulatory Issues

In 1988, the United Nations established the Intergovernmental Panel on Climate Change to evaluate the impacts of global warming and to develop strategies that nations could implement to curtail global climate change. In 1992, the United Nations Framework Convention on Climate Change established an agreement with the goal of controlling GHG emissions, including methane. As a result, the Climate Change Action Plan was developed to address the reduction of GHGs in the United States. The plan consists of more than 50 voluntary programs. Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete O_3 in the stratosphere (chlorofluorocarbons [CFCs], halons, carbon tetrachloride, and methyl chloroform) were phased out by 2000 (methyl chloroform was phased out by 2005).

On September 27, 2006, Assembly Bill 32 (AB32), the California Global Warming Solutions Act of 2006 (the Act) was enacted by the State of California. The legislature stated, "Global warming poses a serious threat to

the economic well-being, public health, natural resources, and the environment of California." The Act caps California's GHG emissions at 1990 levels by 2020. The Act defines GHG emissions as all of the following gases: carbon dioxide (CO_2), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. This agreement represents the first enforceable statewide program in the U.S. to cap all GHG emissions from major industries that includes penalties for non-compliance. While acknowledging that national and international actions will be necessary to fully address the issue of global warming, AB32 lays out a program to inventory and reduce GHG emissions in California and from power generation facilities located outside the state that serve California residents and businesses.

AB32 charges CARB with responsibility to monitor and regulate sources of GHG emissions in order to reduce those emissions. CARB has adopted a list of discrete early action measures that can be implemented to reduce GHG emissions. CARB has defined the 1990 baseline emissions for California and has adopted that baseline as the 2020 statewide emissions cap. CARB is conducting rulemaking for reducing GHG emissions to achieve the emissions cap by 2020. In designing emission reduction measures, CARB must aim to minimize costs, maximize benefits, improve and modernize California's energy infrastructure, maintain electric system reliability, maximize additional environmental and economic co-benefits for California, and complement the state's efforts to improve air quality.

Subsequent legislation by the California legislature has included Senate Bill (SB) 32, which expanded upon AB32 to reduce GHG emissions to 40% below the 1990 levels by 2030; AB197 which increased the legislative oversight of the CARB by adding two legislatively appointed non-voting members to the CARB Board and provided additional protection to disadvantaged communities; SB350, which increased California's renewable energy electricity procurement goal and SB100, which established a landmark policy requiring renewable energy and zero-carbon resources to supply 100 percent of electrical retail sales to end use customers and 100 percent of electricity procured to serve state agencies by 2045.

Global warming and climate change have received substantial public attention for more than 20 years. For example, the United States Global Change Research Program was established by the Global Change Research Act of 1990 to enhance the understanding of natural and human-induced changes in the Earth's global environmental system, to monitor, understand, and predict global change, and to provide a sound scientific basis for national and international decision-making. Even so, the analytical tools have not been developed to determine the effect on worldwide global warming from a particular increase in GHG emissions, or the resulting effects on climate change in a particular locale. The scientific tools needed to evaluate the impacts that a specific project may have on the environment are even farther in the future.

The California Supreme Court's most recent CEQA decision on the Newhall Ranch development case, Center for Biological v. California Department of Fish and Wildlife (November 30, 2015, Case No. 217763), determined that the project's Environmental Impact Report (EIR) did not substantiate the conclusion that the GHG cumulative impacts would be less than significant. The EIR determined that the Newhall Ranch development project would reduce GHG emissions by 31 percent from business as usual (BAU). This reduction was compared to the California's target of reducing GHG emissions statewide by 29 percent from business as usual. The Court determined that "the EIR's deficiency stems from taking a quantitative comparison method developed by the Scoping Plan as a measure of the greenhouse gas reduction effort required by the state as a whole, and attempting to use that method, without adjustments, for a purpose very different from its original design." In the Court's final ruling it offered suggestions that were deemed appropriate use of the BAU methodology:

1. Lead agencies can use the comparison to BAU methodology if they determine what reduction a particular project must achieve in order to comply with statewide goals,

2. Project design features that comply with regulations to reduce emissions may demonstrate that those components of emissions are less that significant, and
3. Lead agencies could also demonstrate compliance with locally adopted climate plans or could apply specific numerical thresholds developed by some local agencies.

The Kern County, the Lead CEQA agency for this Project, has not developed specific thresholds for GHGs. As discussed in **Section 4.1**, the SJVAPCD, a CEQA Trustee Agency for this Project, has developed thresholds to determine significance of a proposed project – either implement Best Performance Standards or achieve a 29% reduction from BAU (a specific numerical threshold). A Best Performance Standards threshold has not been established. Therefore, the 29% reduction from BAU is applied to the modified proposed Project in order to determine significance. Therefore, the GHG analysis for this modified proposed Project follows the suggestions from the Court's ruling on the Newhall Ranch development project in order to determine significance using the project design features.

4. IMPACT ASSESSMENT

4.1 Significance Criteria

To determine whether a Project could create a potential CEQA impact, local, State, and Federal agencies have developed various means by which a project's impacts may be measured and evaluated. Such means can generally be categorized as follows:

- Thresholds of significance adopted by air quality agencies to guide lead agencies in their evaluation of air quality impacts under the CEQA.
- Regulations established by air districts, CARB and EPA for the evaluation of stationary sources when applying for Authorities to Construct, Permits to Operate and other permit program requirements (e.g., New Source Review).
- Thresholds utilized to determine if a project would cause or contribute significantly to violations of the ambient air quality standards or other concentration-based limits.
- Regulations applied in areas where severe air quality problems exist.

Summary tables of these emission-based and concentration-based thresholds of significance for each pollutant are provided below along with a discussion of their applicability.

4.1.1 Thresholds Adopted for the Evaluation of Air Quality Impacts under CEQA

In order to maintain consistency with CEQA, the SJVAPCD (2015) adopted guidelines to assist applicants in complying with the various requirements. According to the SJVAPCD's GAMAQI, a project would have potentially significant air quality impacts when the project:

- Creates a conflict with or obstructs implementation of the applicable air quality plan;
- Causes a violation of any air quality standard or generates substantial contribution towards exceeding an existing or projected air quality standard;
- Results in a cumulatively considerable net increase of any criteria pollutant for which the project region is designated non-attainment under a NAAQS and CAAQS (including emissions which exceed quantitative thresholds for O_3 precursors);
- Exposes sensitive receptors to substantial pollutant concentrations; or
- Creates objectionable odors that affect a substantial number of people.

The SJVAPCD GAMAQI thresholds are designed to implement the general criteria for air quality emissions as required in the CEQA Guidelines, Appendix G, Paragraph III (Title 14 of the California Code of Regulations §15064.7) and CEQA (California Public Resources Code Sections 21000 et. al). SJVAPCD's specific CEQA air quality thresholds are presented in **Table 4-1**.

Table 4-1. SJVAPCD CEQA Thresholds of Significance

Criteria Pollutant	Significance Level	
	Construction	Operational
CO	100 tons/yr	100 tons/yr
NOx	10 tons/yr	10 tons/yr
ROG	10 tons/yr	10 tons/yr
SOx	27 tons/yr	27 tons/yr
PM_{10}	15 tons/yr	15 tons/yr
$PM_{2.5}$	15 tons/yr	15 tons/yr
Source: SJVAPCD 2015		

4.1.2 Thresholds for Ambient Air Quality Impacts

CEQA Guidelines – Appendix G (Environmental Checklist) states that a project that would "violate any air quality standard or contribute substantially to an existing or projected air quality violation" would be considered to create significant impacts on air quality. Therefore, an AQIA should determine whether the emissions from a project would cause or contribute significantly to violations of the NAAQS or CAAQS (presented above in **Table 3-1**) when added to existing ambient concentrations.

The EPA has established the Federal Prevention of Significant Deterioration (PSD) program to determine what comprises "significant impact levels" (SIL) to NAAQS attainment areas. A project's impacts are considered less than significant if emissions are below PSD SIL for a particular pollutant. When a SIL is exceeded, an additional "increment analysis" is required. As the modified proposed Project would not include modification to the stationary source under NSR, it would not be subject to either PSD or New Source Review (NSR) review. The PSD SIL thresholds are used with ambient air quality modeling for a CEQA project to address whether the Project would "violate any air quality standard or contribute substantially to an existing or projected air quality violation." Ambient air quality emissions estimates below the PSD SIL thresholds would result in less than significant ambient air quality impacts for both a project and cumulative CEQA impact analysis. The SJVAB is classified as non-attainment for the O_3 NAAQS and, as such, is subject to "non-attainment new source review" (NSR). PSD SILs and increments are more stringent than the CAAQS or NAAQS and represent the most stringent thresholds of significance.

4.1.3 Thresholds for Hazardous Air Pollutants

The SJVAPCD's GAMAQI states, "From a health risk perspective there are basically two types of land use projects that have the potential to cause long-term public health risk impacts:

- Type A Projects: Land use projects that will place new toxic sources in the vicinity of existing receptors, and
- Type B Projects: Land use projects that will place new receptors in the vicinity of existing toxics sources" (SJVAPCD 2015).

Table 4-2 presents the thresholds of significance used with toxic air contaminants for evaluating hazardous air pollutants (HAPs).

Table 4-2. Measures of Significance - Toxic Air Contaminants

Agency	Level	Description
Significance Thresholds Adopted for the Evaluation of Impacts Under CEQA		
SJVAPCD	Carcinogens	Maximally Exposed Individual risk **equals or exceeds** 20 in one million.
	Non-Carcinogens	**Acute**: Hazard Index **equals or exceeds** 1 for the Maximally Exposed Individual.
		Chronic: Hazard Index **equals or exceeds** 1 for the Maximally Exposed Individual.
Source: SJVAPCD 2015		

4.1.4 Cumulative Impacts Threshold of Significance

Attachment A of Kern County's Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports states "the following threshold are defined for purposes of determining cumulative effects as the baseline for "considerable". "Projects in the San Joaquin Valley Air Pollution Control District…will be subject

to the following significance thresholds". The thresholds outlined in the guidelines mirror the individual project significance thresholds of 15 tons per year for PM_{10} and 10 tons per year for NO_X and ROG. Therefore, owing to the inherently cumulative nature of air quality impacts, the threshold for whether a project would make a cumulatively considerable contribution to a significant cumulative impact is simply whether the project would exceed project-level thresholds.

4.1.5 Global Climate Change Thresholds of Significance

On December 17, 2009, SJVAPCD adopted Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (SJVAPCD 2009); which outlined the SJVAPCD's methodology for assessing a project's significance for GHGs under CEQA. The following criteria was outlined in the document to determine whether a project could have a significant impact:

- Projects determined to be exempt from the requirements of CEQA would be determined to have a less than significant individual and cumulative impact for GHG emissions and would not require further environmental review, including analysis of project specific GHG emissions. Projects exempt under CEQA would be evaluated consistent with established rules and regulations governing project approval and would not be required to implement BPS.
- Projects complying with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located would be determined to have a less than significant individual and cumulative impact for GHG emissions. Such plans or programs must be specified in law or approved by the lead agency with jurisdiction over the affected resource and supported by a CEQA compliant environmental review document adopted by the lead agency. Projects complying with an approved GHG emission reduction plan or GHG mitigation program would not be required to implement BPS.
- Projects implementing Best Performance Standards would not require quantification of project specific GHG emissions. Consistent with the CEQA Guidelines, such projects would be determined to have a less than significant individual and cumulative impact for GHG emissions.
- Projects not implementing Best Performance Standards would require quantification of project specific GHG emissions and demonstration that project specific GHG emissions would be reduced or mitigated by at least 29%, compared to Business-as-Usual (BAU), including GHG emission reductions achieved since the 2002-2004 baseline period. Projects achieving at least a 29% GHG emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG.
- Notwithstanding any of the above provisions, projects requiring preparation of an Environmental Impact Report for any other reason would require quantification of project specific GHG emissions. Projects implementing BPS or achieving at least a 29% GHG emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG.

4.2 Project Related Emissions

This document was prepared pursuant to the SJVAPCD's GAMAQI. The GAMAQI identifies separate thresholds for a project's short-term (construction) and long-term (operational) emissions.

Project emissions were estimated for the following project development stages:

- Short-term (Construction and Demolition) – Construction emissions of the modified proposed Project were estimated in CalEEMod using a 12-month construction schedule for Phase 1 and a 6-month construction schedule for Phases 2 through 7. Defaults were used for construction equipment for the development of each phase based on the total number of single-family units in the phase.

- Long-term (Operations) – Long term emissions were also estimated in CalEEMod using model defaults for operations of the 263-unit single family residential community.

4.2.1 Short-Term Emissions

The Project applicant did not provide a list of specific construction equipment; the construction emissions were therefore based on the default CalEEMod equipment list accordingly for the modified proposed Project's land use type and development intensity. Applying model defaults as well as a conservative analysis approach, construction emissions were estimated as if construction for Phase 1 started in April 2022. Phase 1 has a 12-month construction schedule, and Phases 2 through 7 each have a construction schedule of 6 months. The dates entered into the CalEEMod program may not represent the actual dates the equipment will operate; however, the total construction time is accurate, and therefore, all estimated emission totals are conservative and reflect a reasonable and legally sufficient estimate of potential impacts. All construction equipment activity levels were assumed based on the specified CalEEMod default values for type and number of equipment, hours per day and horsepower.

SJVAPCD's required measures for all projects were also applied:

- Water exposed areas 3 times per day; and
- Reduce vehicle speed to less than 15 miles per hour.

Table 4-3 presents the modified proposed Project's short-term emissions based on the anticipated construction period.

Table 4-3. Short-Term Project Emissions

Emissions Source	Pollutant (tons/year)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Unmitigated						
2022	0.28	2.61	2.49	0.005	0.36	0.22
2023	1.64	2.90	3.04	0.006	0.43	0.25
2024	1.76	2.71	3.05	0.006	0.37	0.23
2025	1.44	2.37	2.90	0.005	0.32	0.20
2026	0.54	0.44	0.58	0.001	0.02	0.02
Maximum Annual Emission	*1.76*	*2.90*	*3.05*	*0.006*	*0.43*	*0.25*
Mitigated						
2022	0.28	2.61	2.49	0.005	0.36	0.22
2023	1.64	2.90	3.04	0.006	0.28	0.25
2024	1.76	2.71	3.05	0.006	0.23	0.23
2025	1.44	2.37	2.90	0.005	0.20	0.17
2026	0.54	0.44	0.58	0.001	0.02	0.02
Maximum Annual Emission	*1.76*	*2.90*	*3.05*	*0.006*	*0.36*	*0.25*
Significance Threshold	**10**	**10**	**100**	**27**	**15**	**15**
Is Threshold Exceeded for a Single Year After Mitigation?	No	No	No	No	No	No
Source: Trinity Consultants 2021						

As calculated with CalEEMod, the estimated short-term construction-related emissions would not exceed SJVAPCD significance threshold levels during any given year and would therefore be *less than significant*.

4.2.2 Long-Term Operations Emissions

Long-term emissions are caused by operational mobile, area, and energy sources. Long-term emissions would consist of the following components:

4.2.2.1 Fugitive Dust Emissions

Operation of the residential development on the Project site at full build-out is not expected to present a substantial source of fugitive dust (PM_{10}) emissions. The main source of PM_{10} emissions would be from vehicular traffic associated with the modified proposed Project.

PM_{10}, on its own as well as in combination with other pollutants, creates a health hazard. The SJVAPCD's Regulation VIII establishes required controls to reduce and minimizing fugitive dust emissions. The following SJVAPCD Rules and Regulations apply to the modified proposed Project (and all projects):

- Rule 4102 - Nuisance
- Regulation VIII – Fugitive PM10 Prohibitions
  - Rule 8011 - General Requirements
  - Rule 8021 - Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities
  - Rule 8041 - Carryout and Trackout
  - Rule 8051 - Open Areas

The modified proposed Project would comply with applicable SJVAPCD Rules and Regulations, the Kern County zoning ordinaces, and additional emissions reduction measures recommended later in this analysis, in Section 7, Mitigation and Other Recommended Measures.

4.2.2.2 Exhaust Emissions

Project-related transportation activities from residents, deliveries, and maintenance would generate mobile source ROG, NOx, SOx, CO, PM_{10}, and $PM_{2.5}$ exhaust emissions. Exhaust emissions would vary substantially from day to day but would average out over the course of an operational year. The variables factored into estimating the total modified proposed Project emissions include level of activity, site characteristics, weather conditions. As the modified proposed Project is expected to be less than significant, substantial emissions are not anticipated.

4.2.2.3 Projected Emissions

The modified proposed Project is expected to have long-term air quality impacts as shown in **Table 4-4**. The output from the CalEEMod runs is available in Appendix B. Mitigation measures implemented within CalEEMod include:

- Improve Walkability Design (74.7 intersections/square mile);
- Improve Destination Accessibility (2.93 miles to shopping center);
- Improve Pedestrian Network (Project site and connecting off-site);
- No Hearths
- 3% Electric Landscaping Equipment; and
- Solar Panels (6 kW per unit)

Table 4-4. Post-Modified Proposed Project (Operational) Emissions

Emissions Source	Pollutant (tons/year)					
	ROG	NOX	CO	SOX	PM_{10}	$PM_{2.5}$
Unmitigated Operational Emissions						
Phase 1	0.58	0.51	1.86	0.006	0.53	0.15
Phase 2	0.32	0.28	1.00	0.003	0.29	0.08
Phase 3	0.64	0.54	1.97	0.007	0.59	0.17
Phase 4	0.35	0.30	1.09	0.004	0.33	0.09
Phase 5	0.36	0.30	1.07	0.004	0.34	0.10
Phase 6	0.43	0.35	1.27	0.004	0.40	0.11
Phase 7	0.32	0.26	0.92	0.003	0.31	0.09
Total Unmitigated Operational Emissions	*3.00*	*2.55*	*9.17*	*0.031*	*2.79*	*0.79*
Mitigated Operational Emissions						
Phase 1	0.57	0.42	1.77	0.01	0.49	0.14
Phase 2	0.32	0.23	0.95	0.00	0.27	0.08
Phase 3	0.63	0.44	1.87	0.01	0.55	0.16
Phase 4	0.35	0.24	1.04	0.00	0.31	0.09
Phase 5	0.36	0.24	1.01	0.00	0.32	0.09
Phase 6	0.42	0.28	1.21	0.00	0.37	0.11
Phase 7	0.32	0.21	0.88	0.00	0.29	0.08
Total Mitigated Operational Emissions	*2.98*	*2.06*	*8.73*	*0.028*	*2.60*	*0.73*
SJVAPCD Threshold	**10**	**10**	**100**	**27**	**15**	**15**
Is Threshold Exceeded After Mitigation?	No	No	No	No	No	No
Source: Trinity Consultants 2021						

As shown in **Table 4-4**, operation-related emissions, as calculated by CalEEMod (See Appendix B), would be less than the SJVAPCD significant threshold levels. Therefore, the modified proposed Project would have a *less than significant impact* during Project operations.

4.3 Potential Impact on Sensitive Receptors

Sensitive receptors are defined as locations where young children, chronically ill individuals, the elderly, or people who are more sensitive than the general population reside, such as schools, hospitals, nursing homes, and daycare centers. The nearest residential sensitive receptor to the proposed Project site is 0.01 miles south of the Project site. The three known non-residential sensitive receptors within 2 miles of the Project site are listed below in **Table 4-5**. The modified proposed Project's predicted criteria pollutant emissions and health risk are less-than significant; therefore, the Project would be expected to have a less than significant impact to sensitive receptors.

Table 4-5. Sensitive Receptors Located < 2 Miles from Project

Receptor	Type of Facility	Distance from Project in Miles	Direction from Project
Frontier High School	9-12 Public	0.81	NE
Veterans Elementary School	K-6 Public	1.42	NE
Patriot Elementary School	K-6 Public	1.77	SE

4.4 Potential Impacts to Visibility to Nearby Areas

Visibility impact analyses are intended for stationary sources of emissions which are subject to the Prevention of Significant Deterioration (PSD) requirements in 40 CFR Part 60; they are not usually conducted for area

sources. Because the Project's PM_{10} emissions increase is predicted to be less than the PSD threshold levels, an impact at any Class 1 area or military/airspace operation within 100 kilometers of the Project site (including San Rafael Wilderness, Domeland Wilderness, Edwards Air Force Base, China Lake Naval Weapons Station, and the entire R-2508 Airspace Complex) is extremely unlikely. Therefore, based on the modified proposed Project's predicted less-than significant PM_{10} emissions, the Project would be expected to have a less than significant impact to visibility at any Class 1 area or military/airspace operation.

4.5 Potential Impacts from Carbon Monoxide

Ambient CO concentrations normally correspond closely to the spatial and temporal distributions of vehicular traffic. Relatively high concentrations of CO would be expected along heavily traveled roads and near busy intersections. CO concentrations are also influenced by wind speed and atmospheric mixing. CO concentrations may be more uniformly distributed when inversion conditions are prevalent in the valley. Under certain meteorological conditions, CO concentrations along a congested roadway or intersection may reach unhealthful levels for sensitive receptors, e.g. children, the elderly, hospital patients, etc. This localized impact can result in elevated levels of CO, or "hotspots" even though concentrations at the closest air quality monitoring station may be below NAAQS and CAAQS.

The localized Project impacts depend on whether ambient CO levels in the Project vicinity would be above or below NAAQS. If ambient levels are below the standards, a project is considered to have significant impacts if a project's emissions would exceed of one or more of these standards. If ambient levels already exceed a State standard, a project's emissions are considered significant if they would increase one-hour CO concentrations by 10 ppm or more or eight-hour CO concentrations by 0.45 ppm or more. There are two criteria established by the SJVAPCD's GAMAQI by which CO "Hot Spot" modeling is required:

1. A traffic study for the project indicates that the Level of Service (LOS) on one or more streets or at one or more intersections in the project vicinity would be reduced to LOS E or F; or
2. A traffic study indicates that the project would substantially worsen an already existing LOS F on one or more streets or at one or more intersections in the project vicinity.

The 2008 Traffic Impact Study (TIS) for the approved project identified LOS deficiencies and mitigation measures. The traffic assessment prepared for the modified proposed Project states that the 2008 TIS adequately identifies the modified proposed Project's LOS deficiencies and mitigation measures provided that the modified proposed Project participates in the Phase IV RTIF program (Ruettgers & Schuler 2021). Based on the traffic assessment, the modified proposed Project is expected to have a less than significant impact; therefore, CO hotspot modeling is not required for the modified proposed Project, and no concentrated excessive CO emissions are expected to be caused once the modified proposed Project is completed.

4.6 Predicted Health Risk Impacts

GAMAQI recommends that Lead Agencies consider situations wherein a new or modified source of HAPs is proposed for a location near an existing residential area or other sensitive receptor when evaluating potential impacts related to HAPs.

The modified proposed Project would result in emissions of Hazardous Air Pollutants (HAPs) during construction and ongoing operation and would be located near existing residents; therefore, an assessment of the potential risk to the population attributable to emissions of hazardous air pollutants from the proposed Project is required.

To predict the potential health risk to the population attributable to emissions of HAPs from the modified proposed Project, ambient air concentrations were predicted with dispersion modeling to arrive at a

conservative estimate of increased individual carcinogenic risk that might occur as a result of continuous exposure over a 70-year lifetime for operational emissions and over the construction period for construction emissions. Similarly, predicted concentrations were used to calculate non-cancer chronic and acute hazard indices (HIs), which are the ratio of expected exposure to acceptable exposure. The basis for evaluating potential health risk is the identification of sources with increased HAPs. HAP emissions from anticipated construction equipment and HHD hauling and vendor trips was evaluated.

Health risk is determined using the Hotspots Analysis and Reporting Program (HARP2) software distributed by the CARB; HARP2 requires peak 1-hour emission rates and annual-averaged emission rates for all pollutants for each modeling source (CARB 2015). Assumptions used to calculate the emission rates for the modified proposed Project are outlined below.

The most recent version of EPA's AMS/EPA Regulatory Model - AERMOD was used to predict the dispersion of emissions from the modified proposed Project. The analysis employed all of the regulatory default AERMOD model keyword parameters, including elevated terrain options.

Diesel combustion emissions from diesel on-site construction equipment and HHD trucks from hauling and vendor trips were modeled as an area source for on-site construction activity on the property. Diesel particulate matter was calculated using CalEEMod for on-site construction equipment. A unit emission rate of 1 grams/second (g/sec) was input to AERMOD for each source. Operation of the residential community will not result in an increase HHD truck trips; therefore, there are negligible amount of HAPs, and operational emissions are not included in this HRA.

Discrete receptors were placed on surrounding houses within close proximity mainly to the south of the Project site. Receptor grids were placed over the more densely populated areas mostly to the south of the Project site. A total of 1,448 discrete off-site receptors analyzed. Elevated terrain options were employed even though there is not complex terrain in the Project area.

SJVAPCD-provided, AERMET UStar processed meteorological datasets for the Bakersfield monitoring station, calendar years 2013 through 2017 was input to AERMOD (SJVAPCD 2017). This was the most recent available dataset available at the time the modeling was conducted. Rural dispersion parameters were used because the operation and the majority of the land surrounding the facility is considered "rural" under the Auer land use classification method (Auer 1978).

The plot files generated in BREEZE AERMOD were uploaded into the Air Dispersion Modeling and Risk Assessment Tool (ADMRT) program in the Hotspots Analysis and Reporting Program Version 2 (HARP 2) (CARB 2015). Variable emission rates were selected in AERMOD to represent ten hours per day of construction activity (8 AM to 6 PM). ADMRT post-processing was used to assess the potential for excess cancer risk and chronic non-cancer effects using the most recent health effects data from the California EPA Office of Environmental Health Hazard Assessment (OEHHA).

HARP post-processing was used to assess the potential for excess chronic non-cancer effects and cancer risk using the most recent health effects data from the California EPA Office of Environmental Health Hazard Assessment (OEHHA). HARP2 site parameters were set for the mandatory minimum pathways of inhalation, soil ingestion, dermal, and mother's milk. Risk reports were generated using the derived OEHHA analysis method for carcinogenic risk and non-carcinogenic chronic and acute risk. Site parameters are included in the HARP2 output files. Total cancer risk was predicted for the inhalation pathway at each receptor. A hazard index was computed for chronic non-cancer health effects for each applicable endpoint and each receptor. A hazard index for acute non-cancer health effects was not computed since DPM does not have a risk exposure level for acute risk.

SJVAPCD has set the level of significance for carcinogenic risk at twenty in one million, which is understood as the possibility of causing twenty additional cancer cases in a population of one million people. The level of significance for chronic non-cancer risk is a hazard index of 1.0. All receptors were modeled with a 5-year exposure for the construction activities.

The carcinogenic risk and the health hazard index (HI) for chronic non-cancer risk at the point of maximum impact (PMI) do not exceed the significance levels of twenty in one million (20×10^{-6}) and 1.0, respectively for the modified proposed Project. The PMIs, are identified by receptor location and risk, and are provided in Table 4-6. The electronic AERMOD and HARP2 output files are provided in **Attachment E**.

Table 4-6. Potential Maximum Impacts Predicted by HARP

	Value	UTM East	UTM North
Excess Cancer Risk	1.92E-05	303433.9	3920534.4
Chronic Hazard Index	8.35E-03	303433.9	3920534.4

As shown above in **Table 4-6**, the maximum predicted cancer risk for the modified proposed Project is 1.92E-05. The maximum chronic non-cancer hazard index for the proposed Project is 8.35E-03. Since the PMI remained below the significance threshold for cancer and chronic risk, this modified proposed Project would not have an adverse effect to any of the surrounding communities.

The potential health risk attributable to the modified proposed Project is determined to be *less than significant* based on the following conclusions:

1. Potential carcinogenic risk from the modified proposed Project is below the significance level of ten in a million at each of the modeled receptors; and
2. The hazard index for the potential chronic non-cancer risk from the modified proposed Project is below the significance level of 1.0 at each of the modeled receptors.
3. The hazard index for the potential acute non-cancer risk was not calculated since there is no acute risk associated with DPM emission; therefore, the modified proposed Project is considered below the significance level.

Therefore, potential risk to the population attributable to emissions of HAPs from the modified proposed Project would be less than significant.

4.7 Potential impacts from Valley Fever

The modified proposed Project has the potential to generate fugitive dust and suspend Valley Fever spores with the dust that could then reach nearby sensitive receptors. It is possible that onsite workers could be exposed to Valley Fever spores as fugitive dust is generated during construction. In order to mitigate potential risk, the modified proposed Project would provide training and personal protective respiratory equipment to construction workers and provide information to all construction personnel and visitors about Valley Fever. Therefore, the exposure to Valley Fever would be minimized. With the implementation of the mitigation measures, dust from the construction of the modified proposed Project would not add significantly to the existing exposure level of people to this fungus, including construction workers, and impacts would be reduced to less-than-significant levels.

4.8 Potential Impacts from Asbestos

Naturally occurring asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human

health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects, and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading of development projects, and at mining operations.

Serpentinite and/or ultramafic rock are known to be present in 44 of California's 58 counties. These rocks are particularly abundant in the counties associated with the Sierra Nevada foothills, the Klamath Mountains, and Coast Ranges. However, according to information provided by the Department of Conservation Division of Mines and Geology, the Project site is not located in an area where naturally occurring asbestos is likely to be present (CDCDMG, 2000). Therefore, the modified proposed Project's potential for impacts associated with exposure of construction workers and nearby sensitive receptors related to asbestos would be less than significant.

4.9 Odor Impacts and Mitigation

The SJVAPCD's GAMAQI states "An analysis of potential odor impacts should be conducted for both of the following two situations:

1. Generators – projects that would potentially generate odorous emissions proposed to locate near existing sensitive receptors or other land uses where people may congregate, and
2. Receivers – residential or other sensitive receptor projects or other projects built for the intent of attracting people locating near existing odor sources." (SJVAPCD 2015).

The GAMAQI also states, "The District has identified some common types of facilities that have been known to produce odors in the San Joaquin Valley Air Basin. These are presented in Table 6 (Screening Levels for Potential Odor Sources), along with a reasonable distance from the source within which, the degree of odors could possibly be significant. [Table 6] can be used as a screening tool to qualitatively assess a project's potential to adversely affect area receptors." (SJVAPCD, 2015). Because the modified proposed Project is a residential community and the anticipated activities for the Project site are not listed in Table 6 of the GAMAQI as a source that would create objectionable odors, the modified proposed Project is not expected to be a source of objectionable odors.

Based on the provisions of the SJVAPCD's GAMAQI, the modified proposed Project would not exceed any screening trigger levels to be considered a source of objectionable odors or odorous compounds (SJVAPCD, 2015). Furthermore, there does not appear to be any significant source of objectionable odors in close proximity that may adversely impact the Project site when it is in operation. Additionally, the modified proposed Project emissions estimates indicate that it would not be expected to adversely impact surrounding receptors. As such, the proposed Project would not be a source of any odorous compounds nor would it likely be impacted by any odorous source.

4.10 Impacts to Ambient Air Quality

As stated in the GAMAQI (2015, p 96-97), SJVAPCD has developed screening levels for requiring an Ambient Air Quality Analysis (AAQA). The SJVAPCD recommends that an AAQA be performed for all criteria pollutants when emissions of any criteria pollutant resulting from project construction or operational activities exceed the 100 pounds per day screening level, after compliance with Rule 9510 requirements and implementation of all enforceable mitigation measures.

As shown above in **Tables 4-3** and **4-4**, average daily emissions for construction and operational activities associated with the modified proposed Project would not exceed 100 pounds per day. *Therefore, an AAQA is not required for this Project.*

4.11 Impacts to Greenhouse Gases and Climate Change

The modified proposed Project's construction and operational GHG emissions were estimated using the CalEEMod program (version 2016.3.2). These emissions are summarized in **Table 4-9**. In order for the modified proposed Project to conform with the goals of AB32, at least a 29% reduction of GHG emissions from Business-as-Usual (BAU) must be achieved by 2020. The mitigated emissions were calculated using updated emission factors from CalEEMod. The unmitigated and mitigated GHG emissions are summarized in **Table 4-10**.

Table 4-7. Estimated Annual GHG Emissions (MT/Year)

Source	CO_2	CH_4	N_2O	CO_2e
Construction Emissions				
2022 Construction Emissions	398.30	0.097	0.000	400.72
2023 Construction Emissions	528.15	0.118	0.000	531.10
2024 Construction Emissions	484.05	0.118	0.000	487.00
2025 Construction Emissions	456.90	0.110	0.000	459.65
2026 Construction Emissions	86.72	0.020	0.000	87.22
Mitigated Operational Emissions				
Phase 1 Operation Emissions	494.92	0.831	0.003	516.63
Phase 2 Operation Emissions	198.43	0.444	0.001	209.86
Phase 3 Operation Emissions	392.83	0.922	0.002	416.53
Phase 4 Operation Emissions	217.49	0.512	0.001	230.67
Phase 5 Operation Emissions	214.46	0.529	0.001	228.06
Phase 6 Operation Emissions	254.65	0.627	0.002	270.77
Phase 7 Operation Emissions	184.95	0.477	0.000	197.21
Total Project Operational Emissions	*1,957.73*	*4.341*	*0.011*	*2,069.74*
Annualized Construction Emissions[1]	*65.14*	*0.015*	*0.000*	*65.52*
Project Emissions	**2,022.87**	**4.356**	**0.011**	**2,135.26**
*Note: 0.000 could represent <0.000 Per South Coast AQMD's Methodology				

Table 4-8. Comparison of Unmitigated and Mitigated GHG Emissions (MT/Year)

	Project Unmitigated	Project Mitigated (2026)
CO_2e Emissions	7,112.37	2,135.26
Percent Reduction		69.98%

The modified proposed Project will not result in the emissions of hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), or sulfur hexafluoride (SF_6), the other gases identified as GHG in AB32. The modified proposed Project will be subject to any regulations developed under AB32 as determined by CARB. The Project will reduce GHG emissions by 69.98%; thus, it will meet the required 29% reduction to meet the AB32 goals (**Table 4-10**); therefore, the modified proposed Project would have *less than significant* GHG impacts.

4.11.1 Feasible and Reasonable Mitigation Relative to Global Warming

CEQA requires that all feasible and reasonable mitigation be applied to the project to reduce the impacts from construction and operations on air quality. The SJVAPCD's "Non-Residential On-Site Mitigation Checklist" was utilized in preparing the mitigation measures and evaluating the projects features. These measures include

using controls that limit the exhaust from construction equipment and using alternatives to diesel when possible. Additional reductions would be achieved through the regulatory process of the air district and CARB as required changes to diesel engines are implemented which would affect the product delivery trucks and limits on idling.

While it is not possible to determine whether the modified proposed Project individually would have a significant impact on global warming or climate change, the modified proposed Project would potentially contribute to cumulative GHG emissions in California as well as related health effects. The modified proposed Project emissions would only be a very small fraction of the statewide GHG emissions. However, without the necessary science and analytical tools, it is not possible to assess, with certainty, whether the modified proposed Project's contribution would be cumulatively considerable, within the meaning of CEQA Guidelines Sections 15065(a)(3) and 15130. CEQA, however, does note that the more severe environmental problems the lower the thresholds for treating a project's contribution to cumulative impacts as significant. Given the position of the legislature in AB32 which states that global warming poses serious detrimental effects, and the requirements of CEQA for the lead agency to determine that a project not have a cumulatively considerable contribution, the effect of the modified proposed Project's CO_2 contribution may be considered cumulatively considerable. This determination is "speculative," given the lack of clear scientific evidence or other criteria for determining the significance of the modified proposed Project's contribution of GHG to the air quality in the SJVAB.

The strategies currently being implemented by CARB may help in reducing the modified proposed Project's GHG emissions and are summarized in the table below.

Table 4-9. Select CARB GHG Emission Reduction Strategies

Strategy	Description of Strategy
Vehicle Climate Change Standards	AB 1493 (Pavley) required the state to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. Regulations were adopted by CARB in Sept. 2004.
Diesel Anti-Idling	In July 2004, CARB adopted a measure to limit diesel-fueled retail motor vehicle idling.
Other Light-Duty Vehicle Technology	New standards would be adopted to phase in beginning in the 2017 model year.
Alternative Fuels: Biodiesel Blends	CARB would develop regulations to require the use of 1% to 4% Biodiesel displacement of California diesel fuel.
Alternative Fuels: Ethanol	Increased use of ethanol fuel.
Heavy-Duty Vehicle Emission Reduction Measures	Increased efficiency in the design of heavy-duty vehicles and an educational program for the heavy-duty vehicle sector.

Not all of these measures are currently appropriate or applicable to the modified proposed Project. While future legislation could further reduce the modified proposed Project's GHG footprint, the analysis of this is speculative and in accordance with CEQA Guidelines Section 15145, will not be further evaluated in this AQIA.

CEQA Guidelines Section 15130 notes that sometimes the only feasible mitigation for cumulative impacts may involve the adoption of ordinances or regulations rather than the imposition of conditions on a project-by-project basis. Global climate change is this type of issue. The causes and effects may not be just regional or statewide, they may also be worldwide. Given the uncertainties in identifying, let alone quantifying the impact of any single project on global warming and climate change, and the efforts made to reduce emissions of GHGs from the modified proposed Project through design, in accordance with CEQA Section 15130, any further

feasible emissions reductions would be accomplished through CARB regulations adopted pursuant to AB32. The modified proposed Project will achieve the required 29% reduction needed to conform with AB32 goals, as demonstrated in **Table 4-10**. Therefore, the modified proposed Project's contribution to cumulative global climate change impacts would *not be cumulatively considerable*.

5. CUMULATIVE IMPACTS

By its very nature, air pollution has a cumulative impact. The District's nonattainment status is a result of past and present development within the SJVAB. Furthermore, attainment of ambient air quality standards can be jeopardized by increasing emissions-generating activities in the region. No single project would be sufficient in size, by itself, to result in nonattainment of the regional air quality standards. Instead, a project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development within the SJVAB. When assessing whether there is a new significant cumulative effect, the Lead Agency shall consider whether the incremental effects of the project are cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects [CCR §15064(h)(1)]. Per CEQA Guidelines §15064(h)(3) a Lead Agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program, including, but not limited to an air quality attainment or maintenance plan that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located. (SJVAPCD 2015)

Attachment A of Kern County's *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports* states "The following threshold are defined for purposes of determining cumulative effects as the baseline for "considerable". Projects in the San Joaquin Valley Air Pollution Control District…will be subject to the following significance thresholds". The thresholds outlined in the guidelines mirror the individual project significance thresholds of 15 tons per year for PM_{10} and 10 tons per year for NO_X and ROG. Therefore, owing to the inherently cumulative nature of air quality impacts, the threshold for whether a project would make a cumulatively considerable contribution to a significant cumulative impact is simply whether the project would exceed project-level thresholds. Based on the analysis conducted for this modified proposed Project, it is individually *less than significant*. This AQIA, however, also considered impacts of the modified proposed Project in conjunction with the impacts of other projects previously proposed in the area. The following cumulative impacts were considered:

- Cumulative O_3 Impacts (ROG and NOx) from numerous sources within the region including transport from outside the region. O_3 is formed through chemical reactions of ROG and NOx in the presence of sunlight.
- Cumulative CO Impacts produced primarily by vehicular emissions.
- Cumulative PM_{10} Impacts from within the region and locally from the various projects. Such projects may cumulatively produce a significant amount of PM10 if several projects conduct grading or earthmoving activities at the same time; and
- Hazardous Air Pollutant (HAP) Impacts on sensitive receptors.

5.1 Cumulative Regional Air Quality Impacts

The most recent, certified SJVAB Emission Inventory data available from the SJVAPCD is based on data gathered for the 2020 annual inventory[1]. This data will be used to assist the SJVAPCD in demonstrating attainment of Federal 1-hour O_3 Standards (SJVAPCD 2007). **Table 5-1** provides a comparative look at the impacts proposed by the modified proposed Project to the SJVAB Emissions Inventory.

[1] SJVAPCD Emissions for Aggregated Stationary, Area-Wide, Mobile, and Natural Sources

Table 5-1. Comparative Analysis Based on SJV Air Basin 2020 Inventory - Tons per Year

	ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Kern County - 2020	21,535.0	15,877.5	27,338.5	511.0	13,651.0	3,723.0
SJVAB - 2020	108,113.0	74,204.5	162,425.0	2,847.0	96,652.0	21,535.0
Proposed Project	2.98	2.37	8.73	0.03	2.60	0.73
Proposed Project's % of Kern	0.014%	0.015%	0.032%	0.006%	0.019%	0.020%
Proposed Project's % of SJVAB	0.003%	0.003%	0.005%	0.001%	0.003%	0.003%
Note: This is the latest inventory available as of April 2021 Source: CARB 2021b						

As shown in **Table 5-1** the modified proposed Project does not pose a substantial increase to basin emissions, as such basin emissions would be essentially the same if the modified proposed Project is implemented.

Table 5-2, **Table 5-3**, and **Table 5-4** provide CARB Emissions Inventory projections for the year 2025 for both the SJVAB and the Kern County portion of the air basin. Looking at the SJVAB Emissions predicted by the CARB year 2025 emissions inventory, the Kern County portion of the air basin is a moderate source of the emissions. The modified proposed Project produces a small portion of the total emissions in both Kern County and the entire SJVAB.

Table 5-2. Emission Inventory SJVAB 2025 Projection - Tons per Year

	ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Total Emissions	107,346.5	52,450.5	145,963.5	2,920.0	95,922.0	21,279.5
Percent Stationary Sources	32.78%	19.28%	6.93%	85.00%	5.97%	15.44%
Percent Area-Wide Sources	52.70%	5.15%	13.30%	3.75%	89.38%	71.87%
Percent Mobile Sources	14.52%	75.57%	79.77%	11.25%	4.68%	12.86%
Total Stationary Source Emissions	35,186.0	10,110.5	10,110.5	2,482.0	5,730.5	3,285.0
Total Area-Wide Source Emissions	56,575.0	2,701.0	19,418.0	109.5	85,738.5	15,293.5
Total Mobile Source Emissions	15,585.5	39,639.0	116,435.0	328.5	4,489.5	2,737.5
Source: CARB 2021b Note: Total may not add due to rounding						

Table 5-3. Emission Inventory SJVAB - Kern County Portion 2020 Projection - Tons per Year

	ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Total Emissions	21,352.5	10,804.0	24,674.0	474.5	13,651.0	3,686.5
Percent Stationary Sources	53.50%	25.68%	15.83%	84.62%	11.76%	31.68%
Percent Area-Wide Sources	34.70%	4.05%	7.69%	0.00%	82.62%	56.44%
Percent Mobile Sources	11.97%	70.27%	76.33%	15.38%	5.61%	10.89%
Total Stationary Source Emissions	11,424.5	2,774.0	3,905.5	401.5	1,606.0	1,168.0
Total Area-Wide Source Emissions	7,409.5	438.0	1,898.0	0.0	11,278.5	2,080.5
Total Mobile Source Emissions	2,555.0	7,592.0	18,834.0	73.0	766.5	401.5
Source: CARB 2021b Note: Total may not add due to rounding						

Table 5-4. 2025 Emissions Projections – Modified Proposed Project, Kern County, and SJVAB

	ROG	NOx	PM_{10}
Proposed Project	2.98	2.37	2.60
Kern County	21,353	10,804	13,651
SJVAB	107,347	52,451	95,922
Proposed Project Percent of Kern County	0.014%	0.022%	0.019%
Proposed Project Percent of SJVAB	0.003%	0.005%	0.003%
Kern County Percent of SJVAB	19.89%	20.60%	14.23%
Source: CARB 2021b			

As shown above, the modified proposed Project would pose an inconsequential impact on regional O_3 and PM_{10} formation. The regional contribution to these cumulative impacts would be negligible and, additionally, the modified proposed Project would not exceed cumulatively considerable thresholds since the Project would be less than thresholds outlined in Kern County's *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports*. Therefore, the modified proposed Project would not be considered cumulatively considerable in its contribution to regional O_3 and PM_{10} impacts.

5.2 Cumulative Local Air Quality Impacts

Kern County provided a list of tentative development maps within a six-mile radius of the modified proposed Project area, however, the details provided for these projects do not provide enough information to accurately estimate their potential emissions. The cumulative projects are typically listed only as geographical reference to demonstrate the construction activity within a six-mile radius of the modified proposed Project. The number and sizes of these projects are of no particular significance since the cumulative considerable thresholds established by Kern County are based on Project specific thresholds which are inherently cumulative in nature.

As details regarding the various cumulative projects were not readily available, emissions estimates were not calculated. As these projects are either currently under construction or, at a minimum, approved by the planning department for consistency with applicable regulation, for the purposes of this analysis, it is assumed that they are in conformance with the regional AQAP.

The cumulative projects are already approved or pending approval it is assumed that these projects are in conformance with the regional AQAP. Additionally, the modified proposed Project would generate less-than-significant impacts to criteria air pollutants, the modified proposed Project's incremental contribution to cumulative air quality impacts would not be cumulatively considerable. (CEQA Guidelines Section 15064(h)(3); (SJVAPCD 2015).

5.3 Cumulative Hazardous Air Pollutants

The GAMAQI also states that when evaluating potential impacts related to HAPs, "*impacts of local pollutants (CO, HAPs) are cumulatively significant when modeling shows that the combined emissions from the project and other existing and planned projects will exceed air quality standards*." Because the modified proposed Project would not be a significant source of HAPS, the modified proposed Project would also *not be expected to pose a significant cumulative CO or HAPs impact*.

5.4 Cumulative Carbon Monoxide (CO) – Mobile Sources

The SJVAPCD's GAMAQI has identified CO impacts from impacted traffic intersections and roadway segments as being potentially cumulatively considerable. Traffic increases and added congestion caused by a project

can combine to cause a violation of the SJVAPCD's CO standard also known as a "Hotspot". There are two criteria established by the GAMAQI by which CO "Hot Spot" modeling is required:

- A traffic study for the project indicates that the Level of Service (LOS) on one or more streets or at one or more intersections in the project vicinity will be reduced to LOS E or F; or
- A traffic study indicates that the project will substantially worsen an already existing LOS F on one or more streets or at one or more intersections in the project vicinity.

According to the Project proponent, at the time of this analysis no traffic generation assessment impact study was prepared for the modified proposed Project. However, due to the location and traffic increase anticipated from this Project, impacted intersections and roadway segments are anticipated to operate at a LOS of C or better. Therefore, CO "Hotspot" Modeling was not conducted for the modified proposed Project and no concentrated excessive CO emissions are expected to be caused once the modified proposed Project is completed.

6. CONSISTENCY WITH THE AIR QUALITY ATTAINMENT PLAN

Air quality impacts from proposed projects within Kern County are controlled through policies and provisions of the SJVAPCD and the Kern County General Plan (KCPD 2009). In order to demonstrate that a proposed project would not cause further air quality degradation in either the SJVAPCD's plan to improve air quality within the air basin or the federal requirements to meet certain air quality compliance goals, each project should also demonstrate consistency with the SJVAPCD's adopted Air Quality Attainment Plans (AQAP) for O_3 and PM_{10}. The SJVAPCD is required to submit a "Rate of Progress" document to CARB that demonstrates past and planned progress toward reaching attainment for all criteria pollutants. The California Clean Air Act (CCAA) requires air pollution control districts with severe or extreme air quality problems to provide for a 5% reduction in non-attainment emissions per year. The AQAP prepared for the San Joaquin Valley by the SJVAPCD complies with this requirement. CARB reviews, approves or amends the document and forwards the plan to the EPA for final review and approval within the SIP.

Air pollution sources associated with stationary sources are regulated through the permitting authority of the SJVAPCD under the New and Modified Stationary Source Review Rule (SJVAPCD Rule 2201). Owners of any new or modified equipment that emits, reduces or controls air contaminants, except those specifically exempted by the SJVAPCD, are required to apply for an Authority to Construct and Permit to Operate (SJVAPCD Rule 2010). Additionally, best available control technology (BACT) is required on specific types of stationary equipment and are required to offset both stationary source emission increases along with increases in cargo carrier emissions if the specified threshold levels are exceeded (SJVAPCD Rule 2201, 4.7.1). Through this mechanism, the SJVAPCD would ensure that all stationary sources within the project area would be subject to the standards of the SJVAPCD to ensure that new developments do not result in net increases in stationary sources of criteria air pollutants.

6.1 Required Evaluation Guidelines

State CEQA Guidelines and the Federal Clean Air Act (Sections 176 and 316) contain specific references on the need to evaluate consistencies between the proposed project and the applicable AQAP for the project site. To accomplish this, CARB has developed a three-step approach to determine project conformity with the applicable AQAP:

1. *Determination that an AQAP is being implemented in the area where the project is being proposed*. The SJVAPCD has implemented the current, modified AQAP as approved by CARB.
2. *The proposed project must be consistent with the growth assumptions of the applicable AQAP*. The proposed Project land use type was not anticipated in the current growth assumptions. Therefore, growth assumptions in the Kern County General Plan will be modified with the approval of the proposed Project.
3. *The project must contain in its design all reasonably available and feasible air quality control measures*. The proposed project incorporates various policy and rule-required implementation measures that will reduce related emissions.

The CCAA and AQAP identify transportation control measures as methods to further reduce emissions from mobile sources. Strategies identified to reduce vehicular emissions such as reductions in vehicle trips, vehicle use, vehicle miles traveled, vehicle idling, and traffic congestion, in order to reduce vehicular emissions, can be implemented as control measures under the CCAA as well. Additional measures may also be implemented through the building process such as providing electrical outlets on exterior walls of structures to encourage use of electrical landscape maintenance equipment or measures such as electrical outlets for electrical systems on diesel trucks to reduce or eliminate idling time.

As the growth represented by the modified proposed Project will be updated in the Kern County General Plan and incorporated into the AQAP, conclusions may be drawn from the following criteria:

1. That, by definition, the proposed emissions from the Project are below the SJVAPCD's established emissions impact thresholds;
2. That the primary source of emissions from the Project will be motor vehicles that are licensed through the State of California and whose emissions are already incorporated into CARB's San Joaquin Valley Emissions Inventory.

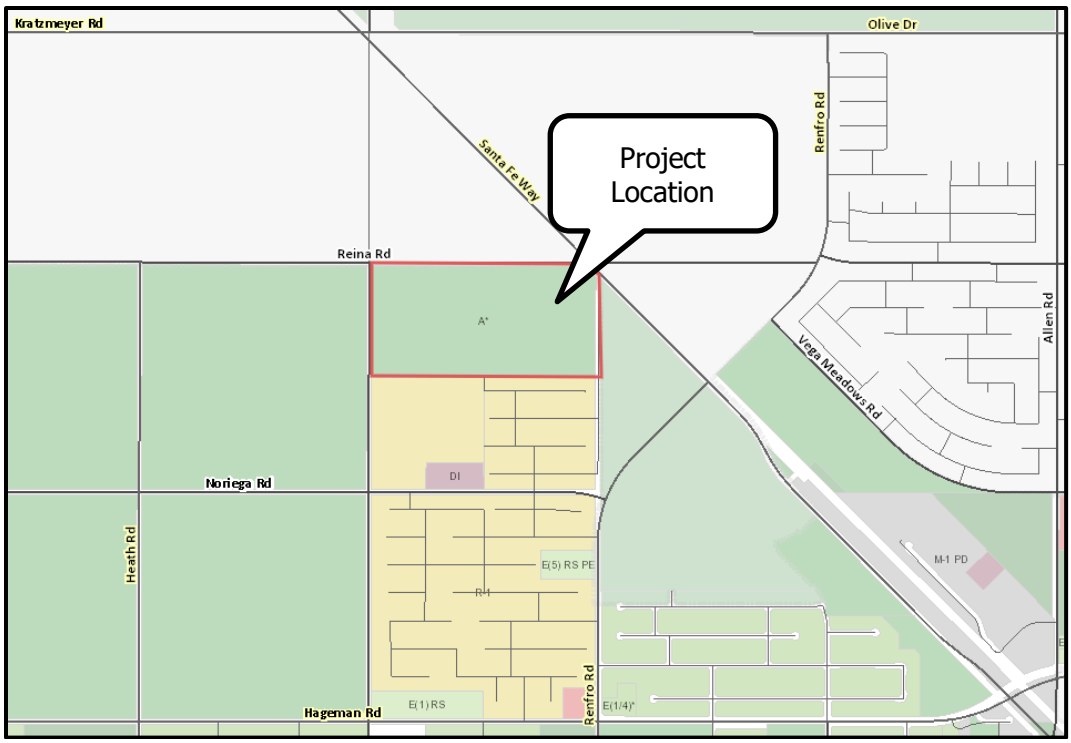
Based on these factors, the modified proposed Project appears to be *consistent with the AQAP*.

6.2 Consistency with the Kern County Council of Government's Regional Conformity Analysis

The Kern Council of Governments (Kern COG) Regional Conformity Analysis (Kern COG 2018) Determination demonstrates that the regional transportation expenditure plans (Destination 2042 Regional Transportation Plan and Federal Transportation Improvement Program) in the Kern County portion of the San Joaquin Valley air quality attainment areas would not hinder the efforts set out in CARB's SIP for each area's non-attainment pollutants (CO, O_3, and PM_{10}). The analysis uses an adopted regional growth forecast, governed by both the adopted Kern COG Policy and Procedure Manual and a Memorandum of Understanding between the County of Kern and Kern COG (representing itself and outlying municipal member agencies).

The Kern COG Regional Conformity Analysis considers General Plan Amendments (GPA) and zone changes that were enacted at the time of the analysis as projected growth within the area based on land use designations incorporated within the Kern County General Plan. Land use designations that are altered based on subsequent GPAs that were not included in the Regional Conformity Analysis were not incorporated into the Kern COG analysis. Consequently, if a proposed project is not included in the regional growth forecast using the latest planning assumptions, it may not be said to conform to the regional growth forecast. Under the current Kern County Zoning, the Project site is designated as "A*: Exclusive Agriculture" (see **Figure 6-1**).

Figure 6-1. Kern County Zoning



Item 2 under Section 3 – Model Maintenance Procedure, of the Kern COG Regional Transportation Modeling Policy and Procedure Manual states "*Land Use Data – General Plan land capacity data or "Build -out capacity" is used to distribute the forecasted County totals, and may be updated as new information becomes available, and is revised in regular consultation with local planning departments.*"

Under current policies, only after a General Plan Amendment (GPA) is approved, can housing and employment assumptions be updated to reflect the capacity changes. Since the modified proposed Project does not require a GPA and zone change from the approved project, the existing growth forecast will not be modified to reflect these changes. In order to determine whether the forecasted growth for the Project area is sufficient to account for the projected increases in employment, an analysis based on Kern COG regional forecast was conducted.

The adopted growth forecast for the Project site is distributed to Traffic Analysis Zones (TAZ) (see **Figure 6-2**). In order to evaluate the impacts to the proposed Project area, a one-mile radius analysis was conducted that included TAZs 12, 1020, 1028, 1029, 1030, 1456, 1461, 1469, 1471, 1472, 1473, 1493, 1495, 1496, 1498, 1499, 1500, 1501, 1509, and 1511. This places the Project site at the center of the analysis area and provides a conservative evaluation of the TAZ data. Kern COG has predicted an increase in growth in population (58%), an increase in growth in housing (63%) and an increase in employment (64%) between 2017 and 2020. Employment forecast for the TAZ analysis area appears to be sufficient to account for 100% of the planned housing growth attributed to the modified proposed Project. In order to be considered "consistent" and, therefore, in conformance with the AQAP, these increases would need to occur over the same time as the adopted growth forecast. From 2020 through 2030, 1,825 new households are forecast to be added to the analysis area.

Figure 6-2. TAZ Analysis Map

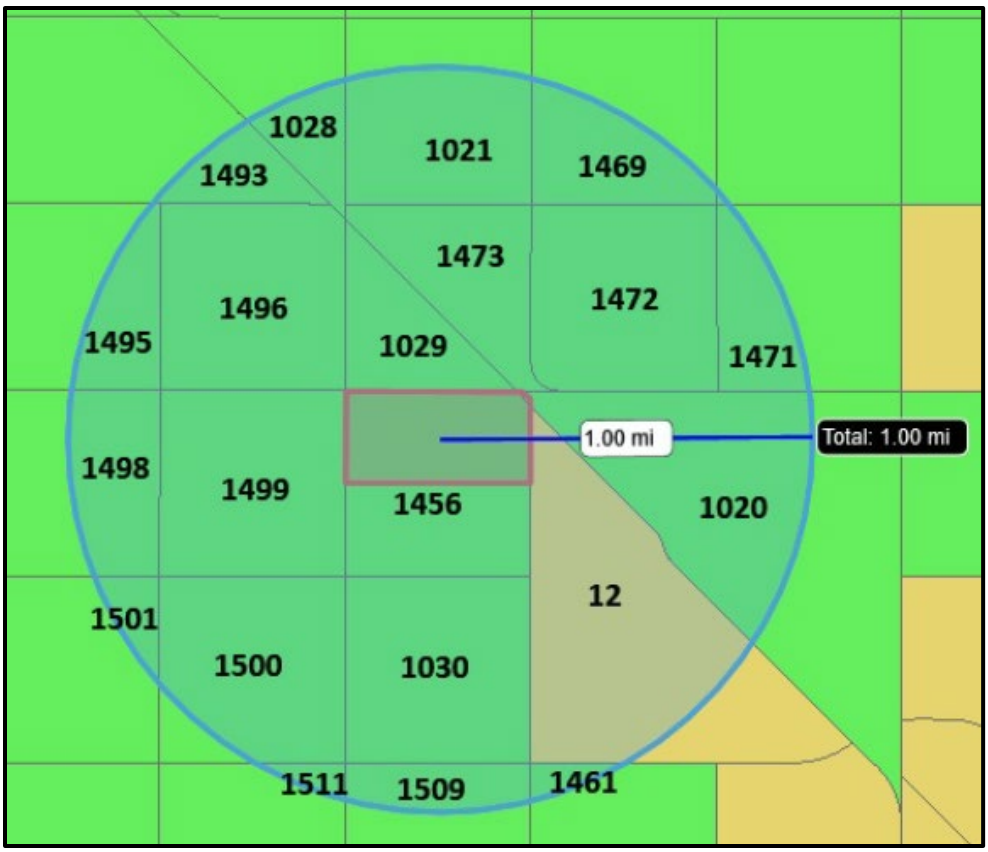


Table 6-1 provides the projected growth rates for the TAZ analysis area.

Table 6-1. TAZ Analysis Area Projected Growth Analysis[2]

Years	2017	2020	2030
Population	7,025	8,903	14,048
Households	2,273	2,893	4,718
Employment	711	874	1,434

Table 6-2 provides the percent increase/decrease for the analysis area population, households, and employment.

Table 6-2. Percent Increase/Decrease on TAZ Analysis Area

Years	Percent Increase / Decrease		
	Population	Households	Employment
2017*	0	0	0
2020	27	27	23
2030	58	63	64
*Baseline year of 2017 was valued at "0" to measure net percent increase/decrease.			

[2] Kern Council of Governments Regional Conformity Analysis Data, 2018

7. MITIGATION AND OTHER RECOMMENDED MEASURES

As the estimated construction and operational emissions from the modified proposed Project would be less than significant, no specific mitigation measures would be required. However, to ensure that the modified proposed Project is in compliance with all applicable SJVAPCD rules and regulations and that emissions are further reduced, the applicant should implement and comply with a number of measures that are either recommended as a "good operating practice" for environmental stewardship or they are required by regulation. Some of the listed measures are regulatory requirements or construction requirements that would result in further emission reductions through their inclusion in Project construction and long-term design. The following measures either have been applied to the Project through the CalEEMod model and would be incorporated into the modified proposed Project by design or would be implemented in conjunction with SJVAPCD rules as conditions of approval.

7.1 SJVAPCD Required PM_{10} Reduction Measures

As the modified proposed Project would be completed in compliance with SJVAPCD Regulation VIII, dust control measures would be taken to ensure compliance specifically during grading and construction phases. The required Regulation VIII measures are as follows:

- Water previously exposed surfaces (soil) whenever visible dust is capable of drifting from the site or approaches 20% opacity.
- Water all unpaved haul roads a minimum of three-times/day or whenever visible dust from such roads is capable of drifting from the site or approaches 20% opacity.
- Reduce speed on unpaved roads to less than 15 miles per hour.
- Install and maintain a track out control device that meets the specifications of SJVAPCD Rule 8041 if the site exceeds 150 vehicle trips per day or more than 20 vehicle trips per day by vehicles with three or more axles.
- Stabilize all disturbed areas, including storage piles, which are not being actively utilized for production purposes using water, chemical stabilizers or by covering with a tarp or other suitable cover.
- Control fugitive dust emissions during land clearing, grubbing, scraping, excavation, leveling, grading, or cut and fill operations with application of water or by presoaking.
- When transporting materials offsite, maintain a freeboard limit of at least 6 inches and cover or effectively wet to limit visible dust emissions.
- Limit and remove the accumulation of mud and/or dirt from adjacent public roadways at the end of each workday. (Use of dry rotary brushes is prohibited except when preceded or accompanied by sufficient wetting to limit visible dust emissions and use of blowers is expressly forbidden).
- Stabilize the surface of storage piles following the addition or removal of materials using water or chemical stabilizer/suppressants.
- Remove visible track-out from the site at the end of each workday.
- Cease grading or other activities that cause excessive (greater than 20% opacity) dust formation during periods of high winds (greater than 20 mph over a one-hour period).

7.2 Recommended Measures to Reduce Equipment Exhaust

In addition, the GAMAQI guidance document lists the following measures as approved and recommended for construction activities. These measures are recommended for the modified proposed Project:

- Maintain all construction equipment as recommended by manufacturer manuals.
- Shut down equipment when not in use for extended periods.
- Construction equipment shall operate no longer than eight (8) cumulative hours per day.

- Use electric equipment for construction whenever possible in lieu of diesel or gasoline powered equipment.
- Curtail use of high-emitting construction equipment during periods of high or excessive ambient pollutant concentrations.
- All construction vehicles shall be equipped with proper emissions control equipment and kept in good and proper running order to substantially reduce NOx emissions.
- On-Road and Off-Road diesel equipment shall use diesel particulate filters if permitted under manufacturer's guidelines.
- On-Road and Off-Road diesel equipment shall use cooled exhaust gas recirculation (EGR) if permitted under manufacturer's guidelines.
- All construction workers shall be encouraged to shuttle (car-pool) to retail establishments or to remain on-site during lunch breaks.
- All construction activities within the project area shall be discontinued during the first stage smog alerts.
- Construction and grading activities shall not be allowed during first stage O_3 alerts. First stage O_3 alerts are declared when the O_3 level exceeds 0.20 ppm (1-hour average).

7.3 Other Measures to Reduce Project Impacts

The following measures are recommended to further reduce the potential for long-term emissions from the modified proposed Project. These measures are required as a matter of regulatory compliance:

- The Project design shall comply with applicable standards set forth in Title 24 of the Uniform Building Code to minimize total consumption of energy.
- Applicants shall be required to comply with applicable mitigation measures in the AQAP, SJVAPCD Rules, Traffic Control Measures, Regulation VIII and Indirect Source Rules for the SJVAPCD.
- The developer shall comply with the provisions of SJVAPCD Rule 4601 - Architectural Coatings, during the construction of all buildings and facilities. Application of architectural coatings shall be completed in a manner that poses the least emissions impacts whenever such application is deemed proficient.
- The applicant shall comply with the provisions of SJVAPCD Rule 4641 during the construction and pavement of all roads and parking areas within the project area. Specifically, the applicant shall not allow the use of:
  - Rapid cure cutback asphalt;
  - Medium cure cutback asphalt;
  - Slow cure cutback asphalt (as specified in SJVAPCD Rule 4641, Section 5.1.3); or Emulsified asphalt (as specified in SJVAPCD Rule 4641, Section 5.1.4).
  - The developer shall comply with applicable provisions of SJVAPCD Rule 9510 (Indirect Source Review).

8. LEVEL OF SIGNIFICANCE AFTER MITIGATION

The modified proposed Project would have short-term air quality impacts due to facility construction activities as well as vehicular emissions. Both of these impacts would be mitigated and *were found to be less than significant before and after mitigation*.

The modified proposed Project would result in long-term air quality impacts due to operational and related mobile source emissions. These impacts would be mitigated and *were found to be less than significant before and after mitigation*.

The modified proposed Project, in conjunction with other past, present and foreseeable future projects, would result in cumulative short-term and long-term impacts to air quality. The modified proposed Project's incremental contribution to these impacts would be mitigated, are below thresholds of significance, and would not be considered cumulatively considerable. Therefore, the modified proposed Project's contribution to cumulative impacts *were found to be less than significant*.

The modified proposed Project, in conjunction with other past, present and foreseeable future projects, would result in cumulative long-term impacts to global climate change. The modified proposed Project's incremental contribution to these impacts will be mitigated to the extent feasible and are considered *less than significant*.

9. REFERENCES

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APPENDIX A. EXISTING AIR QUALITY MONITORING DATA

Top 4 Summary: Highest 4 Daily Maximum 8-Hour Ozone Averages

at Bakersfield-Municipal Airport

iADAM

	2017		2018		2019	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National 2015 Std (0.070 ppm):						
First High:	Sep 2	0.101	Jul 31	0.098	Aug 14	0.080
Second High:	Sep 1	0.091	Aug 8	0.094	Jul 25	0.079
Third High:	Aug 28	0.088	Aug 9	0.094	Jun 4	0.078
Fourth High:	Jul 10	0.086	Aug 1	0.090	Aug 7	0.078
California Std (0.070 ppm):						
First High:	Sep 2	0.101	Jul 31	0.098	Jul 25	0.080
Second High:	Sep 1	0.092	Aug 8	0.095	Aug 14	0.080
Third High:	Aug 28	0.088	Aug 9	0.095	Jun 4	0.078
Fourth High:	Aug 1	0.087	Aug 1	0.090	Aug 7	0.078
National 2015 Std (0.070 ppm):						
# Days Above the Standard:		55		54		19
Nat'l Standard Design Value:		0.090		0.088		0.084
National Year Coverage:		96		97		99
California Std (0.070 ppm):						
# Days Above the Standard:		57		59		24
California Designation Value:		0.101		0.095		0.092
Expected Peak Day Concentration:		0.101		0.096		0.094
California Year Coverage:		95		84		96

Notes:

Eight-hour ozone averages and related statistics are available at Bakersfield-Municipal Airport between 2012 and 2019. Some years in this range may not be represented.

All averages expressed in parts per million.

An exceedance of a standard is not necessarily related to a violation of the standard.

State and national statistics may differ for the following reasons:

National 8-hour averages are truncated to three decimal places; State 8-hour averages are rounded to three decimal places.

State criteria for ensuring that data are sufficiently complete for calculating 8-hour averages are more stringent than the national criteria.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard exclude those 8-hour averages that have first hours between midnight and 6:00 am, Pacific Standard Time.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard include only those 8-hour averages from days that have sufficient data for the day to be considered valid.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Top 4 Summary: Highest 4 Daily Maximum 8-Hour Ozone Averages

iADAM

at Bakersfield-5558 California Avenue

	2017		2018		2019	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National 2015 Std (0.070 ppm):						
First High:	Sep 2	0.104	Jul 31	0.098	Jul 25	0.088
Second High:	Sep 1	0.094	Aug 8	0.097	Jun 4	0.085
Third High:	Aug 29	0.092	Aug 9	0.095	Jun 5	0.081
Fourth High:	Aug 28	0.089	Aug 1	0.093	Jun 18	0.081
California Std (0.070 ppm):						
First High:	Sep 2	0.104	Jul 31	0.098	Jul 25	0.088
Second High:	Sep 1	0.095	Aug 8	0.098	Jun 4	0.086
Third High:	Aug 29	0.092	Aug 9	0.096	Jun 5	0.082
Fourth High:	Aug 28	0.089	Aug 1	0.093	Jun 18	0.082
National 2015 Std (0.070 ppm):						
# Days Above the Standard:		85		60		24
Nat'l Standard Design Value:		0.086		0.088		0.087
National Year Coverage:		100		100		99
California Std (0.070 ppm):						
# Days Above the Standard:		87		64		28
California Designation Value:		0.095		0.095		0.096
Expected Peak Day Concentration:		0.095		0.095		0.096
California Year Coverage:		99		100		97

Notes:

Eight-hour ozone averages and related statistics are available at Bakersfield-5558 California Avenue between 1994 and 2019. Some years in this range may not be represented.

All averages expressed in parts per million.

An exceedance of a standard is not necessarily related to a violation of the standard.

State and national statistics may differ for the following reasons:

National 8-hour averages are truncated to three decimal places; State 8-hour averages are rounded to three decimal places.

State criteria for ensuring that data are sufficiently complete for calculating 8-hour averages are more stringent than the national criteria.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard exclude those 8-hour averages that have first hours between midnight and 6:00 am, Pacific Standard Time.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard include only those 8-hour averages from days that have sufficient data for the day to be considered valid.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Top 4 Summary: Highest 4 Daily Maximum 8-Hour Ozone Averages

at Oildale-3311 Manor Street

iADAM

	2017		2018		2019	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National 2015 Std (0.070 ppm):						
First High:	Sep 2	0.099	Aug 8	0.097	Jul 25	0.086
Second High:	Sep 1	0.094	Jul 31	0.092	Aug 14	0.079
Third High:	Jun 23	0.085	Aug 9	0.092	Aug 6	0.077
Fourth High:	Aug 28	0.085	Aug 4	0.091	Aug 15	0.076
California Std (0.070 ppm):						
First High:	Sep 2	0.099	Aug 8	0.098	Jul 25	0.087
Second High:	Sep 1	0.095	Jul 31	0.093	Aug 14	0.080
Third High:	Jun 23	0.085	Aug 9	0.093	Aug 6	0.077
Fourth High:	Aug 28	0.085	Aug 4	0.092	Aug 15	0.077
National 2015 Std (0.070 ppm):						
# Days Above the Standard:		65		54		16
Nat'l Standard Design Value:		0.079		0.082		0.084
National Year Coverage:		97		99		99
California Std (0.070 ppm):						
# Days Above the Standard:		68		57		20
California Designation Value:		0.092		0.093		0.093
Expected Peak Day Concentration:		0.092		0.094		0.093
California Year Coverage:		93		99		98

Notes:

Eight-hour ozone averages and related statistics are available at Oildale-3311 Manor Street between 1983 and 2019. Some years in this range may not be represented.

All averages expressed in parts per million.

An exceedance of a standard is not necessarily related to a violation of the standard.

State and national statistics may differ for the following reasons:

National 8-hour averages are truncated to three decimal places; State 8-hour averages are rounded to three decimal places.

State criteria for ensuring that data are sufficiently complete for calculating 8-hour averages are more stringent than the national criteria.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard exclude those 8-hour averages that have first hours between midnight and 6:00 am, Pacific Standard Time.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard include only those 8-hour averages from days that have sufficient data for the day to be considered valid.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

CALIFORNIA AIR RESOURCES BOARD

Top 4 Summary: Highest 4 Daily Maximum Hourly Ozone Measurements

iADAM

at Bakersfield-Municipal Airport

	2017		2018		2019	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Sep 2	0.118	Aug 1	0.111	Aug 14	0.092
Second High:	Aug 29	0.105	Jul 30	0.106	Aug 6	0.089
Third High:	Aug 25	0.103	Jul 31	0.105	Jul 25	0.088
Fourth High:	Sep 1	0.101	Aug 8	0.103	Jul 23	0.087
California:						
# Days Above the Standard:	9		9		0	
California Designation Value:	0.11		0.11		0.10	
Expected Peak Day Concentration:	0.113		0.106		0.102	
National:						
# Days Above the Standard:	*0*		*0*		*0*	
3-Year Estimated Expected Number of Exceedance Days:	*0.0*		*0.0*		*0.0*	
1-Year Estimated Expected Number of Exceedance Days:	*0.0*		*0.0*		*0.0*	
Nat'l Standard Design Value:	*0.114*		*0.105*		*0.105*	
Year Coverage:	96		97		97	

Notes:

Hourly ozone measurements and related statistics are available at Bakersfield-Municipal Airport between 2012 and 2019. Some years in this range may not be represented.

All concentrations expressed in parts per million.

The national 1-hour ozone standard was revoked in June 2005. Statistics related to the national 1-hour ozone standard are shown in or .

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Top 4 Summary: Highest 4 Daily Maximum Hourly Ozone Measurements

at Bakersfield-5558 California Avenue

	2017		2018		2019	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Sep 2	0.122	Aug 1	0.107	Jul 25	0.097
Second High:	Sep 1	0.104	Aug 4	0.106	Jun 4	0.095
Third High:	Aug 29	0.101	Jul 31	0.103	Jun 11	0.092
Fourth High:	Jun 23	0.099	Aug 9	0.103	Jun 18	0.092
California:						
# Days Above the Standard:	11		8		2	
California Designation Value:	0.10		0.10		0.10	
Expected Peak Day Concentration:	0.100		0.101		0.102	
National:						
# Days Above the Standard:	*0*		*0*		*0*	
3-Year Estimated Expected Number of Exceedance Days:	*0.0*		*0.0*		*0.0*	
1-Year Estimated Expected Number of Exceedance Days:	*0.0*		*0.0*		*0.0*	
Nat'l Standard Design Value:	*0.101*		*0.104*		*0.104*	
Year Coverage:	99		100		99	

Notes:

Hourly ozone measurements and related statistics are available at Bakersfield-5558 California Avenue between 1994 and 2019. Some years in this range may not be represented.

All concentrations expressed in parts per million.

The national 1-hour ozone standard was revoked in June 2005. Statistics related to the national 1-hour ozone standard are shown in or .

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Top 4 Summary: Highest 4 Daily Maximum Hourly Ozone Measurements

at Oildale-3311 Manor Street

	2017		2018		2019	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Sep 2	0.110	Aug 4	0.113	Jul 25	0.099
Second High:	Sep 1	0.100	Aug 1	0.102	Aug 6	0.091
Third High:	Jun 21	0.096	Jul 31	0.100	Aug 14	0.089
Fourth High:	Jun 23	0.095	Aug 8	0.100	Aug 31	0.086
California:						
# Days Above the Standard:	4		5		1	
California Designation Value:	0.10		0.10		0.10	
Expected Peak Day Concentration:	0.096		0.098		0.098	
National:						
# Days Above the Standard:	*0*		*0*		*0*	
3-Year Estimated Expected Number of Exceedance Days:	*0.0*		*0.0*		*0.0*	
1-Year Estimated Expected Number of Exceedance Days:	*0.0*		*0.0*		*0.0*	
Nat'l Standard Design Value:	*0.098*		*0.100*		*0.100*	
Year Coverage:	97		99		99	

Notes:

Hourly ozone measurements and related statistics are available at Oildale-3311 Manor Street between 1983 and 2019. Some years in this range may not be represented.

All concentrations expressed in parts per million.

The national 1-hour ozone standard was revoked in June 2005. Statistics related to the national 1-hour ozone standard are shown in or .

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

CALIFORNIA AIR RESOURCES BOARD

Top 4 Summary: Highest 4 Daily 24-Hour PM2.5 Averages

at Bakersfield-5558 California Avenue

iADAM

	2017		2018		2019	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Dec 28	101.8	Jan 3	98.5	Jan 27	59.1
Second High:	Dec 31	88.1	Jan 2	97.5	Jan 29	57.6
Third High:	Dec 30	82.9	Nov 19	96.5	Jan 28	53.1
Fourth High:	Dec 10	76.5	Jan 1	93.1	Jan 26	52.3
California:						
First High:	Dec 28	101.8	Jan 3	98.5	Jan 27	59.1
Second High:	Dec 31	88.1	Jan 2	97.5	Jan 29	57.6
Third High:	Dec 30	82.9	Nov 19	96.5	Jan 28	53.1
Fourth High:	Dec 10	76.5	Jan 1	93.1	Jan 26	52.3
National:						
Estimated # Days > 24-Hour Std:		30.2		40.3		12.3
Measured # Days > 24-Hour Std:		28		36		12
24-Hour Standard Design Value:		59		63		61
24-Hour Standard 98th Percentile:		71.8		69.2		43.4
2006 Annual Std Design Value:		15.7		16.1		15.2
2013 Annual Std Design Value:		15.7		16.1		15.2
Annual Average:		15.9		17.6		11.8
California:						
Annual Std Designation Value:		16		16		16
Annual Average:		15.9		15.7		11.5
Year Coverage:		94		93		98

Notes:

Daily PM2.5 averages and related statistics are available at Bakersfield-5558 California Avenue between 1999 and 2019. Some years in this range may not be represented.

All averages expressed in micrograms per cubic meter.

An exceedance of a standard is not necessarily related to a violation of the standard.

State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

CALIFORNIA AIR RESOURCES BOARD

Top 4 Summary: Highest 4 Daily 24-Hour PM2.5 Averages

at Bakersfield-410 E Planz Road

iADAM

	2017		2018		2019	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Dec 30	80.1	Jan 2	100.9	Jan 27	83.7
Second High:	Dec 15	73.6	Nov 16	60.8	Oct 30	49.3
Third High:	Dec 12	69.7	Feb 4	56.6	Nov 8	46.7
Fourth High:	Dec 24	69.7	Feb 1	52.8	Nov 17	34.5
California:						
First High:	Dec 30	80.1	Jan 2	100.9	Jan 27	83.7
Second High:	Dec 15	73.6	Nov 16	60.8	Oct 30	49.3
Third High:	Dec 12	69.7	Feb 4	56.6	Nov 8	46.7
Fourth High:	Dec 24	69.7	Feb 1	52.8	Nov 17	34.5
National:						
Estimated # Days > 24-Hour Std:		32.2		*		10.0
Measured # Days > 24-Hour Std:		10		9		3
24-Hour Standard Design Value:		59		60		59
24-Hour Standard 98th Percentile:		69.7		60.8		46.7
2006 Annual Std Design Value:		17.3		17.8		16.9
2013 Annual Std Design Value:		17.3		17.8		16.9
Annual Average:		18.2		19.3		13.0
California:						
Annual Std Designation Value:		18		*		13
Annual Average:		*		*		13.0
Year Coverage:		86		79		92

Notes:

Daily PM2.5 averages and related statistics are available at Bakersfield-410 E Planz Road between 2000 and 2019. Some years in this range may not be represented.

All averages expressed in micrograms per cubic meter.

An exceedance of a standard is not necessarily related to a violation of the standard.

State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

CALIFORNIA AIR RESOURCES BOARD

Top 4 Summary: Highest 4 Daily 24-Hour PM2.5 Averages

at Bakersfield-Golden State Highway

iADAM

	2017		2018		2019	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Dec 15	74.3	Jan 2	99.1	Jan 27	66.1
Second High:	Dec 30	74.1	Nov 19	95.3	Jan 30	47.4
Third High:	Dec 12	71.3	Nov 16	60.9	Nov 8	44.3
Fourth High:	Dec 24	68.6	Feb 4	54.9	Nov 17	36.7
California:						
First High:	Dec 15	74.3	Jan 2	99.1	Jan 27	66.1
Second High:	Dec 30	74.1	Nov 19	95.3	Jan 30	47.4
Third High:	Dec 12	71.3	Nov 16	60.9	Nov 8	44.3
Fourth High:	Dec 24	68.6	Feb 4	54.9	Nov 17	36.7
National:						
Estimated # Days > 24-Hour Std:		29.7		33.8		12.2
Measured # Days > 24-Hour Std:		9		11		4
24-Hour Standard Design Value:		58		61		59
24-Hour Standard 98th Percentile:		71.3		60.9		44.3
2006 Annual Std Design Value:		15.9		16.4		15.5
2013 Annual Std Design Value:		15.9		16.4		15.5
Annual Average:		16.1		18.0		12.3
California:						
Annual Std Designation Value:		17		18		18
Annual Average:		16.2		18.1		12.4
Year Coverage:		88		99		99

Notes:

Daily PM2.5 averages and related statistics are available at Bakersfield-Golden State Highway between 1999 and 2019. Some years in this range may not be represented.

All averages expressed in micrograms per cubic meter.

An exceedance of a standard is not necessarily related to a violation of the standard.

State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

CALIFORNIA AIR RESOURCES BOARD

Top 4 Summary: Highest 4 Daily 24-Hour PM10 Averages

iADAM

at Bakersfield-5558 California Avenue

	2017		2018		2019	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Dec 15	138.0	Jan 2	136.1	Jan 5	116.3
Second High:	Dec 9	106.7	Nov 16	116.4	Nov 5	94.9
Third High:	Dec 27	94.9	Aug 6	75.0	Nov 11	75.9
Fourth High:	Oct 17	90.9	Feb 1	73.8	Oct 31	74.5
California:						
First High:	Dec 15	143.6	Jan 2	142.0	Jan 5	125.9
Second High:	Dec 9	112.1	Nov 16	119.8	Nov 5	96.5
Third High:	Dec 27	99.5	Feb 1	76.1	Nov 11	77.3
Fourth High:	Oct 17	90.9	Aug 6	73.1	Oct 31	76.4
National:						
Estimated # Days > 24-Hour Std:		0.0		0.0		0.0
Measured # Days > 24-Hour Std:		0		0		0
3-Yr Avg Est # Days > 24-Hr Std:		0.0		0.0		0.0
Annual Average:		*42.6*		*42.1*		*38.8*
3-Year Average:		*43*		*42*		*41*
California:						
Estimated # Days > 24-Hour Std:		98.7		*		108.1
Measured # Days > 24-Hour Std:		16		13		17
Annual Average:		42.6		*		39.0
3-Year Maximum Annual Average:		44		43		43
Year Coverage:		98		95		94

Notes:

Daily PM10 averages and related statistics are available at Bakersfield-5558 California Avenue between 1994 and 2019. Some years in this range may not be represented.

All averages expressed in micrograms per cubic meter.

The national annual average PM10 standard was revoked in December 2006 and is no longer in effect. Statistics related to the revoked standard are shown in *italics* or *italics* .

An exceedance of a standard is not necessarily related to a violation of the standard.

All values listed above represent midnight-to-midnight 24-hour averages and may be related to an exceptional event.

State and national statistics may differ for the following reasons:

- State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.
- State statistics for 1998 and later are based on local conditions (except for sites in the South Coast Air Basin, where State statistics for 2002 and later are based on local conditions). National statistics are based on standard conditions.
- State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

Measurements are usually collected every six days. Measured days counts the days that a measurement was greater than the level of the standard; Estimated days mathematically estimates how many days concentrations would have been greater than the level of the standard had each day been monitored.

3-Year statistics represent the listed year and the 2 years before the listed year.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

CALIFORNIA AIR RESOURCES BOARD

Top 4 Summary: Highest 4 Daily 24-Hour PM10 Averages

iADAM

at Bakersfield-Golden State Highway

	2017		2018		2019	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Dec 15	158.2	Nov 16	155.2	Oct 30	652.2
Second High:	Dec 9	109.6	Jan 2	144.2	Nov 5	116.4
Third High:	Dec 27	101.4	Sep 5	99.3	Nov 11	98.7
Fourth High:	Oct 16	98.3	Oct 23	99.0	Oct 24	90.3
California:						
First High:	Dec 15	165.1	Nov 16	159.0	Oct 30	664.2
Second High:	Dec 9	115.4	Jan 2	150.6	Nov 5	117.4
Third High:	Dec 27	106.5	Oct 23	98.5	Nov 11	99.5
Fourth High:	Oct 16	100.3	Sep 5	96.1	Nov 17	90.2
National:						
Estimated # Days > 24-Hour Std:		6.1		6.6		6.6
Measured # Days > 24-Hour Std:		1		1		1
3-Yr Avg Est # Days > 24-Hr Std:		*		4.0		6.0
Annual Average:		*48.3*		*53.0*		*55.6*
3-Year Average:		*48*		*50*		*52*
California:						
Estimated # Days > 24-Hour Std:		145.5		163.0		129.7
Measured # Days > 24-Hour Std:		24		27		21
Annual Average:		48.4		53.0		55.6
3-Year Maximum Annual Average:		48		53		56
Year Coverage:		100		97		98

Notes:

Daily PM10 averages and related statistics are available at Bakersfield-Golden State Highway between 1994 and 2019. Some years in this range may not be represented.

All averages expressed in micrograms per cubic meter.

The national annual average PM10 standard was revoked in December 2006 and is no longer in effect. Statistics related to the revoked standard are shown in *italics* or *italics* .

An exceedance of a standard is not necessarily related to a violation of the standard.

All values listed above represent midnight-to-midnight 24-hour averages and may be related to an exceptional event.

State and national statistics may differ for the following reasons:

- State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.
- State statistics for 1998 and later are based on local conditions (except for sites in the South Coast Air Basin, where State statistics for 2002 and later are based on local conditions). National statistics are based on standard conditions.
- State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

Measurements are usually collected every six days. Measured days counts the days that a measurement was greater than the level of the standard; Estimated days mathematically estimates how many days concentrations would have been greater than the level of the standard had each day been monitored.

3-Year statistics represent the listed year and the 2 years before the listed year.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Top 4 Summary: Highest 4 Daily 24-Hour PM10 Averages

at Oildale-3311 Manor Street

iADAM

	2017		2018		2019	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Mar 14	59.4	Nov 19	174.9	Oct 30	389.3
Second High:	Jan 31	55.0	Jan 3	171.6	Oct 27	382.7
Third High:	May 1	44.7	Nov 16	159.8	Nov 25	339.6
Fourth High:	May 19	39.0	Jan 2	157.4	Oct 28	233.7
California:						
First High:	Dec 16	210.0	Nov 19	179.0	Oct 30	392.1
Second High:	Dec 15	153.8	Jan 3	175.2	Oct 27	384.2
Third High:	Dec 11	148.5	Nov 16	163.0	Nov 25	344.1
Fourth High:	Dec 14	143.6	Jan 2	162.1	Oct 28	238.0
National:						
Estimated # Days > 24-Hour Std:		*		4.3		8.1
Measured # Days > 24-Hour Std:		0		4		8
3-Yr Avg Est # Days > 24-Hr Std:		*		*		*
Annual Average:		*19.3*		*54.4*		*46.6*
3-Year Average:		*32*		*		*52*
California:						
Estimated # Days > 24-Hour Std:		*		*		*
Measured # Days > 24-Hour Std:		80		161		118
Annual Average:		*		*		*
3-Year Maximum Annual Average:		*		*		*
Year Coverage:		24		0		0

Notes:

Daily PM10 averages and related statistics are available at Oildale-3311 Manor Street between 1988 and 2019. Some years in this range may not be represented.

All averages expressed in micrograms per cubic meter.

The national annual average PM10 standard was revoked in December 2006 and is no longer in effect. Statistics related to the revoked standard are shown in *italics* or *italics* .

An exceedance of a standard is not necessarily related to a violation of the standard.

All values listed above represent midnight-to-midnight 24-hour averages and may be related to an exceptional event.

State and national statistics may differ for the following reasons:

- State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.
- State statistics for 1998 and later are based on local conditions (except for sites in the South Coast Air Basin, where State statistics for 2002 and later are based on local conditions). National statistics are based on standard conditions.
- State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

Measurements are usually collected every six days. Measured days counts the days that a measurement was greater than the level of the standard; Estimated days mathematically estimates how many days concentrations would have been greater than the level of the standard had each day been monitored.

3-Year statistics represent the listed year and the 2 years before the listed year.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Top 4 Summary: Highest 4 Daily Maximum Hourly Nitrogen Dioxide Measurements

at Bakersfield-Municipal Airport

	2017		2018		2019	
	Date	Measurement	Date	Measurement	Date	Measurement
National:						
First High:	Oct 16	62.5	Aug 23	57.1	Nov 10	64.3
Second High:	Dec 11	60.4	Sep 23	56.0	Nov 5	58.6
Third High:	Dec 15	59.3	Oct 20	55.7	Nov 4	57.2
Fourth High:	Dec 12	56.4	Nov 20	53.2	Nov 19	56.9
California:						
First High:	Oct 16	62	Aug 23	57	Nov 10	64
Second High:	Dec 11	60	Sep 23	56	Nov 5	58
Third High:	Dec 15	59	Oct 20	55	Nov 4	57
Fourth High:	Dec 12	56	Nov 19	53	Nov 6	56
National:						
1-Hour Standard Design Value:		48		49		53
1-Hour Standard 98th Percentile:		52.9		49.4		55.7
# Days Above the Standard:		0		0		0
Annual Standard Design Value:		13		11		12
California:						
1-Hour Std Designation Value:		60		60		60
Expected Peak Day Concentration:		59		60		65
# Days Above the Standard:		0		0		0
Annual Std Designation Value:		12		12		12
Annual Average:		12		11		11
Year Coverage:		95		90		99

Notes:

Hourly nitrogen dioxide measurements and related statistics are available at Bakersfield-Municipal Airport between 2012 and 2019. Some years in this range may not be represented.

All concentrations expressed in parts per billion.

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Top 4 Summary: Highest 4 Daily Maximum Hourly Nitrogen Dioxide Measurements

at Bakersfield-5558 California Avenue

	2017		2018		2019	
	Date	Measurement	Date	Measurement	Date	Measurement
National:						
First High:	Dec 15	66.0	Nov 16	61.5	Nov 8	67.1
Second High:	Dec 14	63.1	Nov 15	58.0	Nov 12	63.8
Third High:	Nov 22	61.5	Sep 28	56.3	Nov 13	62.6
Fourth High:	Dec 29	61.1	Nov 14	56.1	Nov 4	60.4
California:						
First High:	Dec 15	66	Nov 16	61	Nov 8	67
Second High:	Dec 14	63	Nov 15	58	Nov 12	63
Third High:	Nov 22	61	Sep 28	56	Nov 13	62
Fourth High:	Dec 12	61	Nov 14	56	Nov 4	60
National:						
1-Hour Standard Design Value:		52		53		54
1-Hour Standard 98th Percentile:		58.1		51.0		53.9
# Days Above the Standard:		0		0		0
Annual Standard Design Value:		13		13		12
California:						
1-Hour Std Designation Value:		60		70		70
Expected Peak Day Concentration:		63		65		66
# Days Above the Standard:		0		0		0
Annual Std Designation Value:		12		12		12
Annual Average:		12		12		11
Year Coverage:		97		97		99

Notes:

Hourly nitrogen dioxide measurements and related statistics are available at Bakersfield-5558 California Avenue between 1994 and 2019. Some years in this range may not be represented.

All concentrations expressed in parts per billion.

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

APPENDIX B. PROJECT EMISSION CALCULATIONS

Reina Ranch
Emissions Summary

Unmitigated Construction (phase and year breakdown)

Phase	Year	ROG	NOx	CO	SO2	PM10	PM2.5	CO2	CH4	N2O	CO2e
		tons/year						MT/year			
1	2022	0.28	2.61	2.49	0.00	0.36	0.22	398.30	0.10	0	400.72
1	2023	0.90	0.49	0.58	0.00	0.03	0.02	88.24	0.02	0	88.76
2	2023	0.65	1.54	1.60	0.00	0.23	0.13	295.02	0.06	0	296.54
3	2023	0.09	0.87	0.86	0.00	0.17	0.10	144.89	0.04	0	145.80
3	2024	1.01	0.54	0.67	0.00	0.03	0.02	103.10	0.02	0	103.67
4	2024	0.67	1.35	1.51	0.00	0.19	0.12	238.02	0.06	0	239.49
5	2024	0.09	0.82	0.88	0.00	0.15	0.09	142.93	0.04	0	143.84
5	2025	0.59	0.46	0.61	0.00	0.02	0.02	92.09	0.02	0	92.62
6	2025	0.78	1.22	1.48	0.00	0.17	0.10	237.60	0.06	0	239.04
7	2025	0.07	0.69	0.81	0.00	0.13	0.08	127.21	0.03	0	127.99
7	2026	0.54	0.44	0.58	0.00	0.02	0.02	86.72	0.02	0	87.22

Unmitigated Construction (phase and year breakdown)

Year	ROG	NOx	CO	SO2	PM10	PM2.5	CO2	CH4	N2O	CO2e
	tons/year						MT/year			
2022	0.28	2.61	2.49	0.005	0.36	0.22	398.2991	0.0969	0	400.7212
2023	1.64	2.90	3.04	0.006	0.43	0.25	528.1461	0.1181	0	531.0973
2024	1.76	2.71	3.05	0.006	0.37	0.23	484.0499	0.118	0	487.0007
2025	1.44	2.37	2.90	0.005	0.32	0.20	456.9032	0.1099	0	459.6503
2026	0.54	0.44	0.58	0.001	0.02	0.02	86.721	0.0201	0	87.2222
Max	**1.76**	**2.90**	**3.05**	**0.006**	**0.43**	**0.25**	**528.1461**	**0.1181**	**0**	**531.097**

Reina Ranch
Emissions Summary

Mitigated Construction (phase and year breakdown)

Phase	Year	ROG	NOx	CO	SO2	PM10	PM2.5	CO2	CH4	N2O	CO2e
		tons/year						MT/year			
1	2022	0.28	2.61	2.49	0.00	0.36	0.22	398.30	0.10	0	400.72
1	2023	0.90	0.49	0.58	0.00	0.03	0.02	88.24	0.02	0	88.76
2	2023	0.65	1.54	1.60	0.00	0.16	0.13	295.02	0.06	0	296.54
3	2023	0.09	0.87	0.86	0.00	0.09	0.10	144.89	0.04	0	145.80
3	2024	1.01	0.54	0.67	0.00	0.03	0.02	103.10	0.02	0	103.67
4	2024	0.67	1.35	1.51	0.00	0.12	0.12	238.02	0.06	0	239.49
5	2024	0.09	0.82	0.88	0.00	0.08	0.09	142.93	0.04	0	143.84
5	2025	0.59	0.46	0.61	0.00	0.02	0.02	92.09	0.02	0	92.62
6	2025	0.78	1.22	1.48	0.00	0.10	0.10	237.60	0.06	0	239.04
7	2025	0.07	0.69	0.81	0.00	0.07	0.05	127.21	0.03	0	127.99
7	2026	0.54	0.44	0.58	0.00	0.02	0.02	86.72	0.02	0	87.22

Mitigated Construction (phase and year breakdown)

Year	ROG	NOx	CO	SO2	PM10	PM2.5	CO2	CH4	N2O	CO2e
	tons/year						MT/year			
2022	0.28	2.61	2.49	0.005	0.36	0.22	398.30	0.097	0.000	400.72
2023	1.64	2.90	3.04	0.006	0.28	0.25	528.15	0.118	0.000	531.10
2024	1.76	2.71	3.05	0.006	0.23	0.23	484.05	0.118	0.000	487.00
2025	1.44	2.37	2.90	0.005	0.20	0.17	456.90	0.110	0.000	459.65
2026	0.54	0.44	0.58	0.001	0.02	0.02	86.72	0.020	0.000	87.22
Max	**1.76**	**2.90**	**3.05**	**0.006**	**0.36**	**0.25**	**528.1461**	**0.1181**	**0**	**531.097**

Annualized Construction GHG Emissions (MT/year)

Year	CO2	CH4	N2O	CO2e
	MT/year			
2022	398.30	0.097	0.000	400.72
2023	528.15	0.118	0.000	531.10
2024	484.05	0.118	0.000	487.00
2025	456.90	0.110	0.000	459.65
2026	86.72	0.020	0.000	87.22
Total	*1954.12*	*0.463*	*0.000*	*1965.69*
Annualized	**65.14**	**0.015**	**0.000**	**65.52**

Reina Ranch
Emissions Summary

Unmitigated Operational (by phase)

Phase	Year	ROG	NOx	CO	SO2	PM10	PM2.5	CO2	CH4	N2O	CO2e
		tons/year						MT/year			
1	2023	0.58	0.51	1.86	0.006	0.53	0.15	747.0182	0.841	5.44E-03	769.6651
2	2023	0.32	0.28	1.00	0.003	0.29	0.08	403.3715	0.4531	2.93E-03	415.5739
3	2024	0.64	0.54	1.97	0.007	0.59	0.17	816.6156	0.9397	6.09E-03	841.9228
4	2024	0.35	0.30	1.09	0.004	0.33	0.09	452.0907	0.5223	3.38E-03	466.1528
5	2025	0.36	0.30	1.07	0.004	0.34	0.10	455.9266	0.539	3.48E-03	470.4401
6	2025	0.43	0.35	1.27	0.004	0.40	0.11	541.392	0.6389	4.14E-03	558.596
7	2026	0.32	0.26	0.92	0.003	0.31	0.09	403.1467	0.4861	3.15E-03	416.2398

Unmitigated Operational (total)

Year	ROG	NOx	CO	SO2	PM10	PM2.5	CO2	CH4	N2O	CO2e
	tons/year						MT/year			
Total	3.00	2.55	9.17	0.031	2.79	0.79	3819.5613	4.4201	0.02861	3938.591

Mitigated Operational (by phase)

Phase	Year	ROG	NOx	CO	SO2	PM10	PM2.5	CO2	CH4	N2O	CO2e
		tons/year						MT/year			
1	2023	0.57	0.48	1.77	0.01	0.49	0.14	494.92	0.831	0.003	516.63
2	2023	0.32	0.26	0.95	0.00	0.27	0.08	198.43	0.444	0.001	209.86
3	2024	0.63	0.51	1.87	0.01	0.55	0.16	392.83	0.922	0.002	416.53
4	2024	0.35	0.28	1.04	0.00	0.31	0.09	217.49	0.512	0.001	230.67
5	2025	0.36	0.28	1.01	0.00	0.32	0.09	214.46	0.529	0.001	228.06
6	2025	0.42	0.33	1.21	0.00	0.37	0.11	254.65	0.627	0.002	270.77
7	2026	0.32	0.24	0.88	0.00	0.29	0.08	184.95	0.477	0.000	197.21

Reina Ranch
Emissions Summary

Mitigated Operational w/solar reductions (by phase)

Phase	Year	ROG	NOx	CO	SO2	PM10	PM2.5	CO2	CH4	N2O	CO2e
		tons/year						MT/year			
1	2023	0.57	0.42	1.77	0.01	0.49	0.14	494.92	0.831	0.003	516.63
2	2023	0.32	0.23	0.95	0.00	0.27	0.08	198.43	0.444	0.001	209.86
3	2024	0.63	0.44	1.87	0.01	0.55	0.16	392.83	0.922	0.002	416.53
4	2024	0.35	0.24	1.04	0.00	0.31	0.09	217.49	0.512	0.001	230.67
5	2025	0.36	0.24	1.01	0.00	0.32	0.09	214.46	0.529	0.001	228.06
6	2025	0.42	0.28	1.21	0.00	0.37	0.11	254.65	0.627	0.002	270.77
7	2026	0.32	0.21	0.88	0.00	0.29	0.08	184.95	0.477	0.000	197.21

Mitigated Construction (phase and year breakdown)

Year	ROG	NOx	CO	SO2	PM10	PM2.5	CO2	CH4	N2O	CO2e
	tons/year						MT/year			
Total	2.98	2.37	8.73	0.028	2.60	0.73	1957.73	4.341	0.011	2069.74
Total (solar)[1]	2.98	2.06	8.73	0.028	2.60	0.73	1957.73	4.341	0.011	2069.74

1. Accounts for NOx reductions from solar panels based on SJVAPCD solar panel mitgation calculator.

Project GHG Emissions (MT/year)

CO2	CH4	N2O	CO2e
MT/year			
2,022.87	4.356	0.011	2,135.26

Affentranger Farms - Phase 1

Kern-San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	50.00	Dwelling Unit	16.23	90,000.00	143

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Start 4/1/2022, total construction = 1 year

Grading -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Fleet Mix - 2023 Residential Fleet Mix

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	30.00	28.00
tblConstructionPhase	NumDays	300.00	287.00
tblConstructionPhase	NumDays	20.00	18.00
tblConstructionPhase	NumDays	20.00	18.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblFleetMix	HHD	0.15	0.02
tblFleetMix	LDA	0.49	0.53
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.02	1.1000e-003
tblFleetMix	LHD2	5.5720e-003	9.0000e-004
tblFleetMix	MCY	5.7600e-003	2.5000e-003
tblFleetMix	MDV	0.11	0.06
tblFleetMix	MH	7.5900e-004	1.9000e-003
tblFleetMix	MHD	0.02	8.5000e-003
tblFleetMix	OBUS	1.6120e-003	0.00
tblFleetMix	SBUS	9.1200e-004	4.0000e-004
tblFleetMix	UBUS	1.6100e-003	4.3000e-003

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					
2022	0.2770	2.6104	2.4924	4.5800e-003	0.2357	0.1263	0.3620	0.1065	0.1182	0.2246	0.0000	398.2991	398.2991	0.0969	0.0000	400.7212
2023	0.8989	0.4890	0.5845	1.0200e-003	6.0200e-003	0.0235	0.0295	1.6200e-003	0.0220	0.0236	0.0000	88.2439	88.2439	0.0206	0.0000	88.7581
Maximum	**0.8989**	**2.6104**	**2.4924**	**4.5800e-003**	**0.2357**	**0.1263**	**0.3620**	**0.1065**	**0.1182**	**0.2246**	**0.0000**	**398.2991**	**398.2991**	**0.0969**	**0.0000**	**400.7212**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2770	2.6104	2.4924	4.5800e-003	0.2357	0.1263	0.3620	0.1065	0.1182	0.2246	0.0000	398.2987	398.2987	0.0969	0.0000	400.7207
2023	0.8989	0.4890	0.5845	1.0200e-003	6.0200e-003	0.0235	0.0295	1.6200e-003	0.0220	0.0236	0.0000	88.2438	88.2438	0.0206	0.0000	88.7580
Maximum	**0.8989**	**2.6104**	**2.4924**	**4.5800e-003**	**0.2357**	**0.1263**	**0.3620**	**0.1065**	**0.1182**	**0.2246**	**0.0000**	**398.2987**	**398.2987**	**0.0969**	**0.0000**	**400.7207**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	4-1-2022	6-30-2022	1.2358	1.2358
2	7-1-2022	9-30-2022	0.8259	0.8259
3	10-1-2022	12-31-2022	0.8261	0.8261
4	1-1-2023	3-31-2023	0.7681	0.7681
5	4-1-2023	6-30-2023	0.6199	0.6199
		Highest	1.2358	1.2358

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	0.4493	0.0230	0.3793	1.4000e-004		3.5700e-003	3.5700e-003		3.5700e-003	3.5700e-003	0.0000	22.2668	22.2668	1.0000e-003	4.0000e-004	22.4101
Energy	7.0500e-003	0.0602	0.0256	3.8000e-004		4.8700e-003	4.8700e-003		4.8700e-003	4.8700e-003	0.0000	197.1905	197.1905	7.1000e-003	2.4700e-003	198.1043
Mobile	0.1221	0.4294	1.4520	5.5200e-003	0.5189	4.1300e-003	0.5231	0.1387	3.8300e-003	0.1426	0.0000	507.4069	507.4069	0.0231	0.0000	507.9839
Waste						0.0000	0.0000		0.0000	0.0000	11.9014	0.0000	11.9014	0.7034	0.0000	29.4851
Water						0.0000	0.0000		0.0000	0.0000	1.0335	7.2192	8.2527	0.1065	2.5700e-003	11.6817
Total	**0.5785**	**0.5126**	**1.8569**	**6.0400e-003**	**0.5189**	**0.0126**	**0.5315**	**0.1387**	**0.0123**	**0.1510**	**12.9349**	**734.0833**	**747.0182**	**0.8410**	**5.4400e-003**	**769.6651**

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	0.4470	4.2500e-003	0.3687	2.0000e-005		2.0400e-003	2.0400e-003		2.0400e-003	2.0400e-003	0.0000	0.6010	0.6010	5.7000e-004	0.0000	0.6154
Energy	7.0500e-003	0.0602	0.0256	3.8000e-004		4.8700e-003	4.8700e-003		4.8700e-003	4.8700e-003	0.0000	-0.6293	-0.6293	-0.0019	6.2000e-004	-0.4906
Mobile	0.1196	0.4142	1.3734	5.1700e-003	0.4831	3.8800e-003	0.4870	0.1292	3.6000e-003	0.1328	0.0000	474.7947	474.7947	0.0219	0.0000	475.3424
Waste						0.0000	0.0000		0.0000	0.0000	11.9014	0.0000	11.9014	0.7034	0.0000	29.4851
Water						0.0000	0.0000		0.0000	0.0000	1.0335	7.2192	8.2527	0.1065	2.5700e-003	11.6817
Total	**0.5736**	**0.4787**	**1.7677**	**5.5700e-003**	**0.4831**	**0.0108**	**0.4939**	**0.1292**	**0.0105**	**0.1397**	**12.9349**	**481.9855**	**494.9204**	**0.8305**	**3.1900e-003**	**516.6339**

	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	**0.83**	**6.62**	**4.81**	**7.78**	**6.90**	**14.16**	**7.07**	**6.90**	**14.34**	**7.51**	**0.00**	**34.34**	**33.75**	**1.25**	**41.36**	**32.88**

3.0 Construction Detail

Construction Phase

Affentranger Farms - Phase 1 - Kern-San Joaquin County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/1/2022	4/10/2022	7	10	
2	Grading	Grading	4/11/2022	5/8/2022	7	28	
3	Building Construction	Building Construction	5/11/2022	2/21/2023	7	287	
4	Paving	Paving	3/7/2023	3/24/2023	7	18	
5	Architectural Coating	Architectural Coating	3/27/2023	4/13/2023	7	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 70

Acres of Paving: 0

Residential Indoor: 182,250; Residential Outdoor: 60,750; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Affentranger Farms - Phase 1 - Kern-San Joaquin County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	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
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	18.00	5.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0159	0.1654	0.0985	1.9000e-004		8.0600e-003	8.0600e-003		7.4200e-003	7.4200e-003	0.0000	16.7197	16.7197	5.4100e-003	0.0000	16.8549
Total	**0.0159**	**0.1654**	**0.0985**	**1.9000e-004**	**0.0903**	**8.0600e-003**	**0.0984**	**0.0497**	**7.4200e-003**	**0.0571**	**0.0000**	**16.7197**	**16.7197**	**5.4100e-003**	**0.0000**	**16.8549**

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-004	1.9000e-004	1.9300e-003	1.0000e-005	7.3000e-004	0.0000	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6186	0.6186	1.0000e-005	0.0000	0.6189
Total	**3.0000e-004**	**1.9000e-004**	**1.9300e-003**	**1.0000e-005**	**7.3000e-004**	**0.0000**	**7.3000e-004**	**1.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**0.6186**	**0.6186**	**1.0000e-005**	**0.0000**	**0.6189**

3.2 Site Preparation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0159	0.1654	0.0985	1.9000e-004		8.0600e-003	8.0600e-003		7.4200e-003	7.4200e-003	0.0000	16.7197	16.7197	5.4100e-003	0.0000	16.8549
Total	**0.0159**	**0.1654**	**0.0985**	**1.9000e-004**	**0.0903**	**8.0600e-003**	**0.0984**	**0.0497**	**7.4200e-003**	**0.0571**	**0.0000**	**16.7197**	**16.7197**	**5.4100e-003**	**0.0000**	**16.8549**

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-004	1.9000e-004	1.9300e-003	1.0000e-005	7.3000e-004	0.0000	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6186	0.6186	1.0000e-005	0.0000	0.6189
Total	**3.0000e-004**	**1.9000e-004**	**1.9300e-003**	**1.0000e-005**	**7.3000e-004**	**0.0000**	**7.3000e-004**	**1.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**0.6186**	**0.6186**	**1.0000e-005**	**0.0000**	**0.6189**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1214	0.0000	0.1214	0.0504	0.0000	0.0504	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0508	0.5438	0.4066	8.7000e-004		0.0229	0.0229		0.0211	0.0211	0.0000	76.3484	76.3484	0.0247	0.0000	76.9658
Total	**0.0508**	**0.5438**	**0.4066**	**8.7000e-004**	**0.1214**	**0.0229**	**0.1443**	**0.0504**	**0.0211**	**0.0714**	**0.0000**	**76.3484**	**76.3484**	**0.0247**	**0.0000**	**76.9658**

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	9.2000e-004	5.8000e-004	6.0100e-003	2.0000e-005	2.2600e-003	2.0000e-005	2.2700e-003	6.0000e-004	1.0000e-005	6.1000e-004	0.0000	1.9244	1.9244	4.0000e-005	0.0000	1.9254
Total	**9.2000e-004**	**5.8000e-004**	**6.0100e-003**	**2.0000e-005**	**2.2600e-003**	**2.0000e-005**	**2.2700e-003**	**6.0000e-004**	**1.0000e-005**	**6.1000e-004**	**0.0000**	**1.9244**	**1.9244**	**4.0000e-005**	**0.0000**	**1.9254**

3.3 Grading - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1214	0.0000	0.1214	0.0504	0.0000	0.0504	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0508	0.5438	0.4066	8.7000e-004		0.0229	0.0229		0.0211	0.0211	0.0000	76.3484	76.3484	0.0247	0.0000	76.9657
Total	**0.0508**	**0.5438**	**0.4066**	**8.7000e-004**	**0.1214**	**0.0229**	**0.1443**	**0.0504**	**0.0211**	**0.0714**	**0.0000**	**76.3484**	**76.3484**	**0.0247**	**0.0000**	**76.9657**

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	9.2000e-004	5.8000e-004	6.0100e-003	2.0000e-005	2.2600e-003	2.0000e-005	2.2700e-003	6.0000e-004	1.0000e-005	6.1000e-004	0.0000	1.9244	1.9244	4.0000e-005	0.0000	1.9254
Total	**9.2000e-004**	**5.8000e-004**	**6.0100e-003**	**2.0000e-005**	**2.2600e-003**	**2.0000e-005**	**2.2700e-003**	**6.0000e-004**	**1.0000e-005**	**6.1000e-004**	**0.0000**	**1.9244**	**1.9244**	**4.0000e-005**	**0.0000**	**1.9254**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2005	1.8348	1.9227	3.1600e-003		0.0951	0.0951		0.0894	0.0894	0.0000	272.2772	272.2772	0.0652	0.0000	273.9079
Total	**0.2005**	**1.8348**	**1.9227**	**3.1600e-003**		**0.0951**	**0.0951**		**0.0894**	**0.0894**	**0.0000**	**272.2772**	**272.2772**	**0.0652**	**0.0000**	**273.9079**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.8000e-003	0.0612	0.0113	1.7000e-004	3.9200e-003	1.5000e-004	4.0700e-003	1.1300e-003	1.4000e-004	1.2800e-003	0.0000	15.8749	15.8749	1.1800e-003	0.0000	15.9043
Worker	6.9400e-003	4.3600e-003	0.0454	1.6000e-004	0.0170	1.1000e-004	0.0172	4.5300e-003	1.0000e-004	4.6300e-003	0.0000	14.5360	14.5360	3.2000e-004	0.0000	14.5440
Total	**8.7400e-003**	**0.0656**	**0.0567**	**3.3000e-004**	**0.0210**	**2.6000e-004**	**0.0212**	**5.6600e-003**	**2.4000e-004**	**5.9100e-003**	**0.0000**	**30.4109**	**30.4109**	**1.5000e-003**	**0.0000**	**30.4483**

3.4 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2005	1.8348	1.9227	3.1600e-003		0.0951	0.0951		0.0894	0.0894	0.0000	272.2768	272.2768	0.0652	0.0000	273.9076
Total	**0.2005**	**1.8348**	**1.9227**	**3.1600e-003**		**0.0951**	**0.0951**		**0.0894**	**0.0894**	**0.0000**	**272.2768**	**272.2768**	**0.0652**	**0.0000**	**273.9076**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.8000e-003	0.0612	0.0113	1.7000e-004	3.9200e-003	1.5000e-004	4.0700e-003	1.1300e-003	1.4000e-004	1.2800e-003	0.0000	15.8749	15.8749	1.1800e-003	0.0000	15.9043
Worker	6.9400e-003	4.3600e-003	0.0454	1.6000e-004	0.0170	1.1000e-004	0.0172	4.5300e-003	1.0000e-004	4.6300e-003	0.0000	14.5360	14.5360	3.2000e-004	0.0000	14.5440
Total	**8.7400e-003**	**0.0656**	**0.0567**	**3.3000e-004**	**0.0210**	**2.6000e-004**	**0.0212**	**5.6600e-003**	**2.4000e-004**	**5.9100e-003**	**0.0000**	**30.4109**	**30.4109**	**1.5000e-003**	**0.0000**	**30.4483**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0409	0.3740	0.4223	7.0000e-004		0.0182	0.0182		0.0171	0.0171	0.0000	60.2692	60.2692	0.0143	0.0000	60.6277
Total	**0.0409**	**0.3740**	**0.4223**	**7.0000e-004**		**0.0182**	**0.0182**		**0.0171**	**0.0171**	**0.0000**	**60.2692**	**60.2692**	**0.0143**	**0.0000**	**60.6277**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.8000e-004	0.0104	2.0800e-003	4.0000e-005	8.7000e-004	1.0000e-005	8.8000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	3.4260	3.4260	1.8000e-004	0.0000	3.4305
Worker	1.4300e-003	8.6000e-004	9.1900e-003	3.0000e-005	3.7700e-003	2.0000e-005	3.8000e-003	1.0000e-003	2.0000e-005	1.0200e-003	0.0000	3.0955	3.0955	6.0000e-005	0.0000	3.0971
Total	**1.7100e-003**	**0.0112**	**0.0113**	**7.0000e-005**	**4.6400e-003**	**3.0000e-005**	**4.6800e-003**	**1.2500e-003**	**3.0000e-005**	**1.2800e-003**	**0.0000**	**6.5215**	**6.5215**	**2.4000e-004**	**0.0000**	**6.5275**

3.4 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0409	0.3740	0.4223	7.0000e-004		0.0182	0.0182		0.0171	0.0171	0.0000	60.2692	60.2692	0.0143	0.0000	60.6276
Total	**0.0409**	**0.3740**	**0.4223**	**7.0000e-004**		**0.0182**	**0.0182**		**0.0171**	**0.0171**	**0.0000**	**60.2692**	**60.2692**	**0.0143**	**0.0000**	**60.6276**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.8000e-004	0.0104	2.0800e-003	4.0000e-005	8.7000e-004	1.0000e-005	8.8000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	3.4260	3.4260	1.8000e-004	0.0000	3.4305
Worker	1.4300e-003	8.6000e-004	9.1900e-003	3.0000e-005	3.7700e-003	2.0000e-005	3.8000e-003	1.0000e-003	2.0000e-005	1.0200e-003	0.0000	3.0955	3.0955	6.0000e-005	0.0000	3.0971
Total	**1.7100e-003**	**0.0112**	**0.0113**	**7.0000e-005**	**4.6400e-003**	**3.0000e-005**	**4.6800e-003**	**1.2500e-003**	**3.0000e-005**	**1.2800e-003**	**0.0000**	**6.5215**	**6.5215**	**2.4000e-004**	**0.0000**	**6.5275**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.2900e-003	0.0917	0.1313	2.1000e-004		4.5900e-003	4.5900e-003		4.2200e-003	4.2200e-003	0.0000	18.0242	18.0242	5.8300e-003	0.0000	18.1699
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.2900e-003**	**0.0917**	**0.1313**	**2.1000e-004**		**4.5900e-003**	**4.5900e-003**		**4.2200e-003**	**4.2200e-003**	**0.0000**	**18.0242**	**18.0242**	**5.8300e-003**	**0.0000**	**18.1699**

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	4.1000e-004	2.5000e-004	2.6500e-003	1.0000e-005	1.0900e-003	1.0000e-005	1.0900e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.8929	0.8929	2.0000e-005	0.0000	0.8934
Total	**4.1000e-004**	**2.5000e-004**	**2.6500e-003**	**1.0000e-005**	**1.0900e-003**	**1.0000e-005**	**1.0900e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.8929**	**0.8929**	**2.0000e-005**	**0.0000**	**0.8934**

3.5 Paving - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.2900e-003	0.0917	0.1313	2.1000e-004		4.5900e-003	4.5900e-003		4.2200e-003	4.2200e-003	0.0000	18.0242	18.0242	5.8300e-003	0.0000	18.1699
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.2900e-003**	**0.0917**	**0.1313**	**2.1000e-004**		**4.5900e-003**	**4.5900e-003**		**4.2200e-003**	**4.2200e-003**	**0.0000**	**18.0242**	**18.0242**	**5.8300e-003**	**0.0000**	**18.1699**

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	4.1000e-004	2.5000e-004	2.6500e-003	1.0000e-005	1.0900e-003	1.0000e-005	1.0900e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.8929	0.8929	2.0000e-005	0.0000	0.8934
Total	**4.1000e-004**	**2.5000e-004**	**2.6500e-003**	**1.0000e-005**	**1.0900e-003**	**1.0000e-005**	**1.0900e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.8929**	**0.8929**	**2.0000e-005**	**0.0000**	**0.8934**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8447					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7200e-003	0.0117	0.0163	3.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004	0.0000	2.2979	2.2979	1.4000e-004	0.0000	2.3014
Total	**0.8465**	**0.0117**	**0.0163**	**3.0000e-005**		**6.4000e-004**	**6.4000e-004**		**6.4000e-004**	**6.4000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.4000e-004**	**0.0000**	**2.3014**

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	7.0000e-005	7.1000e-004	0.0000	2.9000e-004	0.0000	2.9000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2381	0.2381	0.0000	0.0000	0.2382
Total	**1.1000e-004**	**7.0000e-005**	**7.1000e-004**	**0.0000**	**2.9000e-004**	**0.0000**	**2.9000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2381**	**0.2381**	**0.0000**	**0.0000**	**0.2382**

3.6 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8447					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7200e-003	0.0117	0.0163	3.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004	0.0000	2.2979	2.2979	1.4000e-004	0.0000	2.3014
Total	**0.8465**	**0.0117**	**0.0163**	**3.0000e-005**		**6.4000e-004**	**6.4000e-004**		**6.4000e-004**	**6.4000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.4000e-004**	**0.0000**	**2.3014**

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	7.0000e-005	7.1000e-004	0.0000	2.9000e-004	0.0000	2.9000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2381	0.2381	0.0000	0.0000	0.2382
Total	**1.1000e-004**	**7.0000e-005**	**7.1000e-004**	**0.0000**	**2.9000e-004**	**0.0000**	**2.9000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2381**	**0.2381**	**0.0000**	**0.0000**	**0.2382**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Improve Pedestrian Network

	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	0.1196	0.4142	1.3734	5.1700e-003	0.4831	3.8800e-003	0.4870	0.1292	3.6000e-003	0.1328	0.0000	474.7947	474.7947	0.0219	0.0000	475.3424
Unmitigated	0.1221	0.4294	1.4520	5.5200e-003	0.5189	4.1300e-003	0.5231	0.1387	3.8300e-003	0.1426	0.0000	507.4069	507.4069	0.0231	0.0000	507.9839

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	476.00	495.50	431.00	1,373,626	1,278,846
Total	476.00	495.50	431.00	1,373,626	1,278,846

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
Single Family Housing	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.530500	0.205800	0.167300	0.055000	0.001100	0.000900	0.008500	0.021800	0.000000	0.004300	0.002500	0.000400	0.001900

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	-70.3898	-70.3898	-0.0032	-0.0007	-70.6656
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	127.4300	127.4300	5.7600e-003	1.1900e-003	127.9293
NaturalGas Mitigated	7.0500e-003	0.0602	0.0256	3.8000e-004		4.8700e-003	4.8700e-003		4.8700e-003	4.8700e-003	0.0000	69.7605	69.7605	1.3400e-003	1.2800e-003	70.1750
NaturalGas Unmitigated	7.0500e-003	0.0602	0.0256	3.8000e-004		4.8700e-003	4.8700e-003		4.8700e-003	4.8700e-003	0.0000	69.7605	69.7605	1.3400e-003	1.2800e-003	70.1750

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					
Single Family Housing	1.30726e+006	7.0500e-003	0.0602	0.0256	3.8000e-004		4.8700e-003	4.8700e-003		4.8700e-003	4.8700e-003	0.0000	69.7605	69.7605	1.3400e-003	1.2800e-003	70.1750
Total		**7.0500e-003**	**0.0602**	**0.0256**	**3.8000e-004**		**4.8700e-003**	**4.8700e-003**		**4.8700e-003**	**4.8700e-003**	**0.0000**	**69.7605**	**69.7605**	**1.3400e-003**	**1.2800e-003**	**70.1750**

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					
Single Family Housing	1.30726e+006	7.0500e-003	0.0602	0.0256	3.8000e-004		4.8700e-003	4.8700e-003		4.8700e-003	4.8700e-003	0.0000	69.7605	69.7605	1.3400e-003	1.2800e-003	70.1750
Total		**7.0500e-003**	**0.0602**	**0.0256**	**3.8000e-004**		**4.8700e-003**	**4.8700e-003**		**4.8700e-003**	**4.8700e-003**	**0.0000**	**69.7605**	**69.7605**	**1.3400e-003**	**1.2800e-003**	**70.1750**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	438037	127.4300	5.7600e-003	1.1900e-003	127.9293
Total		**127.4300**	**5.7600e-003**	**1.1900e-003**	**127.9293**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	-241963	-70.3898	-0.0032	-0.0007	-70.6656
Total		**-70.3898**	**-0.0032**	**-0.0007**	**-70.6656**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

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	0.4470	4.2500e-003	0.3687	2.0000e-005		2.0400e-003	2.0400e-003		2.0400e-003	2.0400e-003	0.0000	0.6010	0.6010	5.7000e-004	0.0000	0.6154
Unmitigated	0.4493	0.0230	0.3793	1.4000e-004		3.5700e-003	3.5700e-003		3.5700e-003	3.5700e-003	0.0000	22.2668	22.2668	1.0000e-003	4.0000e-004	22.4101

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	0.0845					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3515					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.1900e-003	0.0187	7.9600e-003	1.2000e-004		1.5100e-003	1.5100e-003		1.5100e-003	1.5100e-003	0.0000	21.6604	21.6604	4.2000e-004	4.0000e-004	21.7891
Landscaping	0.0112	4.2800e-003	0.3713	2.0000e-005		2.0600e-003	2.0600e-003		2.0600e-003	2.0600e-003	0.0000	0.6064	0.6064	5.8000e-004	0.0000	0.6210
Total	**0.4494**	**0.0230**	**0.3793**	**1.4000e-004**		**3.5700e-003**	**3.5700e-003**		**3.5700e-003**	**3.5700e-003**	**0.0000**	**22.2668**	**22.2668**	**1.0000e-003**	**4.0000e-004**	**22.4101**

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	0.0845					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3515					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0110	4.2500e-003	0.3687	2.0000e-005		2.0400e-003	2.0400e-003		2.0400e-003	2.0400e-003	0.0000	0.6010	0.6010	5.7000e-004	0.0000	0.6154
Total	**0.4470**	**4.2500e-003**	**0.3687**	**2.0000e-005**		**2.0400e-003**	**2.0400e-003**		**2.0400e-003**	**2.0400e-003**	**0.0000**	**0.6010**	**0.6010**	**5.7000e-004**	**0.0000**	**0.6154**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	8.2527	0.1065	2.5700e-003	11.6817
Unmitigated	8.2527	0.1065	2.5700e-003	11.6817

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	3.2577 / 2.05377	8.2527	0.1065	2.5700e-003	11.6817
Total		**8.2527**	**0.1065**	**2.5700e-003**	**11.6817**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	3.2577 / 2.05377	8.2527	0.1065	2.5700e-003	11.6817
Total		**8.2527**	**0.1065**	**2.5700e-003**	**11.6817**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	11.9014	0.7034	0.0000	29.4851
Unmitigated	11.9014	0.7034	0.0000	29.4851

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	58.63	11.9014	0.7034	0.0000	29.4851
Total		**11.9014**	**0.7034**	**0.0000**	**29.4851**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	58.63	11.9014	0.7034	0.0000	29.4851
Total		**11.9014**	**0.7034**	**0.0000**	**29.4851**

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

Affentranger Farms - Phase 2

Kern-San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	27.00	Dwelling Unit	8.77	48,600.00	77
Other Non-Asphalt Surfaces	2.64	Acre	2.64	114,998.40	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Affentranger Farms - Phase 2 - Kern-San Joaquin County, Annual

Project Characteristics -

Land Use -

Construction Phase - 6 month construction schedule per project applicant

Grading -

Fleet Mix - 2023 Residential Fleet Mix

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	8.00
tblConstructionPhase	NumDays	300.00	142.00
tblConstructionPhase	NumDays	30.00	15.00
tblConstructionPhase	NumDays	20.00	8.00
tblConstructionPhase	NumDays	10.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	PhaseEndDate	10/11/2024	9/28/2023
tblConstructionPhase	PhaseEndDate	8/16/2024	9/12/2023
tblConstructionPhase	PhaseEndDate	6/23/2023	4/23/2023
tblConstructionPhase	PhaseEndDate	9/13/2024	9/20/2023
tblConstructionPhase	PhaseEndDate	5/12/2023	4/8/2023

tblConstructionPhase	PhaseStartDate	9/14/2024	9/21/2023
tblConstructionPhase	PhaseStartDate	6/24/2023	4/24/2023
tblConstructionPhase	PhaseStartDate	5/13/2023	4/9/2023
tblConstructionPhase	PhaseStartDate	8/17/2024	9/13/2023
tblConstructionPhase	PhaseStartDate	4/29/2023	4/3/2023
tblFleetMix	HHD	0.15	0.02
tblFleetMix	LDA	0.49	0.53
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.02	1.1000e-003
tblFleetMix	LHD2	5.5720e-003	9.0000e-004
tblFleetMix	MCY	5.7600e-003	2.5000e-003
tblFleetMix	MDV	0.11	0.06
tblFleetMix	MH	7.5900e-004	1.9000e-003
tblFleetMix	MHD	0.02	8.5000e-003
tblFleetMix	OBUS	1.6120e-003	0.00
tblFleetMix	SBUS	9.1200e-004	4.0000e-004
tblFleetMix	UBUS	1.6100e-003	4.3000e-003

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	0.6465	1.5413	1.5961	3.3500e-003	0.1654	0.0668	0.2322	0.0693	0.0626	0.1318	0.0000	295.0161	295.0161	0.0610	0.0000	296.5414
Maximum	**0.6465**	**1.5413**	**1.5961**	**3.3500e-003**	**0.1654**	**0.0668**	**0.2322**	**0.0693**	**0.0626**	**0.1318**	**0.0000**	**295.0161**	**295.0161**	**0.0610**	**0.0000**	**296.5414**

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	0.6465	1.5413	1.5961	3.3500e-003	0.0926	0.0668	0.1595	0.0346	0.0626	0.0972	0.0000	295.0158	295.0158	0.0610	0.0000	296.5411
Maximum	**0.6465**	**1.5413**	**1.5961**	**3.3500e-003**	**0.0926**	**0.0668**	**0.1595**	**0.0346**	**0.0626**	**0.0972**	**0.0000**	**295.0158**	**295.0158**	**0.0610**	**0.0000**	**296.5411**

	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**	**43.99**	**0.00**	**31.33**	**50.00**	**0.00**	**26.27**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	4-3-2023	7-2-2023	1.0069	1.0069
2	7-3-2023	9-30-2023	1.1812	1.1812
		Highest	1.1812	1.1812

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	0.2525	0.0124	0.2048	8.0000e-005		1.9300e-003	1.9300e-003		1.9300e-003	1.9300e-003	0.0000	12.0241	12.0241	5.4000e-004	2.1000e-004	12.1015
Energy	3.8100e-003	0.0325	0.0138	2.1000e-004		2.6300e-003	2.6300e-003		2.6300e-003	2.6300e-003	0.0000	106.4829	106.4829	3.8300e-003	1.3300e-003	106.9763
Mobile	0.0659	0.2319	0.7841	2.9800e-003	0.2802	2.2300e-003	0.2825	0.0749	2.0700e-003	0.0770	0.0000	273.9997	273.9997	0.0125	0.0000	274.3113
Waste						0.0000	0.0000		0.0000	0.0000	6.4084	0.0000	6.4084	0.3787	0.0000	15.8766
Water						0.0000	0.0000		0.0000	0.0000	0.5581	3.8983	4.4564	0.0575	1.3900e-003	6.3081
Total	**0.3222**	**0.2768**	**1.0028**	**3.2700e-003**	**0.2802**	**6.7900e-003**	**0.2870**	**0.0749**	**6.6300e-003**	**0.0816**	**6.9665**	**396.4050**	**403.3715**	**0.4531**	**2.9300e-003**	**415.5739**

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	0.2512	2.3000e-003	0.1991	1.0000e-005		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003	0.0000	0.3246	0.3246	3.1000e-004	0.0000	0.3323
Energy	3.8100e-003	0.0325	0.0138	2.1000e-004		2.6300e-003	2.6300e-003		2.6300e-003	2.6300e-003	0.0000	-69.1520	-69.1520	-0.0041	-0.0003	-69.3467
Mobile	0.0646	0.2237	0.7416	2.7900e-003	0.2609	2.0900e-003	0.2630	0.0698	1.9400e-003	0.0717	0.0000	256.3892	256.3892	0.0118	0.0000	256.6849
Waste						0.0000	0.0000		0.0000	0.0000	6.4084	0.0000	6.4084	0.3787	0.0000	15.8766
Water						0.0000	0.0000		0.0000	0.0000	0.5581	3.8983	4.4564	0.0575	1.3900e-003	6.3081
Total	**0.3196**	**0.2585**	**0.9546**	**3.0100e-003**	**0.2609**	**5.8200e-003**	**0.2667**	**0.0698**	**5.6700e-003**	**0.0754**	**6.9665**	**191.4600**	**198.4266**	**0.4443**	**1.0800e-003**	**209.8552**

	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	**0.81**	**6.61**	**4.81**	**7.95**	**6.90**	**14.29**	**7.07**	**6.90**	**14.48**	**7.52**	**0.00**	**51.70**	**50.81**	**1.94**	**63.14**	**49.50**

3.0 Construction Detail

Construction Phase

Affentranger Farms - Phase 2 - Kern-San Joaquin County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/3/2023	4/8/2023	7	6	
2	Grading	Grading	4/9/2023	4/23/2023	7	15	
3	Building Construction	Building Construction	4/24/2023	9/12/2023	7	142	
4	Paving	Paving	9/13/2023	9/20/2023	7	8	
5	Architectural Coating	Architectural Coating	9/21/2023	9/28/2023	7	8	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 37.5

Acres of Paving: 2.64

Residential Indoor: 98,415; Residential Outdoor: 32,805; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 6,900 (Architectural Coating – sqft)

OffRoad Equipment

Affentranger Farms - Phase 2 - Kern-San Joaquin County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	58.00	22.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	12.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 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					0.0542	0.0000	0.0542	0.0298	0.0000	0.0298	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.9800e-003	0.0826	0.0547	1.1000e-004		3.8000e-003	3.8000e-003		3.4900e-003	3.4900e-003	0.0000	10.0352	10.0352	3.2500e-003	0.0000	10.1164
Total	**7.9800e-003**	**0.0826**	**0.0547**	**1.1000e-004**	**0.0542**	**3.8000e-003**	**0.0580**	**0.0298**	**3.4900e-003**	**0.0333**	**0.0000**	**10.0352**	**10.0352**	**3.2500e-003**	**0.0000**	**10.1164**

3.2 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	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	1.6000e-004	1.0000e-004	1.0600e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3572	0.3572	1.0000e-005	0.0000	0.3574
Total	**1.6000e-004**	**1.0000e-004**	**1.0600e-003**	**0.0000**	**4.4000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3572**	**0.3572**	**1.0000e-005**	**0.0000**	**0.3574**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0211	0.0000	0.0211	0.0116	0.0000	0.0116	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.9800e-003	0.0826	0.0547	1.1000e-004		3.8000e-003	3.8000e-003		3.4900e-003	3.4900e-003	0.0000	10.0352	10.0352	3.2500e-003	0.0000	10.1163
Total	**7.9800e-003**	**0.0826**	**0.0547**	**1.1000e-004**	**0.0211**	**3.8000e-003**	**0.0249**	**0.0116**	**3.4900e-003**	**0.0151**	**0.0000**	**10.0352**	**10.0352**	**3.2500e-003**	**0.0000**	**10.1163**

3.2 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	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	1.6000e-004	1.0000e-004	1.0600e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3572	0.3572	1.0000e-005	0.0000	0.3574
Total	**1.6000e-004**	**1.0000e-004**	**1.0600e-003**	**0.0000**	**4.4000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3572**	**0.3572**	**1.0000e-005**	**0.0000**	**0.3574**

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0651	0.0000	0.0651	0.0270	0.0000	0.0270	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.2589	0.2104	4.7000e-004		0.0107	0.0107		9.8300e-003	9.8300e-003	0.0000	40.9014	40.9014	0.0132	0.0000	41.2321
Total	**0.0249**	**0.2589**	**0.2104**	**4.7000e-004**	**0.0651**	**0.0107**	**0.0757**	**0.0270**	**9.8300e-003**	**0.0368**	**0.0000**	**40.9014**	**40.9014**	**0.0132**	**0.0000**	**41.2321**

3.3 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	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	4.6000e-004	2.8000e-004	2.9500e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9921	0.9921	2.0000e-005	0.0000	0.9927
Total	**4.6000e-004**	**2.8000e-004**	**2.9500e-003**	**1.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2200e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**0.9921**	**0.9921**	**2.0000e-005**	**0.0000**	**0.9927**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0254	0.0000	0.0254	0.0105	0.0000	0.0105	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.2589	0.2104	4.7000e-004		0.0107	0.0107		9.8300e-003	9.8300e-003	0.0000	40.9014	40.9014	0.0132	0.0000	41.2321
Total	**0.0249**	**0.2589**	**0.2104**	**4.7000e-004**	**0.0254**	**0.0107**	**0.0361**	**0.0105**	**9.8300e-003**	**0.0204**	**0.0000**	**40.9014**	**40.9014**	**0.0132**	**0.0000**	**41.2321**

3.3 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	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	4.6000e-004	2.8000e-004	2.9500e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9921	0.9921	2.0000e-005	0.0000	0.9927
Total	**4.6000e-004**	**2.8000e-004**	**2.9500e-003**	**1.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2200e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**0.9921**	**0.9921**	**2.0000e-005**	**0.0000**	**0.9927**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1117	1.0213	1.1533	1.9100e-003		0.0497	0.0497		0.0468	0.0468	0.0000	164.5814	164.5814	0.0392	0.0000	165.5602
Total	**0.1117**	**1.0213**	**1.1533**	**1.9100e-003**		**0.0497**	**0.0497**		**0.0468**	**0.0468**	**0.0000**	**164.5814**	**164.5814**	**0.0392**	**0.0000**	**165.5602**

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.3800e-003	0.1243	0.0250	4.3000e-004	0.0104	1.2000e-004	0.0106	3.0100e-003	1.2000e-004	3.1300e-003	0.0000	41.1647	41.1647	2.1400e-003	0.0000	41.2182
Worker	0.0126	7.6000e-003	0.0809	3.0000e-004	0.0332	2.2000e-004	0.0334	8.8100e-003	2.0000e-004	9.0100e-003	0.0000	27.2377	27.2377	5.5000e-004	0.0000	27.2515
Total	**0.0160**	**0.1319**	**0.1059**	**7.3000e-004**	**0.0436**	**3.4000e-004**	**0.0440**	**0.0118**	**3.2000e-004**	**0.0121**	**0.0000**	**68.4024**	**68.4024**	**2.6900e-003**	**0.0000**	**68.4697**

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	0.1117	1.0213	1.1533	1.9100e-003		0.0497	0.0497		0.0468	0.0468	0.0000	164.5812	164.5812	0.0392	0.0000	165.5600
Total	**0.1117**	**1.0213**	**1.1533**	**1.9100e-003**		**0.0497**	**0.0497**		**0.0468**	**0.0468**	**0.0000**	**164.5812**	**164.5812**	**0.0392**	**0.0000**	**165.5600**

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.3800e-003	0.1243	0.0250	4.3000e-004	0.0104	1.2000e-004	0.0106	3.0100e-003	1.2000e-004	3.1300e-003	0.0000	41.1647	41.1647	2.1400e-003	0.0000	41.2182
Worker	0.0126	7.6000e-003	0.0809	3.0000e-004	0.0332	2.2000e-004	0.0334	8.8100e-003	2.0000e-004	9.0100e-003	0.0000	27.2377	27.2377	5.5000e-004	0.0000	27.2515
Total	**0.0160**	**0.1319**	**0.1059**	**7.3000e-004**	**0.0436**	**3.4000e-004**	**0.0440**	**0.0118**	**3.2000e-004**	**0.0121**	**0.0000**	**68.4024**	**68.4024**	**2.6900e-003**	**0.0000**	**68.4697**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.1300e-003	0.0408	0.0583	9.0000e-005		2.0400e-003	2.0400e-003		1.8800e-003	1.8800e-003	0.0000	8.0108	8.0108	2.5900e-003	0.0000	8.0755
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.1300e-003**	**0.0408**	**0.0583**	**9.0000e-005**		**2.0400e-003**	**2.0400e-003**		**1.8800e-003**	**1.8800e-003**	**0.0000**	**8.0108**	**8.0108**	**2.5900e-003**	**0.0000**	**8.0755**

3.5 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.1000e-004	1.1800e-003	0.0000	4.8000e-004	0.0000	4.9000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3969	0.3969	1.0000e-005	0.0000	0.3971
Total	**1.8000e-004**	**1.1000e-004**	**1.1800e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.9000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.3969**	**0.3969**	**1.0000e-005**	**0.0000**	**0.3971**

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	4.1300e-003	0.0408	0.0583	9.0000e-005		2.0400e-003	2.0400e-003		1.8800e-003	1.8800e-003	0.0000	8.0107	8.0107	2.5900e-003	0.0000	8.0755
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.1300e-003**	**0.0408**	**0.0583**	**9.0000e-005**		**2.0400e-003**	**2.0400e-003**		**1.8800e-003**	**1.8800e-003**	**0.0000**	**8.0107**	**8.0107**	**2.5900e-003**	**0.0000**	**8.0755**

3.5 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.1000e-004	1.1800e-003	0.0000	4.8000e-004	0.0000	4.9000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3969	0.3969	1.0000e-005	0.0000	0.3971
Total	**1.8000e-004**	**1.1000e-004**	**1.1800e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.9000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.3969**	**0.3969**	**1.0000e-005**	**0.0000**	**0.3971**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4801					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.7000e-004	5.2100e-003	7.2400e-003	1.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	1.0213	1.0213	6.0000e-005	0.0000	1.0228
Total	**0.4809**	**5.2100e-003**	**7.2400e-003**	**1.0000e-005**		**2.8000e-004**	**2.8000e-004**		**2.8000e-004**	**2.8000e-004**	**0.0000**	**1.0213**	**1.0213**	**6.0000e-005**	**0.0000**	**1.0228**

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	9.0000e-005	9.4000e-004	0.0000	3.9000e-004	0.0000	3.9000e-004	1.0000e-004	0.0000	1.1000e-004	0.0000	0.3175	0.3175	1.0000e-005	0.0000	0.3177
Total	**1.5000e-004**	**9.0000e-005**	**9.4000e-004**	**0.0000**	**3.9000e-004**	**0.0000**	**3.9000e-004**	**1.0000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3175**	**0.3175**	**1.0000e-005**	**0.0000**	**0.3177**

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	0.4801					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.7000e-004	5.2100e-003	7.2400e-003	1.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	1.0213	1.0213	6.0000e-005	0.0000	1.0228
Total	**0.4809**	**5.2100e-003**	**7.2400e-003**	**1.0000e-005**		**2.8000e-004**	**2.8000e-004**		**2.8000e-004**	**2.8000e-004**	**0.0000**	**1.0213**	**1.0213**	**6.0000e-005**	**0.0000**	**1.0228**

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	9.0000e-005	9.4000e-004	0.0000	3.9000e-004	0.0000	3.9000e-004	1.0000e-004	0.0000	1.1000e-004	0.0000	0.3175	0.3175	1.0000e-005	0.0000	0.3177
Total	**1.5000e-004**	**9.0000e-005**	**9.4000e-004**	**0.0000**	**3.9000e-004**	**0.0000**	**3.9000e-004**	**1.0000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3175**	**0.3175**	**1.0000e-005**	**0.0000**	**0.3177**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Improve Pedestrian Network

	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	0.0646	0.2237	0.7416	2.7900e-003	0.2609	2.0900e-003	0.2630	0.0698	1.9400e-003	0.0717	0.0000	256.3892	256.3892	0.0118	0.0000	256.6849
Unmitigated	0.0659	0.2319	0.7841	2.9800e-003	0.2802	2.2300e-003	0.2825	0.0749	2.0700e-003	0.0770	0.0000	273.9997	273.9997	0.0125	0.0000	274.3113

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	257.04	267.57	232.74	741,758	690,577
Total	257.04	267.57	232.74	741,758	690,577

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
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.487920	0.030073	0.170877	0.112061	0.016651	0.005572	0.019337	0.146855	0.001612	0.001610	0.005760	0.000912	0.000759
Single Family Housing	0.530500	0.205800	0.167300	0.055000	0.001100	0.000900	0.008500	0.021800	0.000000	0.004300	0.002500	0.000400	0.001900

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	-106.8227	-106.8227	-0.0048	-0.0010	-107.2413
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	68.8122	68.8122	3.1100e-003	6.4000e-004	69.0818
NaturalGas Mitigated	3.8100e-003	0.0325	0.0138	2.1000e-004		2.6300e-003	2.6300e-003		2.6300e-003	2.6300e-003	0.0000	37.6707	37.6707	7.2000e-004	6.9000e-004	37.8945
NaturalGas Unmitigated	3.8100e-003	0.0325	0.0138	2.1000e-004		2.6300e-003	2.6300e-003		2.6300e-003	2.6300e-003	0.0000	37.6707	37.6707	7.2000e-004	6.9000e-004	37.8945

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					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	705921	3.8100e-003	0.0325	0.0138	2.1000e-004		2.6300e-003	2.6300e-003		2.6300e-003	2.6300e-003	0.0000	37.6707	37.6707	7.2000e-004	6.9000e-004	37.8945
Total		**3.8100e-003**	**0.0325**	**0.0138**	**2.1000e-004**		**2.6300e-003**	**2.6300e-003**		**2.6300e-003**	**2.6300e-003**	**0.0000**	**37.6707**	**37.6707**	**7.2000e-004**	**6.9000e-004**	**37.8945**

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					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	705921	3.8100e-003	0.0325	0.0138	2.1000e-004		2.6300e-003	2.6300e-003		2.6300e-003	2.6300e-003	0.0000	37.6707	37.6707	7.2000e-004	6.9000e-004	37.8945
Total		**3.8100e-003**	**0.0325**	**0.0138**	**2.1000e-004**		**2.6300e-003**	**2.6300e-003**		**2.6300e-003**	**2.6300e-003**	**0.0000**	**37.6707**	**37.6707**	**7.2000e-004**	**6.9000e-004**	**37.8945**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	236540	68.8122	3.1100e-003	6.4000e-004	69.0818
Total		**68.8122**	**3.1100e-003**	**6.4000e-004**	**69.0818**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	-183600	-53.4114	-0.0024	-0.0005	-53.6206
Single Family Housing	-183600	-53.4114	-0.0024	-0.0005	-53.6206
Total		**-106.8227**	**-0.0048**	**-0.0010**	**-107.2413**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

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	0.2512	2.3000e-003	0.1991	1.0000e-005		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003	0.0000	0.3246	0.3246	3.1000e-004	0.0000	0.3323
Unmitigated	0.2525	0.0124	0.2048	8.0000e-005		1.9300e-003	1.9300e-003		1.9300e-003	1.9300e-003	0.0000	12.0241	12.0241	5.4000e-004	2.1000e-004	12.1015

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	0.0480					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1972					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.1800e-003	0.0101	4.3000e-003	6.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	11.6966	11.6966	2.2000e-004	2.1000e-004	11.7661
Landscaping	6.0400e-003	2.3100e-003	0.2006	1.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	0.3275	0.3275	3.2000e-004	0.0000	0.3354
Total	**0.2525**	**0.0124**	**0.2049**	**7.0000e-005**		**1.9300e-003**	**1.9300e-003**		**1.9300e-003**	**1.9300e-003**	**0.0000**	**12.0241**	**12.0241**	**5.4000e-004**	**2.1000e-004**	**12.1015**

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	0.0480					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1972					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.9600e-003	2.3000e-003	0.1991	1.0000e-005		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003	0.0000	0.3246	0.3246	3.1000e-004	0.0000	0.3323
Total	**0.2512**	**2.3000e-003**	**0.1991**	**1.0000e-005**		**1.1000e-003**	**1.1000e-003**		**1.1000e-003**	**1.1000e-003**	**0.0000**	**0.3246**	**0.3246**	**3.1000e-004**	**0.0000**	**0.3323**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	4.4564	0.0575	1.3900e-003	6.3081
Unmitigated	4.4564	0.0575	1.3900e-003	6.3081

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.75916 / 1.10903	4.4564	0.0575	1.3900e-003	6.3081
Total		**4.4564**	**0.0575**	**1.3900e-003**	**6.3081**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.75916 / 1.10903	4.4564	0.0575	1.3900e-003	6.3081
Total		**4.4564**	**0.0575**	**1.3900e-003**	**6.3081**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	6.4084	0.3787	0.0000	15.8766
Unmitigated	6.4084	0.3787	0.0000	15.8766

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	31.57	6.4084	0.3787	0.0000	15.8766
Total		**6.4084**	**0.3787**	**0.0000**	**15.8766**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	31.57	6.4084	0.3787	0.0000	15.8766
Total		**6.4084**	**0.3787**	**0.0000**	**15.8766**

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

Affentranger Farms - Phase 3

Kern-San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	56.00	Dwelling Unit	18.18	100,800.00	160

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - 6 month construction schedule

Grading -

Fleet Mix - 2024 Residential Fleet Mix

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Affentranger Farms - Phase 3 - Kern-San Joaquin County, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	9.00
tblConstructionPhase	NumDays	300.00	142.00
tblConstructionPhase	NumDays	30.00	15.00
tblConstructionPhase	NumDays	20.00	9.00
tblConstructionPhase	NumDays	10.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	PhaseEndDate	4/11/2025	3/29/2024
tblConstructionPhase	PhaseEndDate	2/14/2025	3/11/2024
tblConstructionPhase	PhaseEndDate	12/22/2023	10/21/2023
tblConstructionPhase	PhaseEndDate	3/14/2025	3/20/2024
tblConstructionPhase	PhaseEndDate	11/10/2023	10/6/2023
tblConstructionPhase	PhaseStartDate	3/15/2025	3/21/2024
tblConstructionPhase	PhaseStartDate	12/23/2023	10/22/2023
tblConstructionPhase	PhaseStartDate	11/11/2023	10/7/2023
tblConstructionPhase	PhaseStartDate	2/15/2025	3/12/2024
tblConstructionPhase	PhaseStartDate	10/28/2023	10/1/2023
tblFleetMix	HHD	0.15	0.02
tblFleetMix	LDA	0.49	0.53
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.02	9.0000e-004

tblFleetMix	LHD2	5.2590e-003	9.0000e-004
tblFleetMix	MCY	5.6980e-003	2.5000e-003
tblFleetMix	MDV	0.11	0.06
tblFleetMix	MH	7.1100e-004	2.0000e-003
tblFleetMix	MHD	0.02	8.0000e-003
tblFleetMix	OBUS	1.5990e-003	0.00
tblFleetMix	SBUS	8.9600e-004	2.0000e-004
tblFleetMix	UBUS	1.5700e-003	4.3000e-003
tblWoodstoves	NumberCatalytic	18.18	0.00
tblWoodstoves	NumberNoncatalytic	18.18	0.00

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	0.0920	0.8708	0.8631	1.6600e-003	0.1280	0.0394	0.1674	0.0591	0.0368	0.0959	0.0000	144.8861	144.8861	0.0365	0.0000	145.7978
2024	1.0063	0.5437	0.6656	1.1900e-003	7.8300e-003	0.0242	0.0320	2.1100e-003	0.0228	0.0249	0.0000	103.0988	103.0988	0.0228	0.0000	103.6697
Maximum	**1.0063**	**0.8708**	**0.8631**	**1.6600e-003**	**0.1280**	**0.0394**	**0.1674**	**0.0591**	**0.0368**	**0.0959**	**0.0000**	**144.8861**	**144.8861**	**0.0365**	**0.0000**	**145.7978**

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	0.0920	0.8708	0.8631	1.6600e-003	0.0553	0.0394	0.0947	0.0245	0.0368	0.0613	0.0000	144.8860	144.8860	0.0365	0.0000	145.7976
2024	1.0063	0.5437	0.6656	1.1900e-003	7.8300e-003	0.0242	0.0320	2.1100e-003	0.0228	0.0249	0.0000	103.0987	103.0987	0.0228	0.0000	103.6696
Maximum	**1.0063**	**0.8708**	**0.8631**	**1.6600e-003**	**0.0553**	**0.0394**	**0.0947**	**0.0245**	**0.0368**	**0.0613**	**0.0000**	**144.8860**	**144.8860**	**0.0365**	**0.0000**	**145.7976**

	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**	**53.54**	**0.00**	**36.47**	**56.53**	**0.00**	**28.68**	**0.00**	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	10-1-2023	12-31-2023	0.9630	0.9630
2	1-1-2024	3-31-2024	1.5502	1.5502
		Highest	1.5502	1.5502

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	0.5032	0.0257	0.4246	1.6000e-004		4.0000e-003	4.0000e-003		4.0000e-003	4.0000e-003	0.0000	24.9388	24.9388	1.1200e-003	4.4000e-004	25.0993
Energy	7.8900e-003	0.0675	0.0287	4.3000e-004		5.4500e-003	5.4500e-003		5.4500e-003	5.4500e-003	0.0000	220.8533	220.8533	7.9500e-003	2.7700e-003	221.8768
Mobile	0.1276	0.4514	1.5146	5.9600e-003	0.5808	4.4900e-003	0.5853	0.1552	4.1600e-003	0.1594	0.0000	548.2642	548.2642	0.0244	0.0000	548.8729
Waste						0.0000	0.0000		0.0000	0.0000	13.3162	0.0000	13.3162	0.7870	0.0000	32.9903
Water						0.0000	0.0000		0.0000	0.0000	1.1575	8.0854	9.2430	0.1193	2.8800e-003	13.0835
Total	**0.6387**	**0.5446**	**1.9679**	**6.5500e-003**	**0.5808**	**0.0139**	**0.5947**	**0.1552**	**0.0136**	**0.1688**	**14.4738**	**802.1418**	**816.6156**	**0.9397**	**6.0900e-003**	**841.9228**

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	0.5006	4.7600e-003	0.4126	2.0000e-005		2.2900e-003	2.2900e-003		2.2900e-003	2.2900e-003	0.0000	0.6731	0.6731	6.4000e-004	0.0000	0.6892
Energy	7.8900e-003	0.0675	0.0287	4.3000e-004		5.4500e-003	5.4500e-003		5.4500e-003	5.4500e-003	0.0000	-143.4264	-143.4264	-0.0085	-0.0006	-143.8303
Mobile	0.1249	0.4357	1.4322	5.5800e-003	0.5407	4.2200e-003	0.5449	0.1445	3.9100e-003	0.1484	0.0000	513.0227	513.0227	0.0231	0.0000	513.6008
Waste						0.0000	0.0000		0.0000	0.0000	13.3162	0.0000	13.3162	0.7870	0.0000	32.9903
Water						0.0000	0.0000		0.0000	0.0000	1.1575	8.0854	9.2430	0.1193	2.8800e-003	13.0835
Total	**0.6334**	**0.5080**	**1.8735**	**6.0300e-003**	**0.5407**	**0.0120**	**0.5527**	**0.1445**	**0.0117**	**0.1562**	**14.4738**	**378.3548**	**392.8286**	**0.9215**	**2.2400e-003**	**416.5335**

	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	**0.82**	**6.72**	**4.79**	**7.94**	**6.90**	**14.20**	**7.07**	**6.90**	**14.40**	**7.50**	**0.00**	**52.83**	**51.90**	**1.93**	**63.22**	**50.53**

3.0 Construction Detail

Construction Phase

Affentranger Farms - Phase 3 - Kern-San Joaquin County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	10/1/2023	10/6/2023	7	6	
2	Grading	Grading	10/7/2023	10/21/2023	7	15	
3	Building Construction	Building Construction	10/22/2023	3/11/2024	7	142	
4	Paving	Paving	3/12/2024	3/20/2024	7	9	
5	Architectural Coating	Architectural Coating	3/21/2024	3/29/2024	7	9	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 37.5

Acres of Paving: 0

Residential Indoor: 204,120; Residential Outdoor: 68,040; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Affentranger Farms - Phase 3 - Kern-San Joaquin County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Welders	1	8.00	46	0.45

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
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	20.00	6.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 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					0.0542	0.0000	0.0542	0.0298	0.0000	0.0298	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.9800e-003	0.0826	0.0547	1.1000e-004		3.8000e-003	3.8000e-003		3.4900e-003	3.4900e-003	0.0000	10.0352	10.0352	3.2500e-003	0.0000	10.1164
Total	**7.9800e-003**	**0.0826**	**0.0547**	**1.1000e-004**	**0.0542**	**3.8000e-003**	**0.0580**	**0.0298**	**3.4900e-003**	**0.0333**	**0.0000**	**10.0352**	**10.0352**	**3.2500e-003**	**0.0000**	**10.1164**

3.2 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	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	1.6000e-004	1.0000e-004	1.0600e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3572	0.3572	1.0000e-005	0.0000	0.3574
Total	**1.6000e-004**	**1.0000e-004**	**1.0600e-003**	**0.0000**	**4.4000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3572**	**0.3572**	**1.0000e-005**	**0.0000**	**0.3574**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0211	0.0000	0.0211	0.0116	0.0000	0.0116	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.9800e-003	0.0826	0.0547	1.1000e-004		3.8000e-003	3.8000e-003		3.4900e-003	3.4900e-003	0.0000	10.0352	10.0352	3.2500e-003	0.0000	10.1163
Total	**7.9800e-003**	**0.0826**	**0.0547**	**1.1000e-004**	**0.0211**	**3.8000e-003**	**0.0249**	**0.0116**	**3.4900e-003**	**0.0151**	**0.0000**	**10.0352**	**10.0352**	**3.2500e-003**	**0.0000**	**10.1163**

3.2 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	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	1.6000e-004	1.0000e-004	1.0600e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3572	0.3572	1.0000e-005	0.0000	0.3574
Total	**1.6000e-004**	**1.0000e-004**	**1.0600e-003**	**0.0000**	**4.4000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3572**	**0.3572**	**1.0000e-005**	**0.0000**	**0.3574**

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0651	0.0000	0.0651	0.0270	0.0000	0.0270	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.2589	0.2104	4.7000e-004		0.0107	0.0107		9.8300e-003	9.8300e-003	0.0000	40.9014	40.9014	0.0132	0.0000	41.2321
Total	**0.0249**	**0.2589**	**0.2104**	**4.7000e-004**	**0.0651**	**0.0107**	**0.0757**	**0.0270**	**9.8300e-003**	**0.0368**	**0.0000**	**40.9014**	**40.9014**	**0.0132**	**0.0000**	**41.2321**

3.3 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	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	4.6000e-004	2.8000e-004	2.9500e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9921	0.9921	2.0000e-005	0.0000	0.9927
Total	**4.6000e-004**	**2.8000e-004**	**2.9500e-003**	**1.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2200e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**0.9921**	**0.9921**	**2.0000e-005**	**0.0000**	**0.9927**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0254	0.0000	0.0254	0.0105	0.0000	0.0105	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.2589	0.2104	4.7000e-004		0.0107	0.0107		9.8300e-003	9.8300e-003	0.0000	40.9014	40.9014	0.0132	0.0000	41.2321
Total	**0.0249**	**0.2589**	**0.2104**	**4.7000e-004**	**0.0254**	**0.0107**	**0.0361**	**0.0105**	**9.8300e-003**	**0.0204**	**0.0000**	**40.9014**	**40.9014**	**0.0132**	**0.0000**	**41.2321**

3.3 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	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	4.6000e-004	2.8000e-004	2.9500e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9921	0.9921	2.0000e-005	0.0000	0.9927
Total	**4.6000e-004**	**2.8000e-004**	**2.9500e-003**	**1.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2200e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**0.9921**	**0.9921**	**2.0000e-005**	**0.0000**	**0.9927**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0558	0.5107	0.5767	9.6000e-004		0.0248	0.0248		0.0234	0.0234	0.0000	82.2907	82.2907	0.0196	0.0000	82.7801
Total	**0.0558**	**0.5107**	**0.5767**	**9.6000e-004**		**0.0248**	**0.0248**		**0.0234**	**0.0234**	**0.0000**	**82.2907**	**82.2907**	**0.0196**	**0.0000**	**82.7801**

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.6000e-004	0.0170	3.4100e-003	6.0000e-005	1.4200e-003	2.0000e-005	1.4400e-003	4.1000e-004	2.0000e-005	4.3000e-004	0.0000	5.6134	5.6134	2.9000e-004	0.0000	5.6207
Worker	2.1700e-003	1.3100e-003	0.0139	5.0000e-005	5.7200e-003	4.0000e-005	5.7600e-003	1.5200e-003	3.0000e-005	1.5500e-003	0.0000	4.6962	4.6962	1.0000e-004	0.0000	4.6985
Total	**2.6300e-003**	**0.0183**	**0.0174**	**1.1000e-004**	**7.1400e-003**	**6.0000e-005**	**7.2000e-003**	**1.9300e-003**	**5.0000e-005**	**1.9800e-003**	**0.0000**	**10.3095**	**10.3095**	**3.9000e-004**	**0.0000**	**10.3192**

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	0.0558	0.5107	0.5767	9.6000e-004		0.0248	0.0248		0.0234	0.0234	0.0000	82.2906	82.2906	0.0196	0.0000	82.7800
Total	**0.0558**	**0.5107**	**0.5767**	**9.6000e-004**		**0.0248**	**0.0248**		**0.0234**	**0.0234**	**0.0000**	**82.2906**	**82.2906**	**0.0196**	**0.0000**	**82.7800**

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.6000e-004	0.0170	3.4100e-003	6.0000e-005	1.4200e-003	2.0000e-005	1.4400e-003	4.1000e-004	2.0000e-005	4.3000e-004	0.0000	5.6134	5.6134	2.9000e-004	0.0000	5.6207
Worker	2.1700e-003	1.3100e-003	0.0139	5.0000e-005	5.7200e-003	4.0000e-005	5.7600e-003	1.5200e-003	3.0000e-005	1.5500e-003	0.0000	4.6962	4.6962	1.0000e-004	0.0000	4.6985
Total	**2.6300e-003**	**0.0183**	**0.0174**	**1.1000e-004**	**7.1400e-003**	**6.0000e-005**	**7.2000e-003**	**1.9300e-003**	**5.0000e-005**	**1.9800e-003**	**0.0000**	**10.3095**	**10.3095**	**3.9000e-004**	**0.0000**	**10.3192**

3.4 Building Construction - 2024

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	0.0522	0.4773	0.5739	9.6000e-004		0.0218	0.0218		0.0205	0.0205	0.0000	82.3064	82.3064	0.0195	0.0000	82.7930
Total	**0.0522**	**0.4773**	**0.5739**	**9.6000e-004**		**0.0218**	**0.0218**		**0.0205**	**0.0205**	**0.0000**	**82.3064**	**82.3064**	**0.0195**	**0.0000**	**82.7930**

3.4 Building Construction - 2024

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	4.5000e-004	0.0168	3.2400e-003	6.0000e-005	1.4200e-003	2.0000e-005	1.4400e-003	4.1000e-004	2.0000e-005	4.3000e-004	0.0000	5.5703	5.5703	3.0000e-004	0.0000	5.5777
Worker	2.0300e-003	1.1800e-003	0.0129	5.0000e-005	5.7200e-003	4.0000e-005	5.7600e-003	1.5200e-003	3.0000e-005	1.5500e-003	0.0000	4.5172	4.5172	9.0000e-005	0.0000	4.5193
Total	**2.4800e-003**	**0.0180**	**0.0161**	**1.1000e-004**	**7.1400e-003**	**6.0000e-005**	**7.2000e-003**	**1.9300e-003**	**5.0000e-005**	**1.9800e-003**	**0.0000**	**10.0875**	**10.0875**	**3.9000e-004**	**0.0000**	**10.0971**

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	0.0522	0.4773	0.5739	9.6000e-004		0.0218	0.0218		0.0205	0.0205	0.0000	82.3063	82.3063	0.0195	0.0000	82.7929
Total	**0.0522**	**0.4773**	**0.5739**	**9.6000e-004**		**0.0218**	**0.0218**		**0.0205**	**0.0205**	**0.0000**	**82.3063**	**82.3063**	**0.0195**	**0.0000**	**82.7929**

3.4 Building Construction - 2024

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	4.5000e-004	0.0168	3.2400e-003	6.0000e-005	1.4200e-003	2.0000e-005	1.4400e-003	4.1000e-004	2.0000e-005	4.3000e-004	0.0000	5.5703	5.5703	3.0000e-004	0.0000	5.5777
Worker	2.0300e-003	1.1800e-003	0.0129	5.0000e-005	5.7200e-003	4.0000e-005	5.7600e-003	1.5200e-003	3.0000e-005	1.5500e-003	0.0000	4.5172	4.5172	9.0000e-005	0.0000	4.5193
Total	**2.4800e-003**	**0.0180**	**0.0161**	**1.1000e-004**	**7.1400e-003**	**6.0000e-005**	**7.2000e-003**	**1.9300e-003**	**5.0000e-005**	**1.9800e-003**	**0.0000**	**10.0875**	**10.0875**	**3.9000e-004**	**0.0000**	**10.0971**

3.5 Paving - 2024

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	4.4500e-003	0.0429	0.0658	1.0000e-004		2.1100e-003	2.1100e-003		1.9400e-003	1.9400e-003	0.0000	9.0119	9.0119	2.9100e-003	0.0000	9.0848
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.4500e-003**	**0.0429**	**0.0658**	**1.0000e-004**		**2.1100e-003**	**2.1100e-003**		**1.9400e-003**	**1.9400e-003**	**0.0000**	**9.0119**	**9.0119**	**2.9100e-003**	**0.0000**	**9.0848**

3.5 Paving - 2024

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	1.9000e-004	1.1000e-004	1.2300e-003	0.0000	5.4000e-004	0.0000	5.5000e-004	1.4000e-004	0.0000	1.5000e-004	0.0000	0.4295	0.4295	1.0000e-005	0.0000	0.4297
Total	**1.9000e-004**	**1.1000e-004**	**1.2300e-003**	**0.0000**	**5.4000e-004**	**0.0000**	**5.5000e-004**	**1.4000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.4295**	**0.4295**	**1.0000e-005**	**0.0000**	**0.4297**

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	4.4500e-003	0.0429	0.0658	1.0000e-004		2.1100e-003	2.1100e-003		1.9400e-003	1.9400e-003	0.0000	9.0119	9.0119	2.9100e-003	0.0000	9.0848
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.4500e-003**	**0.0429**	**0.0658**	**1.0000e-004**		**2.1100e-003**	**2.1100e-003**		**1.9400e-003**	**1.9400e-003**	**0.0000**	**9.0119**	**9.0119**	**2.9100e-003**	**0.0000**	**9.0848**

3.5 Paving - 2024

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	1.9000e-004	1.1000e-004	1.2300e-003	0.0000	5.4000e-004	0.0000	5.5000e-004	1.4000e-004	0.0000	1.5000e-004	0.0000	0.4295	0.4295	1.0000e-005	0.0000	0.4297
Total	**1.9000e-004**	**1.1000e-004**	**1.2300e-003**	**0.0000**	**5.4000e-004**	**0.0000**	**5.5000e-004**	**1.4000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.4295**	**0.4295**	**1.0000e-005**	**0.0000**	**0.4297**

3.6 Architectural Coating - 2024

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	0.9461					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.1000e-004	5.4800e-003	8.1500e-003	1.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	1.1490	1.1490	6.0000e-005	0.0000	1.1506
Total	**0.9469**	**5.4800e-003**	**8.1500e-003**	**1.0000e-005**		**2.7000e-004**	**2.7000e-004**		**2.7000e-004**	**2.7000e-004**	**0.0000**	**1.1490**	**1.1490**	**6.0000e-005**	**0.0000**	**1.1506**

3.6 Architectural Coating - 2024

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	5.0000e-005	3.0000e-005	3.3000e-004	0.0000	1.5000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1145	0.1145	0.0000	0.0000	0.1146
Total	**5.0000e-005**	**3.0000e-005**	**3.3000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1145**	**0.1145**	**0.0000**	**0.0000**	**0.1146**

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	0.9461					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.1000e-004	5.4800e-003	8.1500e-003	1.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	1.1490	1.1490	6.0000e-005	0.0000	1.1506
Total	**0.9469**	**5.4800e-003**	**8.1500e-003**	**1.0000e-005**		**2.7000e-004**	**2.7000e-004**		**2.7000e-004**	**2.7000e-004**	**0.0000**	**1.1490**	**1.1490**	**6.0000e-005**	**0.0000**	**1.1506**

3.6 Architectural Coating - 2024

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	5.0000e-005	3.0000e-005	3.3000e-004	0.0000	1.5000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1145	0.1145	0.0000	0.0000	0.1146
Total	**5.0000e-005**	**3.0000e-005**	**3.3000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1145**	**0.1145**	**0.0000**	**0.0000**	**0.1146**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Improve Pedestrian Network

	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	0.1249	0.4357	1.4322	5.5800e-003	0.5407	4.2200e-003	0.5449	0.1445	3.9100e-003	0.1484	0.0000	513.0227	513.0227	0.0231	0.0000	513.6008
Unmitigated	0.1276	0.4514	1.5146	5.9600e-003	0.5808	4.4900e-003	0.5853	0.1552	4.1600e-003	0.1594	0.0000	548.2642	548.2642	0.0244	0.0000	548.8729

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	533.12	554.96	482.72	1,538,462	1,432,308
Total	533.12	554.96	482.72	1,538,462	1,432,308

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
Single Family Housing	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.527700	0.209000	0.167500	0.055600	0.000900	0.000900	0.008000	0.021400	0.000000	0.004300	0.002500	0.000200	0.002000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	-221.5582	-221.5582	-0.0100	-0.0021	-222.4263
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	142.7216	142.7216	6.4500e-003	1.3400e-003	143.2808
NaturalGas Mitigated	7.8900e-003	0.0675	0.0287	4.3000e-004		5.4500e-003	5.4500e-003		5.4500e-003	5.4500e-003	0.0000	78.1317	78.1317	1.5000e-003	1.4300e-003	78.5960
NaturalGas Unmitigated	7.8900e-003	0.0675	0.0287	4.3000e-004		5.4500e-003	5.4500e-003		5.4500e-003	5.4500e-003	0.0000	78.1317	78.1317	1.5000e-003	1.4300e-003	78.5960

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					
Single Family Housing	1.46413e+006	7.8900e-003	0.0675	0.0287	4.3000e-004		5.4500e-003	5.4500e-003		5.4500e-003	5.4500e-003	0.0000	78.1317	78.1317	1.5000e-003	1.4300e-003	78.5960
Total		**7.8900e-003**	**0.0675**	**0.0287**	**4.3000e-004**		**5.4500e-003**	**5.4500e-003**		**5.4500e-003**	**5.4500e-003**	**0.0000**	**78.1317**	**78.1317**	**1.5000e-003**	**1.4300e-003**	**78.5960**

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					
Single Family Housing	1.46413e+006	7.8900e-003	0.0675	0.0287	4.3000e-004		5.4500e-003	5.4500e-003		5.4500e-003	5.4500e-003	0.0000	78.1317	78.1317	1.5000e-003	1.4300e-003	78.5960
Total		**7.8900e-003**	**0.0675**	**0.0287**	**4.3000e-004**		**5.4500e-003**	**5.4500e-003**		**5.4500e-003**	**5.4500e-003**	**0.0000**	**78.1317**	**78.1317**	**1.5000e-003**	**1.4300e-003**	**78.5960**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	490601	142.7216	6.4500e-003	1.3400e-003	143.2808
Total		**142.7216**	**6.4500e-003**	**1.3400e-003**	**143.2808**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	-761600	-221.5582	-0.0100	-0.0021	-222.4263
Total		**-221.5582**	**-0.0100**	**-0.0021**	**-222.4263**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

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	0.5006	4.7600e-003	0.4126	2.0000e-005		2.2900e-003	2.2900e-003		2.2900e-003	2.2900e-003	0.0000	0.6731	0.6731	6.4000e-004	0.0000	0.6892
Unmitigated	0.5032	0.0257	0.4246	1.6000e-004		4.0000e-003	4.0000e-003		4.0000e-003	4.0000e-003	0.0000	24.9388	24.9388	1.1200e-003	4.4000e-004	25.0993

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	0.0946					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3937					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.4500e-003	0.0210	8.9100e-003	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	24.2596	24.2596	4.6000e-004	4.4000e-004	24.4038
Landscaping	0.0125	4.7900e-003	0.4156	2.0000e-005		2.3000e-003	2.3000e-003		2.3000e-003	2.3000e-003	0.0000	0.6792	0.6792	6.5000e-004	0.0000	0.6955
Total	**0.5032**	**0.0257**	**0.4245**	**1.5000e-004**		**3.9900e-003**	**3.9900e-003**		**3.9900e-003**	**3.9900e-003**	**0.0000**	**24.9388**	**24.9388**	**1.1100e-003**	**4.4000e-004**	**25.0993**

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	0.0946					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3937					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0123	4.7600e-003	0.4126	2.0000e-005		2.2900e-003	2.2900e-003		2.2900e-003	2.2900e-003	0.0000	0.6731	0.6731	6.4000e-004	0.0000	0.6892
Total	**0.5006**	**4.7600e-003**	**0.4126**	**2.0000e-005**		**2.2900e-003**	**2.2900e-003**		**2.2900e-003**	**2.2900e-003**	**0.0000**	**0.6731**	**0.6731**	**6.4000e-004**	**0.0000**	**0.6892**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	9.2430	0.1193	2.8800e-003	13.0835
Unmitigated	9.2430	0.1193	2.8800e-003	13.0835

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	3.64863 / 2.30022	9.2430	0.1193	2.8800e-003	13.0835
Total		**9.2430**	**0.1193**	**2.8800e-003**	**13.0835**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	3.64863 / 2.30022	9.2430	0.1193	2.8800e-003	13.0835
Total		**9.2430**	**0.1193**	**2.8800e-003**	**13.0835**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	13.3162	0.7870	0.0000	32.9903
Unmitigated	13.3162	0.7870	0.0000	32.9903

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	65.6	13.3162	0.7870	0.0000	32.9903
Total		**13.3162**	**0.7870**	**0.0000**	**32.9903**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	65.6	13.3162	0.7870	0.0000	32.9903
Total		**13.3162**	**0.7870**	**0.0000**	**32.9903**

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

Affentranger Farms - Phase 4

Kern-San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	31.00	Dwelling Unit	10.06	55,800.00	89

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - 6 month construction schedule

Grading -

Fleet Mix - 2024 Residential Fleet Mix

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Affentranger Farms - Phase 4 - Kern-San Joaquin County, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	9.00
tblConstructionPhase	NumDays	300.00	142.00
tblConstructionPhase	NumDays	30.00	15.00
tblConstructionPhase	NumDays	20.00	9.00
tblConstructionPhase	NumDays	10.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	PhaseEndDate	10/10/2025	9/26/2024
tblConstructionPhase	PhaseEndDate	8/15/2025	9/8/2024
tblConstructionPhase	PhaseEndDate	6/21/2024	4/19/2024
tblConstructionPhase	PhaseEndDate	9/12/2025	9/17/2024
tblConstructionPhase	PhaseEndDate	5/10/2024	4/4/2024
tblConstructionPhase	PhaseStartDate	9/13/2025	9/18/2024
tblConstructionPhase	PhaseStartDate	6/22/2024	4/20/2024
tblConstructionPhase	PhaseStartDate	5/11/2024	4/5/2024
tblConstructionPhase	PhaseStartDate	8/16/2025	9/9/2024
tblConstructionPhase	PhaseStartDate	4/27/2024	3/30/2024
tblFleetMix	HHD	0.15	0.02
tblFleetMix	LDA	0.49	0.53
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.02	9.0000e-004

tblFleetMix	LHD2	5.2590e-003	9.0000e-004
tblFleetMix	MCY	5.6980e-003	2.5000e-003
tblFleetMix	MDV	0.11	0.06
tblFleetMix	MH	7.1100e-004	2.0000e-003
tblFleetMix	MHD	0.02	8.0000e-003
tblFleetMix	OBUS	1.5990e-003	0.00
tblFleetMix	SBUS	8.9600e-004	2.0000e-004
tblFleetMix	UBUS	1.5700e-003	4.3000e-003
tblWoodstoves	NumberCatalytic	10.06	0.00
tblWoodstoves	NumberNoncatalytic	10.06	0.00

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					
2024	0.6691	1.3458	1.5073	2.7400e-003	0.1292	0.0597	0.1889	0.0595	0.0559	0.1153	0.0000	238.0244	238.0244	0.0588	0.0000	239.4944
Maximum	**0.6691**	**1.3458**	**1.5073**	**2.7400e-003**	**0.1292**	**0.0597**	**0.1889**	**0.0595**	**0.0559**	**0.1153**	**0.0000**	**238.0244**	**238.0244**	**0.0588**	**0.0000**	**239.4944**

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					
2024	0.6691	1.3458	1.5073	2.7400e-003	0.0565	0.0597	0.1162	0.0248	0.0559	0.0807	0.0000	238.0241	238.0241	0.0588	0.0000	239.4941
Maximum	**0.6691**	**1.3458**	**1.5073**	**2.7400e-003**	**0.0565**	**0.0597**	**0.1162**	**0.0248**	**0.0559**	**0.0807**	**0.0000**	**238.0241**	**238.0241**	**0.0588**	**0.0000**	**239.4941**

	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**	**56.29**	**0.00**	**38.51**	**58.25**	**0.00**	**30.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	3-30-2024	6-29-2024	0.8974	0.8974
2	6-30-2024	9-29-2024	1.1176	1.1176
		Highest	1.1176	1.1176

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	0.2786	0.0143	0.2350	9.0000e-005		2.2100e-003	2.2100e-003		2.2100e-003	2.2100e-003	0.0000	13.8054	13.8054	6.2000e-004	2.5000e-004	13.8943
Energy	4.3700e-003	0.0374	0.0159	2.4000e-004		3.0200e-003	3.0200e-003		3.0200e-003	3.0200e-003	0.0000	122.2581	122.2581	4.4000e-003	1.5300e-003	122.8247
Mobile	0.0706	0.2499	0.8384	3.3000e-003	0.3215	2.4900e-003	0.3240	0.0859	2.3100e-003	0.0882	0.0000	303.5034	303.5034	0.0135	0.0000	303.8403
Waste						0.0000	0.0000		0.0000	0.0000	7.4071	0.0000	7.4071	0.4378	0.0000	18.3509
Water						0.0000	0.0000		0.0000	0.0000	0.6408	4.4759	5.1167	0.0660	1.6000e-003	7.2427
Total	**0.3536**	**0.3015**	**1.0893**	**3.6300e-003**	**0.3215**	**7.7200e-003**	**0.3292**	**0.0859**	**7.5400e-003**	**0.0935**	**8.0479**	**444.0428**	**452.0907**	**0.5223**	**3.3800e-003**	**466.1528**

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	0.2771	2.6300e-003	0.2284	1.0000e-005		1.2700e-003	1.2700e-003		1.2700e-003	1.2700e-003	0.0000	0.3726	0.3726	3.6000e-004	0.0000	0.3815
Energy	4.3700e-003	0.0374	0.0159	2.4000e-004		3.0200e-003	3.0200e-003		3.0200e-003	3.0200e-003	0.0000	-79.3968	-79.3968	-0.0047	-0.0004	-79.6203
Mobile	0.0692	0.2412	0.7928	3.0900e-003	0.2993	2.3300e-003	0.3017	0.0800	2.1600e-003	0.0822	0.0000	283.9947	283.9947	0.0128	0.0000	284.3147
Waste						0.0000	0.0000		0.0000	0.0000	7.4071	0.0000	7.4071	0.4378	0.0000	18.3509
Water						0.0000	0.0000		0.0000	0.0000	0.6408	4.4759	5.1167	0.0660	1.6000e-003	7.2427
Total	**0.3507**	**0.2812**	**1.0371**	**3.3400e-003**	**0.2993**	**6.6200e-003**	**0.3060**	**0.0800**	**6.4500e-003**	**0.0865**	**8.0479**	**209.4464**	**217.4944**	**0.5122**	**1.2500e-003**	**230.6694**

	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	**0.82**	**6.72**	**4.79**	**7.99**	**6.90**	**14.25**	**7.07**	**6.90**	**14.46**	**7.50**	**0.00**	**52.83**	**51.89**	**1.93**	**63.02**	**50.52**

3.0 Construction Detail

Construction Phase

Affentranger Farms - Phase 4 - Kern-San Joaquin County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	3/30/2024	4/4/2024	7	6	
2	Grading	Grading	4/5/2024	4/19/2024	7	15	
3	Building Construction	Building Construction	4/20/2024	9/8/2024	7	142	
4	Paving	Paving	9/9/2024	9/17/2024	7	9	
5	Architectural Coating	Architectural Coating	9/18/2024	9/26/2024	7	9	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 37.5

Acres of Paving: 0

Residential Indoor: 112,995; Residential Outdoor: 37,665; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Affentranger Farms - Phase 4 - Kern-San Joaquin County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Welders	1	8.00	46	0.45

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
Architectural Coating	1	2.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	11.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0542	0.0000	0.0542	0.0298	0.0000	0.0298	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.9800e-003	0.0815	0.0550	1.1000e-004		3.6900e-003	3.6900e-003		3.3900e-003	3.3900e-003	0.0000	10.0371	10.0371	3.2500e-003	0.0000	10.1183
Total	**7.9800e-003**	**0.0815**	**0.0550**	**1.1000e-004**	**0.0542**	**3.6900e-003**	**0.0579**	**0.0298**	**3.3900e-003**	**0.0332**	**0.0000**	**10.0371**	**10.0371**	**3.2500e-003**	**0.0000**	**10.1183**

3.2 Site Preparation - 2024

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	1.5000e-004	9.0000e-005	9.8000e-004	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3436	0.3436	1.0000e-005	0.0000	0.3437
Total	**1.5000e-004**	**9.0000e-005**	**9.8000e-004**	**0.0000**	**4.4000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3436**	**0.3436**	**1.0000e-005**	**0.0000**	**0.3437**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0211	0.0000	0.0211	0.0116	0.0000	0.0116	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.9800e-003	0.0815	0.0550	1.1000e-004		3.6900e-003	3.6900e-003		3.3900e-003	3.3900e-003	0.0000	10.0371	10.0371	3.2500e-003	0.0000	10.1183
Total	**7.9800e-003**	**0.0815**	**0.0550**	**1.1000e-004**	**0.0211**	**3.6900e-003**	**0.0248**	**0.0116**	**3.3900e-003**	**0.0150**	**0.0000**	**10.0371**	**10.0371**	**3.2500e-003**	**0.0000**	**10.1183**

3.2 Site Preparation - 2024

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	1.5000e-004	9.0000e-005	9.8000e-004	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3436	0.3436	1.0000e-005	0.0000	0.3437
Total	**1.5000e-004**	**9.0000e-005**	**9.8000e-004**	**0.0000**	**4.4000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3436**	**0.3436**	**1.0000e-005**	**0.0000**	**0.3437**

3.3 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0651	0.0000	0.0651	0.0270	0.0000	0.0270	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0241	0.2428	0.2079	4.7000e-004		0.0100	0.0100		9.2100e-003	9.2100e-003	0.0000	40.8896	40.8896	0.0132	0.0000	41.2203
Total	**0.0241**	**0.2428**	**0.2079**	**4.7000e-004**	**0.0651**	**0.0100**	**0.0751**	**0.0270**	**9.2100e-003**	**0.0362**	**0.0000**	**40.8896**	**40.8896**	**0.0132**	**0.0000**	**41.2203**

3.3 Grading - 2024

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	4.3000e-004	2.5000e-004	2.7300e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9543	0.9543	2.0000e-005	0.0000	0.9548
Total	**4.3000e-004**	**2.5000e-004**	**2.7300e-003**	**1.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2200e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**0.9543**	**0.9543**	**2.0000e-005**	**0.0000**	**0.9548**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0254	0.0000	0.0254	0.0105	0.0000	0.0105	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0241	0.2428	0.2079	4.7000e-004		0.0100	0.0100		9.2100e-003	9.2100e-003	0.0000	40.8896	40.8896	0.0132	0.0000	41.2202
Total	**0.0241**	**0.2428**	**0.2079**	**4.7000e-004**	**0.0254**	**0.0100**	**0.0354**	**0.0105**	**9.2100e-003**	**0.0197**	**0.0000**	**40.8896**	**40.8896**	**0.0132**	**0.0000**	**41.2202**

3.3 Grading - 2024

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	4.3000e-004	2.5000e-004	2.7300e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9543	0.9543	2.0000e-005	0.0000	0.9548
Total	**4.3000e-004**	**2.5000e-004**	**2.7300e-003**	**1.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2200e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**0.9543**	**0.9543**	**2.0000e-005**	**0.0000**	**0.9548**

3.4 Building Construction - 2024

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	0.1045	0.9545	1.1478	1.9100e-003		0.0435	0.0435		0.0410	0.0410	0.0000	164.6129	164.6129	0.0389	0.0000	165.5860
Total	**0.1045**	**0.9545**	**1.1478**	**1.9100e-003**		**0.0435**	**0.0435**		**0.0410**	**0.0410**	**0.0000**	**164.6129**	**164.6129**	**0.0389**	**0.0000**	**165.5860**

3.4 Building Construction - 2024

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	4.5000e-004	0.0168	3.2400e-003	6.0000e-005	1.4200e-003	2.0000e-005	1.4400e-003	4.1000e-004	2.0000e-005	4.3000e-004	0.0000	5.5703	5.5703	3.0000e-004	0.0000	5.5777
Worker	2.2300e-003	1.3000e-003	0.0142	5.0000e-005	6.2900e-003	4.0000e-005	6.3300e-003	1.6700e-003	4.0000e-005	1.7100e-003	0.0000	4.9689	4.9689	9.0000e-005	0.0000	4.9713
Total	**2.6800e-003**	**0.0181**	**0.0174**	**1.1000e-004**	**7.7100e-003**	**6.0000e-005**	**7.7700e-003**	**2.0800e-003**	**6.0000e-005**	**2.1400e-003**	**0.0000**	**10.5392**	**10.5392**	**3.9000e-004**	**0.0000**	**10.5490**

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	0.1045	0.9545	1.1478	1.9100e-003		0.0435	0.0435		0.0410	0.0410	0.0000	164.6127	164.6127	0.0389	0.0000	165.5858
Total	**0.1045**	**0.9545**	**1.1478**	**1.9100e-003**		**0.0435**	**0.0435**		**0.0410**	**0.0410**	**0.0000**	**164.6127**	**164.6127**	**0.0389**	**0.0000**	**165.5858**

3.4 Building Construction - 2024

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	4.5000e-004	0.0168	3.2400e-003	6.0000e-005	1.4200e-003	2.0000e-005	1.4400e-003	4.1000e-004	2.0000e-005	4.3000e-004	0.0000	5.5703	5.5703	3.0000e-004	0.0000	5.5777
Worker	2.2300e-003	1.3000e-003	0.0142	5.0000e-005	6.2900e-003	4.0000e-005	6.3300e-003	1.6700e-003	4.0000e-005	1.7100e-003	0.0000	4.9689	4.9689	9.0000e-005	0.0000	4.9713
Total	**2.6800e-003**	**0.0181**	**0.0174**	**1.1000e-004**	**7.7100e-003**	**6.0000e-005**	**7.7700e-003**	**2.0800e-003**	**6.0000e-005**	**2.1400e-003**	**0.0000**	**10.5392**	**10.5392**	**3.9000e-004**	**0.0000**	**10.5490**

3.5 Paving - 2024

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	4.4500e-003	0.0429	0.0658	1.0000e-004		2.1100e-003	2.1100e-003		1.9400e-003	1.9400e-003	0.0000	9.0119	9.0119	2.9100e-003	0.0000	9.0848
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.4500e-003**	**0.0429**	**0.0658**	**1.0000e-004**		**2.1100e-003**	**2.1100e-003**		**1.9400e-003**	**1.9400e-003**	**0.0000**	**9.0119**	**9.0119**	**2.9100e-003**	**0.0000**	**9.0848**

3.5 Paving - 2024

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	1.9000e-004	1.1000e-004	1.2300e-003	0.0000	5.4000e-004	0.0000	5.5000e-004	1.4000e-004	0.0000	1.5000e-004	0.0000	0.4295	0.4295	1.0000e-005	0.0000	0.4297
Total	**1.9000e-004**	**1.1000e-004**	**1.2300e-003**	**0.0000**	**5.4000e-004**	**0.0000**	**5.5000e-004**	**1.4000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.4295**	**0.4295**	**1.0000e-005**	**0.0000**	**0.4297**

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	4.4500e-003	0.0429	0.0658	1.0000e-004		2.1100e-003	2.1100e-003		1.9400e-003	1.9400e-003	0.0000	9.0119	9.0119	2.9100e-003	0.0000	9.0848
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.4500e-003**	**0.0429**	**0.0658**	**1.0000e-004**		**2.1100e-003**	**2.1100e-003**		**1.9400e-003**	**1.9400e-003**	**0.0000**	**9.0119**	**9.0119**	**2.9100e-003**	**0.0000**	**9.0848**

3.5 Paving - 2024

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	1.9000e-004	1.1000e-004	1.2300e-003	0.0000	5.4000e-004	0.0000	5.5000e-004	1.4000e-004	0.0000	1.5000e-004	0.0000	0.4295	0.4295	1.0000e-005	0.0000	0.4297
Total	**1.9000e-004**	**1.1000e-004**	**1.2300e-003**	**0.0000**	**5.4000e-004**	**0.0000**	**5.5000e-004**	**1.4000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.4295**	**0.4295**	**1.0000e-005**	**0.0000**	**0.4297**

3.6 Architectural Coating - 2024

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	0.5237					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.1000e-004	5.4800e-003	8.1500e-003	1.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	1.1490	1.1490	6.0000e-005	0.0000	1.1506
Total	**0.5245**	**5.4800e-003**	**8.1500e-003**	**1.0000e-005**		**2.7000e-004**	**2.7000e-004**		**2.7000e-004**	**2.7000e-004**	**0.0000**	**1.1490**	**1.1490**	**6.0000e-005**	**0.0000**	**1.1506**

3.6 Architectural Coating - 2024

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	1.0000e-005	1.6000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0573	0.0573	0.0000	0.0000	0.0573
Total	**3.0000e-005**	**1.0000e-005**	**1.6000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0573**	**0.0573**	**0.0000**	**0.0000**	**0.0573**

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	0.5237					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.1000e-004	5.4800e-003	8.1500e-003	1.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	1.1490	1.1490	6.0000e-005	0.0000	1.1506
Total	**0.5245**	**5.4800e-003**	**8.1500e-003**	**1.0000e-005**		**2.7000e-004**	**2.7000e-004**		**2.7000e-004**	**2.7000e-004**	**0.0000**	**1.1490**	**1.1490**	**6.0000e-005**	**0.0000**	**1.1506**

3.6 Architectural Coating - 2024

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	1.0000e-005	1.6000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0573	0.0573	0.0000	0.0000	0.0573
Total	**3.0000e-005**	**1.0000e-005**	**1.6000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0573**	**0.0573**	**0.0000**	**0.0000**	**0.0573**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Improve Pedestrian Network

	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	0.0692	0.2412	0.7928	3.0900e-003	0.2993	2.3300e-003	0.3017	0.0800	2.1600e-003	0.0822	0.0000	283.9947	283.9947	0.0128	0.0000	284.3147
Unmitigated	0.0706	0.2499	0.8384	3.3000e-003	0.3215	2.4900e-003	0.3240	0.0859	2.3100e-003	0.0882	0.0000	303.5034	303.5034	0.0135	0.0000	303.8403

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	295.12	307.21	267.22	851,648	792,885
Total	295.12	307.21	267.22	851,648	792,885

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
Single Family Housing	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.527700	0.209000	0.167500	0.055600	0.000900	0.000900	0.008000	0.021400	0.000000	0.004300	0.002500	0.000200	0.002000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	-122.6483	-122.6483	-0.0056	-0.0012	-123.1289
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	79.0066	79.0066	3.5700e-003	7.4000e-004	79.3162
NaturalGas Mitigated	4.3700e-003	0.0374	0.0159	2.4000e-004		3.0200e-003	3.0200e-003		3.0200e-003	3.0200e-003	0.0000	43.2515	43.2515	8.3000e-004	7.9000e-004	43.5085
NaturalGas Unmitigated	4.3700e-003	0.0374	0.0159	2.4000e-004		3.0200e-003	3.0200e-003		3.0200e-003	3.0200e-003	0.0000	43.2515	43.2515	8.3000e-004	7.9000e-004	43.5085

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					
Single Family Housing	810502	4.3700e-003	0.0374	0.0159	2.4000e-004		3.0200e-003	3.0200e-003		3.0200e-003	3.0200e-003	0.0000	43.2515	43.2515	8.3000e-004	7.9000e-004	43.5085
Total		**4.3700e-003**	**0.0374**	**0.0159**	**2.4000e-004**		**3.0200e-003**	**3.0200e-003**		**3.0200e-003**	**3.0200e-003**	**0.0000**	**43.2515**	**43.2515**	**8.3000e-004**	**7.9000e-004**	**43.5085**

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					
Single Family Housing	810502	4.3700e-003	0.0374	0.0159	2.4000e-004		3.0200e-003	3.0200e-003		3.0200e-003	3.0200e-003	0.0000	43.2515	43.2515	8.3000e-004	7.9000e-004	43.5085
Total		**4.3700e-003**	**0.0374**	**0.0159**	**2.4000e-004**		**3.0200e-003**	**3.0200e-003**		**3.0200e-003**	**3.0200e-003**	**0.0000**	**43.2515**	**43.2515**	**8.3000e-004**	**7.9000e-004**	**43.5085**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	271583	79.0066	3.5700e-003	7.4000e-004	79.3162
Total		**79.0066**	**3.5700e-003**	**7.4000e-004**	**79.3162**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	-421600	-122.6483	-0.0056	-0.0012	-123.1289
Total		**-122.6483**	**-0.0056**	**-0.0012**	**-123.1289**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

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	0.2771	2.6300e-003	0.2284	1.0000e-005		1.2700e-003	1.2700e-003		1.2700e-003	1.2700e-003	0.0000	0.3726	0.3726	3.6000e-004	0.0000	0.3815
Unmitigated	0.2786	0.0143	0.2350	9.0000e-005		2.2100e-003	2.2100e-003		2.2100e-003	2.2100e-003	0.0000	13.8054	13.8054	6.2000e-004	2.5000e-004	13.8943

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	0.0524					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2179					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.3600e-003	0.0116	4.9300e-003	7.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	13.4294	13.4294	2.6000e-004	2.5000e-004	13.5092
Landscaping	6.9200e-003	2.6500e-003	0.2301	1.0000e-005		1.2800e-003	1.2800e-003		1.2800e-003	1.2800e-003	0.0000	0.3760	0.3760	3.6000e-004	0.0000	0.3850
Total	**0.2786**	**0.0143**	**0.2350**	**8.0000e-005**		**2.2200e-003**	**2.2200e-003**		**2.2200e-003**	**2.2200e-003**	**0.0000**	**13.8054**	**13.8054**	**6.2000e-004**	**2.5000e-004**	**13.8942**

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	0.0524					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2179					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.8200e-003	2.6300e-003	0.2284	1.0000e-005		1.2700e-003	1.2700e-003		1.2700e-003	1.2700e-003	0.0000	0.3726	0.3726	3.6000e-004	0.0000	0.3815
Total	**0.2771**	**2.6300e-003**	**0.2284**	**1.0000e-005**		**1.2700e-003**	**1.2700e-003**		**1.2700e-003**	**1.2700e-003**	**0.0000**	**0.3726**	**0.3726**	**3.6000e-004**	**0.0000**	**0.3815**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	5.1167	0.0660	1.6000e-003	7.2427
Unmitigated	5.1167	0.0660	1.6000e-003	7.2427

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	2.01977 / 1.27334	5.1167	0.0660	1.6000e-003	7.2427
Total		**5.1167**	**0.0660**	**1.6000e-003**	**7.2427**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	2.01977 / 1.27334	5.1167	0.0660	1.6000e-003	7.2427
Total		**5.1167**	**0.0660**	**1.6000e-003**	**7.2427**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	7.4071	0.4378	0.0000	18.3509
Unmitigated	7.4071	0.4378	0.0000	18.3509

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	36.49	7.4071	0.4378	0.0000	18.3509
Total		**7.4071**	**0.4378**	**0.0000**	**18.3509**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	36.49	7.4071	0.4378	0.0000	18.3509
Total		**7.4071**	**0.4378**	**0.0000**	**18.3509**

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

Affentranger Farms - Phase 5

Kern-San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	32.00	Dwelling Unit	10.39	57,600.00	92

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - 6 month construction schedule

Grading -

Fleet Mix - 2025 Residential Fleet Mix

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Affentranger Farms - Phase 5 - Kern-San Joaquin County, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	300.00	142.00
tblConstructionPhase	NumDays	30.00	14.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	PhaseEndDate	4/9/2026	3/26/2025
tblConstructionPhase	PhaseEndDate	2/12/2026	3/6/2025
tblConstructionPhase	PhaseEndDate	12/19/2024	10/15/2024
tblConstructionPhase	PhaseEndDate	3/12/2026	3/16/2025
tblConstructionPhase	PhaseEndDate	11/7/2024	10/1/2024
tblConstructionPhase	PhaseStartDate	3/13/2026	3/17/2025
tblConstructionPhase	PhaseStartDate	12/20/2024	10/16/2024
tblConstructionPhase	PhaseStartDate	11/8/2024	10/2/2024
tblConstructionPhase	PhaseStartDate	2/13/2026	3/7/2025
tblConstructionPhase	PhaseStartDate	10/25/2024	9/27/2024
tblFleetMix	HHD	0.15	0.02
tblFleetMix	LDA	0.50	0.52
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.01	8.0000e-004

tblFleetMix	LHD2	4.9800e-003	9.0000e-004
tblFleetMix	MCY	5.6430e-003	2.5000e-003
tblFleetMix	MDV	0.11	0.06
tblFleetMix	MH	6.7000e-004	2.2000e-003
tblFleetMix	MHD	0.02	7.6000e-003
tblFleetMix	OBUS	1.5890e-003	0.00
tblFleetMix	SBUS	8.8200e-004	1.0000e-004
tblFleetMix	UBUS	1.5280e-003	4.3000e-003
tblWoodstoves	NumberCatalytic	10.39	0.00
tblWoodstoves	NumberNoncatalytic	10.39	0.00

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					
2024	0.0879	0.8224	0.8758	1.6400e-003	0.1119	0.0361	0.1479	0.0516	0.0337	0.0853	0.0000	142.9267	142.9267	0.0364	0.0000	143.8366
2025	0.5920	0.4622	0.6141	1.0600e-003	4.4800e-003	0.0195	0.0240	1.2000e-003	0.0183	0.0195	0.0000	92.0944	92.0944	0.0212	0.0000	92.6248
Maximum	**0.5920**	**0.8224**	**0.8758**	**1.6400e-003**	**0.1119**	**0.0361**	**0.1479**	**0.0516**	**0.0337**	**0.0853**	**0.0000**	**142.9267**	**142.9267**	**0.0364**	**0.0000**	**143.8366**

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					
2024	0.0879	0.8224	0.8758	1.6400e-003	0.0473	0.0361	0.0834	0.0211	0.0337	0.0548	0.0000	142.9266	142.9266	0.0364	0.0000	143.8364
2025	0.5920	0.4622	0.6141	1.0600e-003	4.4800e-003	0.0195	0.0240	1.2000e-003	0.0183	0.0195	0.0000	92.0943	92.0943	0.0212	0.0000	92.6247
Maximum	**0.5920**	**0.8224**	**0.8758**	**1.6400e-003**	**0.0473**	**0.0361**	**0.0834**	**0.0211**	**0.0337**	**0.0548**	**0.0000**	**142.9266**	**142.9266**	**0.0364**	**0.0000**	**143.8364**

	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**	**55.51**	**0.00**	**37.56**	**57.75**	**0.00**	**29.09**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	9-27-2024	12-26-2024	0.8724	0.8724
2	12-27-2024	3-26-2025	1.0924	1.0924
		Highest	1.0924	1.0924

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	0.2876	0.0147	0.2425	9.0000e-005		2.2800e-003	2.2800e-003		2.2800e-003	2.2800e-003	0.0000	14.2508	14.2508	6.4000e-004	2.5000e-004	14.3424
Energy	4.5100e-003	0.0386	0.0164	2.5000e-004		3.1200e-003	3.1200e-003		3.1200e-003	3.1200e-003	0.0000	126.2019	126.2019	4.5400e-003	1.5800e-003	126.7868
Mobile	0.0684	0.2448	0.8069	3.2900e-003	0.3318	2.5000e-003	0.3343	0.0886	2.3100e-003	0.0910	0.0000	302.5354	302.5354	0.0132	0.0000	302.8651
Waste						0.0000	0.0000		0.0000	0.0000	7.6568	0.0000	7.6568	0.4525	0.0000	18.9695
Water						0.0000	0.0000		0.0000	0.0000	0.6615	4.6203	5.2817	0.0682	1.6500e-003	7.4763
Total	**0.3605**	**0.2980**	**1.0658**	**3.6300e-003**	**0.3318**	**7.9000e-003**	**0.3397**	**0.0886**	**7.7100e-003**	**0.0964**	**8.3183**	**447.6083**	**455.9266**	**0.5390**	**3.4800e-003**	**470.4401**

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	0.2861	2.7200e-003	0.2357	1.0000e-005		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	0.3846	0.3846	3.7000e-004	0.0000	0.3938
Energy	4.5100e-003	0.0386	0.0164	2.5000e-004		3.1200e-003	3.1200e-003		3.1200e-003	3.1200e-003	0.0000	-81.9580	-81.9580	-0.0049	-0.0004	-82.1887
Mobile	0.0670	0.2365	0.7628	3.0800e-003	0.3089	2.3400e-003	0.3112	0.0825	2.1700e-003	0.0847	0.0000	283.0968	283.0968	0.0125	0.0000	283.4102
Waste						0.0000	0.0000		0.0000	0.0000	7.6568	0.0000	7.6568	0.4525	0.0000	18.9695
Water						0.0000	0.0000		0.0000	0.0000	0.6615	4.6203	5.2817	0.0682	1.6500e-003	7.4763
Total	**0.3576**	**0.2778**	**1.0149**	**3.3400e-003**	**0.3089**	**6.7700e-003**	**0.3156**	**0.0825**	**6.6000e-003**	**0.0891**	**8.3183**	**206.1437**	**214.4619**	**0.5287**	**1.2800e-003**	**228.0609**

	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	**0.80**	**6.79**	**4.77**	**7.99**	**6.90**	**14.30**	**7.07**	**6.90**	**14.40**	**7.50**	**0.00**	**53.95**	**52.96**	**1.92**	**63.22**	**51.52**

3.0 Construction Detail

Construction Phase

Affentranger Farms - Phase 5 - Kern-San Joaquin County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/27/2024	10/1/2024	7	5	
2	Grading	Grading	10/2/2024	10/15/2024	7	14	
3	Building Construction	Building Construction	10/16/2024	3/6/2025	7	142	
4	Paving	Paving	3/7/2025	3/16/2025	7	10	
5	Architectural Coating	Architectural Coating	3/17/2025	3/26/2025	7	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 35

Acres of Paving: 0

Residential Indoor: 116,640; Residential Outdoor: 38,880; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Affentranger Farms - Phase 5 - Kern-San Joaquin County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	12.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6500e-003	0.0679	0.0458	1.0000e-004		3.0700e-003	3.0700e-003		2.8300e-003	2.8300e-003	0.0000	8.3643	8.3643	2.7100e-003	0.0000	8.4319
Total	**6.6500e-003**	**0.0679**	**0.0458**	**1.0000e-004**	**0.0452**	**3.0700e-003**	**0.0482**	**0.0248**	**2.8300e-003**	**0.0277**	**0.0000**	**8.3643**	**8.3643**	**2.7100e-003**	**0.0000**	**8.4319**

3.2 Site Preparation - 2024

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	1.3000e-004	7.0000e-005	8.2000e-004	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2863	0.2863	1.0000e-005	0.0000	0.2864
Total	**1.3000e-004**	**7.0000e-005**	**8.2000e-004**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2863**	**0.2863**	**1.0000e-005**	**0.0000**	**0.2864**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0176	0.0000	0.0176	9.6800e-003	0.0000	9.6800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6500e-003	0.0679	0.0458	1.0000e-004		3.0700e-003	3.0700e-003		2.8300e-003	2.8300e-003	0.0000	8.3643	8.3643	2.7100e-003	0.0000	8.4319
Total	**6.6500e-003**	**0.0679**	**0.0458**	**1.0000e-004**	**0.0176**	**3.0700e-003**	**0.0207**	**9.6800e-003**	**2.8300e-003**	**0.0125**	**0.0000**	**8.3643**	**8.3643**	**2.7100e-003**	**0.0000**	**8.4319**

3.2 Site Preparation - 2024

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	1.3000e-004	7.0000e-005	8.2000e-004	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2863	0.2863	1.0000e-005	0.0000	0.2864
Total	**1.3000e-004**	**7.0000e-005**	**8.2000e-004**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2863**	**0.2863**	**1.0000e-005**	**0.0000**	**0.2864**

3.3 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0607	0.0000	0.0607	0.0252	0.0000	0.0252	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0225	0.2266	0.1941	4.3000e-004		9.3500e-003	9.3500e-003		8.6000e-003	8.6000e-003	0.0000	38.1637	38.1637	0.0123	0.0000	38.4722
Total	**0.0225**	**0.2266**	**0.1941**	**4.3000e-004**	**0.0607**	**9.3500e-003**	**0.0701**	**0.0252**	**8.6000e-003**	**0.0338**	**0.0000**	**38.1637**	**38.1637**	**0.0123**	**0.0000**	**38.4722**

3.3 Grading - 2024

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	4.0000e-004	2.3000e-004	2.5400e-003	1.0000e-005	1.1300e-003	1.0000e-005	1.1400e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	0.8907	0.8907	2.0000e-005	0.0000	0.8911
Total	**4.0000e-004**	**2.3000e-004**	**2.5400e-003**	**1.0000e-005**	**1.1300e-003**	**1.0000e-005**	**1.1400e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**0.8907**	**0.8907**	**2.0000e-005**	**0.0000**	**0.8911**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0237	0.0000	0.0237	9.8200e-003	0.0000	9.8200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0225	0.2266	0.1941	4.3000e-004		9.3500e-003	9.3500e-003		8.6000e-003	8.6000e-003	0.0000	38.1636	38.1636	0.0123	0.0000	38.4722
Total	**0.0225**	**0.2266**	**0.1941**	**4.3000e-004**	**0.0237**	**9.3500e-003**	**0.0330**	**9.8200e-003**	**8.6000e-003**	**0.0184**	**0.0000**	**38.1636**	**38.1636**	**0.0123**	**0.0000**	**38.4722**

3.3 Grading - 2024

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	4.0000e-004	2.3000e-004	2.5400e-003	1.0000e-005	1.1300e-003	1.0000e-005	1.1400e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	0.8907	0.8907	2.0000e-005	0.0000	0.8911
Total	**4.0000e-004**	**2.3000e-004**	**2.5400e-003**	**1.0000e-005**	**1.1300e-003**	**1.0000e-005**	**1.1400e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**0.8907**	**0.8907**	**2.0000e-005**	**0.0000**	**0.8911**

3.4 Building Construction - 2024

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	0.0567	0.5176	0.6224	1.0400e-003		0.0236	0.0236		0.0222	0.0222	0.0000	89.2619	89.2619	0.0211	0.0000	89.7896
Total	**0.0567**	**0.5176**	**0.6224**	**1.0400e-003**		**0.0236**	**0.0236**		**0.0222**	**0.0222**	**0.0000**	**89.2619**	**89.2619**	**0.0211**	**0.0000**	**89.7896**

3.4 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.4000e-004	9.1200e-003	1.7500e-003	3.0000e-005	7.7000e-004	1.0000e-005	7.8000e-004	2.2000e-004	1.0000e-005	2.3000e-004	0.0000	3.0205	3.0205	1.6000e-004	0.0000	3.0245
Worker	1.3200e-003	7.7000e-004	8.4000e-003	3.0000e-005	3.7200e-003	2.0000e-005	3.7500e-003	9.9000e-004	2.0000e-005	1.0100e-003	0.0000	2.9394	2.9394	6.0000e-005	0.0000	2.9408
Total	**1.5600e-003**	**9.8900e-003**	**0.0102**	**6.0000e-005**	**4.4900e-003**	**3.0000e-005**	**4.5300e-003**	**1.2100e-003**	**3.0000e-005**	**1.2400e-003**	**0.0000**	**5.9599**	**5.9599**	**2.2000e-004**	**0.0000**	**5.9653**

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	0.0567	0.5176	0.6224	1.0400e-003		0.0236	0.0236		0.0222	0.0222	0.0000	89.2618	89.2618	0.0211	0.0000	89.7895
Total	**0.0567**	**0.5176**	**0.6224**	**1.0400e-003**		**0.0236**	**0.0236**		**0.0222**	**0.0222**	**0.0000**	**89.2618**	**89.2618**	**0.0211**	**0.0000**	**89.7895**

3.4 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.4000e-004	9.1200e-003	1.7500e-003	3.0000e-005	7.7000e-004	1.0000e-005	7.8000e-004	2.2000e-004	1.0000e-005	2.3000e-004	0.0000	3.0205	3.0205	1.6000e-004	0.0000	3.0245
Worker	1.3200e-003	7.7000e-004	8.4000e-003	3.0000e-005	3.7200e-003	2.0000e-005	3.7500e-003	9.9000e-004	2.0000e-005	1.0100e-003	0.0000	2.9394	2.9394	6.0000e-005	0.0000	2.9408
Total	**1.5600e-003**	**9.8900e-003**	**0.0102**	**6.0000e-005**	**4.4900e-003**	**3.0000e-005**	**4.5300e-003**	**1.2100e-003**	**3.0000e-005**	**1.2400e-003**	**0.0000**	**5.9599**	**5.9599**	**2.2000e-004**	**0.0000**	**5.9653**

3.4 Building Construction - 2025

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	0.0444	0.4053	0.5228	8.8000e-004		0.0172	0.0172		0.0161	0.0161	0.0000	75.3738	75.3738	0.0177	0.0000	75.8168
Total	**0.0444**	**0.4053**	**0.5228**	**8.8000e-004**		**0.0172**	**0.0172**		**0.0161**	**0.0161**	**0.0000**	**75.3738**	**75.3738**	**0.0177**	**0.0000**	**75.8168**

3.4 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-004	7.6300e-003	1.4100e-003	3.0000e-005	6.5000e-004	1.0000e-005	6.6000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	2.5317	2.5317	1.4000e-004	0.0000	2.5351
Worker	1.0500e-003	5.9000e-004	6.5500e-003	3.0000e-005	3.1400e-003	2.0000e-005	3.1600e-003	8.3000e-004	2.0000e-005	8.5000e-004	0.0000	2.3832	2.3832	4.0000e-005	0.0000	2.3843
Total	**1.2500e-003**	**8.2200e-003**	**7.9600e-003**	**6.0000e-005**	**3.7900e-003**	**3.0000e-005**	**3.8200e-003**	**1.0200e-003**	**3.0000e-005**	**1.0400e-003**	**0.0000**	**4.9149**	**4.9149**	**1.8000e-004**	**0.0000**	**4.9194**

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	0.0444	0.4053	0.5228	8.8000e-004		0.0172	0.0172		0.0161	0.0161	0.0000	75.3737	75.3737	0.0177	0.0000	75.8167
Total	**0.0444**	**0.4053**	**0.5228**	**8.8000e-004**		**0.0172**	**0.0172**		**0.0161**	**0.0161**	**0.0000**	**75.3737**	**75.3737**	**0.0177**	**0.0000**	**75.8167**

3.4 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-004	7.6300e-003	1.4100e-003	3.0000e-005	6.5000e-004	1.0000e-005	6.6000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	2.5317	2.5317	1.4000e-004	0.0000	2.5351
Worker	1.0500e-003	5.9000e-004	6.5500e-003	3.0000e-005	3.1400e-003	2.0000e-005	3.1600e-003	8.3000e-004	2.0000e-005	8.5000e-004	0.0000	2.3832	2.3832	4.0000e-005	0.0000	2.3843
Total	**1.2500e-003**	**8.2200e-003**	**7.9600e-003**	**6.0000e-005**	**3.7900e-003**	**3.0000e-005**	**3.8200e-003**	**1.0200e-003**	**3.0000e-005**	**1.0400e-003**	**0.0000**	**4.9149**	**4.9149**	**1.8000e-004**	**0.0000**	**4.9194**

3.5 Paving - 2025

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	4.5800e-003	0.0429	0.0729	1.1000e-004		2.0900e-003	2.0900e-003		1.9300e-003	1.9300e-003	0.0000	10.0096	10.0096	3.2400e-003	0.0000	10.0906
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.5800e-003**	**0.0429**	**0.0729**	**1.1000e-004**		**2.0900e-003**	**2.0900e-003**		**1.9300e-003**	**1.9300e-003**	**0.0000**	**10.0096**	**10.0096**	**3.2400e-003**	**0.0000**	**10.0906**

3.5 Paving - 2025

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	2.0000e-004	1.1000e-004	1.2600e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4583	0.4583	1.0000e-005	0.0000	0.4585
Total	**2.0000e-004**	**1.1000e-004**	**1.2600e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.1000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.4583**	**0.4583**	**1.0000e-005**	**0.0000**	**0.4585**

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	4.5800e-003	0.0429	0.0729	1.1000e-004		2.0900e-003	2.0900e-003		1.9300e-003	1.9300e-003	0.0000	10.0096	10.0096	3.2400e-003	0.0000	10.0906
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.5800e-003**	**0.0429**	**0.0729**	**1.1000e-004**		**2.0900e-003**	**2.0900e-003**		**1.9300e-003**	**1.9300e-003**	**0.0000**	**10.0096**	**10.0096**	**3.2400e-003**	**0.0000**	**10.0906**

3.5 Paving - 2025

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	2.0000e-004	1.1000e-004	1.2600e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4583	0.4583	1.0000e-005	0.0000	0.4585
Total	**2.0000e-004**	**1.1000e-004**	**1.2600e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.1000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.4583**	**0.4583**	**1.0000e-005**	**0.0000**	**0.4585**

3.6 Architectural Coating - 2025

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	0.5406					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.5000e-004	5.7300e-003	9.0500e-003	1.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	1.2766	1.2766	7.0000e-005	0.0000	1.2784
Total	**0.5415**	**5.7300e-003**	**9.0500e-003**	**1.0000e-005**		**2.6000e-004**	**2.6000e-004**		**2.6000e-004**	**2.6000e-004**	**0.0000**	**1.2766**	**1.2766**	**7.0000e-005**	**0.0000**	**1.2784**

3.6 Architectural Coating - 2025

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	2.0000e-005	1.7000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0611	0.0611	0.0000	0.0000	0.0611
Total	**3.0000e-005**	**2.0000e-005**	**1.7000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0611**	**0.0611**	**0.0000**	**0.0000**	**0.0611**

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	0.5406					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.5000e-004	5.7300e-003	9.0500e-003	1.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	1.2766	1.2766	7.0000e-005	0.0000	1.2784
Total	**0.5415**	**5.7300e-003**	**9.0500e-003**	**1.0000e-005**		**2.6000e-004**	**2.6000e-004**		**2.6000e-004**	**2.6000e-004**	**0.0000**	**1.2766**	**1.2766**	**7.0000e-005**	**0.0000**	**1.2784**

3.6 Architectural Coating - 2025

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	2.0000e-005	1.7000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0611	0.0611	0.0000	0.0000	0.0611
Total	**3.0000e-005**	**2.0000e-005**	**1.7000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0611**	**0.0611**	**0.0000**	**0.0000**	**0.0611**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Improve Pedestrian Network

	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	0.0670	0.2365	0.7628	3.0800e-003	0.3089	2.3400e-003	0.3112	0.0825	2.1700e-003	0.0847	0.0000	283.0968	283.0968	0.0125	0.0000	283.4102
Unmitigated	0.0684	0.2448	0.8069	3.2900e-003	0.3318	2.5000e-003	0.3343	0.0886	2.3100e-003	0.0910	0.0000	302.5354	302.5354	0.0132	0.0000	302.8651

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	304.64	317.12	275.84	879,121	818,462
Total	304.64	317.12	275.84	879,121	818,462

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
Single Family Housing	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.524400	0.212000	0.167700	0.056300	0.000800	0.000900	0.007600	0.021200	0.000000	0.004300	0.002500	0.000100	0.002200

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	-126.6047	-126.6047	-0.0057	-0.0012	-127.1007
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	81.5552	81.5552	3.6900e-003	7.6000e-004	81.8748
NaturalGas Mitigated	4.5100e-003	0.0386	0.0164	2.5000e-004		3.1200e-003	3.1200e-003		3.1200e-003	3.1200e-003	0.0000	44.6467	44.6467	8.6000e-004	8.2000e-004	44.9120
NaturalGas Unmitigated	4.5100e-003	0.0386	0.0164	2.5000e-004		3.1200e-003	3.1200e-003		3.1200e-003	3.1200e-003	0.0000	44.6467	44.6467	8.6000e-004	8.2000e-004	44.9120

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					
Single Family Housing	836648	4.5100e-003	0.0386	0.0164	2.5000e-004		3.1200e-003	3.1200e-003		3.1200e-003	3.1200e-003	0.0000	44.6467	44.6467	8.6000e-004	8.2000e-004	44.9120
Total		**4.5100e-003**	**0.0386**	**0.0164**	**2.5000e-004**		**3.1200e-003**	**3.1200e-003**		**3.1200e-003**	**3.1200e-003**	**0.0000**	**44.6467**	**44.6467**	**8.6000e-004**	**8.2000e-004**	**44.9120**

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					
Single Family Housing	836648	4.5100e-003	0.0386	0.0164	2.5000e-004		3.1200e-003	3.1200e-003		3.1200e-003	3.1200e-003	0.0000	44.6467	44.6467	8.6000e-004	8.2000e-004	44.9120
Total		**4.5100e-003**	**0.0386**	**0.0164**	**2.5000e-004**		**3.1200e-003**	**3.1200e-003**		**3.1200e-003**	**3.1200e-003**	**0.0000**	**44.6467**	**44.6467**	**8.6000e-004**	**8.2000e-004**	**44.9120**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	280344	81.5552	3.6900e-003	7.6000e-004	81.8748
Total		**81.5552**	**3.6900e-003**	**7.6000e-004**	**81.8748**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	-435200	-126.6047	-0.0057	-0.0012	-127.1007
Total		**-126.6047**	**-0.0057**	**-0.0012**	**-127.1007**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

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	0.2861	2.7200e-003	0.2357	1.0000e-005		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	0.3846	0.3846	3.7000e-004	0.0000	0.3938
Unmitigated	0.2876	0.0147	0.2425	9.0000e-005		2.2800e-003	2.2800e-003		2.2800e-003	2.2800e-003	0.0000	14.2508	14.2508	6.4000e-004	2.5000e-004	14.3424

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	0.0541					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2250					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.4000e-003	0.0120	5.0900e-003	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	13.8626	13.8626	2.7000e-004	2.5000e-004	13.9450
Landscaping	7.1300e-003	2.7300e-003	0.2374	1.0000e-005		1.3200e-003	1.3200e-003		1.3200e-003	1.3200e-003	0.0000	0.3881	0.3881	3.7000e-004	0.0000	0.3974
Total	**0.2876**	**0.0147**	**0.2425**	**9.0000e-005**		**2.2900e-003**	**2.2900e-003**		**2.2900e-003**	**2.2900e-003**	**0.0000**	**14.2508**	**14.2508**	**6.4000e-004**	**2.5000e-004**	**14.3424**

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	0.0541					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2250					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.0300e-003	2.7200e-003	0.2357	1.0000e-005		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	0.3846	0.3846	3.7000e-004	0.0000	0.3938
Total	**0.2861**	**2.7200e-003**	**0.2357**	**1.0000e-005**		**1.3100e-003**	**1.3100e-003**		**1.3100e-003**	**1.3100e-003**	**0.0000**	**0.3846**	**0.3846**	**3.7000e-004**	**0.0000**	**0.3938**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	5.2817	0.0682	1.6500e-003	7.4763
Unmitigated	5.2817	0.0682	1.6500e-003	7.4763

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	2.08493 / 1.31441	5.2817	0.0682	1.6500e-003	7.4763
Total		**5.2817**	**0.0682**	**1.6500e-003**	**7.4763**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	2.08493 / 1.31441	5.2817	0.0682	1.6500e-003	7.4763
Total		**5.2817**	**0.0682**	**1.6500e-003**	**7.4763**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	7.6568	0.4525	0.0000	18.9695
Unmitigated	7.6568	0.4525	0.0000	18.9695

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	37.72	7.6568	0.4525	0.0000	18.9695
Total		**7.6568**	**0.4525**	**0.0000**	**18.9695**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	37.72	7.6568	0.4525	0.0000	18.9695
Total		**7.6568**	**0.4525**	**0.0000**	**18.9695**

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

Affentranger Farms - Phase 6

Kern-San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	38.00	Dwelling Unit	12.34	68,400.00	109

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - 6 month construction schedule

Grading -

Fleet Mix - 2025 Residential Fleet Mix

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Affentranger Farms - Phase 6 - Kern-San Joaquin County, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	300.00	142.00
tblConstructionPhase	NumDays	30.00	14.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	PhaseEndDate	10/7/2026	9/23/2025
tblConstructionPhase	PhaseEndDate	8/12/2026	9/3/2025
tblConstructionPhase	PhaseEndDate	6/18/2025	4/14/2025
tblConstructionPhase	PhaseEndDate	9/9/2026	9/13/2025
tblConstructionPhase	PhaseEndDate	5/7/2025	3/31/2025
tblConstructionPhase	PhaseStartDate	9/10/2026	9/14/2025
tblConstructionPhase	PhaseStartDate	6/19/2025	4/15/2025
tblConstructionPhase	PhaseStartDate	5/8/2025	4/1/2025
tblConstructionPhase	PhaseStartDate	8/13/2026	9/4/2025
tblConstructionPhase	PhaseStartDate	4/24/2025	3/27/2025
tblFleetMix	HHD	0.15	0.02
tblFleetMix	LDA	0.50	0.52
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.01	8.0000e-004

tblFleetMix	LHD2	4.9800e-003	9.0000e-004
tblFleetMix	MCY	5.6430e-003	2.5000e-003
tblFleetMix	MDV	0.11	0.06
tblFleetMix	MH	6.7000e-004	2.2000e-003
tblFleetMix	MHD	0.02	7.6000e-003
tblFleetMix	OBUS	1.5890e-003	0.00
tblFleetMix	SBUS	8.8200e-004	1.0000e-004
tblFleetMix	UBUS	1.5280e-003	4.3000e-003
tblWoodstoves	NumberCatalytic	12.34	0.00
tblWoodstoves	NumberNoncatalytic	12.34	0.00

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					
2025	0.7750	1.2168	1.4785	2.7400e-003	0.1180	0.0505	0.1685	0.0533	0.0473	0.1005	0.0000	237.5992	237.5992	0.0576	0.0000	239.0392
Maximum	**0.7750**	**1.2168**	**1.4785**	**2.7400e-003**	**0.1180**	**0.0505**	**0.1685**	**0.0533**	**0.0473**	**0.1005**	**0.0000**	**237.5992**	**237.5992**	**0.0576**	**0.0000**	**239.0392**

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					
2025	0.7750	1.2168	1.4785	2.7400e-003	0.0534	0.0505	0.1039	0.0228	0.0473	0.0700	0.0000	237.5989	237.5989	0.0576	0.0000	239.0389
Maximum	**0.7750**	**1.2168**	**1.4785**	**2.7400e-003**	**0.0534**	**0.0505**	**0.1039**	**0.0228**	**0.0473**	**0.0700**	**0.0000**	**237.5989**	**237.5989**	**0.0576**	**0.0000**	**239.0389**

	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**	**54.74**	**0.00**	**38.33**	**57.27**	**0.00**	**30.34**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	3-27-2025	6-26-2025	0.8050	0.8050
2	6-27-2025	9-26-2025	1.1870	1.1870
		Highest	1.1870	1.1870

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	0.3415	0.0175	0.2879	1.1000e-004		2.7100e-003	2.7100e-003		2.7100e-003	2.7100e-003	0.0000	16.9228	16.9228	7.6000e-004	3.0000e-004	17.0316
Energy	5.3600e-003	0.0458	0.0195	2.9000e-004		3.7000e-003	3.7000e-003		3.7000e-003	3.7000e-003	0.0000	149.8648	149.8648	5.4000e-003	1.8800e-003	150.5593
Mobile	0.0813	0.2907	0.9582	3.9100e-003	0.3940	2.9600e-003	0.3969	0.1053	2.7500e-003	0.1080	0.0000	359.2608	359.2608	0.0157	0.0000	359.6523
Waste						0.0000	0.0000		0.0000	0.0000	9.0717	0.0000	9.0717	0.5361	0.0000	22.4747
Water						0.0000	0.0000		0.0000	0.0000	0.7855	5.4866	6.2720	0.0809	1.9600e-003	8.8781
Total	**0.4281**	**0.3539**	**1.2656**	**4.3100e-003**	**0.3940**	**9.3700e-003**	**0.4033**	**0.1053**	**9.1600e-003**	**0.1144**	**9.8571**	**531.5348**	**541.3920**	**0.6389**	**4.1400e-003**	**558.5960**

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	0.3397	3.2300e-003	0.2799	1.0000e-005		1.5500e-003	1.5500e-003		1.5500e-003	1.5500e-003	0.0000	0.4567	0.4567	4.4000e-004	0.0000	0.4676
Energy	5.3600e-003	0.0458	0.0195	2.9000e-004		3.7000e-003	3.7000e-003		3.7000e-003	3.7000e-003	0.0000	-97.3251	-97.3251	-0.0058	-0.0004	-97.5991
Mobile	0.0796	0.2809	0.9059	3.6500e-003	0.3668	2.7800e-003	0.3696	0.0980	2.5800e-003	0.1006	0.0000	336.1774	336.1774	0.0149	0.0000	336.5496
Waste						0.0000	0.0000		0.0000	0.0000	9.0717	0.0000	9.0717	0.5361	0.0000	22.4747
Water						0.0000	0.0000		0.0000	0.0000	0.7855	5.4866	6.2720	0.0809	1.9600e-003	8.8781
Total	**0.4246**	**0.3299**	**1.2052**	**3.9500e-003**	**0.3668**	**8.0300e-003**	**0.3748**	**0.0980**	**7.8300e-003**	**0.1058**	**9.8571**	**244.7956**	**254.6527**	**0.6266**	**1.5300e-003**	**270.7708**

	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	**0.80**	**6.79**	**4.77**	**8.35**	**6.90**	**14.30**	**7.07**	**6.90**	**14.52**	**7.51**	**0.00**	**53.95**	**52.96**	**1.92**	**63.04**	**51.53**

3.0 Construction Detail

Construction Phase

Affentranger Farms - Phase 6 - Kern-San Joaquin County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	3/27/2025	3/31/2025	7	5	
2	Grading	Grading	4/1/2025	4/14/2025	7	14	
3	Building Construction	Building Construction	4/15/2025	9/3/2025	7	142	
4	Paving	Paving	9/4/2025	9/13/2025	7	10	
5	Architectural Coating	Architectural Coating	9/14/2025	9/23/2025	7	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 35

Acres of Paving: 0

Residential Indoor: 138,510; Residential Outdoor: 46,170; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Affentranger Farms - Phase 6 - Kern-San Joaquin County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Welders	1	8.00	46	0.45

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
Architectural Coating	1	3.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	14.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1800e-003	0.0631	0.0448	1.0000e-004		2.7200e-003	2.7200e-003		2.5000e-003	2.5000e-003	0.0000	8.3668	8.3668	2.7100e-003	0.0000	8.4344
Total	**6.1800e-003**	**0.0631**	**0.0448**	**1.0000e-004**	**0.0452**	**2.7200e-003**	**0.0479**	**0.0248**	**2.5000e-003**	**0.0273**	**0.0000**	**8.3668**	**8.3668**	**2.7100e-003**	**0.0000**	**8.4344**

3.2 Site Preparation - 2025

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	1.2000e-004	7.0000e-005	7.6000e-004	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2750	0.2750	0.0000	0.0000	0.2751
Total	**1.2000e-004**	**7.0000e-005**	**7.6000e-004**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2750**	**0.2750**	**0.0000**	**0.0000**	**0.2751**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0176	0.0000	0.0176	9.6800e-003	0.0000	9.6800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1800e-003	0.0631	0.0448	1.0000e-004		2.7200e-003	2.7200e-003		2.5000e-003	2.5000e-003	0.0000	8.3667	8.3667	2.7100e-003	0.0000	8.4344
Total	**6.1800e-003**	**0.0631**	**0.0448**	**1.0000e-004**	**0.0176**	**2.7200e-003**	**0.0203**	**9.6800e-003**	**2.5000e-003**	**0.0122**	**0.0000**	**8.3667**	**8.3667**	**2.7100e-003**	**0.0000**	**8.4344**

3.2 Site Preparation - 2025

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	1.2000e-004	7.0000e-005	7.6000e-004	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2750	0.2750	0.0000	0.0000	0.2751
Total	**1.2000e-004**	**7.0000e-005**	**7.6000e-004**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2750**	**0.2750**	**0.0000**	**0.0000**	**0.2751**

3.3 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0607	0.0000	0.0607	0.0252	0.0000	0.0252	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0203	0.1956	0.1843	4.3000e-004		7.9200e-003	7.9200e-003		7.2800e-003	7.2800e-003	0.0000	38.1544	38.1544	0.0123	0.0000	38.4629
Total	**0.0203**	**0.1956**	**0.1843**	**4.3000e-004**	**0.0607**	**7.9200e-003**	**0.0686**	**0.0252**	**7.2800e-003**	**0.0325**	**0.0000**	**38.1544**	**38.1544**	**0.0123**	**0.0000**	**38.4629**

3.3 Grading - 2025

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	3.8000e-004	2.1000e-004	2.3500e-003	1.0000e-005	1.1300e-003	1.0000e-005	1.1400e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	0.8555	0.8555	2.0000e-005	0.0000	0.8559
Total	**3.8000e-004**	**2.1000e-004**	**2.3500e-003**	**1.0000e-005**	**1.1300e-003**	**1.0000e-005**	**1.1400e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**0.8555**	**0.8555**	**2.0000e-005**	**0.0000**	**0.8559**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0237	0.0000	0.0237	9.8200e-003	0.0000	9.8200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0203	0.1956	0.1843	4.3000e-004		7.9200e-003	7.9200e-003		7.2800e-003	7.2800e-003	0.0000	38.1543	38.1543	0.0123	0.0000	38.4628
Total	**0.0203**	**0.1956**	**0.1843**	**4.3000e-004**	**0.0237**	**7.9200e-003**	**0.0316**	**9.8200e-003**	**7.2800e-003**	**0.0171**	**0.0000**	**38.1543**	**38.1543**	**0.0123**	**0.0000**	**38.4628**

3.3 Grading - 2025

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	3.8000e-004	2.1000e-004	2.3500e-003	1.0000e-005	1.1300e-003	1.0000e-005	1.1400e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	0.8555	0.8555	2.0000e-005	0.0000	0.8559
Total	**3.8000e-004**	**2.1000e-004**	**2.3500e-003**	**1.0000e-005**	**1.1300e-003**	**1.0000e-005**	**1.1400e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**0.8555**	**0.8555**	**2.0000e-005**	**0.0000**	**0.8559**

3.4 Building Construction - 2025

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	0.0971	0.8854	1.1420	1.9100e-003		0.0375	0.0375		0.0352	0.0352	0.0000	164.6628	164.6628	0.0387	0.0000	165.6305
Total	**0.0971**	**0.8854**	**1.1420**	**1.9100e-003**		**0.0375**	**0.0375**		**0.0352**	**0.0352**	**0.0000**	**164.6628**	**164.6628**	**0.0387**	**0.0000**	**165.6305**

3.4 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.8000e-004	0.0222	4.1100e-003	8.0000e-005	1.9000e-003	2.0000e-005	1.9200e-003	5.5000e-004	2.0000e-005	5.7000e-004	0.0000	7.3744	7.3744	4.0000e-004	0.0000	7.3844
Worker	2.6800e-003	1.5000e-003	0.0167	7.0000e-005	8.0100e-003	5.0000e-005	8.0600e-003	2.1300e-003	5.0000e-005	2.1700e-003	0.0000	6.0742	6.0742	1.1000e-004	0.0000	6.0769
Total	**3.2600e-003**	**0.0237**	**0.0208**	**1.5000e-004**	**9.9100e-003**	**7.0000e-005**	**9.9800e-003**	**2.6800e-003**	**7.0000e-005**	**2.7400e-003**	**0.0000**	**13.4486**	**13.4486**	**5.1000e-004**	**0.0000**	**13.4613**

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	0.0971	0.8854	1.1420	1.9100e-003		0.0375	0.0375		0.0352	0.0352	0.0000	164.6626	164.6626	0.0387	0.0000	165.6303
Total	**0.0971**	**0.8854**	**1.1420**	**1.9100e-003**		**0.0375**	**0.0375**		**0.0352**	**0.0352**	**0.0000**	**164.6626**	**164.6626**	**0.0387**	**0.0000**	**165.6303**

3.4 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.8000e-004	0.0222	4.1100e-003	8.0000e-005	1.9000e-003	2.0000e-005	1.9200e-003	5.5000e-004	2.0000e-005	5.7000e-004	0.0000	7.3744	7.3744	4.0000e-004	0.0000	7.3844
Worker	2.6800e-003	1.5000e-003	0.0167	7.0000e-005	8.0100e-003	5.0000e-005	8.0600e-003	2.1300e-003	5.0000e-005	2.1700e-003	0.0000	6.0742	6.0742	1.1000e-004	0.0000	6.0769
Total	**3.2600e-003**	**0.0237**	**0.0208**	**1.5000e-004**	**9.9100e-003**	**7.0000e-005**	**9.9800e-003**	**2.6800e-003**	**7.0000e-005**	**2.7400e-003**	**0.0000**	**13.4486**	**13.4486**	**5.1000e-004**	**0.0000**	**13.4613**

3.5 Paving - 2025

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	4.5800e-003	0.0429	0.0729	1.1000e-004		2.0900e-003	2.0900e-003		1.9300e-003	1.9300e-003	0.0000	10.0096	10.0096	3.2400e-003	0.0000	10.0906
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.5800e-003**	**0.0429**	**0.0729**	**1.1000e-004**		**2.0900e-003**	**2.0900e-003**		**1.9300e-003**	**1.9300e-003**	**0.0000**	**10.0096**	**10.0096**	**3.2400e-003**	**0.0000**	**10.0906**

3.5 Paving - 2025

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	2.0000e-004	1.1000e-004	1.2600e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4583	0.4583	1.0000e-005	0.0000	0.4585
Total	**2.0000e-004**	**1.1000e-004**	**1.2600e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.1000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.4583**	**0.4583**	**1.0000e-005**	**0.0000**	**0.4585**

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	4.5800e-003	0.0429	0.0729	1.1000e-004		2.0900e-003	2.0900e-003		1.9300e-003	1.9300e-003	0.0000	10.0096	10.0096	3.2400e-003	0.0000	10.0906
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.5800e-003**	**0.0429**	**0.0729**	**1.1000e-004**		**2.0900e-003**	**2.0900e-003**		**1.9300e-003**	**1.9300e-003**	**0.0000**	**10.0096**	**10.0096**	**3.2400e-003**	**0.0000**	**10.0906**

3.5 Paving - 2025

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	2.0000e-004	1.1000e-004	1.2600e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4583	0.4583	1.0000e-005	0.0000	0.4585
Total	**2.0000e-004**	**1.1000e-004**	**1.2600e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.1000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.4583**	**0.4583**	**1.0000e-005**	**0.0000**	**0.4585**

3.6 Architectural Coating - 2025

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	0.6420					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.5000e-004	5.7300e-003	9.0500e-003	1.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	1.2766	1.2766	7.0000e-005	0.0000	1.2784
Total	**0.6428**	**5.7300e-003**	**9.0500e-003**	**1.0000e-005**		**2.6000e-004**	**2.6000e-004**		**2.6000e-004**	**2.6000e-004**	**0.0000**	**1.2766**	**1.2766**	**7.0000e-005**	**0.0000**	**1.2784**

3.6 Architectural Coating - 2025

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	4.0000e-005	2.0000e-005	2.5000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0917	0.0917	0.0000	0.0000	0.0917
Total	**4.0000e-005**	**2.0000e-005**	**2.5000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0917**	**0.0917**	**0.0000**	**0.0000**	**0.0917**

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	0.6420					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.5000e-004	5.7300e-003	9.0500e-003	1.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	1.2766	1.2766	7.0000e-005	0.0000	1.2784
Total	**0.6428**	**5.7300e-003**	**9.0500e-003**	**1.0000e-005**		**2.6000e-004**	**2.6000e-004**		**2.6000e-004**	**2.6000e-004**	**0.0000**	**1.2766**	**1.2766**	**7.0000e-005**	**0.0000**	**1.2784**

3.6 Architectural Coating - 2025

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	4.0000e-005	2.0000e-005	2.5000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0917	0.0917	0.0000	0.0000	0.0917
Total	**4.0000e-005**	**2.0000e-005**	**2.5000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0917**	**0.0917**	**0.0000**	**0.0000**	**0.0917**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Improve Pedestrian Network

	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	0.0796	0.2809	0.9059	3.6500e-003	0.3668	2.7800e-003	0.3696	0.0980	2.5800e-003	0.1006	0.0000	336.1774	336.1774	0.0149	0.0000	336.5496
Unmitigated	0.0813	0.2907	0.9582	3.9100e-003	0.3940	2.9600e-003	0.3969	0.1053	2.7500e-003	0.1080	0.0000	359.2608	359.2608	0.0157	0.0000	359.6523

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	361.76	376.58	327.56	1,043,956	971,923
Total	361.76	376.58	327.56	1,043,956	971,923

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
Single Family Housing	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.524400	0.212000	0.167700	0.056300	0.000800	0.000900	0.007600	0.021200	0.000000	0.004300	0.002500	0.000100	0.002200

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	-150.3431	-150.3431	-0.0068	-0.0014	-150.9321
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	96.8468	96.8468	4.3800e-003	9.1000e-004	97.2263
NaturalGas Mitigated	5.3600e-003	0.0458	0.0195	2.9000e-004		3.7000e-003	3.7000e-003		3.7000e-003	3.7000e-003	0.0000	53.0180	53.0180	1.0200e-003	9.7000e-004	53.3330
NaturalGas Unmitigated	5.3600e-003	0.0458	0.0195	2.9000e-004		3.7000e-003	3.7000e-003		3.7000e-003	3.7000e-003	0.0000	53.0180	53.0180	1.0200e-003	9.7000e-004	53.3330

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					
Single Family Housing	993519	5.3600e-003	0.0458	0.0195	2.9000e-004		3.7000e-003	3.7000e-003		3.7000e-003	3.7000e-003	0.0000	53.0180	53.0180	1.0200e-003	9.7000e-004	53.3330
Total		**5.3600e-003**	**0.0458**	**0.0195**	**2.9000e-004**		**3.7000e-003**	**3.7000e-003**		**3.7000e-003**	**3.7000e-003**	**0.0000**	**53.0180**	**53.0180**	**1.0200e-003**	**9.7000e-004**	**53.3330**

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					
Single Family Housing	993519	5.3600e-003	0.0458	0.0195	2.9000e-004		3.7000e-003	3.7000e-003		3.7000e-003	3.7000e-003	0.0000	53.0180	53.0180	1.0200e-003	9.7000e-004	53.3330
Total		**5.3600e-003**	**0.0458**	**0.0195**	**2.9000e-004**		**3.7000e-003**	**3.7000e-003**		**3.7000e-003**	**3.7000e-003**	**0.0000**	**53.0180**	**53.0180**	**1.0200e-003**	**9.7000e-004**	**53.3330**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	332908	96.8468	4.3800e-003	9.1000e-004	97.2263
Total		**96.8468**	**4.3800e-003**	**9.1000e-004**	**97.2263**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	-516800	-150.3431	-0.0068	-0.0014	-150.9321
Total		**-150.3431**	**-0.0068**	**-0.0014**	**-150.9321**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

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	0.3397	3.2300e-003	0.2799	1.0000e-005		1.5500e-003	1.5500e-003		1.5500e-003	1.5500e-003	0.0000	0.4567	0.4567	4.4000e-004	0.0000	0.4676
Unmitigated	0.3415	0.0175	0.2879	1.1000e-004		2.7100e-003	2.7100e-003		2.7100e-003	2.7100e-003	0.0000	16.9228	16.9228	7.6000e-004	3.0000e-004	17.0316

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	0.0642					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2671					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.6600e-003	0.0142	6.0500e-003	9.0000e-005		1.1500e-003	1.1500e-003		1.1500e-003	1.1500e-003	0.0000	16.4619	16.4619	3.2000e-004	3.0000e-004	16.5597
Landscaping	8.4600e-003	3.2500e-003	0.2819	1.0000e-005		1.5600e-003	1.5600e-003		1.5600e-003	1.5600e-003	0.0000	0.4609	0.4609	4.4000e-004	0.0000	0.4719
Total	**0.3415**	**0.0175**	**0.2879**	**1.0000e-004**		**2.7100e-003**	**2.7100e-003**		**2.7100e-003**	**2.7100e-003**	**0.0000**	**16.9228**	**16.9228**	**7.6000e-004**	**3.0000e-004**	**17.0316**

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	0.0642					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2671					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.3400e-003	3.2300e-003	0.2799	1.0000e-005		1.5500e-003	1.5500e-003		1.5500e-003	1.5500e-003	0.0000	0.4567	0.4567	4.4000e-004	0.0000	0.4676
Total	**0.3397**	**3.2300e-003**	**0.2799**	**1.0000e-005**		**1.5500e-003**	**1.5500e-003**		**1.5500e-003**	**1.5500e-003**	**0.0000**	**0.4567**	**0.4567**	**4.4000e-004**	**0.0000**	**0.4676**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	6.2720	0.0809	1.9600e-003	8.8781
Unmitigated	6.2720	0.0809	1.9600e-003	8.8781

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	2.47585 / 1.56086	6.2720	0.0809	1.9600e-003	8.8781
Total		**6.2720**	**0.0809**	**1.9600e-003**	**8.8781**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	2.47585 / 1.56086	6.2720	0.0809	1.9600e-003	8.8781
Total		**6.2720**	**0.0809**	**1.9600e-003**	**8.8781**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	9.0717	0.5361	0.0000	22.4747
Unmitigated	9.0717	0.5361	0.0000	22.4747

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	44.69	9.0717	0.5361	0.0000	22.4747
Total		**9.0717**	**0.5361**	**0.0000**	**22.4747**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	44.69	9.0717	0.5361	0.0000	22.4747
Total		**9.0717**	**0.5361**	**0.0000**	**22.4747**

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

Affentranger Farm - Phase 7

Kern-San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	29.00	Dwelling Unit	9.42	52,200.00	83

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2026
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - 6 month construction schedule

Grading -

Fleet Mix - 2026 Residential Fleet Mix

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Affentranger Farm - Phase 7 - Kern-San Joaquin County, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	9.00
tblConstructionPhase	NumDays	230.00	142.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	20.00	9.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	PhaseEndDate	12/15/2026	3/21/2026
tblConstructionPhase	PhaseEndDate	10/20/2026	3/3/2026
tblConstructionPhase	PhaseEndDate	12/2/2025	10/13/2025
tblConstructionPhase	PhaseEndDate	11/17/2026	3/12/2026
tblConstructionPhase	PhaseEndDate	11/4/2025	9/28/2025
tblConstructionPhase	PhaseStartDate	11/18/2026	3/13/2026
tblConstructionPhase	PhaseStartDate	12/3/2025	10/13/2025
tblConstructionPhase	PhaseStartDate	11/5/2025	9/29/2025
tblConstructionPhase	PhaseStartDate	10/21/2026	3/4/2026
tblConstructionPhase	PhaseStartDate	10/22/2025	9/24/2025
tblFleetMix	HHD	0.14	0.02
tblFleetMix	LDA	0.50	0.52
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LHD1	0.01	8.0000e-004

tblFleetMix	LHD2	4.7500e-003	9.0000e-004
tblFleetMix	MCY	5.6070e-003	2.5000e-003
tblFleetMix	MDV	0.10	0.06
tblFleetMix	MH	6.3500e-004	2.3000e-003
tblFleetMix	MHD	0.02	7.5000e-003
tblFleetMix	OBUS	1.5830e-003	0.00
tblFleetMix	SBUS	8.7000e-004	2.0000e-004
tblFleetMix	UBUS	1.4970e-003	4.4000e-003
tblWoodstoves	NumberCatalytic	9.42	0.00
tblWoodstoves	NumberNoncatalytic	9.42	0.00

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					
2025	0.0741	0.6870	0.8083	1.4700e-003	0.0996	0.0285	0.1281	0.0515	0.0267	0.0782	0.0000	127.2096	127.2096	0.0311	0.0000	127.9863
2026	0.5384	0.4381	0.5797	1.0000e-003	3.7400e-003	0.0185	0.0222	1.0100e-003	0.0174	0.0184	0.0000	86.7210	86.7210	0.0201	0.0000	87.2222
Maximum	**0.5384**	**0.6870**	**0.8083**	**1.4700e-003**	**0.0996**	**0.0285**	**0.1281**	**0.0515**	**0.0267**	**0.0782**	**0.0000**	**127.2096**	**127.2096**	**0.0311**	**0.0000**	**127.9863**

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					
2025	0.0741	0.6870	0.8083	1.4700e-003	0.0421	0.0285	0.0706	0.0210	0.0267	0.0476	0.0000	127.2095	127.2095	0.0311	0.0000	127.9862
2026	0.5384	0.4381	0.5797	1.0000e-003	3.7400e-003	0.0185	0.0222	1.0100e-003	0.0174	0.0184	0.0000	86.7209	86.7209	0.0201	0.0000	87.2221
Maximum	**0.5384**	**0.6870**	**0.8083**	**1.4700e-003**	**0.0421**	**0.0285**	**0.0706**	**0.0210**	**0.0267**	**0.0476**	**0.0000**	**127.2095**	**127.2095**	**0.0311**	**0.0000**	**127.9862**

	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**	**55.67**	**0.00**	**38.26**	**58.17**	**0.00**	**31.64**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	9-24-2025	12-23-2025	0.7046	0.7046
2	12-24-2025	3-23-2026	1.0330	1.0330
		Highest	1.0330	1.0330

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	0.2606	0.0133	0.2197	8.0000e-005		2.0700e-003	2.0700e-003		2.0700e-003	2.0700e-003	0.0000	12.9148	12.9148	5.8000e-004	2.3000e-004	12.9978
Energy	4.0900e-003	0.0349	0.0149	2.2000e-004		2.8200e-003	2.8200e-003		2.8200e-003	2.8200e-003	0.0000	114.3705	114.3705	4.1200e-003	1.4300e-003	114.9005
Mobile	0.0583	0.2096	0.6858	2.8700e-003	0.3007	2.1700e-003	0.3029	0.0804	2.0100e-003	0.0824	0.0000	264.1672	264.1672	0.0114	0.0000	264.4523
Waste						0.0000	0.0000		0.0000	0.0000	6.9078	0.0000	6.9078	0.4082	0.0000	17.1137
Water						0.0000	0.0000		0.0000	0.0000	0.5994	4.1871	4.7866	0.0618	1.4900e-003	6.7754
Total	**0.3230**	**0.2579**	**0.9204**	**3.1700e-003**	**0.3007**	**7.0600e-003**	**0.3078**	**0.0804**	**6.9000e-003**	**0.0873**	**7.5072**	**395.6395**	**403.1467**	**0.4861**	**3.1500e-003**	**416.2398**

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	0.2592	2.4600e-003	0.2136	1.0000e-005		1.1800e-003	1.1800e-003		1.1800e-003	1.1800e-003	0.0000	0.3486	0.3486	3.3000e-004	0.0000	0.3569
Energy	4.0900e-003	0.0349	0.0149	2.2000e-004		2.8200e-003	2.8200e-003		2.8200e-003	2.8200e-003	0.0000	-74.2744	-74.2744	-0.0044	-0.0003	-74.4835
Mobile	0.0571	0.2026	0.6482	2.6900e-003	0.2800	2.0400e-003	0.2820	0.0748	1.8900e-003	0.0767	0.0000	247.1789	247.1789	0.0109	0.0000	247.4500
Waste						0.0000	0.0000		0.0000	0.0000	6.9078	0.0000	6.9078	0.4082	0.0000	17.1137
Water						0.0000	0.0000		0.0000	0.0000	0.5994	4.1871	4.7866	0.0618	1.4900e-003	6.7754
Total	**0.3204**	**0.2400**	**0.8767**	**2.9200e-003**	**0.2800**	**6.0400e-003**	**0.2860**	**0.0748**	**5.8900e-003**	**0.0807**	**7.5072**	**177.4402**	**184.9474**	**0.4768**	**1.1600e-003**	**197.2125**

	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	**0.79**	**6.92**	**4.75**	**7.89**	**6.90**	**14.45**	**7.07**	**6.89**	**14.64**	**7.52**	**0.00**	**55.15**	**54.12**	**1.92**	**63.17**	**52.62**

3.0 Construction Detail

Construction Phase

Affentranger Farm - Phase 7 - Kern-San Joaquin County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/24/2025	9/28/2025	7	5	
2	Grading	Grading	9/29/2025	10/13/2025	7	15	
3	Building Construction	Building Construction	10/13/2025	3/3/2026	7	142	
4	Paving	Paving	3/4/2026	3/12/2026	7	9	
5	Architectural Coating	Architectural Coating	3/13/2026	3/21/2026	7	9	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 7.5

Acres of Paving: 0

Residential Indoor: 105,705; Residential Outdoor: 35,235; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	1	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

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
Architectural Coating	1	2.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	10.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1800e-003	0.0631	0.0448	1.0000e-004		2.7200e-003	2.7200e-003		2.5000e-003	2.5000e-003	0.0000	8.3668	8.3668	2.7100e-003	0.0000	8.4344
Total	**6.1800e-003**	**0.0631**	**0.0448**	**1.0000e-004**	**0.0452**	**2.7200e-003**	**0.0479**	**0.0248**	**2.5000e-003**	**0.0273**	**0.0000**	**8.3668**	**8.3668**	**2.7100e-003**	**0.0000**	**8.4344**

3.2 Site Preparation - 2025

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	1.2000e-004	7.0000e-005	7.6000e-004	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2750	0.2750	0.0000	0.0000	0.2751
Total	**1.2000e-004**	**7.0000e-005**	**7.6000e-004**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2750**	**0.2750**	**0.0000**	**0.0000**	**0.2751**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0176	0.0000	0.0176	9.6800e-003	0.0000	9.6800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1800e-003	0.0631	0.0448	1.0000e-004		2.7200e-003	2.7200e-003		2.5000e-003	2.5000e-003	0.0000	8.3667	8.3667	2.7100e-003	0.0000	8.4344
Total	**6.1800e-003**	**0.0631**	**0.0448**	**1.0000e-004**	**0.0176**	**2.7200e-003**	**0.0203**	**9.6800e-003**	**2.5000e-003**	**0.0122**	**0.0000**	**8.3667**	**8.3667**	**2.7100e-003**	**0.0000**	**8.4344**

3.2 Site Preparation - 2025

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	1.2000e-004	7.0000e-005	7.6000e-004	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2750	0.2750	0.0000	0.0000	0.2751
Total	**1.2000e-004**	**7.0000e-005**	**7.6000e-004**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2750**	**0.2750**	**0.0000**	**0.0000**	**0.2751**

3.3 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0491	0.0000	0.0491	0.0253	0.0000	0.0253	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0114	0.1149	0.1091	2.2000e-004		4.6800e-003	4.6800e-003		4.3000e-003	4.3000e-003	0.0000	19.5524	19.5524	6.3200e-003	0.0000	19.7105
Total	**0.0114**	**0.1149**	**0.1091**	**2.2000e-004**	**0.0491**	**4.6800e-003**	**0.0538**	**0.0253**	**4.3000e-003**	**0.0296**	**0.0000**	**19.5524**	**19.5524**	**6.3200e-003**	**0.0000**	**19.7105**

3.3 Grading - 2025

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-004	1.7000e-004	1.8900e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.6875	0.6875	1.0000e-005	0.0000	0.6878
Total	**3.0000e-004**	**1.7000e-004**	**1.8900e-003**	**1.0000e-005**	**9.1000e-004**	**1.0000e-005**	**9.1000e-004**	**2.4000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**0.6875**	**0.6875**	**1.0000e-005**	**0.0000**	**0.6878**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0192	0.0000	0.0192	9.8500e-003	0.0000	9.8500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0114	0.1149	0.1091	2.2000e-004		4.6800e-003	4.6800e-003		4.3000e-003	4.3000e-003	0.0000	19.5523	19.5523	6.3200e-003	0.0000	19.7104
Total	**0.0114**	**0.1149**	**0.1091**	**2.2000e-004**	**0.0192**	**4.6800e-003**	**0.0239**	**9.8500e-003**	**4.3000e-003**	**0.0142**	**0.0000**	**19.5523**	**19.5523**	**6.3200e-003**	**0.0000**	**19.7104**

3.3 Grading - 2025

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-004	1.7000e-004	1.8900e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.6875	0.6875	1.0000e-005	0.0000	0.6878
Total	**3.0000e-004**	**1.7000e-004**	**1.8900e-003**	**1.0000e-005**	**9.1000e-004**	**1.0000e-005**	**9.1000e-004**	**2.4000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**0.6875**	**0.6875**	**1.0000e-005**	**0.0000**	**0.6878**

3.4 Building Construction - 2025

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	0.0547	0.4988	0.6434	1.0800e-003		0.0211	0.0211		0.0199	0.0199	0.0000	92.7678	92.7678	0.0218	0.0000	93.3130
Total	**0.0547**	**0.4988**	**0.6434**	**1.0800e-003**		**0.0211**	**0.0211**		**0.0199**	**0.0199**	**0.0000**	**92.7678**	**92.7678**	**0.0218**	**0.0000**	**93.3130**

3.4 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.5000e-004	9.3900e-003	1.7400e-003	3.0000e-005	8.0000e-004	1.0000e-005	8.1000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	3.1159	3.1159	1.7000e-004	0.0000	3.1202
Worker	1.0800e-003	6.0000e-004	6.7200e-003	3.0000e-005	3.2200e-003	2.0000e-005	3.2400e-003	8.6000e-004	2.0000e-005	8.7000e-004	0.0000	2.4443	2.4443	4.0000e-005	0.0000	2.4454
Total	**1.3300e-003**	**9.9900e-003**	**8.4600e-003**	**6.0000e-005**	**4.0200e-003**	**3.0000e-005**	**4.0500e-003**	**1.0900e-003**	**3.0000e-005**	**1.1100e-003**	**0.0000**	**5.5603**	**5.5603**	**2.1000e-004**	**0.0000**	**5.5656**

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	0.0547	0.4988	0.6434	1.0800e-003		0.0211	0.0211		0.0199	0.0199	0.0000	92.7677	92.7677	0.0218	0.0000	93.3128
Total	**0.0547**	**0.4988**	**0.6434**	**1.0800e-003**		**0.0211**	**0.0211**		**0.0199**	**0.0199**	**0.0000**	**92.7677**	**92.7677**	**0.0218**	**0.0000**	**93.3128**

3.4 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.5000e-004	9.3900e-003	1.7400e-003	3.0000e-005	8.0000e-004	1.0000e-005	8.1000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	3.1159	3.1159	1.7000e-004	0.0000	3.1202
Worker	1.0800e-003	6.0000e-004	6.7200e-003	3.0000e-005	3.2200e-003	2.0000e-005	3.2400e-003	8.6000e-004	2.0000e-005	8.7000e-004	0.0000	2.4443	2.4443	4.0000e-005	0.0000	2.4454
Total	**1.3300e-003**	**9.9900e-003**	**8.4600e-003**	**6.0000e-005**	**4.0200e-003**	**3.0000e-005**	**4.0500e-003**	**1.0900e-003**	**3.0000e-005**	**1.1100e-003**	**0.0000**	**5.5603**	**5.5603**	**2.1000e-004**	**0.0000**	**5.5656**

3.4 Building Construction - 2026

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	0.0424	0.3866	0.4986	8.4000e-004		0.0164	0.0164		0.0154	0.0154	0.0000	71.8950	71.8950	0.0169	0.0000	72.3175
Total	**0.0424**	**0.3866**	**0.4986**	**8.4000e-004**		**0.0164**	**0.0164**		**0.0154**	**0.0154**	**0.0000**	**71.8950**	**71.8950**	**0.0169**	**0.0000**	**72.3175**

3.4 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9000e-004	7.2100e-003	1.3000e-003	3.0000e-005	6.2000e-004	1.0000e-005	6.3000e-004	1.8000e-004	1.0000e-005	1.9000e-004	0.0000	2.3995	2.3995	1.3000e-004	0.0000	2.4029
Worker	7.9000e-004	4.3000e-004	4.8400e-003	2.0000e-005	2.5000e-003	2.0000e-005	2.5100e-003	6.6000e-004	1.0000e-005	6.8000e-004	0.0000	1.8198	1.8198	3.0000e-005	0.0000	1.8205
Total	**9.8000e-004**	**7.6400e-003**	**6.1400e-003**	**5.0000e-005**	**3.1200e-003**	**3.0000e-005**	**3.1400e-003**	**8.4000e-004**	**2.0000e-005**	**8.7000e-004**	**0.0000**	**4.2193**	**4.2193**	**1.6000e-004**	**0.0000**	**4.2234**

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	0.0424	0.3866	0.4986	8.4000e-004		0.0164	0.0164		0.0154	0.0154	0.0000	71.8949	71.8949	0.0169	0.0000	72.3175
Total	**0.0424**	**0.3866**	**0.4986**	**8.4000e-004**		**0.0164**	**0.0164**		**0.0154**	**0.0154**	**0.0000**	**71.8949**	**71.8949**	**0.0169**	**0.0000**	**72.3175**

3.4 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9000e-004	7.2100e-003	1.3000e-003	3.0000e-005	6.2000e-004	1.0000e-005	6.3000e-004	1.8000e-004	1.0000e-005	1.9000e-004	0.0000	2.3995	2.3995	1.3000e-004	0.0000	2.4029
Worker	7.9000e-004	4.3000e-004	4.8400e-003	2.0000e-005	2.5000e-003	2.0000e-005	2.5100e-003	6.6000e-004	1.0000e-005	6.8000e-004	0.0000	1.8198	1.8198	3.0000e-005	0.0000	1.8205
Total	**9.8000e-004**	**7.6400e-003**	**6.1400e-003**	**5.0000e-005**	**3.1200e-003**	**3.0000e-005**	**3.1400e-003**	**8.4000e-004**	**2.0000e-005**	**8.7000e-004**	**0.0000**	**4.2193**	**4.2193**	**1.6000e-004**	**0.0000**	**4.2234**

3.5 Paving - 2026

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	4.1200e-003	0.0386	0.0656	1.0000e-004		1.8800e-003	1.8800e-003		1.7300e-003	1.7300e-003	0.0000	9.0087	9.0087	2.9100e-003	0.0000	9.0815
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.1200e-003**	**0.0386**	**0.0656**	**1.0000e-004**		**1.8800e-003**	**1.8800e-003**		**1.7300e-003**	**1.7300e-003**	**0.0000**	**9.0087**	**9.0087**	**2.9100e-003**	**0.0000**	**9.0815**

3.5 Paving - 2026

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	1.7000e-004	9.0000e-005	1.0500e-003	0.0000	5.4000e-004	0.0000	5.5000e-004	1.4000e-004	0.0000	1.5000e-004	0.0000	0.3962	0.3962	1.0000e-005	0.0000	0.3964
Total	**1.7000e-004**	**9.0000e-005**	**1.0500e-003**	**0.0000**	**5.4000e-004**	**0.0000**	**5.5000e-004**	**1.4000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.3962**	**0.3962**	**1.0000e-005**	**0.0000**	**0.3964**

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	4.1200e-003	0.0386	0.0656	1.0000e-004		1.8800e-003	1.8800e-003		1.7300e-003	1.7300e-003	0.0000	9.0087	9.0087	2.9100e-003	0.0000	9.0815
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.1200e-003**	**0.0386**	**0.0656**	**1.0000e-004**		**1.8800e-003**	**1.8800e-003**		**1.7300e-003**	**1.7300e-003**	**0.0000**	**9.0087**	**9.0087**	**2.9100e-003**	**0.0000**	**9.0815**

3.5 Paving - 2026

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	1.7000e-004	9.0000e-005	1.0500e-003	0.0000	5.4000e-004	0.0000	5.5000e-004	1.4000e-004	0.0000	1.5000e-004	0.0000	0.3962	0.3962	1.0000e-005	0.0000	0.3964
Total	**1.7000e-004**	**9.0000e-005**	**1.0500e-003**	**0.0000**	**5.4000e-004**	**0.0000**	**5.5000e-004**	**1.4000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.3962**	**0.3962**	**1.0000e-005**	**0.0000**	**0.3964**

3.6 Architectural Coating - 2026

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	0.4899					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.7000e-004	5.1500e-003	8.1400e-003	1.0000e-005		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004	0.0000	1.1490	1.1490	6.0000e-005	0.0000	1.1505
Total	**0.4907**	**5.1500e-003**	**8.1400e-003**	**1.0000e-005**		**2.3000e-004**	**2.3000e-004**		**2.3000e-004**	**2.3000e-004**	**0.0000**	**1.1490**	**1.1490**	**6.0000e-005**	**0.0000**	**1.1505**

3.6 Architectural Coating - 2026

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	2.0000e-005	1.0000e-005	1.4000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0528	0.0528	0.0000	0.0000	0.0529
Total	**2.0000e-005**	**1.0000e-005**	**1.4000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0528**	**0.0528**	**0.0000**	**0.0000**	**0.0529**

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	0.4899					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.7000e-004	5.1500e-003	8.1400e-003	1.0000e-005		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004	0.0000	1.1490	1.1490	6.0000e-005	0.0000	1.1505
Total	**0.4907**	**5.1500e-003**	**8.1400e-003**	**1.0000e-005**		**2.3000e-004**	**2.3000e-004**		**2.3000e-004**	**2.3000e-004**	**0.0000**	**1.1490**	**1.1490**	**6.0000e-005**	**0.0000**	**1.1505**

3.6 Architectural Coating - 2026

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	2.0000e-005	1.0000e-005	1.4000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0528	0.0528	0.0000	0.0000	0.0529
Total	**2.0000e-005**	**1.0000e-005**	**1.4000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0528**	**0.0528**	**0.0000**	**0.0000**	**0.0529**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Improve Pedestrian Network

	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	0.0571	0.2026	0.6482	2.6900e-003	0.2800	2.0400e-003	0.2820	0.0748	1.8900e-003	0.0767	0.0000	247.1789	247.1789	0.0109	0.0000	247.4500
Unmitigated	0.0583	0.2096	0.6858	2.8700e-003	0.3007	2.1700e-003	0.3029	0.0804	2.0100e-003	0.0824	0.0000	264.1672	264.1672	0.0114	0.0000	264.4523

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	276.08	287.39	249.98	796,703	741,731
Total	276.08	287.39	249.98	796,703	741,731

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
Single Family Housing	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.521500	0.214600	0.168100	0.056900	0.000800	0.000900	0.007500	0.020300	0.000000	0.004400	0.002500	0.000200	0.002300

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	-114.7355	-114.7355	-0.0052	-0.0011	-115.1851
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	73.9094	73.9094	3.3400e-003	6.9000e-004	74.1990
NaturalGas Mitigated	4.0900e-003	0.0349	0.0149	2.2000e-004		2.8200e-003	2.8200e-003		2.8200e-003	2.8200e-003	0.0000	40.4611	40.4611	7.8000e-004	7.4000e-004	40.7015
NaturalGas Unmitigated	4.0900e-003	0.0349	0.0149	2.2000e-004		2.8200e-003	2.8200e-003		2.8200e-003	2.8200e-003	0.0000	40.4611	40.4611	7.8000e-004	7.4000e-004	40.7015

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					
Single Family Housing	758212	4.0900e-003	0.0349	0.0149	2.2000e-004		2.8200e-003	2.8200e-003		2.8200e-003	2.8200e-003	0.0000	40.4611	40.4611	7.8000e-004	7.4000e-004	40.7015
Total		**4.0900e-003**	**0.0349**	**0.0149**	**2.2000e-004**		**2.8200e-003**	**2.8200e-003**		**2.8200e-003**	**2.8200e-003**	**0.0000**	**40.4611**	**40.4611**	**7.8000e-004**	**7.4000e-004**	**40.7015**

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					
Single Family Housing	758212	4.0900e-003	0.0349	0.0149	2.2000e-004		2.8200e-003	2.8200e-003		2.8200e-003	2.8200e-003	0.0000	40.4611	40.4611	7.8000e-004	7.4000e-004	40.7015
Total		**4.0900e-003**	**0.0349**	**0.0149**	**2.2000e-004**		**2.8200e-003**	**2.8200e-003**		**2.8200e-003**	**2.8200e-003**	**0.0000**	**40.4611**	**40.4611**	**7.8000e-004**	**7.4000e-004**	**40.7015**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	254061	73.9094	3.3400e-003	6.9000e-004	74.1990
Total		**73.9094**	**3.3400e-003**	**6.9000e-004**	**74.1990**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	-394400	-114.7355	-0.0052	-0.0011	-115.1851
Total		**-114.7355**	**-0.0052**	**-0.0011**	**-115.1851**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

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	0.2592	2.4600e-003	0.2136	1.0000e-005		1.1800e-003	1.1800e-003		1.1800e-003	1.1800e-003	0.0000	0.3486	0.3486	3.3000e-004	0.0000	0.3569
Unmitigated	0.2606	0.0133	0.2197	8.0000e-005		2.0700e-003	2.0700e-003		2.0700e-003	2.0700e-003	0.0000	12.9148	12.9148	5.8000e-004	2.3000e-004	12.9978

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	0.0490					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2039					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2700e-003	0.0109	4.6200e-003	7.0000e-005		8.8000e-004	8.8000e-004		8.8000e-004	8.8000e-004	0.0000	12.5630	12.5630	2.4000e-004	2.3000e-004	12.6377
Landscaping	6.4600e-003	2.4800e-003	0.2151	1.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003	0.0000	0.3517	0.3517	3.4000e-004	0.0000	0.3602
Total	**0.2606**	**0.0133**	**0.2197**	**8.0000e-005**		**2.0700e-003**	**2.0700e-003**		**2.0700e-003**	**2.0700e-003**	**0.0000**	**12.9148**	**12.9148**	**5.8000e-004**	**2.3000e-004**	**12.9978**

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	0.0490					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2039					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.3700e-003	2.4600e-003	0.2136	1.0000e-005		1.1800e-003	1.1800e-003		1.1800e-003	1.1800e-003	0.0000	0.3486	0.3486	3.3000e-004	0.0000	0.3569
Total	**0.2592**	**2.4600e-003**	**0.2136**	**1.0000e-005**		**1.1800e-003**	**1.1800e-003**		**1.1800e-003**	**1.1800e-003**	**0.0000**	**0.3486**	**0.3486**	**3.3000e-004**	**0.0000**	**0.3569**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	4.7866	0.0618	1.4900e-003	6.7754
Unmitigated	4.7866	0.0618	1.4900e-003	6.7754

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	1.88947 / 1.19119	4.7866	0.0618	1.4900e-003	6.7754
Total		**4.7866**	**0.0618**	**1.4900e-003**	**6.7754**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	1.88947 / 1.19119	4.7866	0.0618	1.4900e-003	6.7754
Total		**4.7866**	**0.0618**	**1.4900e-003**	**6.7754**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	6.9078	0.4082	0.0000	17.1137
Unmitigated	6.9078	0.4082	0.0000	17.1137

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	34.03	6.9078	0.4082	0.0000	17.1137
Total		**6.9078**	**0.4082**	**0.0000**	**17.1137**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	34.03	6.9078	0.4082	0.0000	17.1137
Total		**6.9078**	**0.4082**	**0.0000**	**17.1137**

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

Affentranger Farms - BAU

Kern-San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	263.00	Dwelling Unit	85.39	473,400.00	752
Other Non-Asphalt Surfaces	2.64	Acre	2.64	114,998.40	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2005
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	PhaseEndDate	8/10/2007	6/9/2005
tblConstructionPhase	PhaseEndDate	10/6/2006	11/1/2004
tblConstructionPhase	PhaseEndDate	10/27/2000	8/4/2000
tblConstructionPhase	PhaseEndDate	3/9/2007	2/19/2005
tblConstructionPhase	PhaseEndDate	3/24/2000	3/2/2000
tblConstructionPhase	PhaseStartDate	3/10/2007	2/20/2005
tblConstructionPhase	PhaseStartDate	10/28/2000	8/5/2000
tblConstructionPhase	PhaseStartDate	3/25/2000	3/3/2000
tblConstructionPhase	PhaseStartDate	10/7/2006	11/2/2004
tblWoodstoves	NumberCatalytic	85.39	0.00
tblWoodstoves	NumberNoncatalytic	85.39	0.00

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					
2000	2.6437	17.1644	11.7376	0.1003	1.3402	0.9800	2.3203	0.6107	0.9778	1.5885	0.0000	1,042.3575	1,042.3575	0.2331	0.0000	1,048.1837
2001	2.6492	12.8762	13.4246	0.0819	0.2676	0.8090	1.0766	0.0724	0.8037	0.8761	0.0000	969.6877	969.6877	0.2622	0.0000	976.2433
2002	2.6492	12.8762	13.4246	0.0819	0.2676	0.8090	1.0766	0.0724	0.8037	0.8761	0.0000	969.6877	969.6877	0.2622	0.0000	976.2433
2003	2.6492	12.8762	13.4246	0.0819	0.2676	0.8090	1.0766	0.0724	0.8037	0.8761	0.0000	969.6877	969.6877	0.2622	0.0000	976.2433
2004	2.4329	12.2418	11.9579	0.0768	0.2279	0.7656	0.9935	0.0617	0.7611	0.8228	0.0000	889.4123	889.4123	0.2369	0.0000	895.3341
2005	7.6469	1.3083	0.8601	8.5800e-003	0.0159	0.0875	0.1033	4.2200e-003	0.0874	0.0917	0.0000	92.3190	92.3190	0.0175	0.0000	92.7561
Maximum	**7.6469**	**17.1644**	**13.4246**	**0.1003**	**1.3402**	**0.9800**	**2.3203**	**0.6107**	**0.9778**	**1.5885**	**0.0000**	**1,042.3575**	**1,042.3575**	**0.2622**	**0.0000**	**1,048.1837**

2.1 Overall Construction

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					
2000	2.6437	17.1644	11.7376	0.1003	1.3402	0.9800	2.3203	0.6107	0.9778	1.5885	0.0000	1,042.3565	1,042.3565	0.2331	0.0000	1,048.1827
2001	2.6492	12.8762	13.4246	0.0819	0.2676	0.8090	1.0766	0.0724	0.8037	0.8761	0.0000	969.6871	969.6871	0.2622	0.0000	976.2428
2002	2.6492	12.8762	13.4246	0.0819	0.2676	0.8090	1.0766	0.0724	0.8037	0.8761	0.0000	969.6871	969.6871	0.2622	0.0000	976.2428
2003	2.6492	12.8762	13.4246	0.0819	0.2676	0.8090	1.0766	0.0724	0.8037	0.8761	0.0000	969.6871	969.6871	0.2622	0.0000	976.2428
2004	2.4329	12.2418	11.9579	0.0768	0.2279	0.7656	0.9935	0.0617	0.7611	0.8228	0.0000	889.4117	889.4117	0.2369	0.0000	895.3336
2005	7.6469	1.3083	0.8601	8.5800e-003	0.0159	0.0875	0.1033	4.2200e-003	0.0874	0.0917	0.0000	92.3189	92.3189	0.0175	0.0000	92.7561
Maximum	**7.6469**	**17.1644**	**13.4246**	**0.1003**	**1.3402**	**0.9800**	**2.3203**	**0.6107**	**0.9778**	**1.5885**	**0.0000**	**1,042.3565**	**1,042.3565**	**0.2622**	**0.0000**	**1,048.1827**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-3-2000**	**4-2-2000**	4.9179	4.9179
2	**4-3-2000**	**7-2-2000**	6.2786	6.2786
3	**7-3-2000**	**10-2-2000**	4.7707	4.7707
4	**10-3-2000**	**1-2-2001**	3.9404	3.9404
5	**1-3-2001**	**4-2-2001**	3.8536	3.8536

6	**4-3-2001**	**7-2-2001**	3.8446	3.8446
7	**7-3-2001**	**10-2-2001**	3.8880	3.8880
8	**10-3-2001**	**1-2-2002**	3.9404	3.9404
9	**1-3-2002**	**4-2-2002**	3.8536	3.8536
10	**4-3-2002**	**7-2-2002**	3.8446	3.8446
11	**7-3-2002**	**10-2-2002**	3.8880	3.8880
12	**10-3-2002**	**1-2-2003**	3.9404	3.9404
13	**1-3-2003**	**4-2-2003**	3.8536	3.8536
14	**4-3-2003**	**7-2-2003**	3.8446	3.8446
15	**7-3-2003**	**10-2-2003**	3.8880	3.8880
16	**10-3-2003**	**1-2-2004**	3.9404	3.9404
17	**1-3-2004**	**4-2-2004**	3.8964	3.8964
18	**4-3-2004**	**7-2-2004**	3.8446	3.8446
19	**7-3-2004**	**10-2-2004**	3.8880	3.8880
20	**10-3-2004**	**1-2-2005**	2.9935	2.9935
21	**1-3-2005**	**4-2-2005**	4.1140	4.1140
22	**4-3-2005**	**7-2-2005**	4.7959	4.7959
		Highest	6.2786	6.2786

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	2.7087	0.1292	2.3067	7.3000e-004		0.0175	0.0175		0.0175	0.0175	0.0000	117.1235	117.1235	7.2900e-003	2.0900e-003	117.9282
Energy	0.0371	0.3168	0.1348	2.0200e-003		0.0256	0.0256		0.0256	0.0256	0.0000	1,037.2218	1,037.2218	0.0373	0.0130	1,042.0288
Mobile	5.7435	43.2063	52.3705	0.3100	2.8009	1.0077	3.8086	0.7555	0.9626	1.7182	0.0000	5,688.4677	5,688.4677	1.8980	0.0000	5,735.9170
Waste						0.0000	0.0000		0.0000	0.0000	62.5862	0.0000	62.5862	3.6987	0.0000	155.0546
Water						0.0000	0.0000		0.0000	0.0000	5.4363	37.9727	43.4090	0.5601	0.0135	61.4457
Total	**8.4894**	**43.6523**	**54.8121**	**0.3127**	**2.8009**	**1.0508**	**3.8517**	**0.7555**	**1.0058**	**1.7613**	**68.0225**	**6,880.7857**	**6,948.8082**	**6.2014**	**0.0286**	**7,112.3743**

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	2.7087	0.1292	2.3067	7.3000e-004		0.0175	0.0175		0.0175	0.0175	0.0000	117.1235	117.1235	7.2900e-003	2.0900e-003	117.9282
Energy	0.0371	0.3168	0.1348	2.0200e-003		0.0256	0.0256		0.0256	0.0256	0.0000	1,037.2218	1,037.2218	0.0373	0.0130	1,042.0288
Mobile	5.7435	43.2063	52.3705	0.3100	2.8009	1.0077	3.8086	0.7555	0.9626	1.7182	0.0000	5,688.4677	5,688.4677	1.8980	0.0000	5,735.9170
Waste						0.0000	0.0000		0.0000	0.0000	62.5862	0.0000	62.5862	3.6987	0.0000	155.0546
Water						0.0000	0.0000		0.0000	0.0000	5.4363	37.9727	43.4090	0.5601	0.0135	61.4457
Total	**8.4894**	**43.6523**	**54.8121**	**0.3127**	**2.8009**	**1.0508**	**3.8517**	**0.7555**	**1.0058**	**1.7613**	**68.0225**	**6,880.7857**	**6,948.8082**	**6.2014**	**0.0286**	**7,112.3743**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/3/2000	3/2/2000	7	60	
2	Grading	Grading	3/3/2000	8/4/2000	7	155	
3	Building Construction	Building Construction	8/5/2000	11/1/2004	7	1550	
4	Paving	Paving	11/2/2004	2/19/2005	7	110	
5	Architectural Coating	Architectural Coating	2/20/2005	6/9/2005	7	110	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 387.5

Acres of Paving: 2.64

Residential Indoor: 958,635; Residential Outdoor: 319,545; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 6,900 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	143.00	47.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	29.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2000

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5420	0.0000	0.5420	0.2979	0.0000	0.2979	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3364	2.4095	0.9233	0.0135		0.1514	0.1514		0.1514	0.1514	0.0000	120.0138	120.0138	0.0274	0.0000	120.6987
Total	**0.3364**	**2.4095**	**0.9233**	**0.0135**	**0.5420**	**0.1514**	**0.6934**	**0.2979**	**0.1514**	**0.4493**	**0.0000**	**120.0138**	**120.0138**	**0.0274**	**0.0000**	**120.6987**

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	0.0139	0.0162	0.1456	8.0000e-005	4.3500e-003	1.9000e-004	4.5400e-003	1.1600e-003	1.8000e-004	1.3300e-003	0.0000	5.0041	5.0041	8.6000e-004	0.0000	5.0256
Total	**0.0139**	**0.0162**	**0.1456**	**8.0000e-005**	**4.3500e-003**	**1.9000e-004**	**4.5400e-003**	**1.1600e-003**	**1.8000e-004**	**1.3300e-003**	**0.0000**	**5.0041**	**5.0041**	**8.6000e-004**	**0.0000**	**5.0256**

3.2 Site Preparation - 2000

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5420	0.0000	0.5420	0.2979	0.0000	0.2979	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3364	2.4095	0.9233	0.0135		0.1514	0.1514		0.1514	0.1514	0.0000	120.0137	120.0137	0.0274	0.0000	120.6986
Total	**0.3364**	**2.4095**	**0.9233**	**0.0135**	**0.5420**	**0.1514**	**0.6934**	**0.2979**	**0.1514**	**0.4493**	**0.0000**	**120.0137**	**120.0137**	**0.0274**	**0.0000**	**120.6986**

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	0.0139	0.0162	0.1456	8.0000e-005	4.3500e-003	1.9000e-004	4.5400e-003	1.1600e-003	1.8000e-004	1.3300e-003	0.0000	5.0041	5.0041	8.6000e-004	0.0000	5.0256
Total	**0.0139**	**0.0162**	**0.1456**	**8.0000e-005**	**4.3500e-003**	**1.9000e-004**	**4.5400e-003**	**1.1600e-003**	**1.8000e-004**	**1.3300e-003**	**0.0000**	**5.0041**	**5.0041**	**8.6000e-004**	**0.0000**	**5.0256**

3.3 Grading - 2000

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6722	0.0000	0.6722	0.2787	0.0000	0.2787	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1720	9.4359	4.7704	0.0530		0.4976	0.4976		0.4976	0.4976	0.0000	507.1307	507.1307	0.0953	0.0000	509.5128
Total	**1.1720**	**9.4359**	**4.7704**	**0.0530**	**0.6722**	**0.4976**	**1.1698**	**0.2787**	**0.4976**	**0.7764**	**0.0000**	**507.1307**	**507.1307**	**0.0953**	**0.0000**	**509.5128**

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	0.0400	0.0465	0.4180	2.4000e-004	0.0125	5.5000e-004	0.0130	3.3200e-003	5.1000e-004	3.8200e-003	0.0000	14.3637	14.3637	2.4700e-003	0.0000	14.4253
Total	**0.0400**	**0.0465**	**0.4180**	**2.4000e-004**	**0.0125**	**5.5000e-004**	**0.0130**	**3.3200e-003**	**5.1000e-004**	**3.8200e-003**	**0.0000**	**14.3637**	**14.3637**	**2.4700e-003**	**0.0000**	**14.4253**

3.3 Grading - 2000

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6722	0.0000	0.6722	0.2787	0.0000	0.2787	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1720	9.4359	4.7704	0.0530		0.4976	0.4976		0.4976	0.4976	0.0000	507.1301	507.1301	0.0953	0.0000	509.5122
Total	**1.1720**	**9.4359**	**4.7704**	**0.0530**	**0.6722**	**0.4976**	**1.1698**	**0.2787**	**0.4976**	**0.7764**	**0.0000**	**507.1301**	**507.1301**	**0.0953**	**0.0000**	**509.5122**

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	0.0400	0.0465	0.4180	2.4000e-004	0.0125	5.5000e-004	0.0130	3.3200e-003	5.1000e-004	3.8200e-003	0.0000	14.3637	14.3637	2.4700e-003	0.0000	14.4253
Total	**0.0400**	**0.0465**	**0.4180**	**2.4000e-004**	**0.0125**	**5.5000e-004**	**0.0130**	**3.3200e-003**	**5.1000e-004**	**3.8200e-003**	**0.0000**	**14.3637**	**14.3637**	**2.4700e-003**	**0.0000**	**14.4253**

3.4 Building Construction - 2000

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	0.6500	3.5955	1.6657	0.0227		0.2827	0.2827		0.2827	0.2827	0.0000	195.8315	195.8315	0.0529	0.0000	197.1549
Total	**0.6500**	**3.5955**	**1.6657**	**0.0227**		**0.2827**	**0.2827**		**0.2827**	**0.2827**	**0.0000**	**195.8315**	**195.8315**	**0.0529**	**0.0000**	**197.1549**

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	0.1566	1.3410	0.9413	9.1200e-003	0.0234	0.0438	0.0672	6.7500e-003	0.0419	0.0487	0.0000	101.2887	101.2887	0.0372	0.0000	102.2178
Worker	0.2748	0.3198	2.8731	1.6700e-003	0.0859	3.7500e-003	0.0896	0.0228	3.4800e-003	0.0263	0.0000	98.7249	98.7249	0.0170	0.0000	99.1486
Total	**0.4315**	**1.6608**	**3.8145**	**0.0108**	**0.1092**	**0.0476**	**0.1568**	**0.0296**	**0.0454**	**0.0750**	**0.0000**	**200.0137**	**200.0137**	**0.0541**	**0.0000**	**201.3664**

3.4 Building Construction - 2000

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	0.6500	3.5955	1.6657	0.0227		0.2827	0.2827		0.2827	0.2827	0.0000	195.8312	195.8312	0.0529	0.0000	197.1547
Total	**0.6500**	**3.5955**	**1.6657**	**0.0227**		**0.2827**	**0.2827**		**0.2827**	**0.2827**	**0.0000**	**195.8312**	**195.8312**	**0.0529**	**0.0000**	**197.1547**

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	0.1566	1.3410	0.9413	9.1200e-003	0.0234	0.0438	0.0672	6.7500e-003	0.0419	0.0487	0.0000	101.2887	101.2887	0.0372	0.0000	102.2178
Worker	0.2748	0.3198	2.8731	1.6700e-003	0.0859	3.7500e-003	0.0896	0.0228	3.4800e-003	0.0263	0.0000	98.7249	98.7249	0.0170	0.0000	99.1486
Total	**0.4315**	**1.6608**	**3.8145**	**0.0108**	**0.1092**	**0.0476**	**0.1568**	**0.0296**	**0.0454**	**0.0750**	**0.0000**	**200.0137**	**200.0137**	**0.0541**	**0.0000**	**201.3664**

3.4 Building Construction - 2001

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	1.5923	8.8078	4.0805	0.0555		0.6924	0.6924		0.6924	0.6924	0.0000	479.7214	479.7214	0.1297	0.0000	482.9633
Total	**1.5923**	**8.8078**	**4.0805**	**0.0555**		**0.6924**	**0.6924**		**0.6924**	**0.6924**	**0.0000**	**479.7214**	**479.7214**	**0.1297**	**0.0000**	**482.9633**

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	0.3837	3.2850	2.3059	0.0223	0.0573	0.1074	0.1646	0.0165	0.1027	0.1193	0.0000	248.1234	248.1234	0.0910	0.0000	250.3992
Worker	0.6732	0.7834	7.0382	4.0900e-003	0.2103	9.2000e-003	0.2195	0.0559	8.5300e-003	0.0644	0.0000	241.8429	241.8429	0.0415	0.0000	242.8808
Total	**1.0569**	**4.0684**	**9.3441**	**0.0264**	**0.2676**	**0.1166**	**0.3841**	**0.0724**	**0.1113**	**0.1837**	**0.0000**	**489.9663**	**489.9663**	**0.1326**	**0.0000**	**493.2800**

3.4 Building Construction - 2001

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	1.5923	8.8078	4.0805	0.0555		0.6924	0.6924		0.6924	0.6924	0.0000	479.7208	479.7208	0.1297	0.0000	482.9627
Total	**1.5923**	**8.8078**	**4.0805**	**0.0555**		**0.6924**	**0.6924**		**0.6924**	**0.6924**	**0.0000**	**479.7208**	**479.7208**	**0.1297**	**0.0000**	**482.9627**

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	0.3837	3.2850	2.3059	0.0223	0.0573	0.1074	0.1646	0.0165	0.1027	0.1193	0.0000	248.1234	248.1234	0.0910	0.0000	250.3992
Worker	0.6732	0.7834	7.0382	4.0900e-003	0.2103	9.2000e-003	0.2195	0.0559	8.5300e-003	0.0644	0.0000	241.8429	241.8429	0.0415	0.0000	242.8808
Total	**1.0569**	**4.0684**	**9.3441**	**0.0264**	**0.2676**	**0.1166**	**0.3841**	**0.0724**	**0.1113**	**0.1837**	**0.0000**	**489.9663**	**489.9663**	**0.1326**	**0.0000**	**493.2800**

3.4 Building Construction - 2002

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	1.5923	8.8078	4.0805	0.0555		0.6924	0.6924		0.6924	0.6924	0.0000	479.7214	479.7214	0.1297	0.0000	482.9633
Total	**1.5923**	**8.8078**	**4.0805**	**0.0555**		**0.6924**	**0.6924**		**0.6924**	**0.6924**	**0.0000**	**479.7214**	**479.7214**	**0.1297**	**0.0000**	**482.9633**

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	0.3837	3.2850	2.3059	0.0223	0.0573	0.1074	0.1646	0.0165	0.1027	0.1193	0.0000	248.1234	248.1234	0.0910	0.0000	250.3992
Worker	0.6732	0.7834	7.0382	4.0900e-003	0.2103	9.2000e-003	0.2195	0.0559	8.5300e-003	0.0644	0.0000	241.8429	241.8429	0.0415	0.0000	242.8808
Total	**1.0569**	**4.0684**	**9.3441**	**0.0264**	**0.2676**	**0.1166**	**0.3841**	**0.0724**	**0.1113**	**0.1837**	**0.0000**	**489.9663**	**489.9663**	**0.1326**	**0.0000**	**493.2800**

3.4 Building Construction - 2002

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	1.5923	8.8078	4.0805	0.0555		0.6924	0.6924		0.6924	0.6924	0.0000	479.7208	479.7208	0.1297	0.0000	482.9627
Total	**1.5923**	**8.8078**	**4.0805**	**0.0555**		**0.6924**	**0.6924**		**0.6924**	**0.6924**	**0.0000**	**479.7208**	**479.7208**	**0.1297**	**0.0000**	**482.9627**

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	0.3837	3.2850	2.3059	0.0223	0.0573	0.1074	0.1646	0.0165	0.1027	0.1193	0.0000	248.1234	248.1234	0.0910	0.0000	250.3992
Worker	0.6732	0.7834	7.0382	4.0900e-003	0.2103	9.2000e-003	0.2195	0.0559	8.5300e-003	0.0644	0.0000	241.8429	241.8429	0.0415	0.0000	242.8808
Total	**1.0569**	**4.0684**	**9.3441**	**0.0264**	**0.2676**	**0.1166**	**0.3841**	**0.0724**	**0.1113**	**0.1837**	**0.0000**	**489.9663**	**489.9663**	**0.1326**	**0.0000**	**493.2800**

3.4 Building Construction - 2003

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	1.5923	8.8078	4.0805	0.0555		0.6924	0.6924		0.6924	0.6924	0.0000	479.7214	479.7214	0.1297	0.0000	482.9633
Total	**1.5923**	**8.8078**	**4.0805**	**0.0555**		**0.6924**	**0.6924**		**0.6924**	**0.6924**	**0.0000**	**479.7214**	**479.7214**	**0.1297**	**0.0000**	**482.9633**

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	0.3837	3.2850	2.3059	0.0223	0.0573	0.1074	0.1646	0.0165	0.1027	0.1193	0.0000	248.1234	248.1234	0.0910	0.0000	250.3992
Worker	0.6732	0.7834	7.0382	4.0900e-003	0.2103	9.2000e-003	0.2195	0.0559	8.5300e-003	0.0644	0.0000	241.8429	241.8429	0.0415	0.0000	242.8808
Total	**1.0569**	**4.0684**	**9.3441**	**0.0264**	**0.2676**	**0.1166**	**0.3841**	**0.0724**	**0.1113**	**0.1837**	**0.0000**	**489.9663**	**489.9663**	**0.1326**	**0.0000**	**493.2800**

3.4 Building Construction - 2003

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	1.5923	8.8078	4.0805	0.0555		0.6924	0.6924		0.6924	0.6924	0.0000	479.7208	479.7208	0.1297	0.0000	482.9627
Total	**1.5923**	**8.8078**	**4.0805**	**0.0555**		**0.6924**	**0.6924**		**0.6924**	**0.6924**	**0.0000**	**479.7208**	**479.7208**	**0.1297**	**0.0000**	**482.9627**

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	0.3837	3.2850	2.3059	0.0223	0.0573	0.1074	0.1646	0.0165	0.1027	0.1193	0.0000	248.1234	248.1234	0.0910	0.0000	250.3992
Worker	0.6732	0.7834	7.0382	4.0900e-003	0.2103	9.2000e-003	0.2195	0.0559	8.5300e-003	0.0644	0.0000	241.8429	241.8429	0.0415	0.0000	242.8808
Total	**1.0569**	**4.0684**	**9.3441**	**0.0264**	**0.2676**	**0.1166**	**0.3841**	**0.0724**	**0.1113**	**0.1837**	**0.0000**	**489.9663**	**489.9663**	**0.1326**	**0.0000**	**493.2800**

3.4 Building Construction - 2004

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	1.3349	7.3841	3.4209	0.0465		0.5805	0.5805		0.5805	0.5805	0.0000	402.1774	402.1774	0.1087	0.0000	404.8953
Total	**1.3349**	**7.3841**	**3.4209**	**0.0465**		**0.5805**	**0.5805**		**0.5805**	**0.5805**	**0.0000**	**402.1774**	**402.1774**	**0.1087**	**0.0000**	**404.8953**

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	0.3217	2.7540	1.9332	0.0187	0.0480	0.0900	0.1380	0.0139	0.0861	0.1000	0.0000	208.0158	208.0158	0.0763	0.0000	209.9238
Worker	0.5644	0.6567	5.9005	3.4300e-003	0.1763	7.7100e-003	0.1840	0.0468	7.1500e-003	0.0540	0.0000	202.7505	202.7505	0.0348	0.0000	203.6206
Total	**0.8861**	**3.4107**	**7.8337**	**0.0222**	**0.2243**	**0.0977**	**0.3221**	**0.0607**	**0.0933**	**0.1540**	**0.0000**	**410.7663**	**410.7663**	**0.1111**	**0.0000**	**413.5444**

3.4 Building Construction - 2004

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	1.3349	7.3841	3.4209	0.0465		0.5805	0.5805		0.5805	0.5805	0.0000	402.1769	402.1769	0.1087	0.0000	404.8948
Total	**1.3349**	**7.3841**	**3.4209**	**0.0465**		**0.5805**	**0.5805**		**0.5805**	**0.5805**	**0.0000**	**402.1769**	**402.1769**	**0.1087**	**0.0000**	**404.8948**

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	0.3217	2.7540	1.9332	0.0187	0.0480	0.0900	0.1380	0.0139	0.0861	0.1000	0.0000	208.0158	208.0158	0.0763	0.0000	209.9238
Worker	0.5644	0.6567	5.9005	3.4300e-003	0.1763	7.7100e-003	0.1840	0.0468	7.1500e-003	0.0540	0.0000	202.7505	202.7505	0.0348	0.0000	203.6206
Total	**0.8861**	**3.4107**	**7.8337**	**0.0222**	**0.2243**	**0.0977**	**0.3221**	**0.0607**	**0.0933**	**0.1540**	**0.0000**	**410.7663**	**410.7663**	**0.1111**	**0.0000**	**413.5444**

3.5 Paving - 2004

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	0.2004	1.4335	0.5819	8.0900e-003		0.0872	0.0872		0.0872	0.0872	0.0000	72.2985	72.2985	0.0163	0.0000	72.7065
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2004**	**1.4335**	**0.5819**	**8.0900e-003**		**0.0872**	**0.0872**		**0.0872**	**0.0872**	**0.0000**	**72.2985**	**72.2985**	**0.0163**	**0.0000**	**72.7065**

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	0.0116	0.0135	0.1214	7.0000e-005	3.6300e-003	1.6000e-004	3.7800e-003	9.6000e-004	1.5000e-004	1.1100e-003	0.0000	4.1701	4.1701	7.2000e-004	0.0000	4.1880
Total	**0.0116**	**0.0135**	**0.1214**	**7.0000e-005**	**3.6300e-003**	**1.6000e-004**	**3.7800e-003**	**9.6000e-004**	**1.5000e-004**	**1.1100e-003**	**0.0000**	**4.1701**	**4.1701**	**7.2000e-004**	**0.0000**	**4.1880**

3.5 Paving - 2004

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	0.2004	1.4335	0.5819	8.0900e-003		0.0872	0.0872		0.0872	0.0872	0.0000	72.2985	72.2985	0.0163	0.0000	72.7064
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2004**	**1.4335**	**0.5819**	**8.0900e-003**		**0.0872**	**0.0872**		**0.0872**	**0.0872**	**0.0000**	**72.2985**	**72.2985**	**0.0163**	**0.0000**	**72.7064**

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	0.0116	0.0135	0.1214	7.0000e-005	3.6300e-003	1.6000e-004	3.7800e-003	9.6000e-004	1.5000e-004	1.1100e-003	0.0000	4.1701	4.1701	7.2000e-004	0.0000	4.1880
Total	**0.0116**	**0.0135**	**0.1214**	**7.0000e-005**	**3.6300e-003**	**1.6000e-004**	**3.7800e-003**	**9.6000e-004**	**1.5000e-004**	**1.1100e-003**	**0.0000**	**4.1701**	**4.1701**	**7.2000e-004**	**0.0000**	**4.1880**

3.5 Paving - 2005

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	0.1447	1.0417	0.4499	6.7400e-003		0.0660	0.0660		0.0660	0.0660	0.0000	60.2488	60.2488	0.0118	0.0000	60.5439
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1447**	**1.0417**	**0.4499**	**6.7400e-003**		**0.0660**	**0.0660**		**0.0660**	**0.0660**	**0.0000**	**60.2488**	**60.2488**	**0.0118**	**0.0000**	**60.5439**

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	5.9800e-003	5.9300e-003	0.0563	4.0000e-005	3.0200e-003	8.0000e-005	3.1000e-003	8.0000e-004	7.0000e-005	8.7000e-004	0.0000	3.4316	3.4316	4.4000e-004	0.0000	3.4425
Total	**5.9800e-003**	**5.9300e-003**	**0.0563**	**4.0000e-005**	**3.0200e-003**	**8.0000e-005**	**3.1000e-003**	**8.0000e-004**	**7.0000e-005**	**8.7000e-004**	**0.0000**	**3.4316**	**3.4316**	**4.4000e-004**	**0.0000**	**3.4425**

3.5 Paving - 2005

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	0.1447	1.0416	0.4499	6.7400e-003		0.0660	0.0660		0.0660	0.0660	0.0000	60.2487	60.2487	0.0118	0.0000	60.5439
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1447**	**1.0416**	**0.4499**	**6.7400e-003**		**0.0660**	**0.0660**		**0.0660**	**0.0660**	**0.0000**	**60.2487**	**60.2487**	**0.0118**	**0.0000**	**60.5439**

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	5.9800e-003	5.9300e-003	0.0563	4.0000e-005	3.0200e-003	8.0000e-005	3.1000e-003	8.0000e-004	7.0000e-005	8.7000e-004	0.0000	3.4316	3.4316	4.4000e-004	0.0000	3.4425
Total	**5.9800e-003**	**5.9300e-003**	**0.0563**	**4.0000e-005**	**3.0200e-003**	**8.0000e-005**	**3.1000e-003**	**8.0000e-004**	**7.0000e-005**	**8.7000e-004**	**0.0000**	**3.4316**	**3.4316**	**4.4000e-004**	**0.0000**	**3.4425**

3.6 Architectural Coating - 2005

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	7.4294					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0414	0.2355	0.1143	1.6300e-003		0.0211	0.0211		0.0211	0.0211	0.0000	14.0429	14.0429	3.3900e-003	0.0000	14.1275
Total	**7.4708**	**0.2355**	**0.1143**	**1.6300e-003**		**0.0211**	**0.0211**		**0.0211**	**0.0211**	**0.0000**	**14.0429**	**14.0429**	**3.3900e-003**	**0.0000**	**14.1275**

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	0.0254	0.0252	0.2396	1.7000e-004	0.0129	3.3000e-004	0.0132	3.4100e-003	3.0000e-004	3.7200e-003	0.0000	14.5957	14.5957	1.8600e-003	0.0000	14.6422
Total	**0.0254**	**0.0252**	**0.2396**	**1.7000e-004**	**0.0129**	**3.3000e-004**	**0.0132**	**3.4100e-003**	**3.0000e-004**	**3.7200e-003**	**0.0000**	**14.5957**	**14.5957**	**1.8600e-003**	**0.0000**	**14.6422**

3.6 Architectural Coating - 2005

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	7.4294					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0414	0.2355	0.1143	1.6300e-003		0.0211	0.0211		0.0211	0.0211	0.0000	14.0429	14.0429	3.3900e-003	0.0000	14.1275
Total	**7.4708**	**0.2355**	**0.1143**	**1.6300e-003**		**0.0211**	**0.0211**		**0.0211**	**0.0211**	**0.0000**	**14.0429**	**14.0429**	**3.3900e-003**	**0.0000**	**14.1275**

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	0.0254	0.0252	0.2396	1.7000e-004	0.0129	3.3000e-004	0.0132	3.4100e-003	3.0000e-004	3.7200e-003	0.0000	14.5957	14.5957	1.8600e-003	0.0000	14.6422
Total	**0.0254**	**0.0252**	**0.2396**	**1.7000e-004**	**0.0129**	**3.3000e-004**	**0.0132**	**3.4100e-003**	**3.0000e-004**	**3.7200e-003**	**0.0000**	**14.5957**	**14.5957**	**1.8600e-003**	**0.0000**	**14.6422**

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	5.7435	43.2063	52.3705	0.3100	2.8009	1.0077	3.8086	0.7555	0.9626	1.7182	0.0000	5,688.4677	5,688.4677	1.8980	0.0000	5,735.9170
Unmitigated	5.7435	43.2063	52.3705	0.3100	2.8009	1.0077	3.8086	0.7555	0.9626	1.7182	0.0000	5,688.4677	5,688.4677	1.8980	0.0000	5,735.9170

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	2,503.76	2,606.33	2267.06	7,225,275	7,225,275
Total	2,503.76	2,606.33	2,267.06	7,225,275	7,225,275

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
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	7.30	7.50	46.40	16.40	37.20	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.394323	0.055127	0.150223	0.171506	0.046756	0.008777	0.022924	0.138429	0.001266	0.001220	0.006103	0.000952	0.002392
Single Family Housing	0.394323	0.055127	0.150223	0.171506	0.046756	0.008777	0.022924	0.138429	0.001266	0.001220	0.006103	0.000952	0.002392

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	670.2817	670.2817	0.0303	6.2700e-003	672.9081
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	670.2817	670.2817	0.0303	6.2700e-003	672.9081
NaturalGas Mitigated	0.0371	0.3168	0.1348	2.0200e-003		0.0256	0.0256		0.0256	0.0256	0.0000	366.9401	366.9401	7.0300e-003	6.7300e-003	369.1207
NaturalGas Unmitigated	0.0371	0.3168	0.1348	2.0200e-003		0.0256	0.0256		0.0256	0.0256	0.0000	366.9401	366.9401	7.0300e-003	6.7300e-003	369.1207

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					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	6.8762e+006	0.0371	0.3168	0.1348	2.0200e-003		0.0256	0.0256		0.0256	0.0256	0.0000	366.9401	366.9401	7.0300e-003	6.7300e-003	369.1207
Total		**0.0371**	**0.3168**	**0.1348**	**2.0200e-003**		**0.0256**	**0.0256**		**0.0256**	**0.0256**	**0.0000**	**366.9401**	**366.9401**	**7.0300e-003**	**6.7300e-003**	**369.1207**

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					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	6.8762e+006	0.0371	0.3168	0.1348	2.0200e-003		0.0256	0.0256		0.0256	0.0256	0.0000	366.9401	366.9401	7.0300e-003	6.7300e-003	369.1207
Total		**0.0371**	**0.3168**	**0.1348**	**2.0200e-003**		**0.0256**	**0.0256**		**0.0256**	**0.0256**	**0.0000**	**366.9401**	**366.9401**	**7.0300e-003**	**6.7300e-003**	**369.1207**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	2.30407e+006	670.2817	0.0303	6.2700e-003	672.9081
Total		**670.2817**	**0.0303**	**6.2700e-003**	**672.9081**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	2.30407e+006	670.2817	0.0303	6.2700e-003	672.9081
Total		**670.2817**	**0.0303**	**6.2700e-003**	**672.9081**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	2.7087	0.1292	2.3067	7.3000e-004		0.0175	0.0175		0.0175	0.0175	0.0000	117.1235	117.1235	7.2900e-003	2.0900e-003	117.9282
Unmitigated	2.7087	0.1292	2.3067	7.3000e-004		0.0175	0.0175		0.0175	0.0175	0.0000	117.1235	117.1235	7.2900e-003	2.0900e-003	117.9282

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	0.7429					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8563					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0115	0.0984	0.0419	6.3000e-004		7.9500e-003	7.9500e-003		7.9500e-003	7.9500e-003	0.0000	113.9335	113.9335	2.1800e-003	2.0900e-003	114.6106
Landscaping	0.0980	0.0308	2.2648	1.0000e-004		9.5600e-003	9.5600e-003		9.5600e-003	9.5600e-003	0.0000	3.1899	3.1899	5.1100e-003	0.0000	3.3176
Total	**2.7087**	**0.1292**	**2.3067**	**7.3000e-004**		**0.0175**	**0.0175**		**0.0175**	**0.0175**	**0.0000**	**117.1235**	**117.1235**	**7.2900e-003**	**2.0900e-003**	**117.9282**

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	0.7429					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8563					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0115	0.0984	0.0419	6.3000e-004		7.9500e-003	7.9500e-003		7.9500e-003	7.9500e-003	0.0000	113.9335	113.9335	2.1800e-003	2.0900e-003	114.6106
Landscaping	0.0980	0.0308	2.2648	1.0000e-004		9.5600e-003	9.5600e-003		9.5600e-003	9.5600e-003	0.0000	3.1899	3.1899	5.1100e-003	0.0000	3.3176
Total	**2.7087**	**0.1292**	**2.3067**	**7.3000e-004**		**0.0175**	**0.0175**		**0.0175**	**0.0175**	**0.0000**	**117.1235**	**117.1235**	**7.2900e-003**	**2.0900e-003**	**117.9282**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	43.4090	0.5601	0.0135	61.4457
Unmitigated	43.4090	0.5601	0.0135	61.4457

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	17.1355 / 10.8028	43.4090	0.5601	0.0135	61.4457
Total		**43.4090**	**0.5601**	**0.0135**	**61.4457**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	17.1355 / 10.8028	43.4090	0.5601	0.0135	61.4457
Total		**43.4090**	**0.5601**	**0.0135**	**61.4457**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	62.5862	3.6987	0.0000	155.0546
Unmitigated	62.5862	3.6987	0.0000	155.0546

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	308.32	62.5862	3.6987	0.0000	155.0546
Total		**62.5862**	**3.6987**	**0.0000**	**155.0546**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	308.32	62.5862	3.6987	0.0000	155.0546
Total		**62.5862**	**3.6987**	**0.0000**	**155.0546**

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

APPENDIX C. CARB 2020 AND 2025 ESTIMATED EMISSION INVENTORIES

2016 SIP Emission Projection Data

2020 Estimated Annual Average Emissions

SAN JOAQUIN VALLEY AIR BASIN

All emissions are represented in Tons per Day and reflect the most current data provided to ARB.

See detailed information.

Start a new query.

STATIONARY SOURCES	TOG	ROG	CO	NOX	SOX	PM	PM10	PM2.5	NH3
FUEL COMBUSTION	17.9	3.2	24.7	24.1	2.4	4.8	4.7	4.6	2.2
WASTE DISPOSAL	527.3	26.9	0.6	0.3	0.2	0.9	0.3	0.2	11.2
CLEANING AND SURFACE COATINGS	27.8	25.2	-	-	-	0.3	0.3	0.3	0.0
PETROLEUM PRODUCTION AND MARKETING	111.0	16.6	1.0	0.4	0.4	0.2	0.1	0.1	0.0
INDUSTRIAL PROCESSES	20.6	19.5	1.4	3.9	3.6	20.9	9.5	3.6	1.7
*** TOTAL STATIONARY SOURCES**	**704.7**	**91.3**	**27.7**	**28.6**	**6.5**	**27.2**	**14.9**	**8.7**	**15.2**
AREAWIDE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
SOLVENT EVAPORATION	55.0	49.9	-	-	-	-	-	-	113.1
MISCELLANEOUS PROCESSES	761.8	103.0	53.2	7.9	0.3	473.4	236.8	41.8	193.9
*** TOTAL AREAWIDE SOURCES**	**816.8**	**152.8**	**53.2**	**7.9**	**0.3**	**473.4**	**236.8**	**41.8**	**307.0**
MOBILE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
ON-ROAD MOTOR VEHICLES	27.3	24.9	167.9	96.9	0.6	7.8	7.6	3.4	3.6
OTHER MOBILE SOURCES	30.6	27.2	196.2	69.8	0.3	5.6	5.5	5.0	0.0
*** TOTAL MOBILE SOURCES**	**57.9**	**52.0**	**364.1**	**166.8**	**1.0**	**13.4**	**13.1**	**8.5**	**3.6**
GRAND TOTAL FOR SAN JOAQUIN VALLEY AIR BASIN	**1579.4**	**296.2**	**445.0**	**203.3**	**7.8**	**514.0**	**264.8**	**59.0**	**325.9**

Start a new query.

Secretary for Environmental Protection
Jared Blumenfeld
Visit his Website

Chair, California Air Resources Board
Mary D. Nichols
Visit her Website

The California Air Resources Board is one of six boards, departments, and offices under the California Environmental Protection Agency.

CalEPA | CalRecycle | DPR | DTSC | OEHHA | SWRCB

2016 SIP Emission Projection Data

2020 Estimated Annual Average Emissions

KERN COUNTY

All emissions are represented in Tons per Day and reflect the most current data provided to ARB.

See detailed information.

Start a new query.

KERN COUNTY COUNTY - MOJAVE DESERT AIR BASIN

STATIONARY SOURCES	TOG	ROG	CO	NOX	SOX	PM	PM10	PM2.5	NH3
FUEL COMBUSTION	0.5	0.1	0.8	2.4	0.2	0.4	0.4	0.4	0.0
WASTE DISPOSAL	8.4	0.1	0.0	-	0.0	0.0	0.0	0.0	0.1
CLEANING AND SURFACE COATINGS	0.9	0.8	-	-	-	0.0	0.0	0.0	-
PETROLEUM PRODUCTION AND MARKETING	0.1	0.1	-	-	-	-	-	-	-
INDUSTRIAL PROCESSES	0.1	0.1	10.2	18.4	8.1	3.7	2.9	1.7	0.1
*** TOTAL STATIONARY SOURCES**	**10.2**	**1.3**	**11.0**	**20.8**	**8.3**	**4.1**	**3.3**	**2.1**	**0.1**
AREAWIDE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
SOLVENT EVAPORATION	1.6	1.4	-	-	-	-	-	-	1.3
MISCELLANEOUS PROCESSES	3.5	1.2	11.0	0.6	0.0	18.6	9.7	2.6	0.7
*** TOTAL AREAWIDE SOURCES**	**5.0**	**2.6**	**11.0**	**0.6**	**0.0**	**18.6**	**9.7**	**2.6**	**2.0**
MOBILE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
ON-ROAD MOTOR VEHICLES	1.1	1.1	7.2	4.1	0.0	0.3	0.3	0.1	0.1
OTHER MOBILE SOURCES	5.0	4.9	23.8	5.5	0.3	3.0	2.9	2.9	0.0
*** TOTAL MOBILE SOURCES**	**6.2**	**5.9**	**31.0**	**9.6**	**0.3**	**3.3**	**3.2**	**3.0**	**0.1**
TOTAL KERN COUNTY IN MOJAVE DESERT	**21.4**	**9.8**	**53.0**	**31.0**	**8.6**	**26.0**	**16.2**	**7.7**	**2.3**

KERN COUNTY COUNTY - SAN JOAQUIN VALLEY AIR BASIN

STATIONARY SOURCES	TOG	ROG	CO	NOX	SOX	PM	PM10	PM2.5	NH3
FUEL COMBUSTION	12.6	1.8	9.9	7.6	0.7	2.7	2.6	2.5	1.6
WASTE DISPOSAL	224.6	12.2	0.2	0.1	0.0	0.1	0.0	0.0	5.4
CLEANING AND SURFACE COATINGS	3.0	2.7	-	-	-	0.0	0.0	0.0	
PETROLEUM PRODUCTION AND MARKETING	46.2	11.8	0.9	0.3	0.4	0.2	0.1	0.1	0.0
INDUSTRIAL PROCESSES	2.4	2.3	0.1	0.1	0.1	3.7	1.6	0.6	0.2

* TOTAL STATIONARY SOURCES	288.8	30.7	11.1	8.0	1.1	6.7	4.4	3.3	7.2
AREAWIDE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
SOLVENT EVAPORATION	10.9	10.0	-	-	-	-	-	-	26.5
MISCELLANEOUS PROCESSES	63.6	9.9	5.2	1.2	0.0	61.8	30.9	5.7	17.1
* TOTAL AREAWIDE SOURCES	74.5	19.9	5.2	1.2	0.0	61.8	30.9	5.7	43.6
MOBILE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
ON-ROAD MOTOR VEHICLES	5.4	4.9	31.4	23.5	0.1	1.7	1.6	0.7	0.8
OTHER MOBILE SOURCES	4.0	3.5	27.2	10.8	0.0	0.6	0.5	0.5	0.0
* TOTAL MOBILE SOURCES	9.4	8.4	58.6	34.2	0.2	2.2	2.2	1.2	0.8
TOTAL KERN COUNTY IN SAN JOAQUIN VALLEY	372.7	59.0	74.9	43.5	1.4	70.7	37.4	10.2	51.7
GRAND TOTAL FOR KERN COUNTY	394.0	68.8	127.9	74.4	10.0	96.7	53.6	17.9	54.0

Start a new query.

2016 SIP Emission Projection Data

2025 Estimated Annual Average Emissions

KERN COUNTY

All emissions are represented in Tons per Day and reflect the most current data provided to ARB.

See detailed information.

Start a new query.

KERN COUNTY COUNTY - MOJAVE DESERT AIR BASIN

STATIONARY SOURCES	TOG	ROG	CO	NOX	SOX	PM	PM10	PM2.5	NH3
FUEL COMBUSTION	0.5	0.1	0.8	2.5	0.2	0.4	0.4	0.4	0.0
WASTE DISPOSAL	9.3	0.1	0.0	-	0.0	0.0	0.0	0.0	0.1
CLEANING AND SURFACE COATINGS	1.0	0.9	-	-	-	0.0	0.0	0.0	-
PETROLEUM PRODUCTION AND MARKETING	0.1	0.1	-	-	-	-	-	-	-
INDUSTRIAL PROCESSES	0.1	0.1	11.0	19.7	8.6	3.9	3.2	1.9	0.1
*** TOTAL STATIONARY SOURCES**	**11.1**	**1.4**	**11.8**	**22.2**	**8.8**	**4.4**	**3.5**	**2.2**	**0.1**
AREAWIDE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
SOLVENT EVAPORATION	1.7	1.5	-	-	-	-	-	-	1.3
MISCELLANEOUS PROCESSES	3.5	1.2	11.1	0.6	0.0	18.5	9.7	2.6	0.7
*** TOTAL AREAWIDE SOURCES**	**5.2**	**2.7**	**11.1**	**0.6**	**0.0**	**18.5**	**9.7**	**2.6**	**2.0**
MOBILE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
ON-ROAD MOTOR VEHICLES	0.9	0.8	5.0	2.3	0.0	0.3	0.3	0.1	0.1
OTHER MOBILE SOURCES	5.0	4.8	24.2	4.6	0.3	3.0	2.9	2.9	0.0
*** TOTAL MOBILE SOURCES**	**5.8**	**5.6**	**29.2**	**6.9**	**0.3**	**3.3**	**3.2**	**3.0**	**0.1**
TOTAL KERN COUNTY IN MOJAVE DESERT	**22.1**	**9.7**	**52.1**	**29.7**	**9.2**	**26.1**	**16.4**	**7.8**	**2.3**

KERN COUNTY COUNTY - SAN JOAQUIN VALLEY AIR BASIN

STATIONARY SOURCES	TOG	ROG	CO	NOX	SOX	PM	PM10	PM2.5	NH3
FUEL COMBUSTION	12.4	1.7	9.6	7.2	0.6	2.6	2.5	2.4	1.7
WASTE DISPOSAL	247.0	13.4	0.2	0.1	0.0	0.1	0.0	0.0	6.0
CLEANING AND SURFACE COATINGS	3.3	3.0	-	-	-	0.0	0.0	0.0	
PETROLEUM PRODUCTION AND MARKETING	45.0	10.8	0.8	0.3	0.4	0.2	0.1	0.1	0.0
INDUSTRIAL PROCESSES	2.6	2.4	0.1	0.1	0.1	4.0	1.7	0.6	0.2

* TOTAL STATIONARY SOURCES	310.3	31.3	10.7	7.6	1.1	6.9	4.4	3.2	7.8
AREAWIDE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
SOLVENT EVAPORATION	11.4	10.3	-	-	-	-	-	-	25.1
MISCELLANEOUS PROCESSES	63.7	9.9	5.2	1.2	0.0	61.8	30.9	5.7	17.2
* TOTAL AREAWIDE SOURCES	75.0	20.3	5.2	1.2	0.0	61.8	30.9	5.7	42.3
MOBILE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
ON-ROAD MOTOR VEHICLES	4.3	3.9	23.7	12.7	0.1	1.7	1.7	0.7	0.8
OTHER MOBILE SOURCES	3.5	3.1	28.0	8.1	0.0	0.4	0.4	0.4	0.0
* TOTAL MOBILE SOURCES	7.8	7.0	51.6	20.8	0.2	2.1	2.1	1.1	0.8
TOTAL KERN COUNTY IN SAN JOAQUIN VALLEY	393.1	58.5	67.6	29.6	1.3	70.8	37.4	10.1	51.0
GRAND TOTAL FOR KERN COUNTY	415.2	68.2	119.7	59.3	10.5	97.0	53.8	17.8	53.2

Start a new query.

2016 SIP Emission Projection Data

2025 Estimated Annual Average Emissions

SAN JOAQUIN VALLEY AIR BASIN

All emissions are represented in Tons per Day and reflect the most current data provided to ARB.

See detailed information.

Start a new query.

STATIONARY SOURCES	TOG	ROG	CO	NOX	SOX	PM	PM10	PM2.5	NH3
FUEL COMBUSTION	17.7	3.0	24.6	23.0	2.4	4.7	4.6	4.5	2.3
WASTE DISPOSAL	572.3	29.2	0.6	0.3	0.2	1.0	0.3	0.2	12.2
CLEANING AND SURFACE COATINGS	30.8	27.9	-	-	-	0.4	0.4	0.3	0.0
PETROLEUM PRODUCTION AND MARKETING	109.5	15.1	0.9	0.3	0.4	0.2	0.1	0.1	0.0
INDUSTRIAL PROCESSES	22.4	21.1	1.6	4.2	3.8	22.6	10.3	3.9	1.9
*** TOTAL STATIONARY SOURCES**	**752.7**	**96.4**	**27.7**	**27.7**	**6.8**	**28.9**	**15.7**	**9.0**	**16.4**
AREAWIDE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
SOLVENT EVAPORATION	57.5	52.0	-	-	-	-	-	-	109.9
MISCELLANEOUS PROCESSES	761.9	103.0	53.2	7.4	0.3	469.2	234.9	41.9	194.5
*** TOTAL AREAWIDE SOURCES**	**819.4**	**155.0**	**53.2**	**7.4**	**0.3**	**469.2**	**234.9**	**41.9**	**304.4**
MOBILE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
ON-ROAD MOTOR VEHICLES	20.5	18.8	118.9	54.2	0.6	7.9	7.7	3.2	3.4
OTHER MOBILE SOURCES	26.8	23.9	200.1	54.4	0.3	4.7	4.6	4.2	0.0
*** TOTAL MOBILE SOURCES**	**47.3**	**42.7**	**319.0**	**108.6**	**0.9**	**12.6**	**12.3**	**7.5**	**3.5**
GRAND TOTAL FOR SAN JOAQUIN VALLEY AIR BASIN	**1619.4**	**294.1**	**399.9**	**143.7**	**8.0**	**510.7**	**262.8**	**58.3**	**324.3**

Start a new query.

Secretary for Environmental Protection
Jared Blumenfeld
Visit his Website

Chair, California Air Resources Board
Mary D. Nichols
Visit her Website

The California Air Resources Board is one of six boards, departments, and offices under the California Environmental Protection Agency.

CalEPA | CalRecycle | DPR | DTSC | OEHHA | SWRCB

APPENDIX D. HEALTH RISK ASSESSMENT MODELING FILES

(Electric Files)

APPENDIX B
Biological Resources Evaluation

BIOLOGICAL RESOURCE EVALUATION

Addendum to the Reina Ranch Project EIR
Assessor's Parcel Map No. 463-052-05, -06
County of Kern
Bakersfield, California

Prepared for:

Affentranger Farms, LLC
18107 Kratzmeyer Road
Bakersfield, California 93314

Prepared by:

Pruett Biological Resource Consulting
8613 Beaver Drive
Bakersfield, California 93312
661.421.0006

11 June 2021

EXECUTIVE SUMMARY

Pruett Biological Resource Consulting, Inc. (PruettBio) has prepared this biological resource evaluation for the Addendum to the Reina Ranch Project Environmental Impact Report (EIR). The Reina Ranch Project EIR, which analyzed the impacts of a 253 single-family residential development on the 76.36 net acres (79.75 gross acres) (32.27 hectares) project site, was certified by the Kern County Board of Supervisors on September 22, 2009. The approved project addressed in the EIR consists of the following:

- Site plan with a circulation system that provides access by linear streets for 253 single-family residential dwelling units with an average density of 7,200 to 9,600 square feet on approximately 72.0 net acres for a net average density of 3.51 dwelling unit/acre;
- Two storm water retention basins in the north central and northwest corner of the project site, respectively, totaling 3.65 acres; and
- A centrally located 2.57-acre drilling island on the project site preserved as undeveloped land for future oil drilling.

The approved project was proposed to realign Reina Road between Rudd Avenue and Santa Fe Way so that it intersects Santa Fe Road at a 90-degree angle, approximately 650 feet north of the existing intersection. In addition, the approved project would provide for connections to the Vaughn Water Company and North of the River (NOR) Sanitary District to provide domestic water and public sewer services to the project site.

The Addendum to the EIR analyzes a proposed modified project that would result in the following modifications to the approved project:

- Redesign of the site plan with a circulation system with linear streets and cul-de-sacs resulting in an increase from 253 to 263 single-family residential dwelling units with an average density 7,200 to 9,600 square feet on approximately 72.0 net acres for a net average density of 3.51 dwelling unit/acre;
- Reduction from two storm water retention basins totaling 3.65 acres to one 1.24-acre storm water retention basin in the northwest corner of the project site;
- Relocation of a 2.57-acre drilling island preserve in the center of the site plan to a 2.64-acre drilling island to preserve undeveloped land for future oil drilling in the northeast corner of the project site; and
- Removal of the Cluster (CL) Combining Overlay on the project site.

Both the approved proposed project addressed in the Reina Ranch Project EIR and the Addendum to the Reina Ranch Project EIR would result in the development of the entire 76.36-acre project site.

The boundaries of the project site for the proposed modified project would be unchanged from the approved project. The project site is located in an unincorporated part of Kern County at the western edge of the City of Bakersfield, California, in Section 15, Township 29 South, Range 26 East, Mount Diablo Base and Meridian. The project site is bounded by Rudd Avenue to the west, Reina Road to the north, Leonard Alvarado Road to the east, and agricultural land and a single-family residential development to the south.

The project site is located within the geographic range of several federal-, and state-listed, threatened and/or endangered plant and animal taxa. Several non-listed, special-status species also have the potential to occur in the vicinity of the project site.

The purpose of this report is to document the biological resources identified during a reconnaissance-level field study of the project site and include biological resources potentially occurring as identified during a literature review of the site and vicinity. The report is intended to evaluate potential impacts to biological resources resulting from the development of the proposed, modified project site, and to recommend avoidance and minimization measures for implementation prior to and during project activities. Prior to the field study, a literature review was conducted of the site and vicinity of the biological resources known to occur based on recorded, direct observation, or potentially occurring in the project impact area based on current or historical habitat conditions. During the field study, existing habitat

conditions, direct observations and/or species sign were recorded to assess the potential for occurrence of special-status species. This report includes an evaluation of those special-status biological resources not observed during the field study, with the potential to occur on the property based on the habitat conditions at the time of the field study.

The project site is located in an unincorporated part at the western edge of the City of Bakersfield. The project vicinity has been historically farmed. Urban development has increased along the margins of Metropolitan Bakersfield in the past 30 years and has resulted in the conversion of farmland to residential and commercial properties. The project site was under grain production at the time of the field study. The project site is surrounded by mixed use residential, agricultural, and commercial development with scattered oil production. No undisturbed, native, or recovering habitat is present on the site or adjacent parcels.

The literature review and database queries yielded 21 special-status plant species and 32 special-status animal species as potentially occurring within the vicinity of the project site. Of these, 5 plant species, and 16 animal species have federal-, and/or state-listed and are afforded protection under federal or state law.

Development of the proposed, modified project will not conflict with existing or adopted Habitat Conservation Plans, Natural Community Conservation Plans, local or regional conservation plans, or local ordinances protecting biological resources. The project site is within the Metropolitan Bakersfield Habitat Conservation Plan (MBHCP). The field study was conducted in accordance with the Federal Endangered Species Act section 10(a)(1)(B) permit and California Endangered Species Act incidental take permit (ITP) issued by the California Department of Fish and Wildlife, pursuant to Fish and Game Code section 2081(b)(ITP No. 2081-2013-058-04), for the MBHCP. Evaluation of potential impacts to plant and animal species are required under federal and state regulation. The California Environmental Quality Act (CEQA) Appendix G thresholds have been used to evaluate potential impacts to the biological resources from the development of the proposed, modified project.

Impacts to covered plant and animal species, other than blunt-nosed leopard lizard or bird species afforded protection under the Migratory Bird Treaty Act (MBTA), would be fully-mitigated by participation in the MBHCP. Recommendations included in this report, if any, when implemented in concert with the MBHCP, would be expected to mitigate any project impacts to biological resources to a less-than-significant level.

Table of Contents

INTRODUCTION

Pruett Biological Resource Consulting, Inc. (PruettBio) has prepared this biological resource evaluation for the proposed development of the Reina Ranch Project, in an unincorporated area of Kern County, adjacent to the western edge of the City of Bakersfield. The report documents biological resources identified during fieldwork conducted on the project site and those identified through a literature search as potentially occurring based on known observations or historic habitat conditions. The report uses the information collected during the field study and literature search to evaluate potential impacts to biological resources, resulting from the project. The report is intended to assist in the analysis of the proposed, modified project in the Addendum to the Reina Ranch EIR.

Listed plant and animal species are protected under the Federal Endangered Species Act (FESA) and the California Endangered Species Act (CESA). Protection of other non-listed, special-status species is afforded under additional regulation including the Migratory Bird Treaty Act (MBTA). Pursuant to the California Environmental Quality Act (CEQA) impacts to non-listed, special-status species must be evaluated. Where necessary, the report recommends avoidance and minimization measures for implementation prior to and during project activities. The report is intended to provide technical information in support of a CEQA preliminary review. For the purposes of this report, potential impacts to the biological resources of the proposed project were evaluated in accordance with Appendix G of the *CEQA Guidelines* (2021).

PROJECT LEGAL DESCRIPTION

The project site consists of 76.36 net acres (79.75 gross acres) (32.27 hectares) of APNs 463-052-05, -06. The project site is located on the west side of Santa Fe Way, about 0.25 mile north of Renfro Road in an unincorporated area of Kern County, California, generally described as northwest Bakersfield. The project is located in Section 15, Township 29 South, Range 26 East, Mount Diablo Base and Meridian.

PROJECT SETTING AND PHYSICAL DESCRIPTION

The project site is located in the southern San Joaquin Valley; a broad, treeless plain in the rain shadow of the Inner Coast Ranges. The region's climate can be characterized as Mediterranean; with hot, dry summers and cool, moist winters. Summer high temperatures typically exceed 100 °Fahrenheit (°F); with an average of 110 days per year over 90 °F. Winter temperatures in the San Joaquin Valley are mild, with an average of only 16 days per year with frost (Twisselmann 1967).

Rainfall varies, increasing from west to east, with the west side of the valley receiving an average of around 4 inches (10 centimeters) per year and the east side averaging about 6 inches (15 centimeters) per year. Winter fog, called Tule fog, sometimes forms during the months of November, December, and January, supplementing the annual precipitation. Approximately 90% of the rainfall in the region occurs between November 1 and April 1. Drought cycles occur periodically, becoming severe enough that plant and animal populations can experience large fluctuations. The vegetation communities in the San Joaquin Valley are distinguishable from the Mojave Desert to the east due to Tule fog, higher humidity, and isolation from continental climatic influences by mountain ranges (Twisselmann 1967).

The general topography of the area slopes very subtly southwest with the project generally flat at about 285 feet (87 meters) above mean sea level. The project and vicinity have been historically farmed for decades. The project site was under grain production at the time of the field study. The project site is surrounded by mixed use residential, agricultural, and commercial development with scattered oil production. No undisturbed, native, or recovering habitat is present on the project site or adjacent parcels.

METHODS

LITERATURE REVIEW

PruettBio conducted a literature review to identify known observations and potential for listed, or otherwise special-status, species to occur in the vicinity of the project site. A standard, 10-mile (16-kilometer) radius query was performed. Database records reviewed included:

- **United States Fish & Wildlife Service (USFWS) iPac:** The iPac report generates a list of federal-listed species and other resources under the jurisdiction of the USFWS, including designated critical habitat for listed species, National Wildlife Refuge lands, and Wetlands in the National Wetlands Inventory. The list includes resources that are outside of the project site, but that have the potential to be impacted by project activities.

- **USFWS National Wetlands Inventory:** The Wetlands Mapper is an online inventory integrating digital map data and other resources to provide current information regarding the status of national wetlands, riparian, and deepwater habitats.

- **United States Department of Agriculture (USDA) WebSoil Survey:** The report is an online database providing soil data produced by the National Cooperative Soil Survey, a joint effort of the USDA and other federal, state, and local agencies. The information drawn for the Soil Survey of Kern County, California, Northwestern Part was originally drawn from fieldwork completed in 1981 with soil names and descriptions approved in 1982.

- **California Natural Diversity Database (CNDDB-RareFind 5):** The CNDDB is a database of listed, or otherwise special-status, plant and animal species and sensitive communities maintained by the California Department of Fish and Wildlife (CDFW). The information queried for this report included a standard 10-mile radius of the project site.

- **California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants:** CNPS is a private, professional organization that maintains a database evaluating the current conservation status of California's rare, threatened, and endangered plant species. The information queried for this report included a standard 10-mile radius of the project site. The list includes resources that are outside of the project site, but that have the potential to be impacted by project activities based on known historic or current habitat features.

FIELD STUDY

A reconnaissance-level, biological field study was conducted by Steven P. Pruett on 25 January 2021. The entire project site was surveyed by walking and driving the perimeter and all internal farm roads to evaluate all representative habitat features of the site. Walking transects on the entire project site spaced at no greater than 100-foot (30-meter) intervals was not possible due to active grain production. The field study conducted allowed for 100% visual coverage of the project site. Field notes included observations of all plant and wildlife species observed. Direct observations and/or species sign was recorded to assess the potential for occurrence. Land cover types and general habitat conditions were recorded and photographed. Special-status species and habitat features, such as vegetation communities or ephemeral channels, were also recorded and photographed if observed.

Coordinates for important biological resource elements and direct observations of special-status species were recorded using a handheld geographic positioning system unit. If observed, San Joaquin kit fox (SJKF) dens were classified as defined by the *USFWS Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (2011). All plant taxa encountered were identified to the extent possible given the diagnostic features present. Identifications were made using keys contained in *The Jepson Manual: Vascular Plants of California* and online updates containing revisions to taxonomic treatments (Baldwin et al. 2012; Jepson Flora Project 2015).

RESULTS

This section summarizes the results of the field study conducted on the project site and evaluates those results for the known or potential for occurrence of special-status species based on the literature review and database queries and pursuant to statutory regulation. Discussions are provided describing the existing habitat conditions including vegetation communities, land cover and current use; soils; special-status biological resources potentially occurring in the vicinity of the project site; the potential for jurisdictional resources including designated critical habitat and riparian/wetland/water resource features; the potential for wildlife migration corridors and nursery sites; and regional and local policy.

VEGETATION COMMUNITIES AND LAND COVER

The project site is located at the northwest edge of urban development of Metropolitan Bakersfield. Before conversion to farmland, the original vegetive communities of the project site were Non-native Grassland (Holland 42200) and Valley Saltbush Scrub (Holland 36220). No undisturbed, native, or recovering habitat is present on the project site, adjacent parcels, or general vicinity of the project. The project site and surrounding area have been intensively farmed for decades. Urban development has increased along the margins of Metropolitan Bakersfield in the past 30 years and has resulted in the conversion of farmland to residential and commercial properties. The project site was under grain production at the time of the field study. No undisturbed, native, or recovering habitat is present on the site or adjacent parcels. The potential for any native herbaceous species is extremely low due to ongoing disturbance. The project site farm roads and margins are dominated by ruderal/invasive plant species.

SOILS

The USGS soil survey map describes the soil of the project site as Unit 174, Kimberlina fine sandy loam, 0 to 2 percent slopes, MLRA 17, Unit 196, Milham sandy loam, 0 to 2 percent slopes, MLRA 17, and Unit 243, Wasco sandy loam (NRCS 2020). Unit 174 is alluvium derived from igneous and sedimentary rock found on alluvial fans. It is comprised of fine sandy loam and silt loam to a depth of about 71 inches. The depth to the restrictive feature is more than 80 inches and the available water storage in profile is listed as moderate (about 8.7 inches). This soil has a prime farmland classification and is of statewide importance. Unit 196, Milham sandy loam, 0 to 2 percent slopes, MLRA 17. Milham sandy loam is derived from igneous and sedimentary rock and is generally found on alluvial fans, terraces, fan remnants, and plains. The typical profile is 10 inches (25 centimeters) sandy loam, 10 to 22 inches (25-35 centimeters) loam, 22 to 49 inches (56-125 centimeters) clay loam, and from 49 to 60 inches (125-152 centimeters) sandy loam. The soil is classified as well-drained with medium runoff. Unit 243 is alluvium derived from mixed rock sources found on alluvial fans and flood plains. It is comprised of sandy loam, loamy sand, and sand to a depth of about 62 inches. The depth to the restrictive feature is more than 80 inches and the available water storage in profile is listed as low (about 6.4 inches).

Unit 196, Milham sandy loam, 0 to 2 percent slopes, MLRA 17. Milham sandy loam is derived from igneous and sedimentary rock and is generally fund on alluvial fans, terraces, fan remnants, and plains. The typical profile is 10 inches (25 centimeters) sandy loam, 10 to 22 inches (25-35 centimeters) loam, 22 to 49 inches (56-125 centimeters) clay loam, and from 49 to 60 inches (125-152 centimeters) sandy loam. The soil is classified as well-drained with medium runoff.

BIOLOGICAL RESOURCES

The literature review and database queries yielded 21 special-status plant species as potentially occurring within the vicinity of the project site. Thirty-two animal species were identified as potentially occurring in the region of the project site. No listed, or otherwise special-status plant or animal species, or animal species sign was observed during the field study. The evaluation of special-status species that were found during the literature review with a potential to occur in the region are included in Appendix B.

Special-Status Plant Species

Special-status plant species considered in this evaluation include all plant species that meet one or more of the following criteria:

- Listed or proposed for listing as threatened or endangered under ESA or candidates for possible future listing as threatened or endangered under the ESA (50 CFR §17.12).

- Listed or candidates for listing by the State of California as threatened or endangered under CESA (Fish and Game Code §2050 et seq.). A species, subspecies, or variety of plant is endangered when the prospects of its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition, disease, or other factors (Fish and Game Code §2062). A plant is threatened when it is likely to become endangered in the foreseeable future in the absence of special protection and management measures (Fish and Game Code §2067).

- Listed as rare under the California Native Plant Protection Act (Fish and Game Code §1900 et seq.). A plant is rare when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens (Fish and Game Code §1901).

- Meet the definition of rare or endangered under CEQA §15380(b) and (d). Species that may meet the definition of rare or endangered include the following:
    - Species considered by the California Native Plant Society (CNPS) to be "rare, threatened or endangered in California" (Lists 1A, 1B and 2);
    - Species that may warrant consideration on the basis of local significance or recent biological information.
    - Some species included on the California Natural Diversity Database's (CNDDB) Special Plants, Bryophytes, and Lichens List (California Department of Fish and Game 2008).

- Considered a locally significant species, that is, a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region (CEQA §15125 (c)) or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G). Examples include a species at the outer limits of its known range or a species occurring on an uncommon soil type.

Precipitation has been about average to date, resulting in an acceptable year for annual plant species observations. Of the 21 special-status plant species returned during database queries for the project vicinity, 5 species are either federally- or state-listed as threatened or endangered. Although CEQA requires consideration for impacts to locally significant plant species, no mitigation is legally required to compensate for impacts to non-listed plant species. No listed, or otherwise special-status plant species was observed during the fieldwork conducted for the preparation of this report. No listed, or otherwise special-status plant species, has been recorded as occurring within the project site. The potential for occurrence of any special-status plant species is unlikely due to decades of intensive farming.

Special-Status Animal Species

Special-status animal species considered in this evaluation include those that may occur in the project vicinity that have statutory protections. This includes federal- and state-listed (rare, threatened, or endangered; fully protected) species and candidates for listing under the respective endangered species acts. Species that are of special concern to the CDFW or the USFWS are included in this evaluation. Special-status bird species that are afforded protection under the MBTA which may nest on or within an approximate 10-mile (16-kilometer) radius of the project site are also evaluated. No listed, or otherwise special-status animal species or their sign was observed during the field study.

Designated Critical Habitat

The USFWS iPac report and USFWS Designated Critical Habitat Mapper lists no Designated Critical Habitat (USFWS 2020). Designated Critical Habitats closest to the project site include California condor (*Gymnogyps californianus*) approximately 22-miles south and Buena Vista Lake shrew (*Sorex ornatus relictus*) approximately 12-miles southwest of the project site. No suitable habitat for either species exists on the project site.

Jurisdictional Water Resource Features

Section 404 of the Federal Clean Water Act (CWA) regulates discharge of dredged and fill material into Waters of the United States. Wetlands are included under this jurisdiction. Proposed activities that may result in discharge of material into Waters of the U.S. require a permit review process by the U.S. Army Corps of Engineers as set forth under CWA section 404(b)(1). Fish and Game Code section 1602 requires any person, state or local governmental agency, or public utility to notify CDFW before beginning any activity that will substantially modify a river, stream, or lake.

A search of the USFWS National Wetlands Inventory resulted in no riparian, wetlands, or other jurisdictional water features mapped on the project site (USFWS 2021). These results are consistent with the observed conditions within the survey area.

Special-Status Natural Communities

No special-status vegetation communities on the project site were identified by the USFWS iPac query, the CNDDB, or the CNPS Inventory (USFWS 2021, CDFW 2021, CNPS 2021). These results are consistent with the observed conditions within the survey area.

Wildlife Migration Corridors and Nursery Sites

Wildlife corridors can be defined as connections between wildlife blocks that meet specific habitat needs for species movement generally during migratory periods but seasonally as well. Wildlife corridors generally contain habitat dissimilar to the surrounding vicinity and include examples such as riparian areas along rivers and streams, washes, canyons, or otherwise undisturbed areas within urbanization. Corridor width requirements can vary based on the needs of the species utilizing them. Development of the project would not impact wildlife migration corridors or nursery sites.

Regional and Local Policies

The proposed, modified project will not conflict with existing or adopted Habitat Conservation Plans, Natural Community Conservation Plans, local or regional conservation plans, or local ordinances protecting biological resources. The project site is located within the MBHCP, CDFW, ITP boundaries. Recommendations included in this report when implemented in concert with the MBHCP, would be expected to mitigate any project impacts to biological resources to a less-than-significant level.

IMPACT ANALYSIS AND RECOMMENDED MITIGATION MEASURES

This section provides an analysis of the impacts of the proposed, modified project following the standards of CEQA and provides recommendations that, when implemented, would reduce impacts to less-than-significant levels. It is important to note that potential take of any federal- or state-listed species from project activities would require contacting the appropriate wildlife agency (the USFWS and/or the CDFW). This contact may result in a requirement to obtain federal and/or state take authority for listed species as necessary.

The project site is located within the MBHCP ITP boundaries. Impacts to covered plant and animal species, other than blunt-nosed leopard lizard or bird species afforded protection under the MBTA, would

be fully-mitigated by participation in the MBHCP. Recommendations included in this report when implemented in concert with the MBHCP, would be expected to mitigate any project impacts to biological resources to a less-than-significant level.

CEQA Appendix G thresholds have been used to evaluate potential impacts to the biological resources from the proposed project. The project would create a significant impact to biological resources, based on the specifications in Appendix G of the CEQA Guidelines, if the following were to occur:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;

2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;

3. Have a substantial adverse effect on federally protected wetlands as defined by section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;

6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

The following analysis discusses potential impacts associated with the development of the project and provides recommendations where appropriate to further reduce potential impacts.

1. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, by the CDFW, or the USFWS?

Direct and indirect impacts, in the form of “incidental take” of a threatened, endangered, or otherwise protected species, are not expected as a result of the development of the proposed, modified project..

2. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations, or by the CDFW or the USFWS?

No riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service exists on the project site. No adverse effect will occur as a result of the development of the proposed, modified project and no mitigation measures are recommended.

3. Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No features, identified in wetland categories, appear on the USFWS National Wetlands Inventory mapping (USFWS 2021) on the proposed, modified project site. No federally protected wetlands as defined by Section 404 of the Clean Water Act were identified during the field study conducted for the

preparation of this report. No substantial adverse effect will occur as a result of the development of the project. No mitigation measures are recommended.

4. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

No migratory wildlife corridors or wildlife nursery sites were identified during the literature search or field study. The project will not interfere substantially with the movement of any native fish of wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. The following recommendations are provided for the general protection of bird species that may occur on the project site or vicinity in compliance with the MBTA:

If ground-disturbing activities are planned during the nesting season for migratory birds that may nest on or near the site (generally February 1 through August 31), nesting bird surveys are recommended prior to the commencement of ground disturbance for project activities. If nesting birds are present, no new construction or ground disturbance should occur within an appropriate avoidance area for that species until young have fledged, unless otherwise approved and monitored by a qualified onsite biologist. Appropriate avoidance should be determined by a qualified biologist. In general, minimum avoidance zones for active nests should be implemented as follows: 1) ground or low-shrub nesting non-raptors – 300 feet (91 meters); 2) burrowing owl – as appropriate based on nest location, existing surrounding activity, and evaluation of owl behavior. Coordination with CDFW may be warranted. 3) Sensitive raptors (e.g., prairie falcon, golden eagle) – 0.5 miles (0.8 kilometers); 3) other raptors – 500 feet (152 meters).

5. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

There are no biological resources on the site which are protected by local policies. Impacts from conflicts with local policies will not occur. No additional mitigation measures are recommended.

6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

The project does not conflict with any Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. No additional mitigstion measures are recommended.

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APPENDIX A

PROJECT VICINTY AND SITE

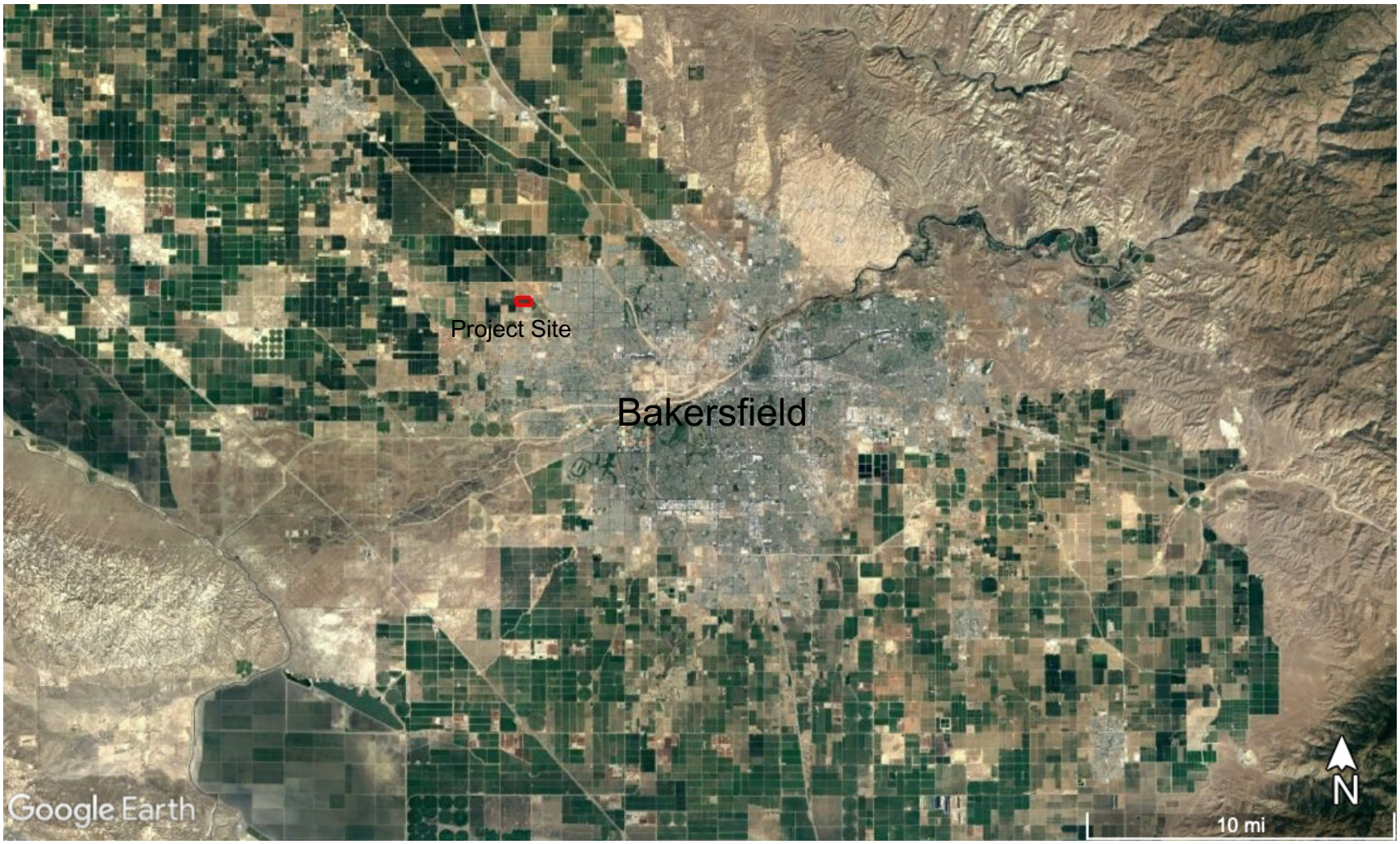

Figure A-1. Aerial photograph of the project and vicinity (Google Earth Pro 2021).

Figure A-2. Aerial photograph of the project site (Google Earth Pro 2021).

Figure A-3. Photograph of the project taken from near the southeast corner facing southeast (25JAN21).

Figure A-4. Photograph of the project taken from the northeast corner of the project facing southwest (25JAN21).

Figure A-5. Photograph taken in abut the middle of the south edge of the project facing west. Home construction shows in the left of the photograph (25JAN21).

Figure A-6. Photograph taken from the southeast corner of the project facing northwest (25JAN21).

APPENDIX B

SPECIAL-STATUS PLANT AND ANIMAL EVALUATION

Table B-1: Special-status Plants That May Occur in the Vicinity of the Project.

Scientific Name **Common Name**	**Status Fed/State/CNPS**	**Description**	**Blooming Period**	**Field Study Results/Potential for Occurrence**
Astragalus hornii var. *hornii* Horn's milk vetch	S/-/1B.1	Annual herb in the Fabaceae found in meadows and seeps and on playas and lake margins on alkaline soils between 197 and 2,789 feet (60–850 meters) in elevation. Known from occurrences in the Southern San Joaquin Valley, the Tehachapi Mountains and the Western Transverse Ranges in Kern, Los Angeles, and San Bernardino Counties.	May to October	**Not Observed/Not Expected**. Decades of intensive farming has resulted in vegetation limited to invasive/ruderal species.
Atriplex cordulata var. *cordulata* Heartscale	S/-/1B.2	Herbaceous annual in the Chenopodiaceae found in chenopod scrub, meadows and weeps, and valley and foothill grasslands in sandy, saline or alkaline soils below 1,837 feet (560 meters) in elevation. Known to occur in the Great Central Valley from Kern County north to Southern Butte County.	April to October	**Not Observed/Not Expected**. Decades of intensive farming has resulted in vegetation limited to invasive/ruderal species.
Atriplex coronata var. *vallicola* Lost Hills crownscale	S/-/1B.2	Herbaceous annual in the Chenopodiaceae found in valley and foothill grasslands, playas, and vernal pools on alkaline soils between 456 and 1,640 feet (139–500 meters) in elevation.	April to August	**Not Observed/Not Expected**. Decades of intensive farming has resulted in vegetation limited to invasive/ruderal species.
Atriplex tularensis Bakersfield smallscale	-/E/1A	Annual herb in the Chenopodiaceae found in valley and foothill grasslands, between 131 and 328 feet (40–100 meters) in elevation. Known to occur in the San Joaquin Valley from Northwestern Kern County north to Southern Merced County and in the Sacramento Valley in Southern Butte County.	June to August (occasionally October)	**Not Observed/Not Expected**. Decades of intensive farming has resulted in vegetation limited to invasive/ruderal species.
Calochortus striatus Alkali mariposa lily	S/-/1B.2	Bulbiferous perennial herb in the Liliaceae found in chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grasslands on sandy often granitic, sometimes serpentine soils, between 1,296 and 3,281 feet (395–1,000 meters). Known to occur in the Outer South Coast Ranges in Santa Barbara and San Luis Obispo Counties.	April to May	**Not Observed/Not Expected**. Decades of intensive farming has resulted in vegetation limited to invasive/ruderal species.
Caulanthus californicus California jewelflower	E/E/1B.1	Annual herb in the Brassicaceae family found on serpentinite soils in closed-cone coniferous forest, chaparral, and cismontane woodland between 1,542 and 4,003 feet (470–1,220 meters) in elevation.	May to July	**Not Observed/Not Expected**. Decades of intensive farming has resulted in vegetation limited to invasive/ruderal species.

Scientific Name **Common Name**	**Status Fed/State/CNPS**	**Description**	**Blooming Period**	**Field Study Results/Potential for Occurrence**
Chloropyron molle ssp. *hispidum* Hispid bird's-beak	S/-/1B.1	Hemiparasitic annual herb in the Orobanchaceae family found on coastal dunes and coastal saltwater marshes and swamps below 98 feet (30 meters) in elevation.	May to October	**Not Observed/Not Expected**. Decades of intensive farming has resulted in vegetation limited to invasive/ruderal species.
Delphinium recurvatum Recurved larkspur	S/-/1B.2	Perennial herb in the Ranunculaceae family found in chaparral, cismontane woodland, and pinyon and juniper woodland on rocky, carbonate soils between 984 and 4,396 feet (300–1,340 meters) in elevation. Known to occur in Kern and Tulare Counties.	April to May	**Not Observed/Not Expected**. Decades of intensive farming has resulted in vegetation limited to invasive/ruderal species.
Diplacus pictus *Calico monkeyflower*	-/-/1B.2	Annual herb in the Phrymaceae family found in upland and cismontane woodland on granitic soils between 328 and 4690 feet (100-1430 meters). Known to occur in Kern and Tulare Counties.	March to May	**Not Observed/Not Expected**. Decades of intensive farming has resulted in vegetation limited to invasive/ruderal species.
Eremalche parryi ssp. *kernensis* Kern mallow	E/-/1B.1	Perennial, stoloniferous herb in the Onagraceae family found in meadows ad seeps, and subalpine coniferous forest in mesic soils between 6,562 and 10,236 feet (2,000–3,120 meters) in elevation. Known to occur in Alpine, El Dorado, Fresno, Madera, Mono, Nevada, Sierra, and Tuolumne Counties.	July to August	**Not Observed/Not Expected**. Decades of intensive farming has resulted in vegetation limited to invasive/ruderal species.
Eriastrum hooveri Hoover's eriastrum	D/-/4.2	Annual herb in the Polemoniaceae family that occurs between 164 and 3,002 feet (50–915 meters) in elevation in pinyon-juniper woodland, and valley and foothill grasslands, occasionally on gravelly soils. Known to occur in the Southern San Joaquin Valley in Kern and Fresno Counties and on the Carrizo Plain in San Luis Obispo County.	March to July	**Not Observed/Not Expected**. Decades of intensive farming has resulted in vegetation limited to invasive/ruderal species.
Eschscholzia lemmonii ssp. *kernensis* Tejon poppy	-/-/1B.1	Annual herb in the Papaveraceae family found in chaparral, cismontane woodland and valley and foothill grassland on serpentinite clay soil between 656 and 4,921 feet (200–1,500 meters) in elevation. Known to occur in Fresno, Imperial, Mendocino, Monterey, San Benito, and San Luis Obispo Counties.	March to June	**Not Observed/Not Expected**. Decades of intensive farming has resulted in vegetation limited to invasive/ruderal species.
Imperata brevifolia *California satintail*	-/-/2B.1	Perennial herb in the Poaceae family found in chaparral, coastal sage scrub, creosote bush scrub and wetland-riparian communities. Known to occur in Butte, Lake, Fresno, Tulare, Inyo, Kern, Santa Barbara, Ventura, San Bernadino, Orange, Riverside, San Diego and Imperial Counties.	September to May	**Not Observed/Not Expected**. Decades of intensive farming has resulted in vegetation limited to invasive/ruderal species.

Scientific Name **Common Name**	**Status Fed/State/CNPS**	**Description**	**Blooming Period**	**Field Study Results/Potential for Occurrence**
Lasthenia glabrata ssp. Coulteri *Coulter's goldfields*	-/-/1B.1	Annual herb in the Asteraceae family found in vernal pools and saline places at elevations below 1000m. Known to occur in Kern and San Joaquin Counties	February to June	**Not Observed/Not Expected**. Decades of intensive farming has resulted in vegetation limited to invasive/ruderal species.
Layia leucopappa *Comanche Point layia*	S/-/1B.1	Annual herb in the Asteraceae family found in chenopod scrub, and valley and foothill grassland between 328 and 1,148 feet (100–350 meters) in elevation. Known to occur in Kern County.	March to April	**Not Observed/Not Expected**. Decades of intensive farming has resulted in vegetation limited to invasive/ruderal species.
Monolopia congdonii San Joaquin woolly-threads	E/-/1B.2	Perennial, rhizomatous herb in the Ericaceae family found in broadleafed upland forest and North Coast coniferous forest between 328 and 3,609 feet (100–1,100 meters) in elevation. Known to occur in Del Norte, Fresno, Humboldt and Siskiyou Counties.	May to August	**Not Observed/Not Expected**. Decades of intensive farming has resulted in vegetation limited to invasive/ruderal species.
Navarretia setiloba *Piute Mountains navarretia*	S/-/1B.1	Herbaceous annual in the Polemoniaceae family found on clay or gravelly loam soils in cismontane woodland, pinyon and juniper woodland, and valley and foothill grasslands from 1,001 and 6,890 feet (305–2,100 meters) in elevation. Known from occurrences in the Southern Sierra Nevada in Kern and Tulare Counties.	April to June	**Not Observed/Not Expected**. Decades of intensive farming has resulted in vegetation limited to invasive/ruderal species.
Opuntia basilaris var. *treleasei* Bakersfield cactus	E/E/1B.1	Perennial stem succulent in the Cactaceae family found in chenopod scrub, cismontane woodland, and valley and foothill grasslands between 394 and 1,804 feet (120–550 meters) in elevation. Known to occur in the Southeast San Joaquin Valley and Southern Sierra Nevada Foothills in Kern County.	April to May	**Not Observed/Not Expected**. Decades of intensive farming has resulted in vegetation limited to invasive/ruderal species.
Puccinellia simplex *California alkali grass*	-/-/1B.1	Annual herb in the Poaceae family found in meadows and seeps between 2,297 and 3,281 feet (700–1,000 meters) in elevation. Known to occur in Kern and San Bernardino Counties.	April to May	**Not Observed/Not Expected**. Decades of intensive farming has resulted in vegetation limited to invasive/ruderal species.
Stylocline citroleum Oil neststraw	S/-/1B.1	Annual herb in the Asteraceae family found in chenopod scrub, coastal scrub, and valley and foothill grasslands on clay soils between 164 and 1,312 feet (50–400 meters) in elevation. Known from locations in Kern and San Diego Counties.	March to April	**Not Observed/Not Expected**. Decades of intensive farming has resulted in vegetation limited to invasive/ruderal species.

Scientific Name **Common Name**	**Status Fed/State/CNPS**	**Description**	**Blooming Period**	**Field Study Results/Potential for Occurrence**
Stylocline masonii Mason's neststraw	S/-/1B.1	Annual herb in the Asteraceae family found in chenopod scrub, coastal scrub, and valley and foothill grasslands on clay soils between 164 and 1,312 feet (50–400 meters) in elevation. Known from locations in Kern and San Diego Counties.	March to April	**Not Observed/Not Expected**. Decades of intensive farming has resulted in vegetation limited to invasive/ruderal species.

STATUS: Federal and State Listing Code

- D Delisted
- E Federally or State-listed Endangered
- T Federally or State-listed Threatened

CNPS

- 1A Plants presumed extirpated in California, and either rare or extinct elsewhere
- 1B.1 Plants considered rare, threatened, or endangered in California and elsewhere; seriously threatened in California
- 1B.2 Plants considered rare, threatened, or endangered in California and elsewhere; fairly threatened in California
- 2B.1 Plants considered rare, threatened, or endangered in California, but more common elsewhere; seriously threatened in California
- 4.2 Plants of limited distribution in California; fairly threatened in California

Table B-2: Special-status Animals That May Occur in the Vicinity of the Project.

Scientific Name **Common Name**	**Status Federal/State**	**General Habitat**	**Survey Results/Regional or Nearest Occurrence***
Invertebrates			
Desmocerus californicus dimorphus Valley elderberry longhorn beetle	T/-	Central Valley riparian forest; nearly always found on or close to its host plant, elderberry (*Sambucus* species).	**Not Present.** No suitable habitat for the species. No host plants present on the project or vicinity.
Branchinect lynchi Vernal pool fairy shrimp	T/-	Found in vernal pools throughout California. Exist as cysts during the dry season and reproduce when pools are filled with water again.	**Not Present**. No suitable habitat present.
Fishes			
Hypomesus transpacificus Delta smelt	T/-	Found only in the low-salinity and freshwater habitats of the Sacramento-San Joaquin Estuary. Historically, it was one of the most common pelagic fish in the estuary	**Not Present.** No suitable habitat present.
Amphibians			
Rana draytonii California red-legged frog	T/-	Found in habitat characterized by dense, shrubby, riparian vegetation and associated still, or slow-moving water that is at least 2.3 feet deep. The arroyo willow (*Salix lasiolepis*) cattails (*Typha* sp.) and bulrushes (*Scirpus* sp.) provide good habitat.	**Not Present.** No suitable habitat present.
Spea hammondii Western spadefoot toad	-/ CSC	Central valley and adjacent foothills, Coast Ranges from Point Conception south to the Mexico border; valley-foothill grasslands and valley-foothill hardwood, shallow temporary pools used for breeding, below 4,472 feet (1,363 meters).	**Not Observed/Not Expected**. No known records in the vicinity of the project. No suitable habitat present on the project. Marginal habitat is present in the project vicinity.
Reptiles			
Anniella spp. California legless lizard	-/CSC	Found in coastal dunes, chaparral, pine-oak woodlands, desert scrub, and sandy washes in warm moist loose soils, below 5,085 feet (1550 meters).	**Not Observed/Not Expected**. Suitable habitat absent from the site. Potential habitat in the project vicinity.
Arizona elegans occidentalis California glossy snake	-/CSC	Found in low elevation scrub, grasslands and chaparral habitats.	**Not Present**. No suitable habitat present.
Emys marmorata *Western pond turtle*	-/CSC	Completely aquatic requiring calm waters such as pools or streams with vegetation banks or logs for basking. Will utilize upland habitat up to about 0.5 km from water.	**Not Present.** No suitable habitat present.
Gambelia sila Blunt-nosed leopard lizard (BNLL)	E/E,SFP	Found only in the San Joaquin Valley, adjacent Carrizo Plain, Elkhorn Plain, Cuyama Valley, and Panoche Valley; inhabits sparsely vegetated plains, lower canyon slopes, on valley floors, and washes; open grassland, saltbush scrub, and alkali sink are more common habitat types.	**Not Present.** No suitable habitat present.

Scientific Name **Common Name**	**Status** **Federal/State**	**General Habitat**	**Survey Results/Regional or Nearest Occurrence***
Masticophis flagellum ruddocki San Joaquin coachwhip	-/CSC	Found in the San Joaquin Valley in open, dry habitats. Associated with valley grassland and saltbush scrub habitats containing small mammal burrows which are used for refugia and oviposition sites.	**Not Present**. No suitable habitat present.
Phrynosoma blainvillii Coast horned lizard	-/CSC	Inhabits valley-foothill hardwood, coniferous and riparian, as well as pine-cypress, juniper, and annual grasslands, in Sierra Nevada below 3,937 feet (1,200 meters) and in mountains of Southern California and into the adjacent valleys.	**Not Present**. No suitable habitat present.
Thamnophis gigas Giant gartersnake	T/T	Found in areas of freshwater marshes or low-gradient streams. Can also be found in human-made habitats, such as drainage canals and irrigation ditches, especially those associated with rice farming.	**Not Present**. No suitable habitat present. Species believed to be extirpated from Kern County.
Birds			
Agelaius tricolor Tricolored blackbird	S/CSC	Forages in grasslands, wetlands, rice fields, croplands, and weedy uplands dominated by mustards and thistles, etc.; breeds in marshes containing heavy growth of bulrushes, cattails, and blackberries; found throughout the Central Valley.	**Not Present/Low Probability of Occurrence in the Project Vicinity**. No suitable nesting or habitat on the site. Potential for marginal foraging habitat in farmlands in the vicinity of the project.
Athene cunicularia Burrowing owl	-/CSC	Inhabits dry, open grasslands, rolling hills, desert floors, prairies, savannas, agricultural land, and other areas of open, bare ground. These owls will also inhabit open areas near human habitation, such as airports, golf courses, shoulders of roads, railroad embankments, and the banks of irrigation ditches and reservoirs.	**Not Observed/Moderate Probability of Occurrence in the Project Vicinity**. No suitable burrows present on the project. Suitable habitat for nesting and foraging in the vicinity of the project.
Buteo swainsoni Swainson's hawk	-/T	Riparian and sometimes large isolated trees used for nesting; grasslands and agricultural lands used for foraging; in California, breeds primarily in the Sacramento Valley, with occasional nesting to the south through Kern County; migrate through the Central and San Joaquin Valleys to their wintering grounds in South America.	**Not Observed/Low Probability of Occurrence in the Project Vicinity**. No suitable nesting sites on the project. Suitable foraging habitat exists across the row-crop farmland south of metropolitan Bakersfield. Swainson's hawk are uncommon in Kern County.
Charadrius alexandrinus nivosus Western snowy plover	T/-	Nests, feeds, and takes cover on sandy or gravelly beaches along the coast, on estuarine salt ponds, alkali lakes, and at the Salton Sea. On the Pacific coast, it nests on barren to sparsely vegetated sand beaches, dry salt flats in lagoons, dredge spoils deposited on beach or dune habitat, levees and flats at salt-evaporation ponds, and river bars.	**Not Present**. No suitable wintering habitat or foraging habitat exists on the project.
Circus cyaneus Northern harrier	-/CSC	Widespread breeding resident, other than in the Central Valley, most lowland birds are winter migrants; ground nester that forages and nests in a wide variety of open	**Not Observed/Low Probability of Occurrence in the Project Vicinity**. No suitable nesting sites on the project.

Scientific Name **Common Name**	**Status Federal/State**	**General Habitat**	**Survey Results/Regional or Nearest Occurrence***
		habitats with low perches such as marshes, fields, and other treeless areas.	Suitable foraging habitat exists across the row-crop farmland south of metropolitan Bakersfield.
Coccyzus americanus occidentalis Western yellow-billed cuckoo	T/E	Nests in walnut and almond orchards in California, natural nesting habitat is in cottonwood-tree willow riparian forest. Known populations of breeding western yellow-billed cuckoo are several disjunct locations in California, Arizona, and western New Mexico.	**Not Present**. No suitable nesting habitat exists on the project for this species. The site represents poor foraging habitat.
Elanus leucurus White tailed kite	-/SFP	Associated habitats include open grasslands, savannahs, agriculture, wetlands, oak woodland and riparian areas with associated open space.	**Not Observed/Low Probability of Occurrence in the Project Vicinity**. No suitable nesting sites on the project. Suitable foraging habitat exists across the row-crop farmland south of metropolitan Bakersfield. Swainson's hawk are frequently observed moving through Kern County during the migratory period. Swainson's hawk are uncommon nesters in Kern County.
Empidonax traillii Willow Flycatcher	-/E	Nests and forages in riparian habitats with dense vegetation characterized by willows, buttonbush and coyote brush, with a scattered overstory of cottonwood. Have also been known to nest in thickets dominated by tamarisk.	**Not Present**. No suitable nesting or foraging habitat present.
Lanius ludovicianus Loggerhead shrike	-/CSC	Common resident and winter visitor in lowlands and foothills throughout California; species prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches; nests on stable branches in densely-foliaged shrubs or trees, usually well-concealed.	**Not Observed/Moderate Probability of Occurrence in the Project Vicinity**. No suitable nesting habitat present. Loggerhead shrike occur throughout the southern San Joaquin Valley and undoubtedly forage in the project vicinity.
Mammals			
Ammospermophilus nelsoni San Joaquin antelope squirrel	-/T	Found in grasslands or open shrublands; formerly more extensive, current range includes southwestern portion of the San Joaquin Valley and in adjacent valleys to the west.	**Not Present**. Beyond the current published range of the species.
Dipodomys ingens Giant kangaroo rat	E/E	Western side of the San Joaquin Valley, including the Carrizo Plain and the Panoche Valley; grassland and shrub-land habitats with sparse vegetative cover and soils that are well-drained, fine sandy loams with gentle slopes.	**Not Present**. Beyond the current published range of the species.
Dipodomys nitratoides brevinasus Short-nosed kangaroo rat	E/E	Found in arid communities on the valley floor portions of Kern, Tulare, and Kings counties in scrub and grassland communities in level to near-level terrain with	**Not Present**. Beyond the published range of the species.

Scientific Name **Common Name**	**Status Federal/State**	**General Habitat**	**Survey Results/Regional or Nearest Occurrence***
		alluvial fan-floodplain soil (fine sands and sandy loams) with sparse grasses and woody vegetation such as iodine bush, saltbush, seep weed, and mesquite.	
Dipodomys nitratoides nitratoides Tipton kangaroo rat	E/E	Found in arid communities on the valley floor portions of Kern, Tulare, and Kings counties in scrub and grassland communities in level to near-level terrain with alluvial fan-floodplain soil (fine sands and sandy loams) with sparse grasses and woody vegetation such as iodine bush, saltbush, seep weed, and mesquite.	**Not Present**. No suitable habitat present. Not within the southwest focus area of the MBHCP.
Eumops perotis californicus Greater western mastiff bat	-/CSC	Open, semi-arid to arid habitats, including conifer and deciduous woodlands, annual and perennial grasslands, chaparral, desert scrub, and urban areas; roosts in cliff faces, as well as high buildings, trees, and tunnels; uncommon resident in southwestern San Joaquin Valley.	**No Roosting Sites Present.** No known occurrences in the vicinity of the project. Information on some bat species indicates foraging may occur over 10's of miles from roosting sites. Impacts not expected.
Lasiurus cinereus Hoary bat	-/CSC	Open, semi-arid to arid habitats, including conifer and deciduous woodlands, annual and perennial grasslands, chaparral, desert scrub, and urban areas; roosts in cliff faces, as well as high buildings, trees, and tunnels; uncommon resident in southwestern San Joaquin Valley.	**No Roosting Sites Present.** No known occurrences in the vicinity of the project. Information on some bat species indicates foraging may occur over 10's of miles from roosting sites. Impacts not expected.
Onychomys torridus tularensis Tulare grasshopper mouse	-/CSC	Found in valley grasslands habitats, blue oak savanna, desert associations dominated by annual grasses and California ephedra, alkali sink scrub, saltbush scrub, and upper Sonoran shrub associations, dominated by ephedra.	**Not Observed/Not Expected**. No suitable habitat present.
Perognathus inornatus inornatus San Joaquin pocket mouse	S/-	Found in west-central California in the Upper Sacramento Valley, Tehama County, southward through the San Joaquin and Salinas valleys and contiguous areas to the Mojave Desert in Los Angeles, Kern and extreme western San Bernardino counties. Inhabits dry, open, grassy or weedy areas and annual grasslands, savannas, and desert-scrub associations with sandy washes or finely textured soils.	**Not Observed/Not Expected**. No suitable habitat present.
Sorex ornatus relictus Buena Vista Lake shrew	E/CSC	Formerly occupied marshlands of the San Joaquin Valley and the Tulare Basin. Its range has become much restricted due to the loss of lakes and sloughs in the area. It has been recorded from the Kern Lake Preserve area and the Kern National Wildlife Refuge. Current distribution is unknown but likely to be very restricted due to the loss of habitat.	**Not Present**. No suitable habitat present.

Scientific Name **Common Name**	**Status Federal/State**	**General Habitat**	**Survey Results/Regional or Nearest Occurrence***
Taxidea taxus American badger	-/CSC	Uncommon resident found through California; in less disturbed grassland and shrubland habitats in San Joaquin Valley.	**Not Present** No suitable habitat present.
Vulpes macrotis mutica San Joaquin kit fox (SJKF)	E/T	Found in valley saltbush scrub, valley sink scrub, Interior Coast Range saltbush scrub, upper Sonoran sub-shrub scrub, non-native grassland, and valley sacaton grassland in the Central Valley and adjacent foothills and valleys, infrequently to the outer Coast Ranges; generally not found in densely wooded areas, wetland areas, or areas subject to frequent periodic flooding.	**Not Observed/Moderate Probability of Occurrence in the Project Vicinity**. No dens present on the project. Suitable habitat for denning and foraging in the vicinity of the project

STATUS:

Federal

S Listed as a BLM Sensitive Species
D Delisted
E Listed as Endangered
PT Proposed as Threatened
T Listed as Threatened
C Candidate for Endangered Status

State

CSC California Department of Fish and Wildlife Designated Species of Special Concern
D Delisted
E Listed as Endangered
SFP California Department of Fish and Wildlife Designated Fully Protected
T Listed as Threatened

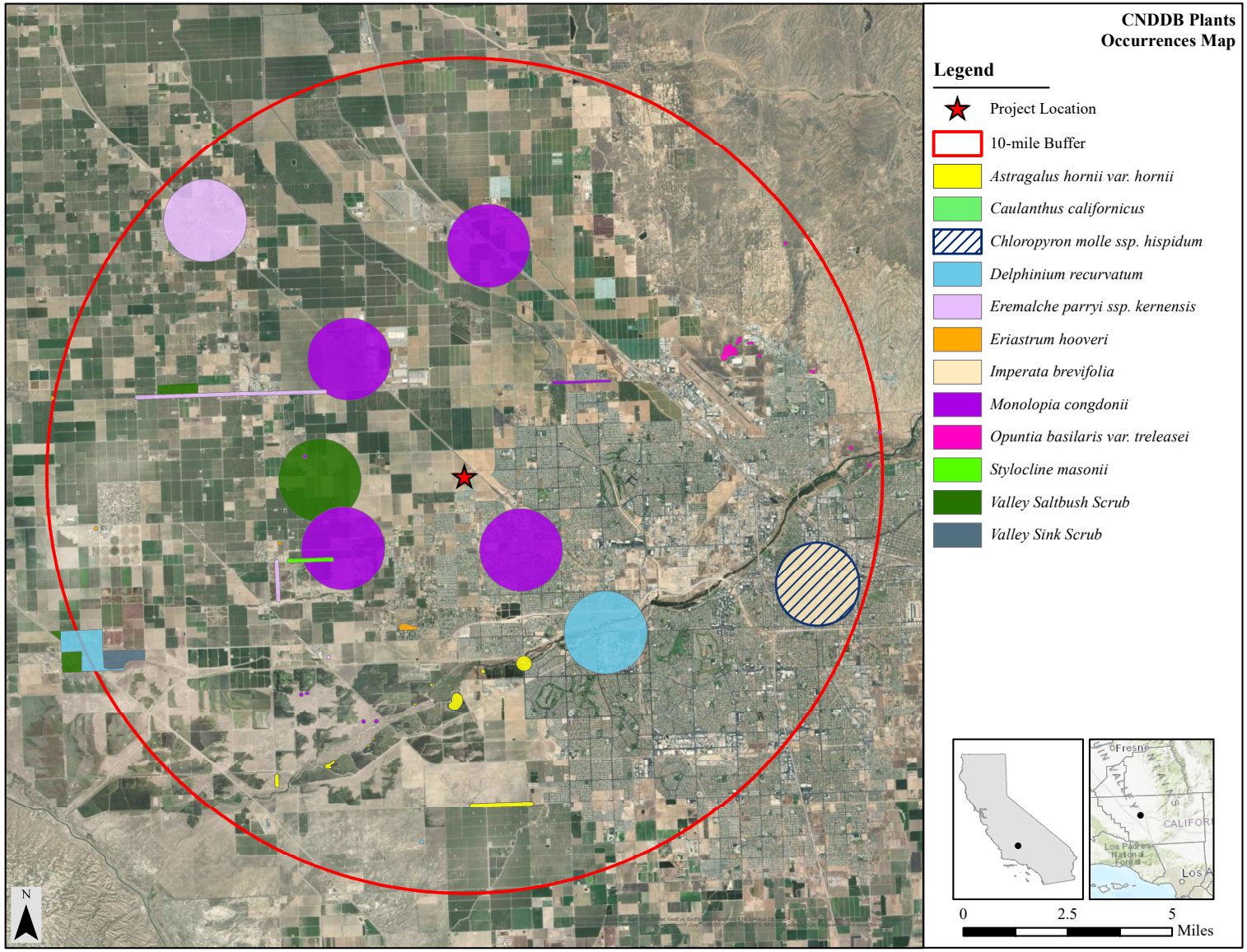

Figure B-1. CNDDB special-status plant species occurrences within a 10-mile radius of the project (CDFW 2021).

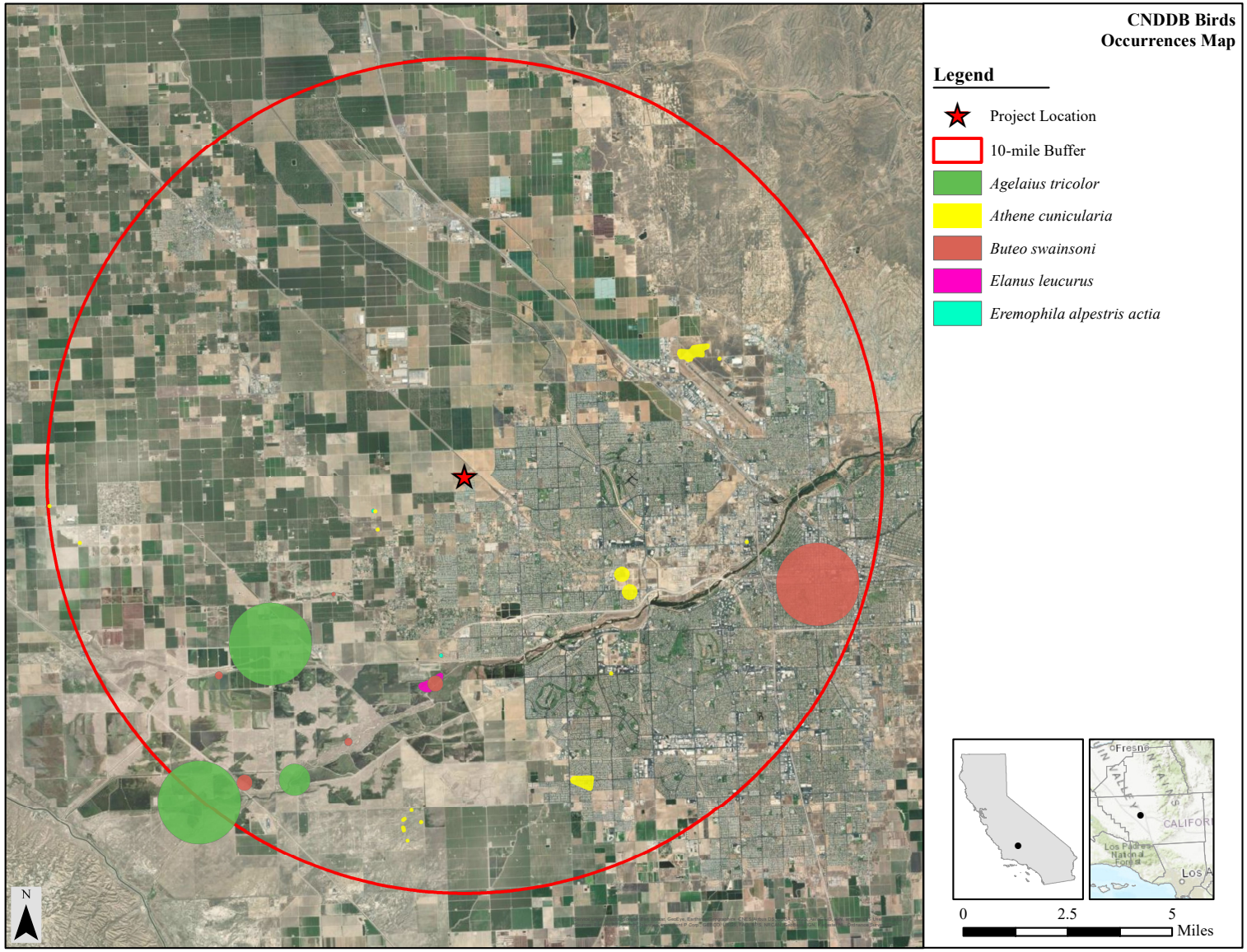

Figure B-2. CNDDB special-status bird species occurrences within a 10-mile radius of the project (CDFW 2021).

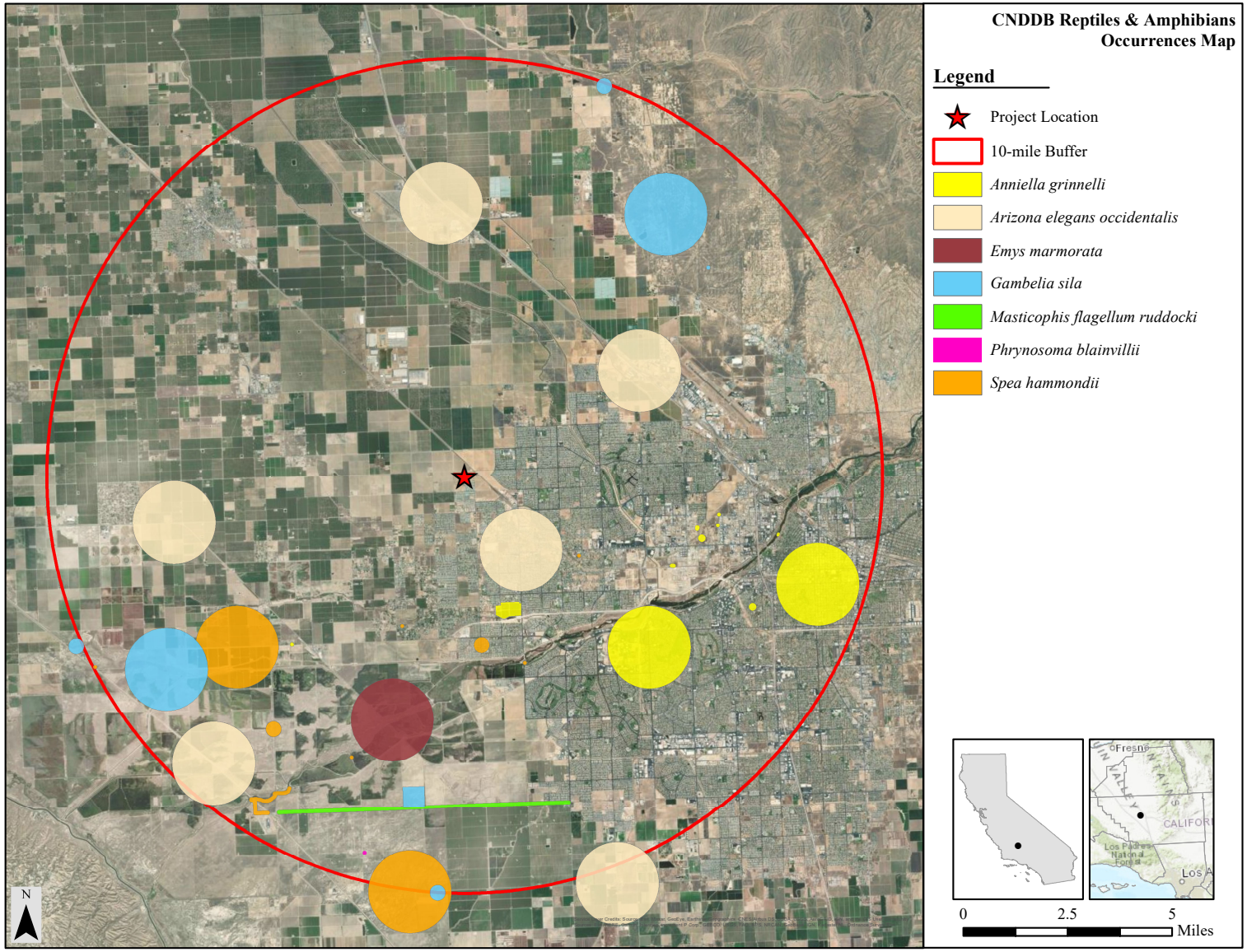

Figure B-3. CNDDB special-status amphibian and reptile species occurrences within a 10-mile radius of the project (CDFW 2021).

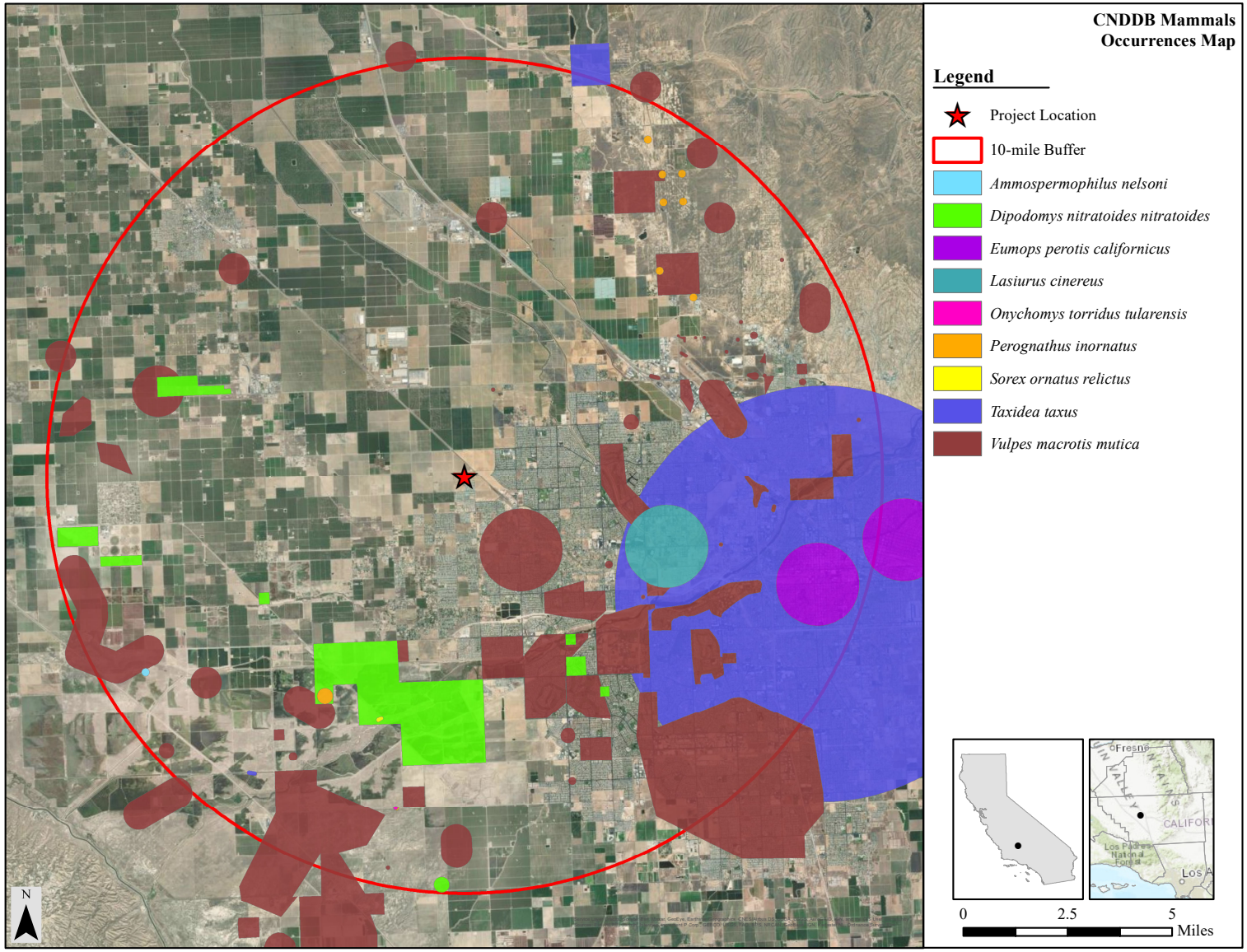

Figure B-4. CNDDB special-status mammal species occurrences within a 10-mile radius of the project (CDFW 2021).

APPENDIX C

PLANTS AND ANIMALS OBSERVED ON THE PROJECT

FIELD STUDY CONDUCTED
25 JANUARY 2021

Table C-1. Vascular plant species observed during the field study conducted on the project site.

Scientific Name	**Common Name**
Asteraceae	
Senecio vulgaris	Common groundsel
Brassicaceae	
Capsella bursa	Sheperd's purse
Sisymbrium irio	London rockets
Chenopodiaceae	
Salsola tragus	Russian thistle
Geraniaceae	
Erodium cicutarium	Redstem filaree
Malvaceae	
Malva parviflora	Cheeseweed
Poaceae	
Cynodon dactylon	Bermudagrass
Cyperus rotundus	Nut sedge
Triticum sp.	Wheat
Urticaceae	
Urtica dioca	Stinging nettle

Table C-2. Vertebrate animal species observed during the field study conducted on the project site.

Scientific Name	**Common Name**
Birds	
Corvus corax	Common raven
Zenaida macroura	Mourning dove
Zonotrichia leucophrys	White-crowned sparrow
Mammals	
Canis lupus familiaris	Domestic dog
Thomomys bottae	Pocket gopher

APPENDIX C
Cultural Resources Records Search

A
CULTURAL RESOURCE LITERATURE SEARCH,
AFFTENRANGER RANCH,
REINA AND RUDD ROADS,
BAKERSFIELD, KERN COUNTY, CALIFORNIA

Submitted to:
McIntosh and Associates
2001 Wheelan Court
Bakersfield, California 93309

Keywords:
Rosedale 7.5' Quadrangle,
Kern County,
California Environmental Quality Act

Submitted by:
Hudlow Cultural Resource Associates
1405 Sutter Lane
Bakersfield, California 93309

Author:
Scott M. Hudlow

January 2021

Management Summary

At the request of McIntosh and Associates, a Cultural Resource Literature Search was conducted on exactly 76.36 acres. The property lies at the southeast corner of Reina and Rudd Roads, Bakersfield, Kern County, California. The Cultural Resource Literature Search consisted of a cultural resource record search, a Sacred Lands search, and a paleontological record search.

Since potential fossil-bearing units are present in the project area, either at the surface or in the subsurface. As such, Natural History Museum of Los Angeles recommends that a full paleontological assessment of the project area be conducted by a paleontologist meeting Bureau of Land Management or Society of Vertebrate Paleontology standards. If archaeological resources are encountered during the course of construction, a qualified archaeologist should be consulted for further evaluation.

If human remains or potential human remains are observed during construction, work in the vicinity of the remains will cease, and they will be treated in accordance with the provisions of State Health and Safety Code Section 7050.5. The protection of human remains follows California Public Resources Codes, Sections 5097.94, 5097.98, and 5097.99.

Table of Contents

List of Figures

1.0 Introduction

At the request of McIntosh and Associates, *Hudlow Cultural Resource Associates* conducted a Cultural Resource Literature Search on exactly 76.36 acres, APNs 463-050-05 and -06. The site lies at the southeast corner of Reina and Rudd Roads, Bakersfield, Kern County, California. This project is being undertaken in accordance with the California Environmental Quality Act (CEQA). The Cultural Resource Literature Search consisted of a cultural resource record search, sacred lands search, and a paleontological survey.

2.0 Survey Location

The project area is in Kern County. The parcel is the N ½ of the NE ¼ of Section 15, T.29S., R.26E., Mount Diablo Baseline and Meridian, as displayed on the United States Geological Survey (USGS) Rosedale 7.5-minute quadrangle map (Figure 1). The property lies at the southeast corner of Reina and Rudd Roads, west of Santa Fe Way, Bakersfield, Kern County, California.

3.0 Record Search

A record search of the project area and the environs within one-half mile was conducted at the Southern San Joaquin Information Center. Information Center staff conducted the record search, RS# 20-448 on January 4, 2021 (Appendix I). The record search revealed that fourteen cultural resource surveys have been conducted within one-half mile radius of the project area. No known previous surveys have been conducted within the current project area. No cultural resources have been recorded within the project area. Three cultural resources have been identified within one half-mile of the current project area. Each is a historic resource, a historic rail line, a historic trash scatter, and a historic house.

A paleontological record search of the project area and the environs was conducted at the Natural History Museum of Los Angeles County. Alyssa Bell, Ph.D., conducted the record search, on December 21, 2020. The record search revealed that no paleontological finds have occurred within the project area; however, fossil localities have occurred within the sedimentary deposits that underlie the project area, southeast of Ducor, California, which produced a Mammoth. East of the project area, in Tehachapi, has produced fossil species of horse, and southeast of Maricopa, unspecified vertebrate species have been identified (Appendix I).

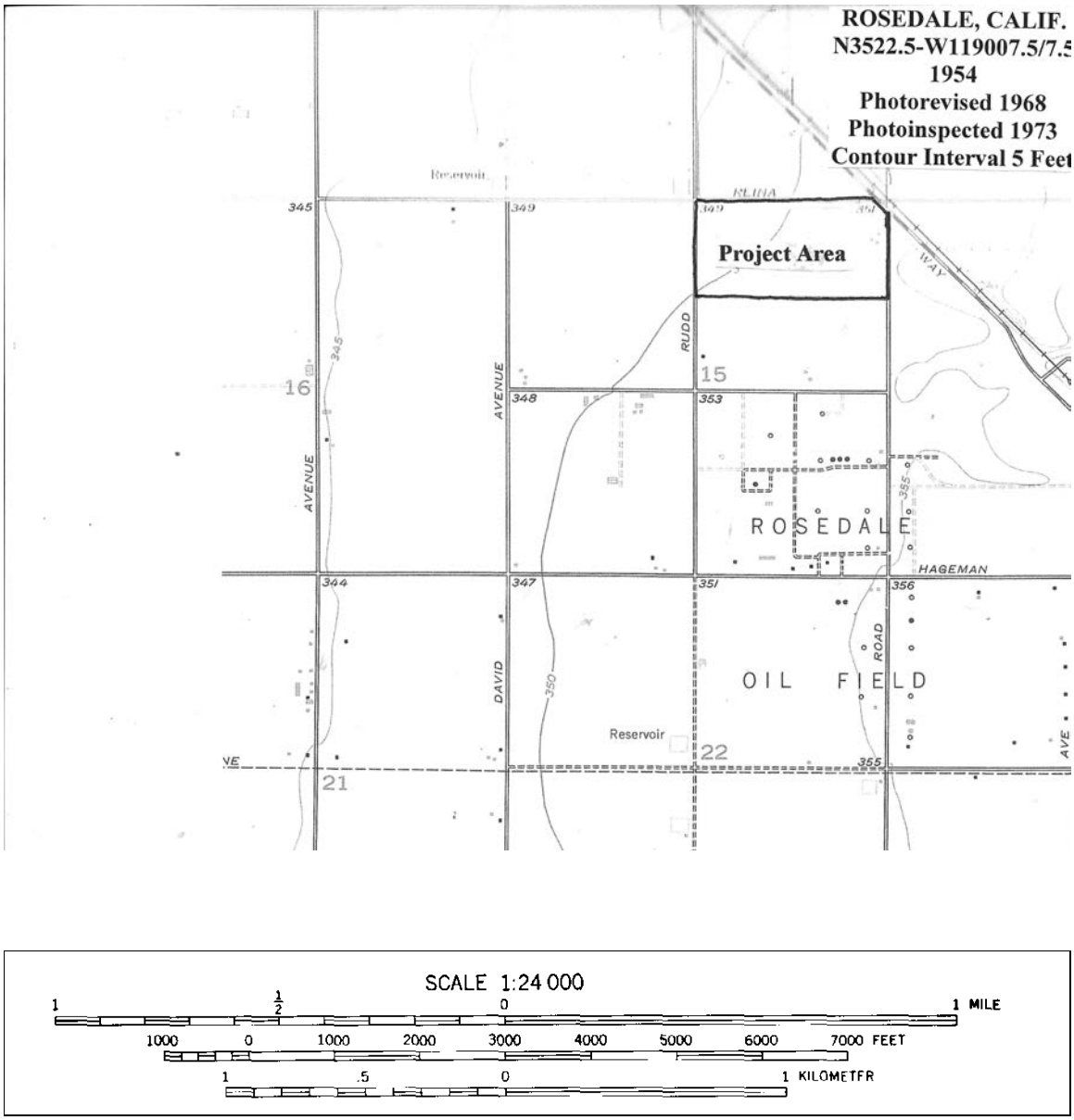

Figure 1
Project Area Location Map

A Sacred Lands File search was requested from the Native American Heritage Commission on December 13, 2020. The search, which was completed on January 22, 2021, revealed that no Naive American cultural resources are located in close proximity to either project area. Native American consultation letters were sent out on January 23, 2021 to each of the nineteen listed tribal entities, notifying each interested Kern County Native Contact, per the list provided by the Native American Heritage Commission. Nineteen parties were sent letters. These letters described the project, provided the letter from the Native American Heritage Commission, and provided maps for further reference. By February 19, 2021, one party returned a response with comments (Appendix I). The San Manuel Band of Mission Indians responded that since the project was not in the Serrano ancestral territory, they had no interest in the project (Appendix I).

10.0 Management Recommendations

At the request of McIntosh and Associates, a Cultural Resource Literature Search was conducted on exactly 76.36 acres. The property lies at the southeast corner of Reina and Rudd Roads, Bakersfield, Kern County, California. The Cultural Resource Literature Search consisted of a cultural resource record search, a Sacred Lands search, and a paleontological record search.

No further work is required. If archaeological resources are encountered during the course of construction, a qualified archaeologist should be consulted for further evaluation.

If human remains or potential human remains are observed during construction, work in the vicinity of the remains will cease, and they will be treated in accordance with the provisions of State Health and Safety Code Section 7050.5. The protection of human remains follows California Public Resources Codes, Sections 5097.94, 5097.98, and 5097.99.

Appendix I

Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007

tel 213.763.DINO
www.nhm.org

Research & Collections

e-mail: paleorecords@nhm.org

December 21, 2020

Hudlow Cultural Resource Associates

Attn: Scott M. Hudlow

re: Paleontological resources for a Project north of the Rosedale Oil Field

Dear Scott:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for proposed development at the project area as outlined on the portion of the Rosedale USGS topographic quadrangle map that you sent via e-mail on December 13, 2020. We do not have any fossil localities that lie directly within the proposed project area, but we do have fossil localities in the region from the same sedimentary deposits that occur in the proposed project area, either at the surface or at depth.

The following table shows the closest known localities in the collection of the Natural History Museum of Los Angeles County.

Locality Number	Location	Formation	Taxa	Depth
LACM VP 6731	SE of Maricopa, CA, just west of Bitter Creek	Unknown Formation (Pleistocene; clay with some asphalt)	unspecified vertebrates	Unknown
LACM VP 3722	Tehachapi, CA	Unknown formation (Pleistocene)	Horse (*Equus*)	Unknown (found during sewer excavation in town)
LACM VP 6701	Flynn ranch, 14 km SE of Ducor, CA	Unknown formation (Pleistocene; green sand)	Mammoth (*Mammuthus*)	6 ft bgs

VP, Vertebrate Paleontology; IP, Invertebrate Paleontology; bgs, below ground surface

This records search covers only the records of the Natural History Museum of Los Angeles County ("NHMLA"). It is not intended as a paleontological assessment of the project area for the purposes of CEQA or NEPA. Potentially fossil-bearing units are present in the project area, either at the surface or in the subsurface. As such, NHMLA recommends that a full paleontological assessment of the project area be conducted by a paleontologist meeting Bureau of Land Management or Society of Vertebrate Paleontology standards.

Sincerely,

Alyssa Bell, Ph.D.
Natural History Museum of Los Angeles County

enclosure: invoice

California Historical Resources Information System

Fresno
Kern
Kings
Madera
Tulare

Southern San Joaquin Valley Information Center
California State University, Bakersfield
Mail Stop: 72 DOB
9001 Stockdale Highway
Bakersfield, California 93311-1022
(661) 654-2289
E-mail: ssjvic@csub.edu
Website: www.csub.edu/ssjvic

1/4/2021

Scott M. Hudlow
Hudlow Cultural Resource Associates
1405 Sutter Lane
Bakersfield, CA 93309

Re: McIntosh 20-03
Records Search File No.: 20-448

The Southern San Joaquin Valley Information Center received your record search request for the project area referenced above, located on the Rosedale USGS 7.5' quad. The following reflects the results of the records search for the project area and the 0.5 mile radius:

As indicated on the data request form, the locations of resources and reports are provided in the following format: ☒ custom GIS maps ☐ GIS data

Resources within project area:	None
Resources within 0.5 mile radius:	P-15-000560, 017583, 017584
Reports within project area:	None
Reports within 0.5 mile radius:	KE-01399, 02396, 02974, 03025, 03037, 03128, 03130, 03454, 04463, 04464, 04466, 04769, 05005, 05085

Note: Mapped report locations were not included per the Data Request Form.

Resource Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Resource Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Resource Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Report Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Report Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Report Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Resource Record Copies:	☒ enclosed	☐ not requested	☐ nothing listed
Report Copies:	☐ enclosed	☒ not requested	☐ nothing listed
OHP Built Environment Resources Directory:	☐ enclosed	☒ not requested	☐ nothing listed
Archaeological Determinations of Eligibility:	☐ enclosed	☒ not requested	☐ nothing listed
CA Inventory of Historic Resources (1976):	☐ enclosed	☒ not requested	☐ nothing listed

Caltrans Bridge Survey: Not available at SSJVIC; please see https://dot.ca.gov/programs/environmental-analysis/cultural-studies/california-historical-bridges-tunnels

Ethnographic Information: Not available at SSJVIC

Historical Literature: Not available at SSJVIC

Historical Maps: Not available at SSJVIC; please see http://historicalmaps.arcgis.com/usgs/

Local Inventories: Not available at SSJVIC

GLO and/or Rancho Plat Maps: Not available at SSJVIC; please see http://www.glorecords.blm.gov/search/default.aspx#searchTabIndex=0&searchByTypeIndex=1 and/or http://www.oac.cdlib.org/view?docId=hb8489p15p;developer=local;style=oac4;doc.view=items

Shipwreck Inventory: Not available at SSJVIC; please see https://www.slc.ca.gov/shipwrecks/

Soil Survey Maps: Not available at SSJVIC; please see http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

Thank you for using the California Historical Resources Information System (CHRIS).

Sincerely,

Digitally signed by Celeste M. Thomson
Date: 2021.01.04 10:26:05 -08'00'

Celeste M. Thomson
Coordinator

STATE OF CALIFORNIA Gavin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

January 22, 2021

Scott Hudlow

Hudlow Cultural Resource Associates

Via Email to: shudlow@sbcglobal.net

Re: McMtosh 20-03, Afftenranger Ranch Project, Kern County

Dear Mr. Hudlow:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Nancy.Gonzalez-Lopez@nahc.ca.gov.

Sincerely,

Nancy Gonzalez-Lopez
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contacts List
January 22, 2021

Big Pine Paiute Tribe of the Owens Valley
James Rambeau, Sr., Chairperson
P.O. Box 700 — Paiute - Shoshone
Big Pine ,CA 93513
j.rambeau@bigpinepaiute.org
(760) 938-2003
(976) 938-2942 Fax

Big Pine Paiute Tribe of Owens Valley
Sally Manning, Environmental Director
P.O. Box 700 — Paiute
Big Pine ,CA 93513
s.manning@bigpinepaiute.org
(760) 938-2003
(760) 938-2942 Fax

Big Pine Paiute Tribe of the Owens Valley
Danelle Gutierrez THPO
P.O. Box 700 — Paiute
Big Pine ,CA 93513
d.gutierrez@bigpinepaiute.org
(760) 938-2003, ext. 228
(760) 938-2942 Fax

Chumash Council of Bakersfield
Julio Quair, Chairperson
729 Texas Street — Chumash
Bakersfield ,CA 93307
chumashtribe@sbcglobal.net
(661) 322-0121

Coastal Band of the Chumash Nation
Mariza Sullivan, Chairman
P. O. Box 4464 — Chumash
Santa Barbara ,CA 93140
cbcntribalchair@gmail.com
(805) 665-0486

Fernandeno Tataviam Band of Mission Indians
Jairo F. Avila, THPO
1019 Second St., Suite 1 — Fernandeno Tataviam
San Fernando ,CA 91340
jairo.avila@tataviam-nsn.us
(818) 837-0794 Office
(818) 837-0796 Fax

Kern Valley Indian Community
Julie Turner, Secretary
P.O. Box 1010 — Kawaiisu Tubatulabal
Lake Isabella ,CA 93240
(661) 340-0032 Cell

Kern Valley Indian Community
Robert Robinson, Chairperson
P.O. Box 1010 — Tubatulabal Kawaiisu
Lake Isabella ,CA 93240
bbutterbredt@gmail.com
(760) 378-2915 Cell

Kern Valley Indian Community
Brandy Kendricks
30741 Foxridge Court — Kawaiisu Tubatulabal
Tehachapi ,CA 93561
krazykendricks@hotmail.com
(661) 821-1733
(661) 972-0445

Kitanemuk & Yowlumne Tejon Indians
Delia Dominguez, Chairperson
115 Radio Street — Yowlumne Kitanemuk
Bakersfield ,CA 93305
2deedominguez@gmail.com
(626) 339-6785

This list is current as of the date of this document and is based on the information available to the Commission on the date it was produced.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code,Section 5097.94 of the Public Resources Code, or Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans Tribes for the proposed:
McMtosh 20-03, Afftenranger Ranch Project, Kern County.

Native American Heritage Commission
Native American Contacts List
January 22, 2021

San Fernando Band of Mission Indians
Donna Yocum, Chairperson
P.O. Box 221838 Fernandeno
Newhall ,CA 91322 Tataviam
ddyocum@comcast.net Serrano
(503) 593-0933 Vanyume
(503) 574-3308 Kitanemuk

San Manuel Band of Mission Indians
Jessica Mauck, Director-CRM Dept.
26569 Community Center Drive Serrano
Highland ,CA 92346
jmauck@sanmanuel-nsn.gov
(909) 864-8933

Santa Rosa Rancheria Tachi Yokut Tribe
Leo Sisco, Chairperson
P.O. Box 8 Tache
Lemoore ,CA 93245 Tachi
(559) 924-1278 Yokut
(559) 924-3583 Fax

Tejon Indian Tribe
Octavio Escobedo III, Chairperson
P.O. Box 640 Kitanemuk
Arvin ,CA 93203
oescobedo@tejonindiantribe-nsn.gov
(661) 834-8566

Tejon Indian Tribe
Colin Rambo, CRM Tech
P.O. Box 640 Kitanemuk
Arvin ,CA 93203
colin.rambo@tejonindiantribe-nsn.gov
(661) 834-8566
(484) 515-4790 Cell

Tubatulabals of Kern Valley
Robert L. Gomez, Jr., Tribal Chairperson
P.O. Box 226 Tubatulabal
Lake Isabella ,CA 93240
(760) 379-4590
(760) 379-4592 Fax

Tule River Indian Tribe
Neil Peyron, Chairperson
P.O. Box 589 Yokuts
Porterville ,CA 93258
neil.peyron@tulerivertribe-nsn.gov
(559) 781-4271
(559) 781-4610 Fax

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct. Foothill Yokuts
Salinas ,CA 93906 Mono
kwood8934@aol.com Wuksache
(831) 443-9702

yak tityu tityu yak tilhini - Northern Chumash Tribe
Mona Olivas Tucker, Chairwoman
660 Camino Del Rey Chumash
Arroyo Grande ,CA 93420
olivas.mona@gmail.com
(805) 489-1052 Home
(805) 748-2121 Cell

This list is current as of the date of this document and is based on the information available to the Commission on the date it was produced.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code,Section 5097.94 of the Public Resources Code, or Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans Tribes for the proposed: McMtosh 20-03. Afftenranger Ranch Project. Kern County.

Big Pine Paiute Tribe of the Owens Valley
James Rambeau, Senior, Chairperson
P.O. Box 700
Big Pine, California 93513

January 22, 2021

Mr. Rambeau,

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Hudlow Cultural Resource Associates
1405 Sutter Lane
Bakersfield, California 93309
(661) 834-9183
shudlow@sbcglobal.net

Sincerely,

Scott M. Hudlow
Hudlow Cultural Resource Associates

enclosures

STATE OF CALIFORNIA — Gavin Newsom, *Governor*

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

January 22, 2021

Scott Hudlow

Hudlow Cultural Resource Associates

Via Email to: shudlow@sbcglobal.net

Re: McMtosh 20-03, Afftenranger Ranch Project, Kern County

Dear Mr. Hudlow:

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Sincerely,

Nancy Gonzalez-Lopez
Cultural Resources Analyst

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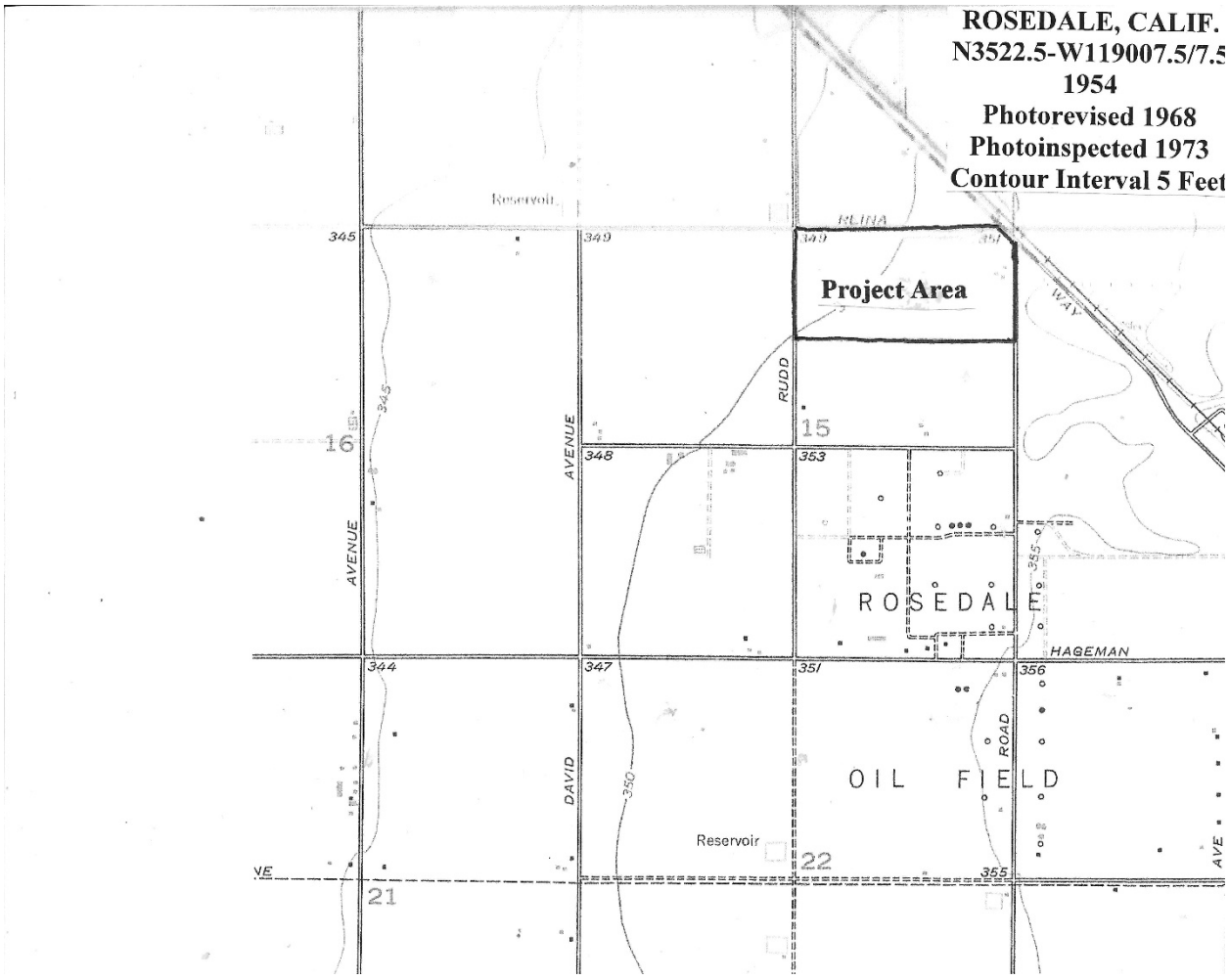

Project Area Location Map

Big Pine Paiute Tribe of the Owens Valley
Sally Manning, Environmental Director
P.O. Box 700
Big Pine, California 93513

January 22, 2021

Ms. Manning,

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1405 Sutter Lane
Bakersfield, California 93309
(661) 834-9183
shudlow@sbcglobal.net

Sincerely,

Scott M. Hudlow
Hudlow Cultural Resource Associates

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NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
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January 22, 2021

Scott Hudlow

Hudlow Cultural Resource Associates

Via Email to: shudlow@sbcglobal.net

Re: McMtosh 20-03, Afftenranger Ranch Project, Kern County

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Cultural Resources Analyst

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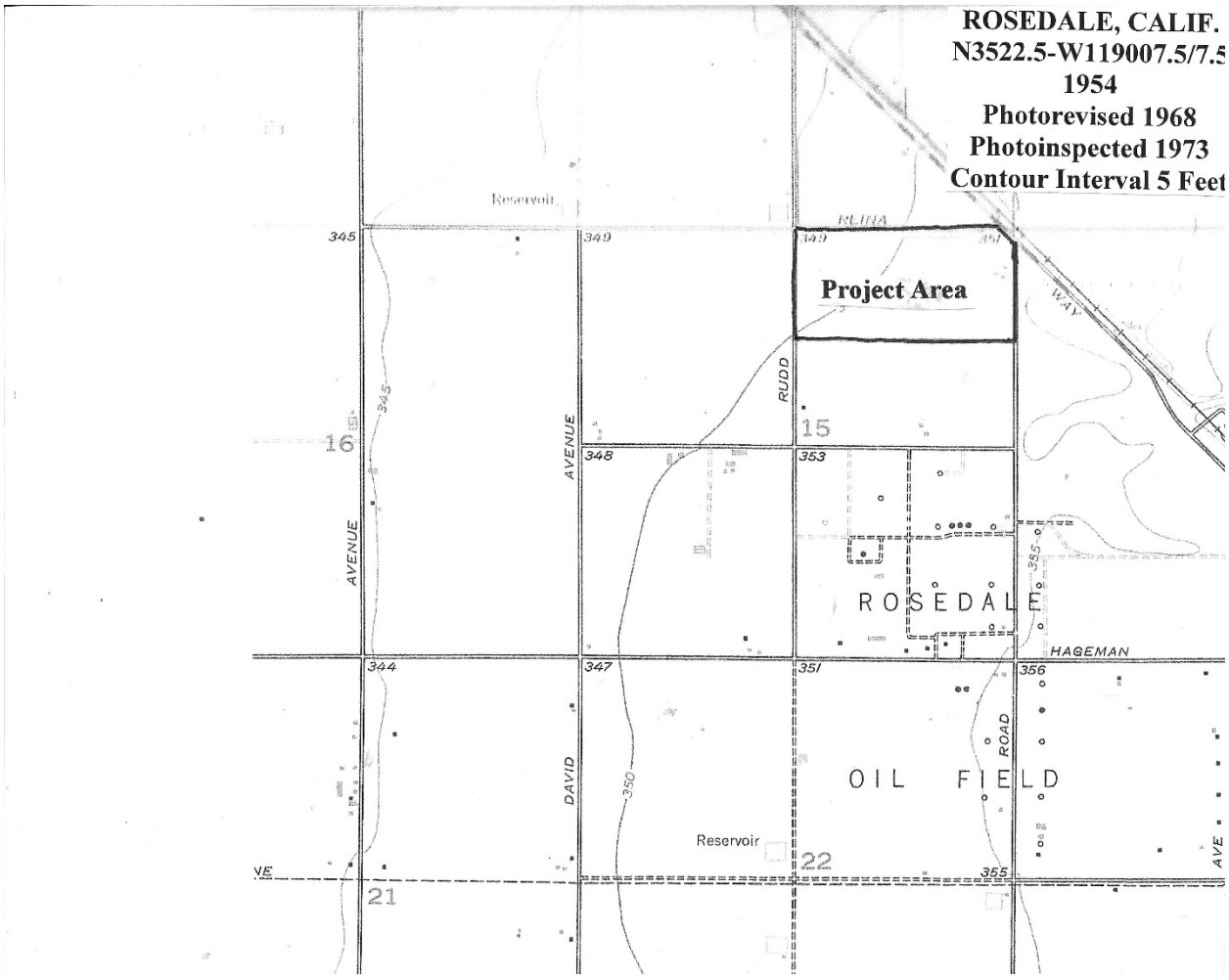

Project Area Location Map

Big Pine Paiute Tribe of the Owens Valley
Danelle Gutierrez
P.O. Box 700
Big Pine, California 93513

January 22, 2021

Mr. Gutierrez,

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Sincerely,

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NAHC HEADQUARTERS
1550 Harbor Boulevard
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January 22, 2021

Scott Hudlow

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Via Email to: shudlow@sbcglobal.net

Re: McMtosh 20-03, Afftenranger Ranch Project, Kern County

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Cultural Resources Analyst

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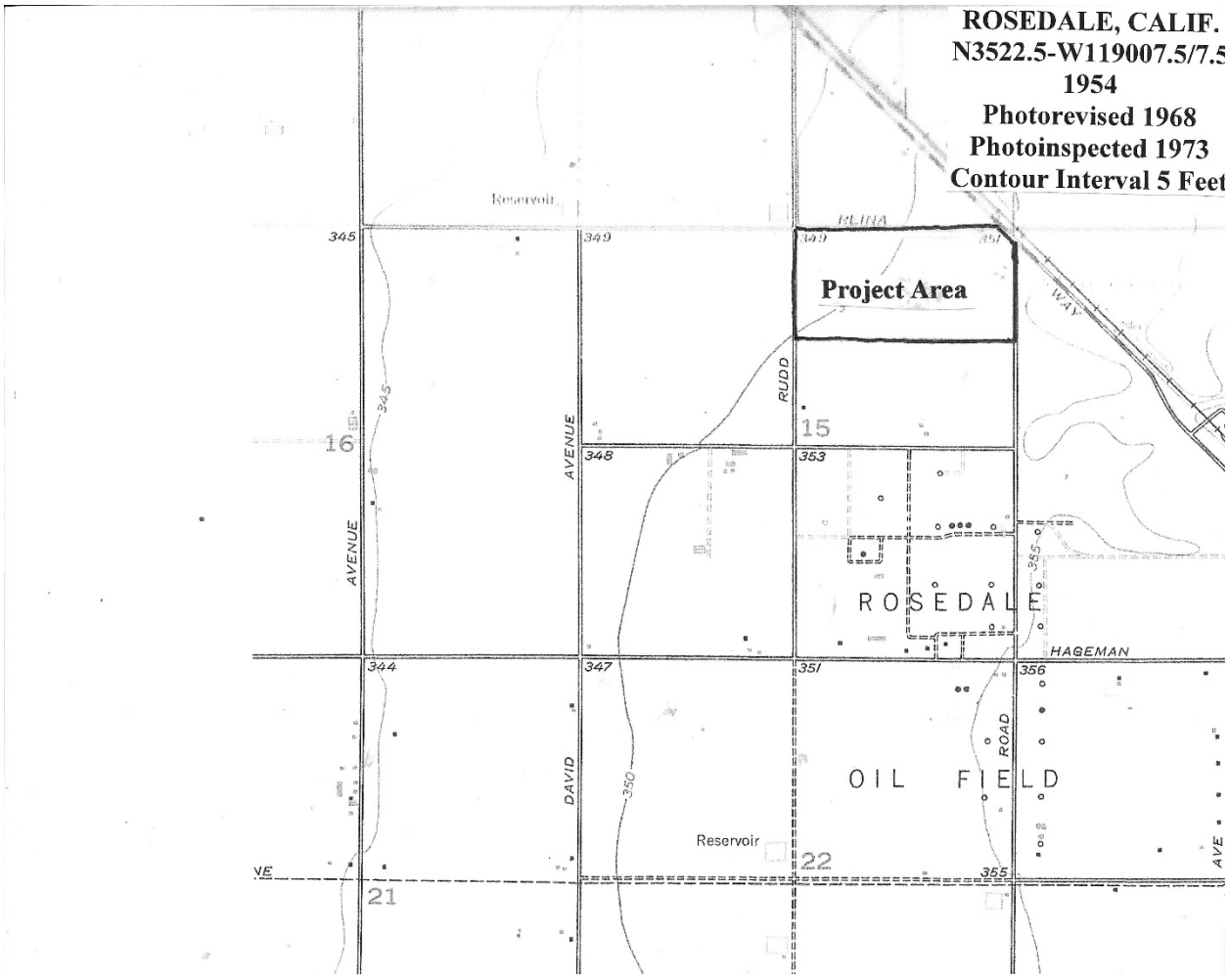

Project Area Location Map

Chumash Council of Bakersfield
Julio Quair, Chairperson
729 Texas Street
Bakersfield, California 93307

January 22, 2021

Mr. Quair,

Afftenranger Ranch, LLC announces its intention to rezone approximately forty acres from agricultural to residential in Bakersfield, Kern County, California. The site is located at the northeast corner of Rudd and Reina Roads in Bakersfield, California. After consultation with the Native American Heritage Commission, the project area is not known to have Native American cultural resources in close proximity. The record search and reporting have been performed in a manner consistent with SHPO guidelines. These guidelines are prescribed in "Instructions for Recording Historical Resources", "Archaeological Resources Management Reports (ARMR) Recommended Contents and Format," and "Guidelines for Archaeological Research Designs".

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1405 Sutter Lane
Bakersfield, California 93309
(661) 834-9183
shudlow@sbcglobal.net

Sincerely,

Scott M. Hudlow
Hudlow Cultural Resource Associates

enclosures

STATE OF CALIFORNIA — Gavin Newsom, *Governor*

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

January 22, 2021

Scott Hudlow

Hudlow Cultural Resource Associates

Via Email to: shudlow@sbcglobal.net

Re: McMtosh 20-03, Afftenranger Ranch Project, Kern County

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Sincerely,

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Cultural Resources Analyst

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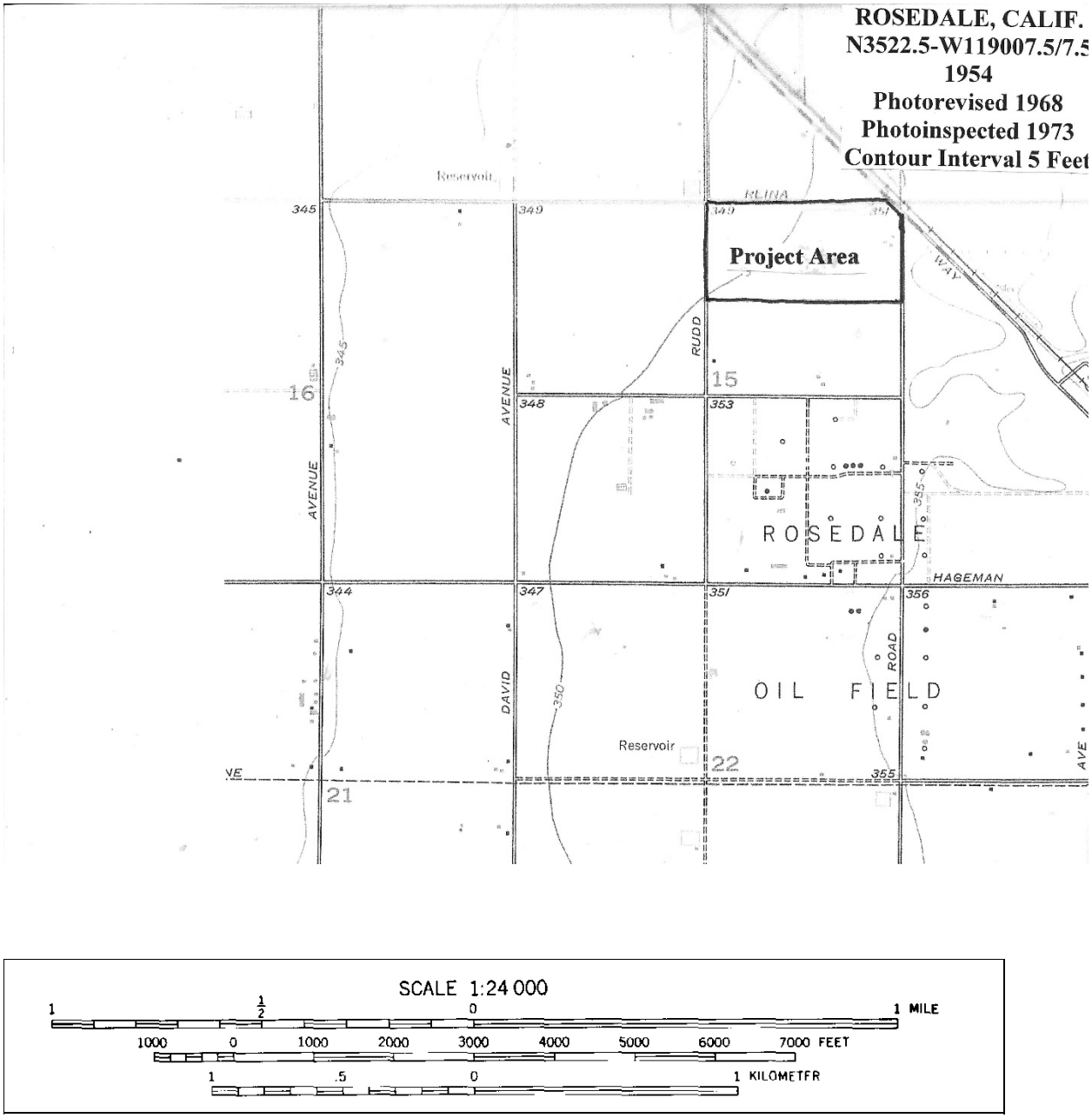

Project Area Location Map

Coastal Band of the Chumash Nation
Mariza Sullivan, Chairman,
P.O. Box 4464
Santa Barbara, California 93140

January 22, 2021

Mr. Rambeau,

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1405 Sutter Lane
Bakersfield, California 93309
(661) 834-9183
shudlow@sbcglobal.net

Sincerely,

Scott M. Hudlow
Hudlow Cultural Resource Associates

enclosures

STATE OF CALIFORNIA Gavin Newsom, *Governor*

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

January 22, 2021

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Via Email to: shudlow@sbcglobal.net

Re: McMtosh 20-03, Afftenranger Ranch Project, Kern County

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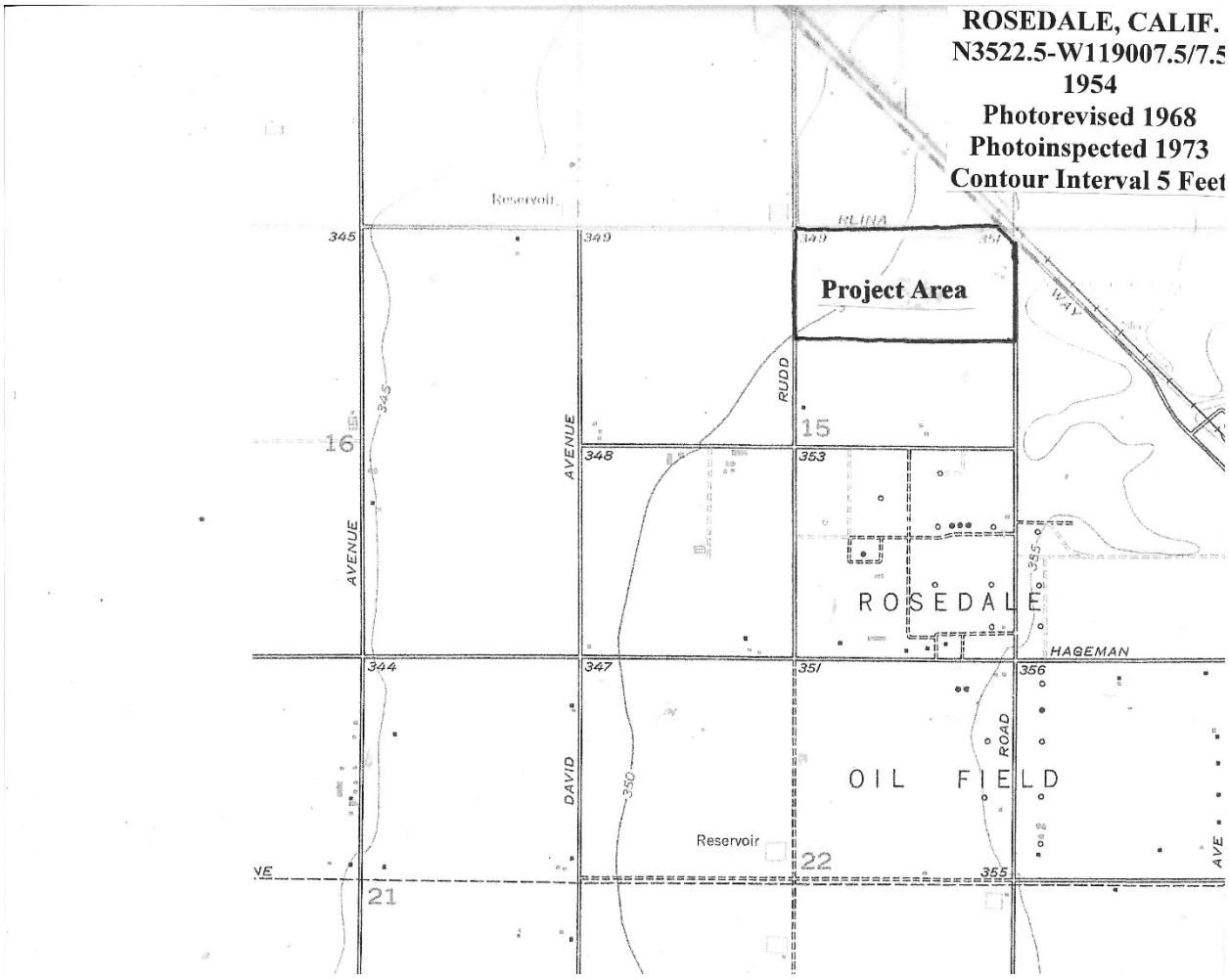

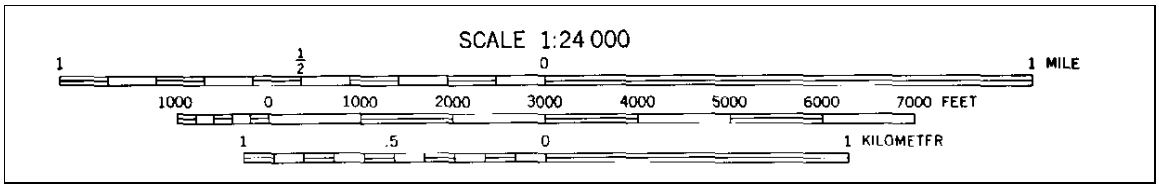

Project Area Location Map

Fernandeno Tatavium Band of Mission Indians
Jairo F. Avila, THPO
1019 Second Street, Suite 1
San Fernando, California 91340

January 22, 2021

Mr. Avila,

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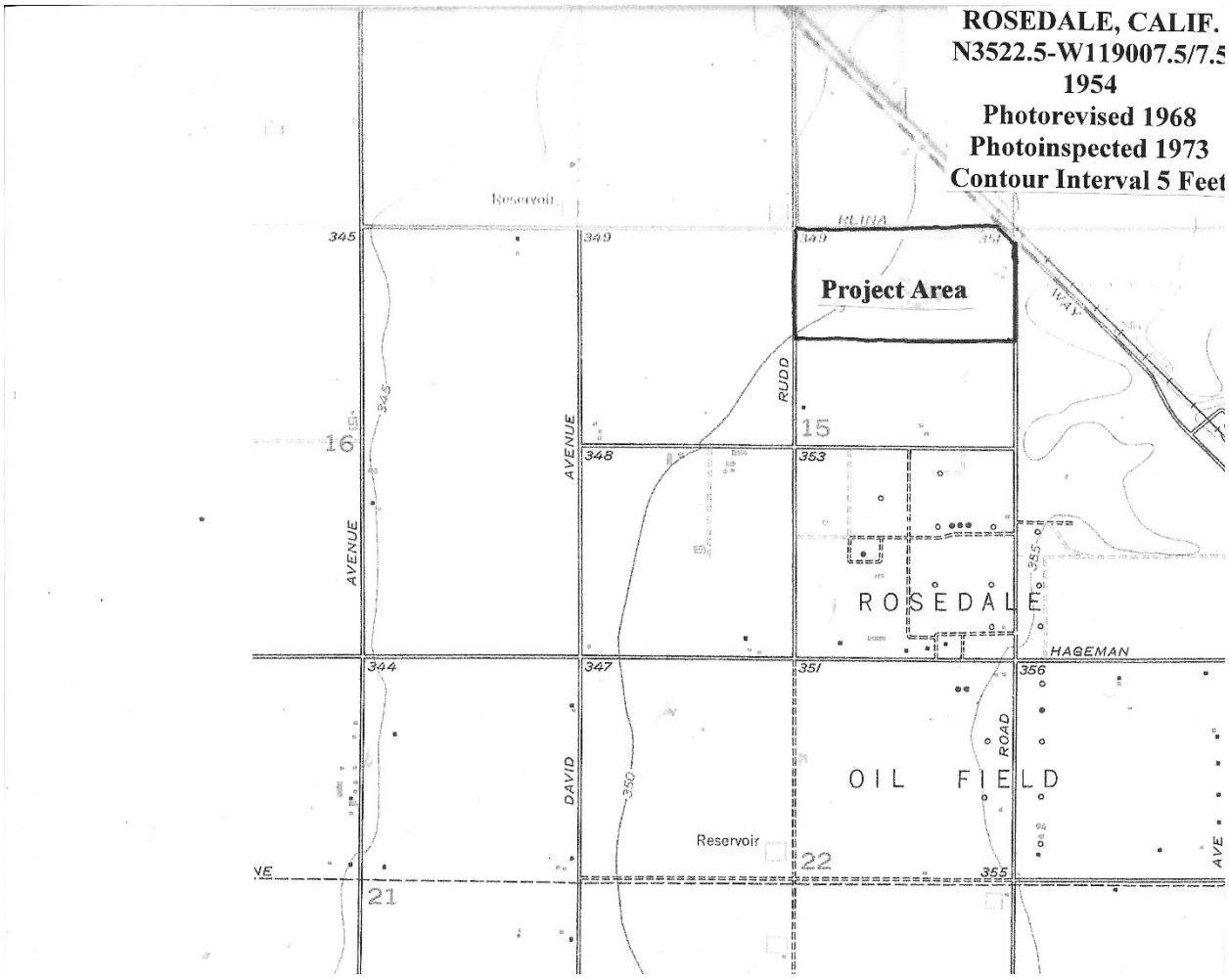

Project Area Location Map

Kern Valley Indian Community
Julie Turner, Secretary
P.O. Box 1010
Lake Isabella, California 93240

January 22, 2021

Ms. Turner,

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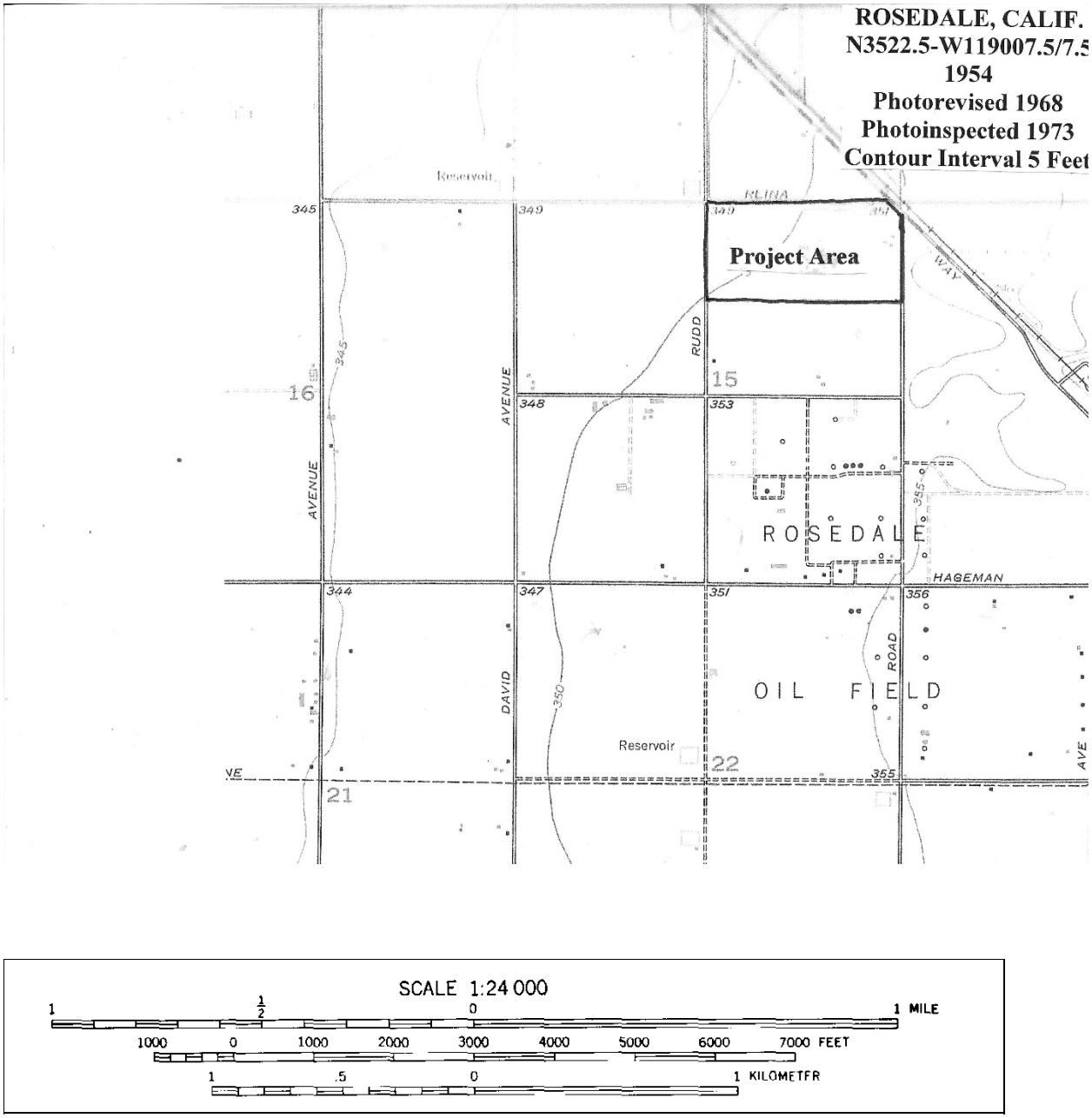

Project Area Location Map

Kern Valley Indian Community
Robert Robinson
P.O. Box 1010
Lake Isabella, California 93240

January 22, 2021

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Sincerely,

Scott M. Hudlow
Hudlow Cultural Resource Associates

enclosures

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

January 22, 2021

Scott Hudlow

Hudlow Cultural Resource Associates

Via Email to: shudlow@sbcglobal.net

Re: McMtosh 20-03, Afftenranger Ranch Project, Kern County

Dear Mr. Hudlow:

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Cultural Resources Analyst

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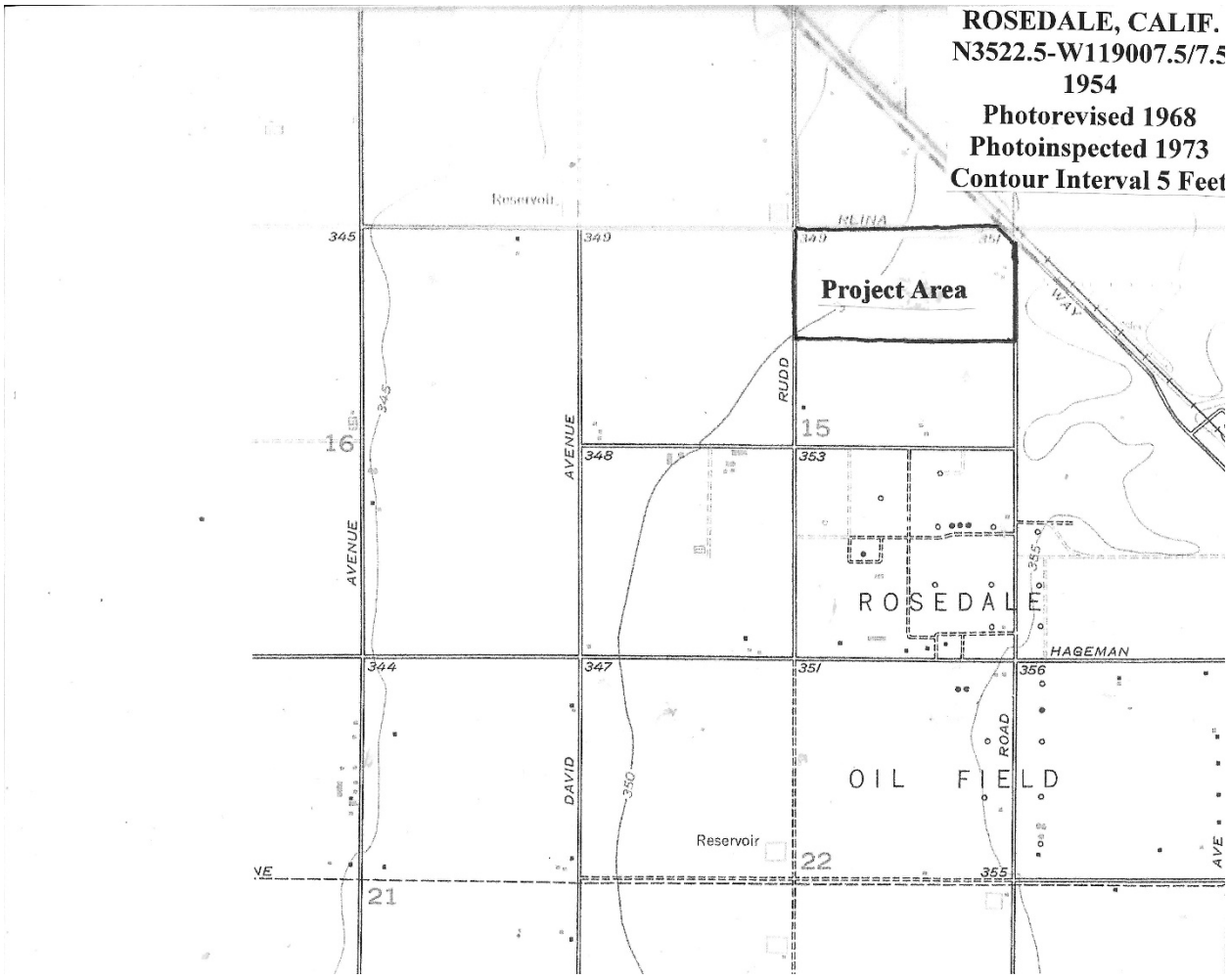

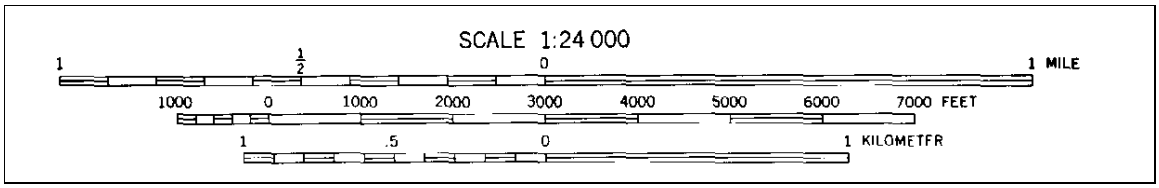

Project Area Location Map

Kianemuk and Yowlumne Tejon Indians
Delai Dominquez, Chairperson
115 Radio Street
Bakersfield, California 93305

January 22, 2021

Ms. Dominquez,

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1405 Sutter Lane
Bakersfield, California 93309
(661) 834-9183
shudlow@sbcglobal.net

Sincerely,

Scott M. Hudlow
Hudlow Cultural Resource Associates

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STATE OF CALIFORNIA Gavin Newsom, *Governor*

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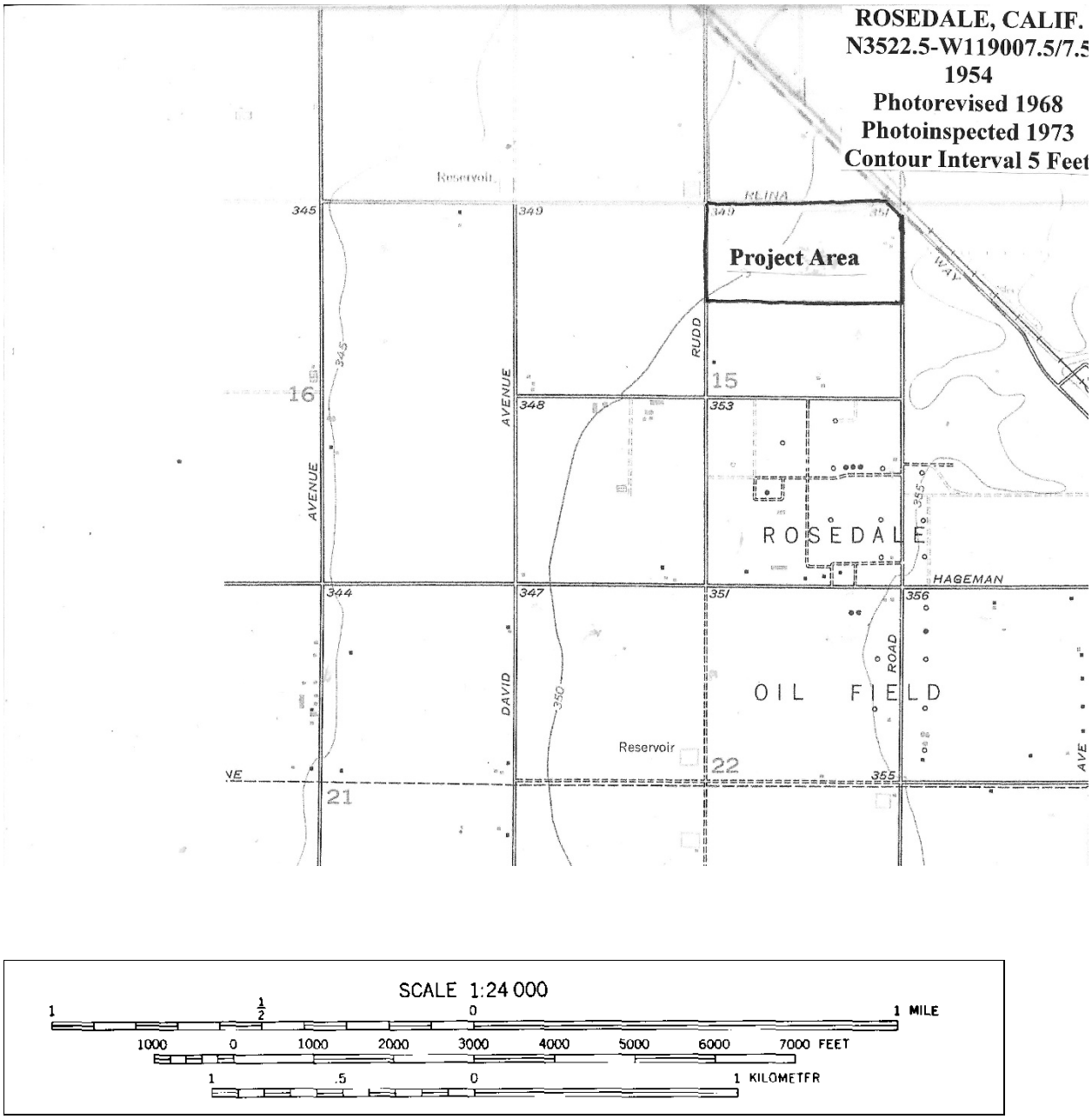

Project Area Location Map

Kern Valley Indian Community
Brandy Kendricks
30741 Foxridge Court
Tehachapi, California 93240

January 22, 2021

Ms. Kendricks,

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January 22, 2021

Scott Hudlow

Hudlow Cultural Resource Associates

Via Email to: shudlow@sbcglobal.net

Re: McMtosh 20-03, Afftenranger Ranch Project, Kern County

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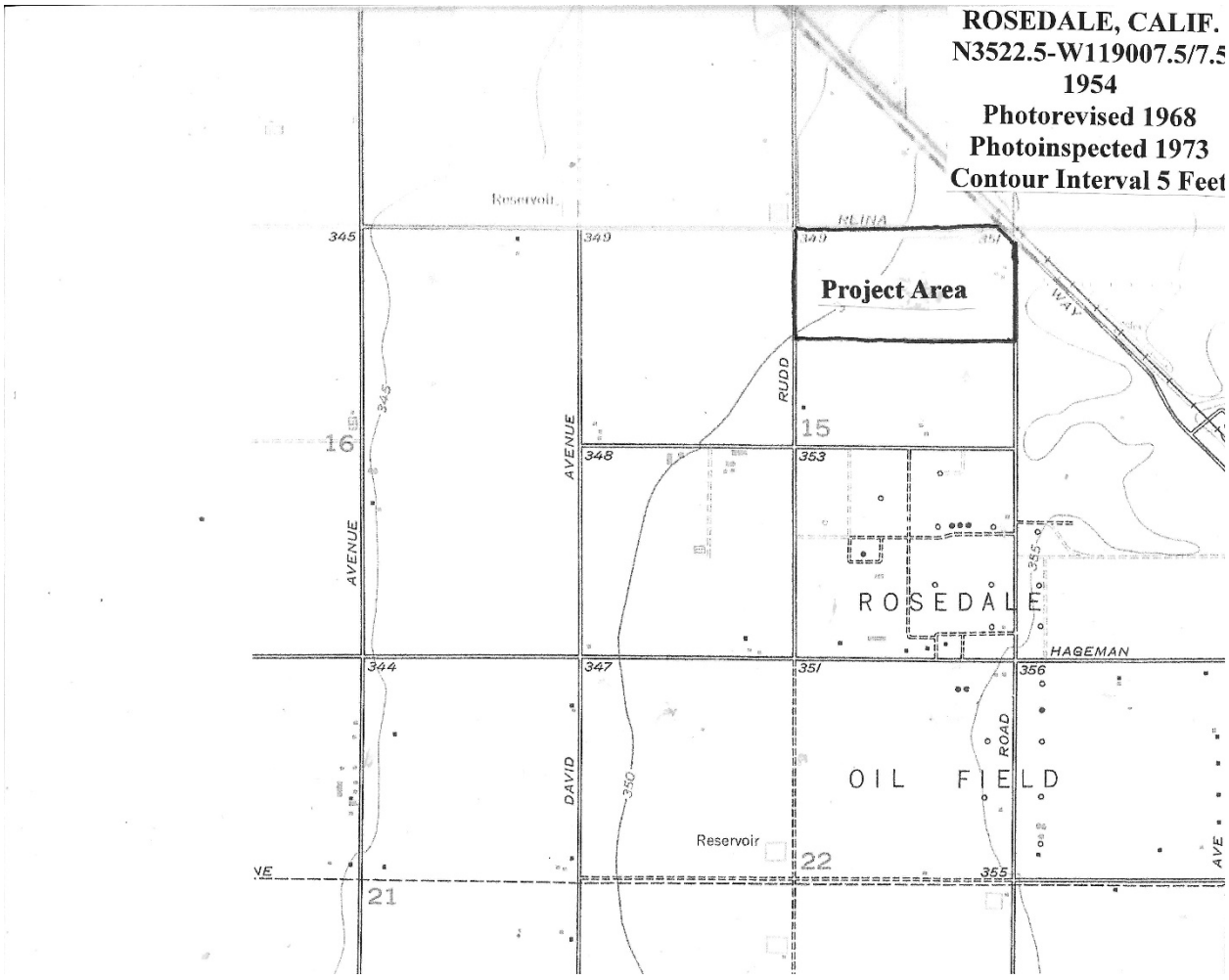

Project Area Location Map

San Fernando Band of Mission Indians
Donna Yocum, Chairperson
P.O. Box 221838
Newhall, California 91322

January 22, 2021

Ms. Yocum,

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January 22, 2021

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Via Email to: shudlow@sbcglobal.net

Re: McMtosh 20-03, Afftenranger Ranch Project, Kern County

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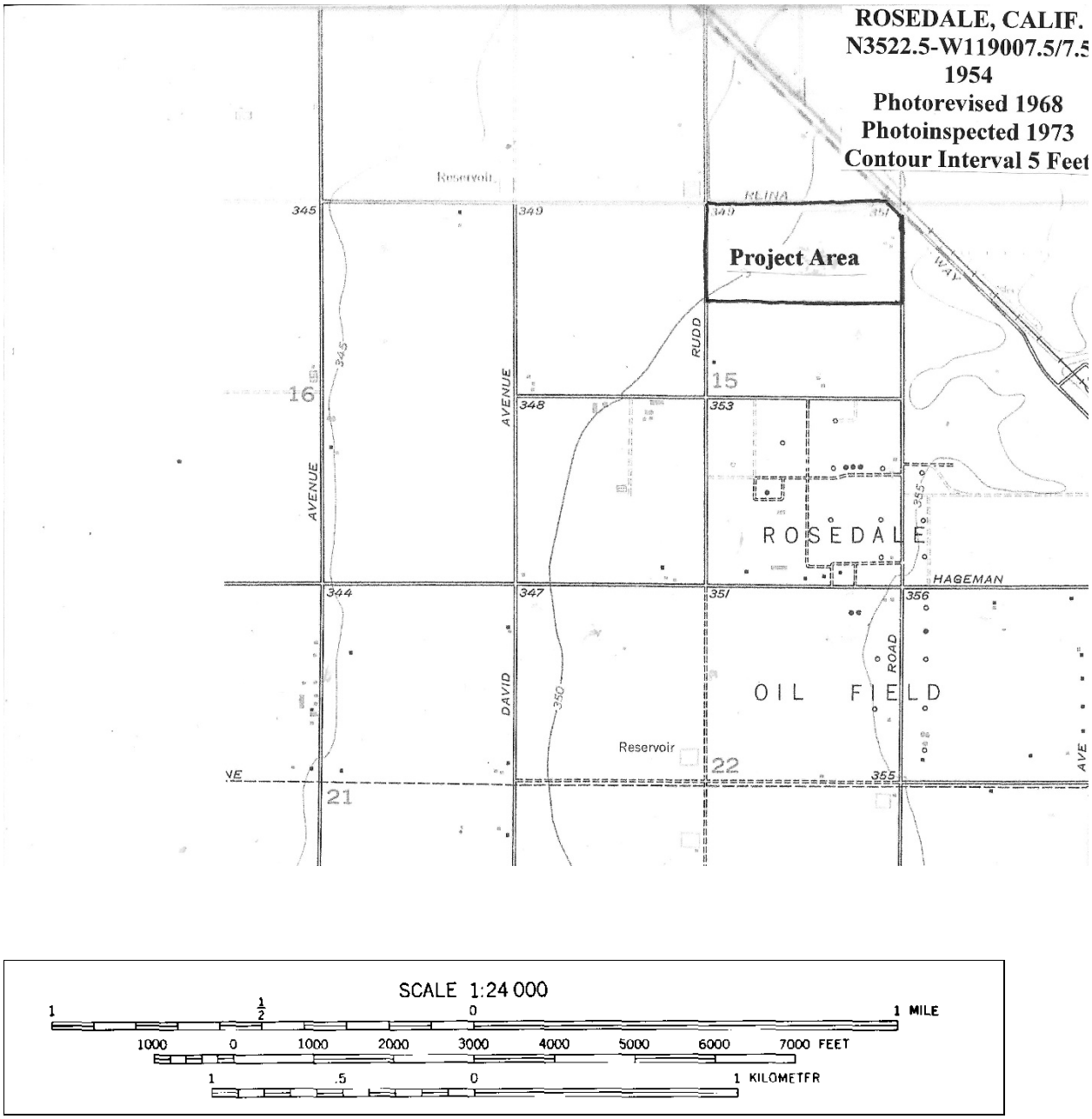

Project Area Location Map

San Manuel Band of Mission Indians
Jessica Mauck, Director-CRM Department
26569 Community Center Drive
Highland, California 92346

January 22, 2021

Ms. Mauck,

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January 22, 2021

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Via Email to: shudlow@sbcglobal.net

Re: McMtosh 20-03, Afftenranger Ranch Project, Kern County

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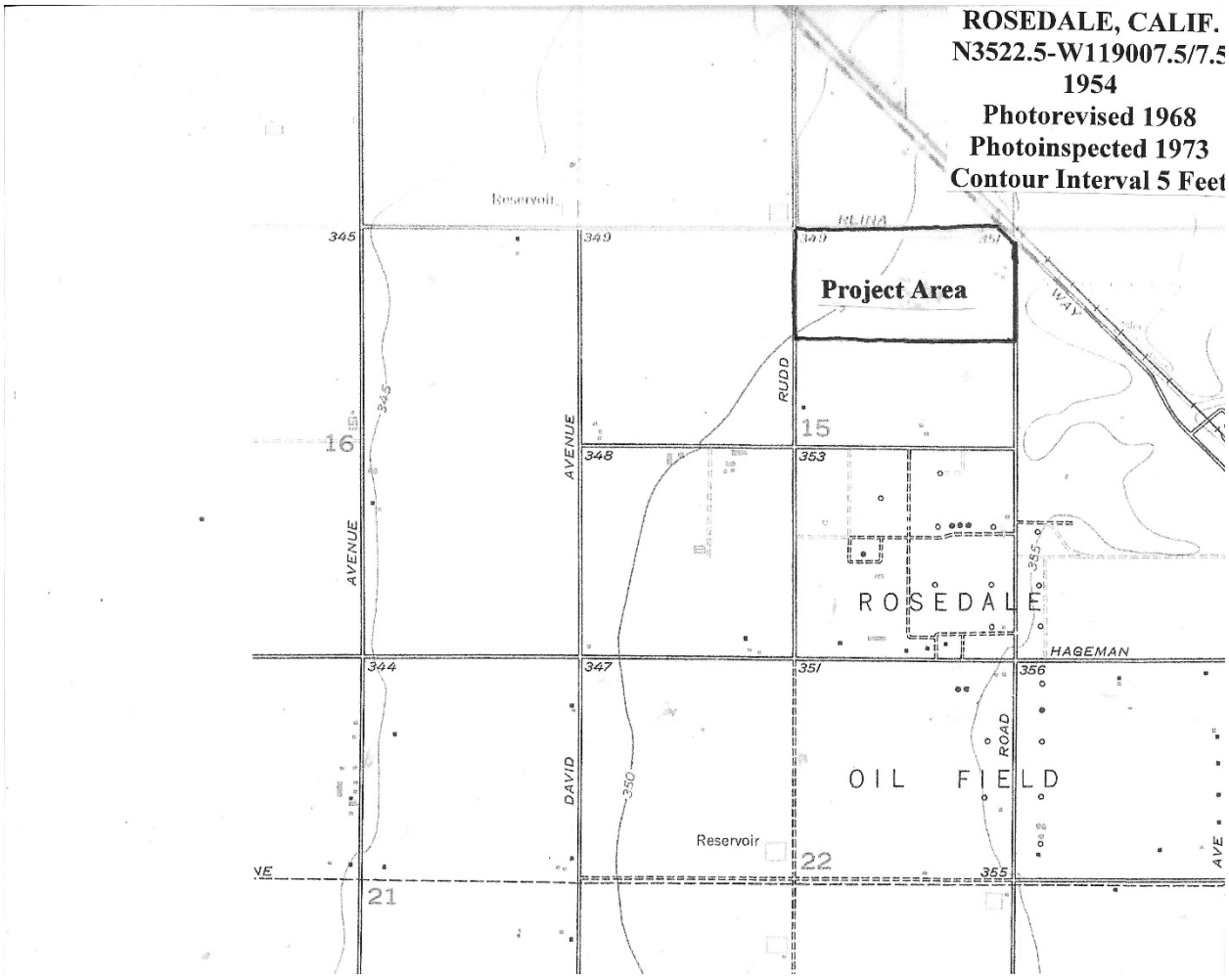

Project Area Location Map

Santa Rosa Rancheria Tachi Yokut Tribe
Leo Sisco, Chairperson
P.O. Box 8
Lemoore, California 93245

January 22, 2021

Mr. Sisco,

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shudlow@sbcglobal.net

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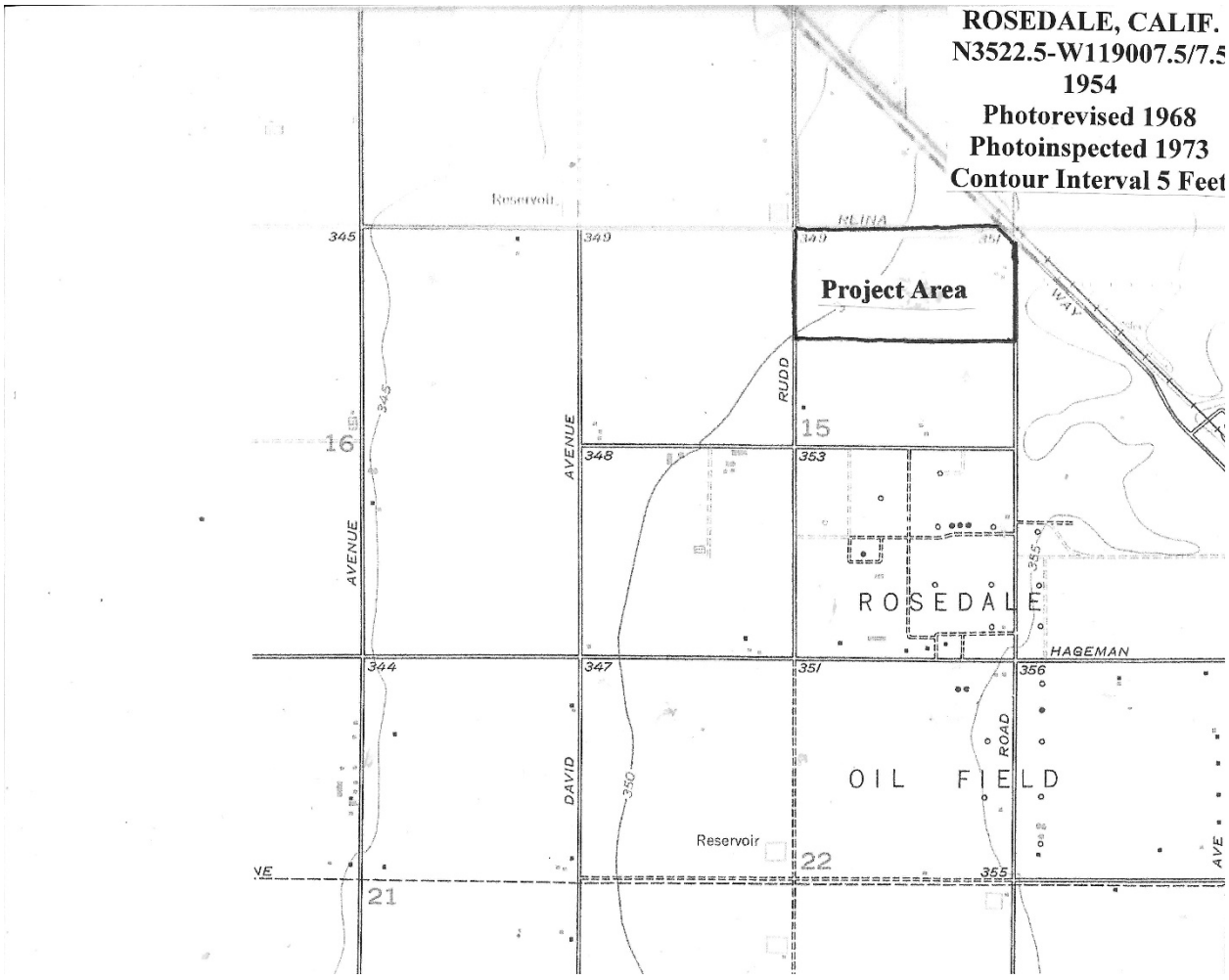

Project Area Location Map

Tejon Indian Tribe
Octavio Escobedo III, Chairperson
P.O. Box 640
Arvin, California 93203

January 22, 2021

Mr. Escobedo III,

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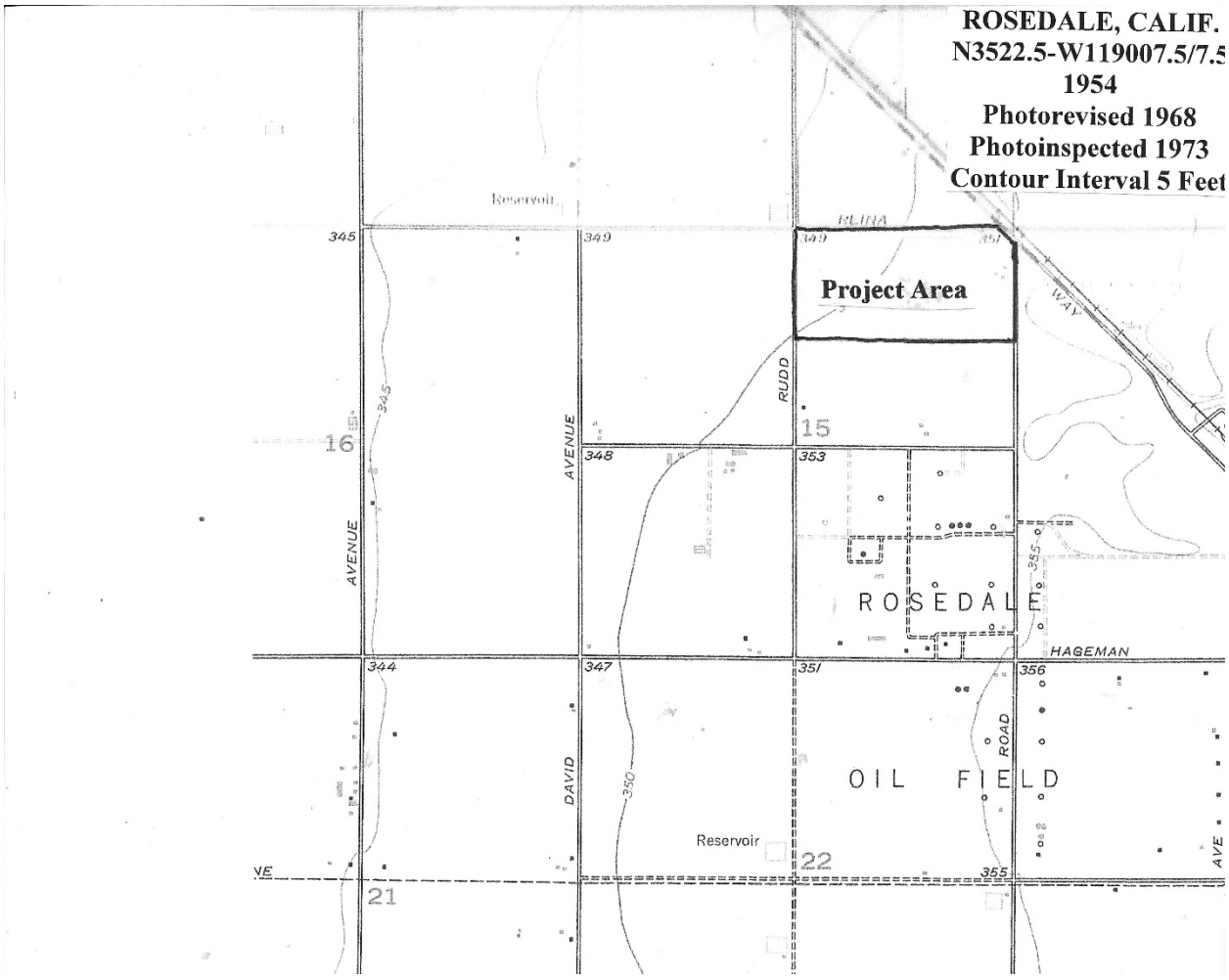

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Tejon Indian Tribe
Colin Rambo, CRM Tech
P.O. Box 640
Arvin, California 93203

January 22, 2021

Mr. Rambo,

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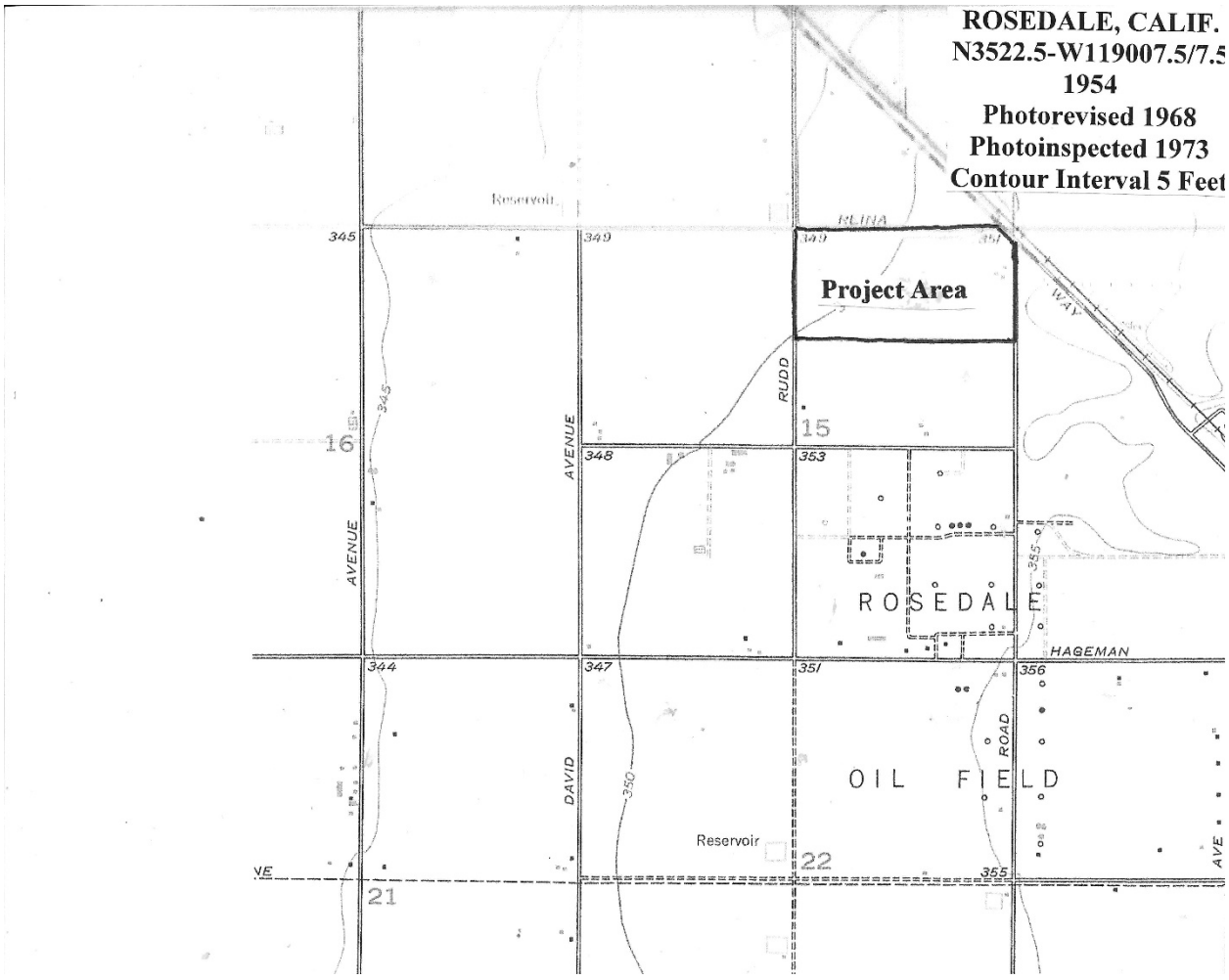

Project Area Location Map

Tubatulabals of Kern Valley
Robert L. Gomez, Jr., Tribal Chairperson
P.O. Box 226
Lake Isabella, California 93240

January 22, 2021

Mr. Gomez,

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Re: McMtosh 20-03, Afftenranger Ranch Project, Kern County

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A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

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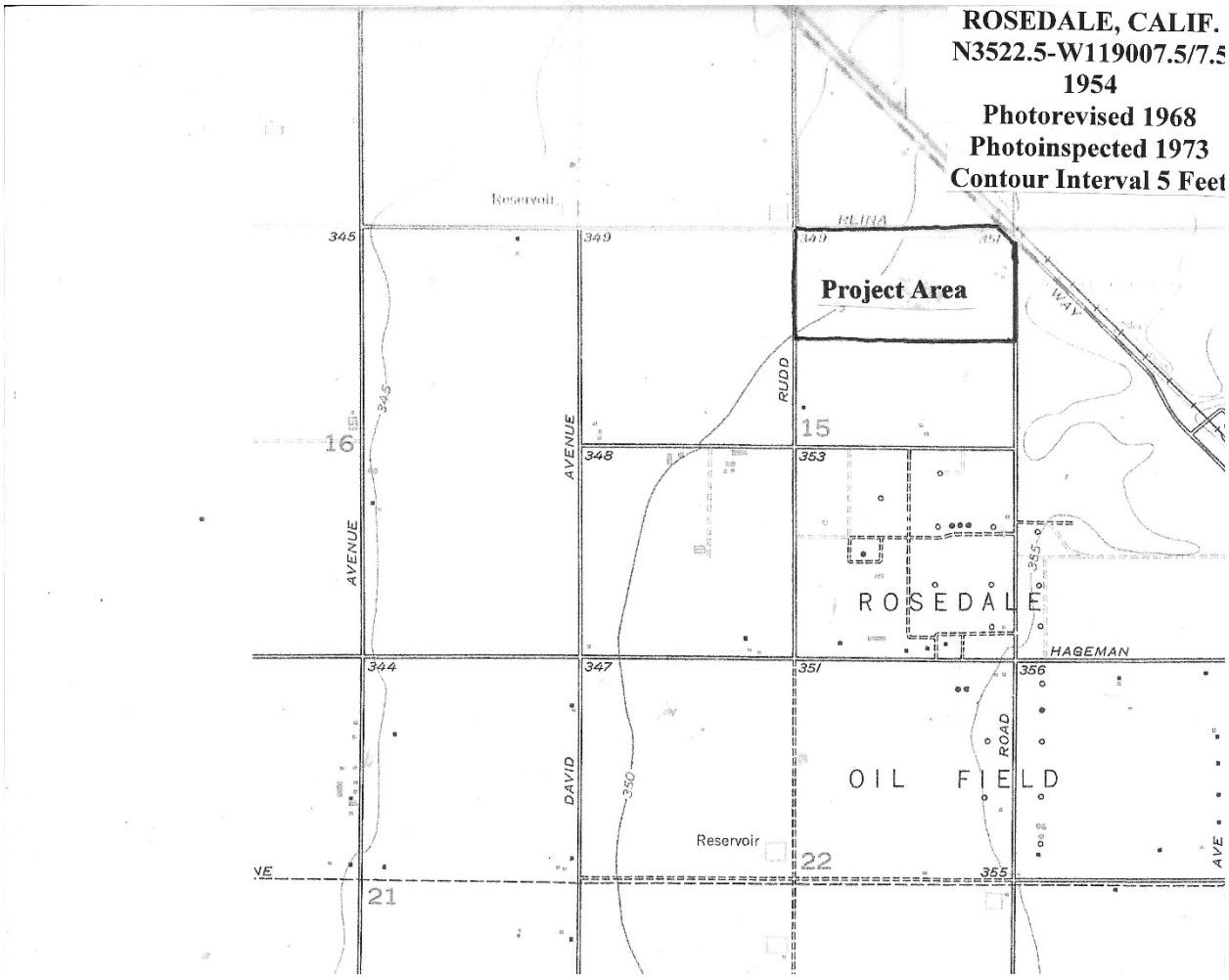
If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Nancy.Gonzalez-Lopez@nahc.ca.gov.

Sincerely,

Nancy Gonzalez-Lopez
Cultural Resources Analyst

Attachment



Project Area Location Map

Tule River Indian Tribe
Neil Peyron, Chairperson
P.O. Box 589
Porterville, California 93258

January 22, 2021

Mr. Peyron,

Afftenranger Ranch, LLC announces its intention to rezone approximately forty acres from agricultural to residential in Bakersfield, Kern County, California. The site is located at the northeast corner of Rudd and Reina Roads in Bakersfield, California. After consultation with the Native American Heritage Commission, the project area is not known to have Native American cultural resources in close proximity. The record search and reporting have been performed in a manner consistent with SHPO guidelines. These guidelines are prescribed in "Instructions for Recording Historical Resources", "Archaeological Resources Management Reports (ARMR) Recommended Contents and Format," and "Guidelines for Archaeological Research Designs".

McIntosh and Associates retained Hudlow Cultural Resource Associates of Bakersfield, California to conduct an Information Center record search, a Sacred Land Search, and a paleontological record search.

This project falls within California Environmental Quality Act guidelines and is subject to Native comment and consultation pursuant to SB 18. As such, this letter informs your group that this project is preceding and requests comments with respect to the proposed project as outlined above.

If you have any questions, comments, or need additional information, please inform Scott M. Hudlow in writing on or before Friday, February 19, 2021. My business address is below.

Hudlow Cultural Resource Associates
1405 Sutter Lane
Bakersfield, California 93309
(661) 834-9183
shudlow@sbcglobal.net

Sincerely,

Scott M. Hudlow
Hudlow Cultural Resource Associates

enclosures

STATE OF CALIFORNIA Gavin Newsom, *Governor*

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

January 22, 2021

Scott Hudlow

Hudlow Cultural Resource Associates

Via Email to: shudlow@sbcglobal.net

Re: McMtosh 20-03, Afftenranger Ranch Project, Kern County

Dear Mr. Hudlow:

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Cultural Resources Analyst

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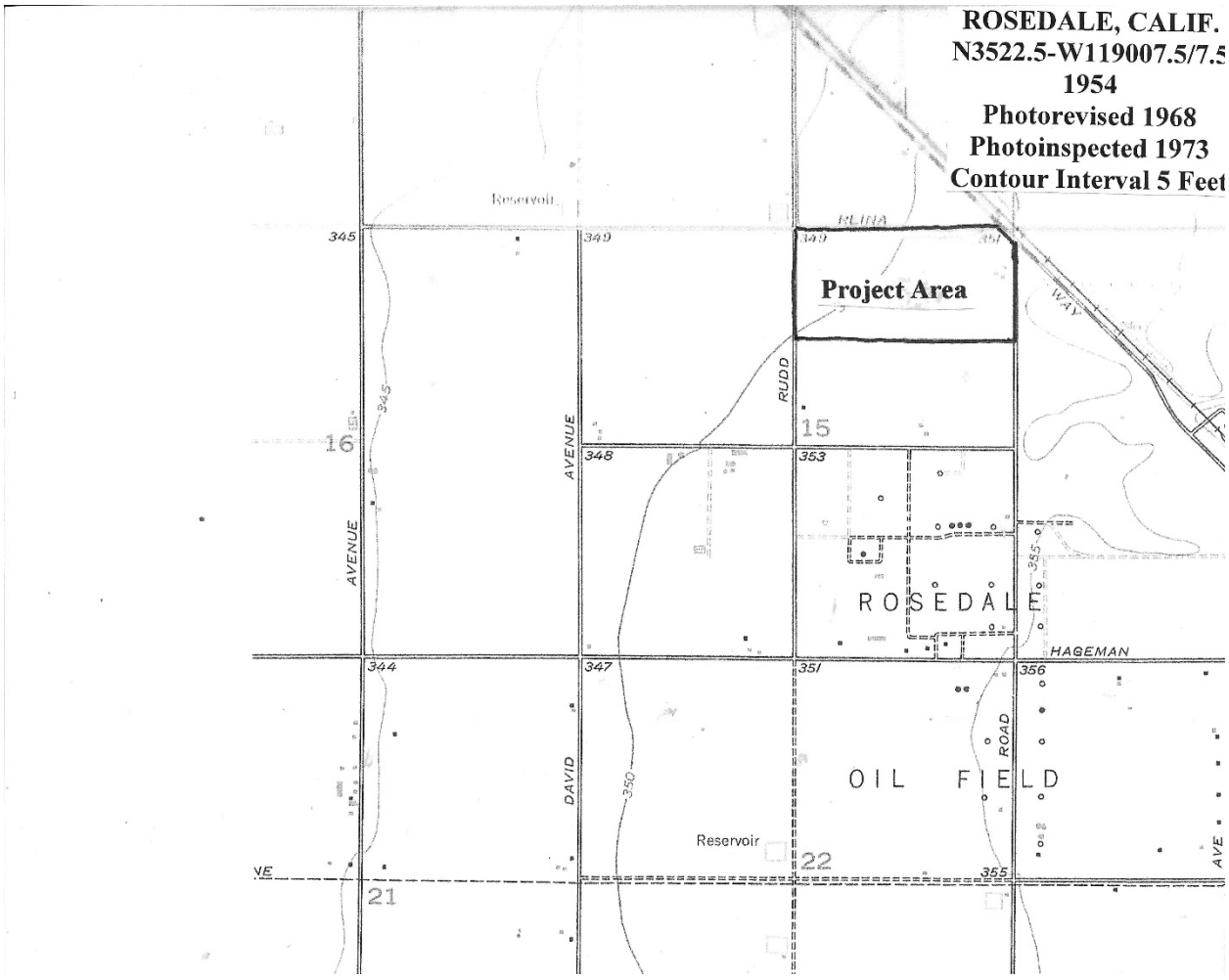

Project Area Location Map

Wukasche Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Court
Salinas, California 93906

January 22, 2021

Mr. Woodrow,

Afftenranger Ranch, LLC announces its intention to rezone approximately forty acres from agricultural to residential in Bakersfield, Kern County, California. The site is located at the northeast corner of Rudd and Reina Roads in Bakersfield, California. After consultation with the Native American Heritage Commission, the project area is not known to have Native American cultural resources in close proximity. The record search and reporting have been performed in a manner consistent with SHPO guidelines. These guidelines are prescribed in "Instructions for Recording Historical Resources", "Archaeological Resources Management Reports (ARMR) Recommended Contents and Format," and "Guidelines for Archaeological Research Designs".

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1405 Sutter Lane
Bakersfield, California 93309
(661) 834-9183
shudlow@sbcglobal.net

Sincerely,

Scott M. Hudlow
Hudlow Cultural Resource Associates

enclosures

STATE OF CALIFORNIA Gavin Newsom, *Governor*

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

January 22, 2021

Scott Hudlow

Hudlow Cultural Resource Associates

Via Email to: shudlow@sbcglobal.net

Re: McMtosh 20-03, Afftenranger Ranch Project, Kern County

Dear Mr. Hudlow:

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Nancy Gonzalez-Lopez
Cultural Resources Analyst

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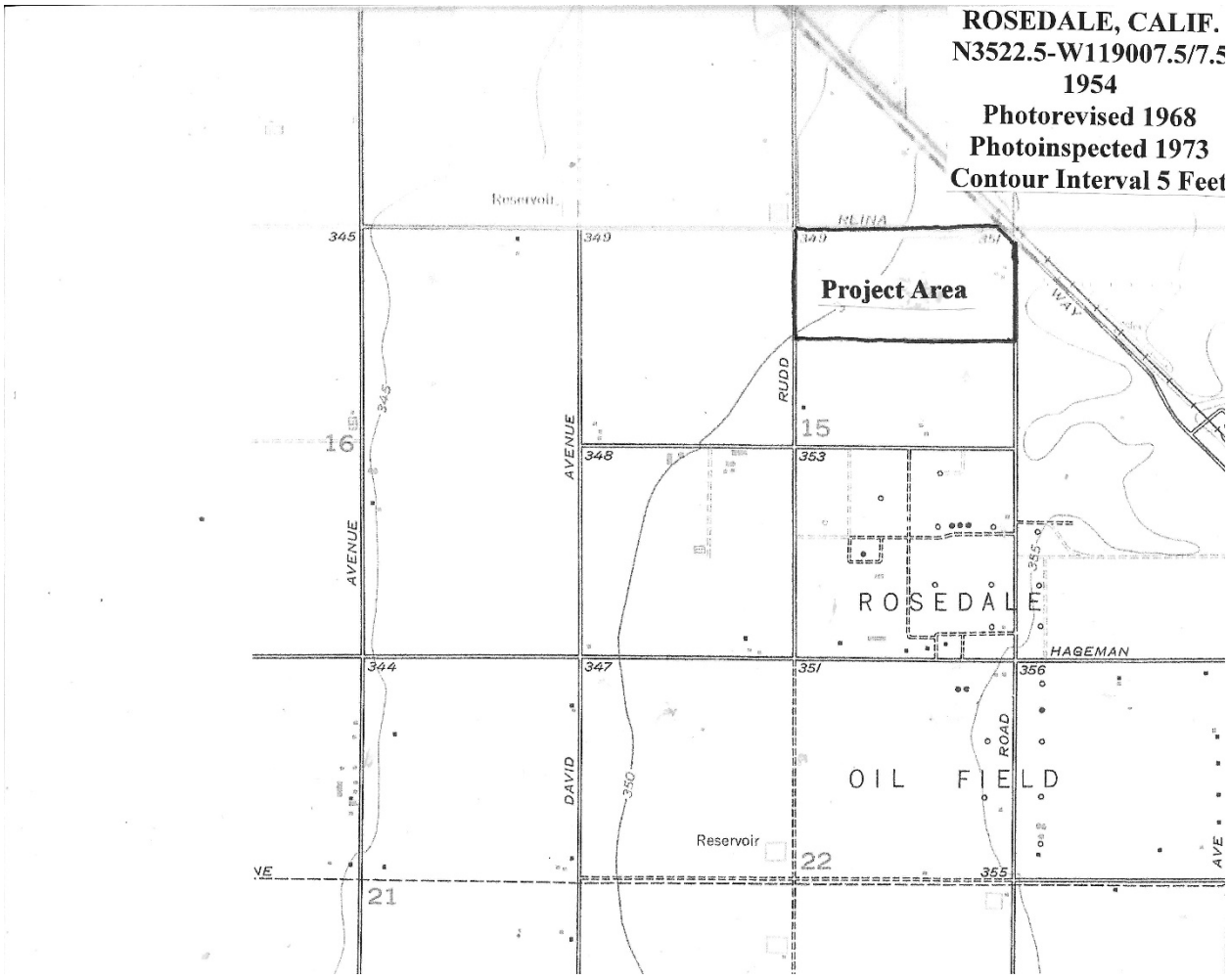

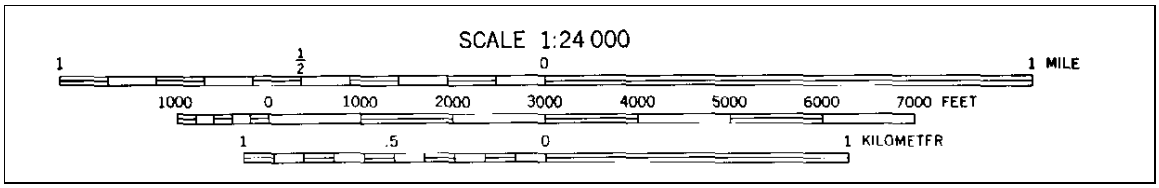

Project Area Location Map

Yak Tityu Tidy Yak Tithini- Northern Chumash Tribe
Mona Olivas Tucker, Chairwoman
660 Camino Del Rey
Arroyo Grande, California 93420

January 22, 2021

Ms. Tucker,

Afftenranger Ranch, LLC announces its intention to rezone approximately forty acres from agricultural to residential in Bakersfield, Kern County, California. The site is located at the northeast corner of Rudd and Reina Roads in Bakersfield, California. After consultation with the Native American Heritage Commission, the project area is not known to have Native American cultural resources in close proximity. The record search and reporting have been performed in a manner consistent with SHPO guidelines. These guidelines are prescribed in "Instructions for Recording Historical Resources", "Archaeological Resources Management Reports (ARMR) Recommended Contents and Format," and "Guidelines for Archaeological Research Designs".

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Hudlow Cultural Resource Associates
1405 Sutter Lane
Bakersfield, California 93309
(661) 834-9183
shudlow@sbcglobal.net

Sincerely,

Scott M. Hudlow
Hudlow Cultural Resource Associates

enclosures

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
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January 22, 2021

Scott Hudlow

Hudlow Cultural Resource Associates

Via Email to: shudlow@sbcglobal.net

Re: McMtosh 20-03, Afftenranger Ranch Project, Kern County

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Sincerely,

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Cultural Resources Analyst

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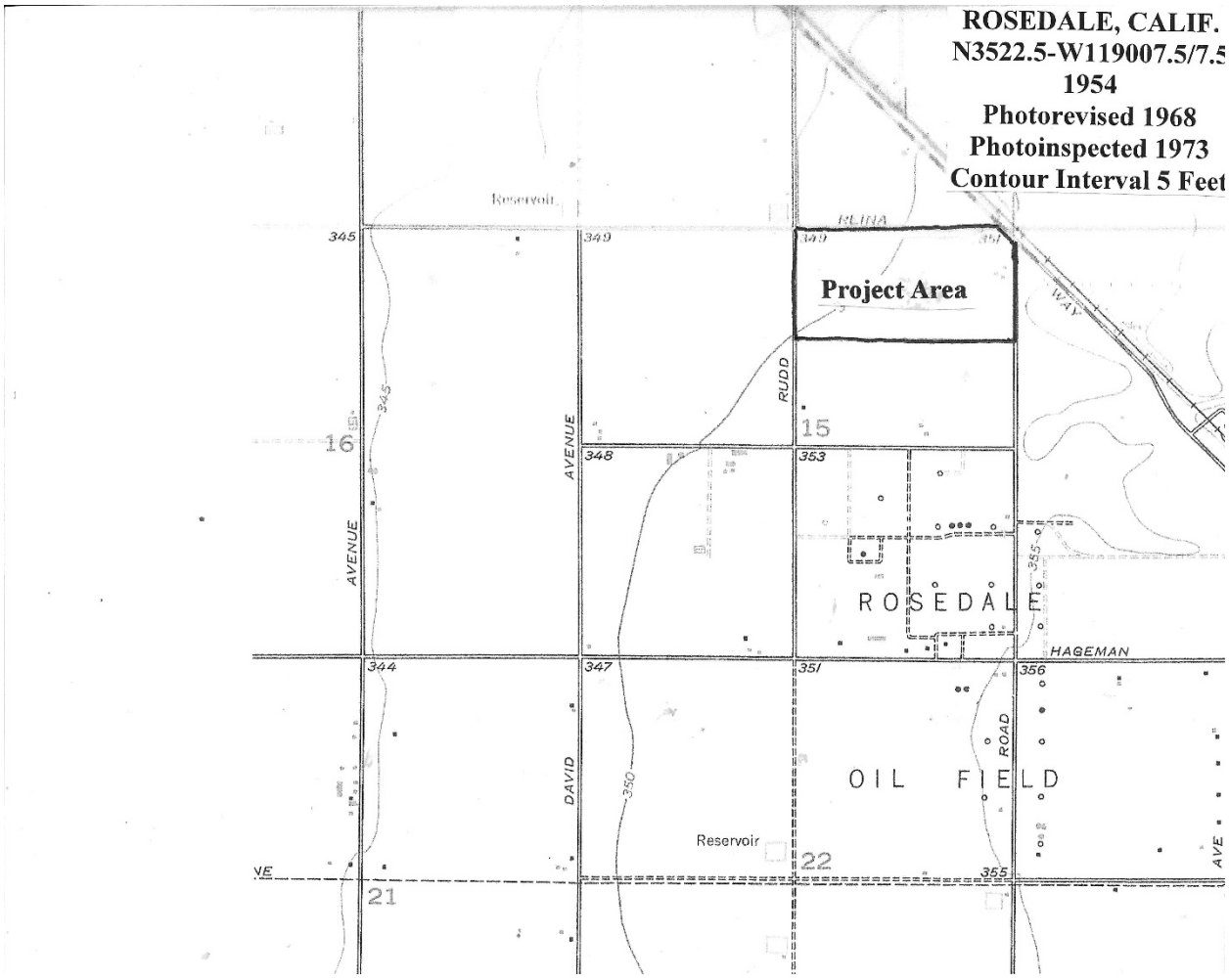


Project Area Location Map

Ryan Nordness <ryan.nordness@sanmanuel-nsn.gov>
To:shudlow@sbcglobal.net
Mon, Feb 1 at 4:26 PM

Dear Scott,

Thank you for contacting the San Manuel Band of Mission Indians (SMBMI) regarding the above-referenced project. SMBMI appreciates the opportunity to review the project documentation, which was received by the Cultural Resources Management Department on February 1, 2021. The proposed project is located outside of Serrano ancestral territory and, as such, SMBMI will not be requesting to receive consulting party status with the lead agency or to participate in the scoping, development, or review of documents created pursuant to legal and regulatory mandates.

Kind regards,

Ryan Nordness

Cultural Resource Analyst
San Manuel Band of Mission Indians

Ryan Nordness
CULTURAL RESOURCE ANALYST
O: (909) 864-8933 x50-2022
Internal: 50-2022
M: 909-838-4053
26569 Community Center Dr Highland California 92346

APPENDIX D
Review of Geotechnical Feasibility Report

February 1, 2021
(*Revised May 26, 2021*)

Project No. 022-20166

Ms. Marie Millan
Affentranger Farms, LLC
18107 Kratzmeyer Road
Bakersfield, California 93314
rmillan@bak.rr.com

Re: Review of Geotechnical Feasibility Report
County of Kern – Reina Ranch Project EIR
APN: 463-052-05 & 06
Mc #18-023

Dear Ms. Millan:

In accordance with the request of McIntosh & Associates, we are providing this Review of the Geotechnical Feasibility Report for the Reina Ranch Project Environmental Impact Report (EIR) to be located at the southeast corner of Reina Road and Rudd Road, in Kern County, California. The purpose of this report is to perform a review of the original Geotechnical Feasibility Report for the project, and provide our opinion of the continued relevance of the report with respect to its intended use as part of the Addendum to the Reina Ranch Project EIR, including recommendations for any further exploration and/or soil sampling and testing, if necessary.

Previous Geotechnical Feasibility Investigation

A Geotechnical Feasibility Report was previously completed for the site by Earth Systems Southern California, (Project No. VT-23663-01) dated April 17, 2006. The previous investigation included a review of relevant geologic maps and reports, reconnaissance of the site, drilling seven soil borings to depths of 15.5 to 31.5 feet below the existing site grade to explore the site subsurface soil and ground water conditions and collect soil samples for laboratory testing, testing of select soil samples, and analysis of the subsequent data obtained. The previous report contained a description of the proposed project and scope of services, a description of existing site conditions, discussions of pertinent geotechnical and geological background data, on-site soil conditions, and preliminary recommendations for grading, foundation design and pavement sections. The report also included a concluding statement regarding the suitability of the proposed development at the site from a geotechnical standpoint.

The proposed project was described as a "proposed 79.7-acre residential development to be located on South Reina Road and east of Rudd Road in the western Bakersfield area of Kern County, California." The project was proposed to include "about 241 residential units, interior paved streets and a retention basin near the northwest corner of the property." The site contained no existing structures at that time.

The subject parcel was described as encompassing approximately 79.7 acres, relatively flat, covered with alfalfa and associated unpaved roads, and with slight surface drainage in a northwesterly direction.

Pertinent geotechnical and geological background data discussed in the report included Fault Rupture, Seismic Shaking, Liquefaction, Landslides and Rockfall, and Flooding. For all of these geologic hazard conditions, the report concluded that the hazard potential was low. The earthquake-induced peak horizontal ground acceleration at the site was estimated to be about 0.31g.

The previous field investigation consisted of drilling seven (7) hollow-stem auger test borings at the site to depths of 15.5 to 31.5 feet below existing site grade. In addition, two (2) near-surface bulk soil samples were collected for laboratory R-Value and chemical testing. The soil boring logs indicate the upper 2.5 to 3 feet of the native on-site soils consisted of disturbed silty sand, silty sand/sand, or sand. Some of these soils contained trace amounts of clay. Beneath the upper disturbed soils, approximately 13 to 29 feet of loose to medium dense sand and silty sand were encountered. Some of these soils contained trace amounts of clay or gravel. Standard penetration test blow counts ranged from 5 to 34 blows per foot. California modified sampler blow-counts ranged from 11 to 38 blows per foot. The in-situ dry densities of these soils ranged from 92 to 117 pcf, with moisture contents of 2 to 22 percent. Laboratory R-Value test results indicated soils with fair to good support characteristics, with results of 31 and 59. Chemistry analyses indicated the upper soils have a very low potential for sulfate reactivity with cement, with sulfate concentrations of 23 and 30 parts per million, pH values of 6.6 and 6.9, and chloride concentrations below detection limits. Minimum resistivity values were 15,600 and 25,000 ohm-cm, indicating the soils are only mildly corrosive to ferrous metals.

Preliminary grading recommendations state only that "some overexcavation and recompaction will be required."

Paving recommendations provided recommended pavement structural sections based on a design R-Value of 31. Recommendations are also provided for compaction of paved area subgrade soils and aggregate base materials.

In the conclusion section of the report, the following statements are made: "The site is suitable for the proposed development from a geotechnical standpoint. This is a "feasibility level" report, and will not be suitable to obtain a grading permit. This report will be followed by (a) "design level" geotechnical engineering report."

Review Comments and Recommendations

Based on our review of the previous report and our experience in the immediate vicinity of the project site, we have prepared the following comments and recommendations.

The field and laboratory investigation performed for development of the report, and the majority of the recommendations contained in the report, appear to be consistent with other "feasibility level" projects performed in the same general area and time frame, and also appear to be currently suitable for the intended use for inclusion in the Addendum to the EIR.

We agree with the recommendation that a "design level" Geotechnical Engineering Investigation be performed prior to start of construction, in order to develop site-specific recommendations for grading, foundation design, retaining walls, utility trenches, slabs-on-grade, etc. The field exploration for a "design level" investigation and report will likely require an increased number of soil borings and bulk samples for R-Value testing. The presence of trace amounts of clay will warrant performing expansion index tests to evaluate the expansion potential of any clayey soils. Based on our experience in the project vicinity, we would anticipate the soil expansion potential to be in the very low to low range. The typical scenario for these soil types would result in a requirement for up to 12 inches of non-expansive Engineered Fill soil beneath slabs-on-grade and exterior flatwork.

In addition to the reported clayey soils, the boring logs indicate that relatively clean sands were encountered at various locations throughout the site. The possibility exists that site grading operations could expose these soils in areas of proposed buildings, pavements, and/or retaining walls. The Contractor should note that these soils lack the cohesion necessary to stand vertically, even in shallow excavations such as footing trenches. If these conditions are encountered, it will be necessary to over-excavate the affected area(s) to a minimum of 1 foot below the proposed bearing surface. These areas may be backfilled using a mix of the silty sand and sand soils that contains at least 20 percent fines and meeting the requirements for Engineered Fill. This material may be obtained from elsewhere at the site, imported to the site from an approved off-site source, or manufactured through blending of the excavated clean sand with other suitable material containing a higher percentage of fines to result in material meeting the requirements for Engineered Fill. This information and recommendations should be included in the Addendum to the EIR.

Due to the time lapse and related changes to the California Building Code with regards to development of seismic design parameters for use in foundation design, we expect the site modified peak ground acceleration (PGA_M) to be in excess of 1.5 times the value for peak horizontal acceleration provided in the previous report. This would not change the conclusion of the previous report that the geologic hazard potential was low.

Limitations

Soils Engineering is one of the newest divisions of Civil Engineering. This branch of Civil Engineering is constantly improving as new technologies and understanding of earth sciences advance. Although your site was analyzed using the most appropriate and most current techniques and methods, undoubtedly there will be substantial future improvements in this branch of engineering. In addition to advancements in the field of Soils Engineering, physical changes in the site, either due to excavation or fill placement, new agency regulations, or possible changes in the proposed development after the soils report is completed may require the soils report to be professionally reviewed. In light of this, the Owner should be aware that there is a practical limit to the usefulness of this report without critical review. Although the time limit for this review is strictly arbitrary, it is suggested that 2 years be considered a reasonable time for the usefulness of this report.

Foundation and earthwork construction is characterized by the presence of a calculated risk that soil and groundwater conditions have been fully revealed by the original foundation investigation. This risk is

derived from the practical necessity of basing interpretations and design conclusions on limited sampling of the earth. The recommendations made in this report are based on the assumption that soil conditions do not vary significantly from those disclosed during the field investigation. If any variations or undesirable conditions are encountered during construction, the Soils Engineer should be notified so that supplemental recommendations may be made.

The conclusions of this report are based on the information provided regarding the proposed construction. If the proposed construction is relocated or redesigned, the conclusions in this report may not be valid. The Soils Engineer should be notified of any changes so the recommendations may be reviewed and re-evaluated.

This report is a Geotechnical Feasibility Review with the purpose of evaluating the original project Geotechnical Feasibility Report, and providing related recommendations, in terms of building foundation design and related site preparation, the recommendation that a "design level" Geotechnical Investigation with further exploration, testing, analyses, and reporting, as necessary, based on previous and current soil conditions. The scope of our services did not include any Environmental Site Assessment for the presence or absence of hazardous and/or toxic materials in the soil, groundwater, or atmosphere, or the presence of wetlands. Any statements, or absence of statements, in this report or on any boring log regarding odors, unusual or suspicious items, or conditions observed, are strictly for descriptive purposes and are not intended to convey engineering judgment regarding potential hazardous and/or toxic assessment.

The geotechnical engineering information presented herein is based upon professional interpretation utilizing standard engineering practices and a degree of conservatism deemed proper for this project. It is not warranted that such information and interpretation cannot be superseded by future geotechnical engineering developments. We emphasize that this report is valid for the project outlined above and should not be used for any other sites.

Recommendations and limitations provided in the previous Earth Systems Southern California Geotechnical Feasibility Report, dated April 17, 2006, which were not revised or superseded herein, will apply to this letter. If you have any questions, or if we can be of further assistance, please contact our office at (661) 837-9200.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

Ryan K. Privett, PE
Senior Engineer
RCE No. 59372

RKP:rp

APPENDIX E
Noise Report

ACOUSTICAL ANALYSIS
FOR

ADDENDUM TO THE REINA RANCH EIR
KERN COUNTY, CALIFORNIA

WJVA Project No. 19-053

PREPARED FOR

McINTOSH & ASSOCIATES
2001 WHEELAN COURT
BAKERSFIELD, CA 93309

PREPARED BY

WJV ACOUSTICS, INC.
VISALIA, CALIFORNIA

wjv acoustics

DECEMBER 19, 2019
(REVISED JULY 28, 2021)

INTRODUCTION

This acoustical analysis has been prepared for use in the Addendum to the Reina Ranch Project Environmental Impact Report (EIR). The Reina Ranch Project EIR, which analyzed the impacts of a 253 single-family residential development on the 76.36 net acres (79.75 gross acres) project site, was certified by the Kern County Board of Supervisors on September 22, 2009. The approved project addressed in the EIR consists of the following:

- Site plan with a circulation system that provides access by linear streets for 253 single-family residential dwelling units with an average density of 7,200 to 9,600 square feet on approximately 72.0 net acres for a net average density of 3.51 dwelling unit/acre;

- Two storm water retention basins in the north central and northwest corner of the project site, respectively, totaling 3.65 acres; and

- A centrally located 2.57-acre drilling island on the project site preserved as undeveloped land for future oil drilling.

The approved project was proposed to realign Reina Road between Rudd Avenue and Santa Fe Way so that it intersects Santa Fe Road at a 90-degree angle, approximately 650 feet north of the existing intersection. In addition, the approved project would provide for connections to the Vaughn Water Company and North of the River (NOR) Sanitary District to provide domestic water and public sewer services to the project site.

The Addendum to the EIR analyzes a proposed modified project that would result in the following modifications to the approved project:

- Redesign of the site plan with a circulation system with linear streets and cul-de-sacs resulting in an increase from 253 to 263 single-family residential dwelling units with an average density 7,200 to 9,600 square feet on approximately 72.0 net acres for a net average density of 3.51 dwelling unit/acre;

- Reduction from two storm water retention basins totaling 3.65 acres to one 1.24-acre storm water retention basin in the northwest corner of the project site;

- Relocation of a 2.57-acre drilling island preserve in the center of the site plan to a 2.64-acre drilling island to preserve undeveloped land for future oil drilling in the northeast corner of the project site; and

- Removal of the Cluster (CL) Combining Overlay on the project site.

The modified proposed project site plan is provided as Figure 1.

The boundaries of the project site for the proposed modified project would be unchanged from the approved project. The project site is located to the southwest of Santa Fe Way in unincorporated Kern County to the northwest of the City of Bakersfield, California, in Section 15, Township 29 South, Range 26 East, Mount Diablo Base and Meridian. The project site is bounded by Rudd Avenue to the west, Reina Road to the north, Leonard Alvarado Road to the east, and agricultural land and a single-family residential development to the south.

The project applicant has requested an acoustical analysis to assess project site noise exposure and determine the extent noise mitigation measures that should be incorporated into the modified proposed project design. This analysis, prepared by WJV Acoustics, Inc. (WJVA), is based upon a site plan dated 2/25/20, traffic data provided by Kern Council of Governments (Kern COG), railroad data provided by the Federal Rail Administration and Kern COG and the findings of on-site noise level measurements.

Appendix A provides definitions of the acoustical terminology used in this report. Unless otherwise stated, all sound levels reported in this analysis are A-weighted sound pressure levels in decibels (dB). A-weighting de-emphasizes the very low and very high frequencies of sound in a manner similar to the human ear. Most community noise standards utilize A-weighted sound levels, as they correlate well with public reaction to noise. Appendix B provides typical A-weighted sound levels for common noise sources.

CRITERIA FOR ACCEPTABLE NOISE EXPOSURE

Although the project site is in unincorporated Kern County, the project site is in the planning area of the Metropolitan Bakersfield General Plan. The applicable standards for noise levels that apply to the project site and the modified proposed project are those within Chapter VII of the Metropolitan Bakersfield General Plan adopted in 2002. No federal or state noise standards are applicable to this project.

For transportation noise sources (e.g., traffic and railway noise), the Metropolitan Bakersfield General Plan establishes noise level criteria in terms of the Community Noise Equivalent Level (CNEL) metric. The CNEL is the time-weighted energy average noise level for a 24-hour day, with a 4.77 dB penalty added to noise levels occurring during the evening hours (7:00 p.m.-10:00 p.m.) and a 10 dB penalty added to noise levels occurring during the nighttime hours (10:00 p.m.-7:00 a.m.). The CNEL represents cumulative exposure to noise over an extended period of time and is therefore calculated based upon *annual average* conditions.

The Noise Element establishes a land use compatibility criterion of 65 dB CNEL for exterior noise levels in outdoor activity areas of new residential developments. Outdoor activity areas generally include backyards of single-family residences, individual patios or decks of multi-family developments and common outdoor recreation areas of multi-family developments. The intent of the exterior noise level requirement is to provide an acceptable noise environment for outdoor activities and recreation.

The Noise Element also requires that interior noise levels attributable to exterior noise sources not exceed 45 dB CNEL. The intent of the interior noise level standard is to provide an acceptable noise environment for indoor communication and sleep.

For non-transportation (stationary) noise sources, the Noise Element applies hourly noise level performance standards at residential and other noise-sensitive uses. Table I summarizes the hourly standards for non-transportation noise sources.

TABLE I

HOURLY NOISE LEVEL PERFORMANCE STANDARDS
METROPOLITAN BAKERSFIELD GENERAL PLAN
NON-TRANSPORTATION NOISE SOURCES

Maximum Acceptable Noise Level, dBA		
Min./Hr. (L_n)	Day (7a-10p)	Night (10p-7a)
30 (L_{50})	55	50
15 (L_{25})	60	55
5 ($L_{8.3}$)	65	60
1 ($L_{1.7}$)	70	65
0 (L_{max})	75	70

Note: L_n means the percentage of time the noise level is exceeded during an hour. L_{50} means the level exceeded 50% of the hour, L_{25} is the level exceeded 25% of the hour, etc.

PROJECT SITE NOISE EXPOSURE

The project site is located southwest of the intersection of Santa Fe Way and Reina Road, within an unincorporated area of Kern County, just outside the City of Bakersfield city limits. The project site is exposed to railroad noise associated with train operations along the BNSF Railway mainline, and traffic noise associated with vehicles along Santa Fe Way.

Railroad Noise Exposure

The BNSF Railway mainline is located along the northeast portion of the project site. The railroad consists of a single-track mainline with continuously welded rail adjacent to the project site. The nearest grade crossing is currently located at Reina Road, at the northeast corner of the project site. Train engineers are required to sound warning horns when within approximately ¼ mile of a grade crossing. The estimated speed of trains passing the project site is 25-70 mph for freight trains and 55-79 mph for passenger (Amtrak) trains. The railroad is elevated approximately 4-5 feet above the northeast portion of the project site.

The applicant has requested that project site railroad noise exposure be assessed for both the existing conditions, with the Reina Road grade crossing as well as with the removal of the Reina Road crossing. The removal of the Reina Road grade crossing would eliminate the use of the required warning horn, and would significantly reduce project site noise exposure.

With Reina Road Grade Crossing-
Noise level monitoring was conducted by WJVA (then operating as Brown Buntin Associates) within the project site on March 7 and April 24, 2007 at a distance of 125 feet from the center of the train tracks. The project area and railroad noise monitoring site are shown in Figure 2.

Noise monitoring equipment consisted of Larson-Davis Laboratories Model LDL-820 sound level analyzers equipped with B&K Type 4176 1/2" microphones. This equipment complies with the specifications of the American National Standards Institute (ANSI) for Type I (Precision) sound level meters. The meters were calibrated in the field prior to use with a B&K Type 4230 acoustic calibrator to ensure the accuracy of the measurements. The microphones were placed on tripods at 5 feet above the ground.

A total of fifteen (15) train movements were monitored, including six (6) passenger trains and (9) nine freight trains. The mean Sound Exposure Level (SEL) for freight trains was 107.2 dB and the mean SEL for passenger trains was 104.3 dB. The train horn was the dominant source of noise for all monitored train movements. Noise from locomotives and cars was secondary.

The SEL is a measure of the total energy of a noise event, including consideration of event duration. The SEL is not actually heard, but is a derived value used for the calculation of energy-based noise exposure metrics such as the CNEL.

According to the U.S. Department of Transportation (Federal Rail Administration) Railroad Crossing Inventory, an average of 34 train movements per day occur on the BNSF Railway in the project vicinity, including 14 Amtrak train movements. Freight trains may occur at any time during the day or night. According to the current Amtrak schedule (10/28/19), all but three (3) passenger trains pass the project site during the daytime hours (7:00 a.m.-10:00 p.m.). Estimates of future railroad activity were not available from the BNSF Railway.

Railroad noise exposure may be quantified in terms of the CNEL using the following formula:

CNEL =SEL+ 10 log Neq – 49.4

where,

SEL is the average SEL for a train pass-by, Neq is the equivalent number of pass-bys in a typical 24-hour period determined by adding 10 times the number of nighttime movements (10 p.m.-7 a.m.) to three times the number of evening movements (7 p.m.-10 p.m.) to the actual number of daytime movements (7 a.m.-7 p.m.). 49.4 is a time constant equal to 10 times the log of the number of seconds in a day.

The BNSF railroad tracks pass the eastern portion of the project site from a northwest to the southeast direction, and become progressively farther from the project site in the north to south direction. The homes proposed closest to the tracks within the eastern portion of the project site are located between approximately 375 (northeast portion of the project site) to 1000 feet (southeast portion of the project site) from the BNSF Railway.

Using the above-described formula, railroad operations data and noise measurement results, the railroad noise exposure at the closest proposed homes along the eastern portion of the project site was calculated to be in the range of approximately 66 to 72 dB CNEL. This range of railroad noise project site exposure represents existing conditions, with the Reina Road grade crossing (and subsequent usage of the train warning horns) in place.

Without Reina Road Grade Crossing-
As described above, it is likely that the Reina Road grade crossing will be removed at a future date. In order to assess the potential project site railroad noise exposure that would be expected after removal of the grade crossing (when train engineers would not be required to sound the warning horns), WJVA reviewed train noise measurements obtained approximately ½ mile north of the project site, where train warning horn noise was not a factor.

WJVA applied the noise level measurements conducted along the BNSF railroad line near the project site without the inclusion of train warning horn noise. Without the warning horn noise, the mean Sound Exposure Level (SEL) for freight trains was 99.2 dB and the mean SEL for passenger was 91.3 dB.

Applying the same railroad operations data described above, the railroad noise exposure at the closest homes proposed along the eastern portion of the project site was calculated to be in the range of approximately 57 to 63 dB CNEL.

Traffic Noise Exposure:

Noise exposure from traffic on Santa Fe Way was calculated for existing and future (2042) traffic conditions using the findings of on-site noise level measurements, the FHWA Traffic Noise Model and traffic data from the Kern COG.

WJVA utilized the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108). The FHWA Model is a standard analytical method used for roadway traffic noise calculations. The model is based upon reference energy emission levels for automobiles, medium trucks (2 axles) and heavy trucks (3 or more axles), with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA Model was developed to predict hourly L_{eq} values for free-flowing traffic conditions, and is generally considered to be accurate within ±1.5 dB. To predict L_{dn} values, it is necessary to determine the hourly distribution of traffic for a typical day and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

Annual Average Daily Traffic (AADT) data for Santa Fe Way in the project vicinity was obtained from the Kern Council of Governments (Kern COG). Truck percentages and the day/night distribution of traffic were estimated by WJVA, based upon previous studies conducted in the project vicinity since project-specific data were not available from government sources. Table II summarizes annual average traffic data used to model noise exposure within the project site.

TABLE II

TRAFFIC NOISE MODELING ASSUMPTIONS
TRACT 6812, BAKERSFIELD

	White Lane	
	2019	2042
Annual Avenue Daily Traffic (AADT)	9,384	13,425
Day/Evening/Night Split (%)	77/14/9	
Assumed Vehicle Speed (mph)	45	
% Medium Trucks (% AADT)	1	
% Heavy Trucks (% AADT)	1.5	

Sources: Kern COG
WJV Acoustics, Inc.

Using data from Table II, the FHWA Model, annual average traffic noise exposure was calculated for the closest proposed residential setbacks and the closest proposed residential backyards to Santa Fe Way. As is the case with BNSF railroad line, the distances between the proposed lots and Santa Fe Way increases along the project site from a north to south direction. The calculated

noise exposures for 2042 traffic conditions (worst-case assessment of project site traffic noise exposure) for the closest proposed outdoor activity areas (backyards) to Santa Fe Way range from approximately 50 dB CNEL to 56 dB CNEL.

Combined (Railroad and Traffic) Project Site Noise Exposure:

Table III provides the combined (Railroad and Traffic) noise exposure levels for the proposed lots closest to the BNSF railroad line and Santa Fe Way. Table III provides the combined noise levels for both existing conditions, with the Reina Road grade crossing, as well as the noise exposure levels after the Reina Road grade crossing has been removed (without train warning horn noise). The Lot numbers are not displayed in numerical order, but are rather provided geographically, from north to south along the project site eastern portion.

TABLE III

TRACT 6812, KERN COUNTY
COMBINED NOISE EXPOSURE LEVELS

Lot Number / Phase Number	Railroad Noise Exposure		Traffic Noise Exposure	Combined Noise Exposure	
	W/ Reina Rd. Grade Crossing	W/O Reina Rd. Grade Crossing		W/Reina Rd. Grade Crossing	W/O Reina Rd. Grade Crossing
27 / 2	71.9	63.4	56.4	72.0	64.2
26 / 2	71.0	62.5	55.6	71.6	63.3
25 / 2	70.3	61.8	54.9	70.9	62.6
24 / 2	69.6	61.1	54.0	70.2	61.8
11 / 2	68.4	59.9	52.7	68.5	60.7
12 / 2	68.9	60.4	53.2	69.0	61.2
19 / 2	71.1	62.6	55.7	71.2	63.4
20 / 2	71.9	63.4	56.1	72.0	64.1
21 / 2	70.8	62.3	55.5	70.9	63.1
22 / 2	70.3	61.8	54.7	70.4	62.6
23 / 2	70.1	61.6	54.5	70.2	62.4
31 / 1	69.3	60.8	53.6	69.9	61.6
30 / 1	67.5	59.0	52.2	67.6	59.8
18 / 1	67.1	58.6	51.0	67.2	59.3
17 / 1	66.8	58.3	50.9	66.9	59.0
16 / 1	66.1	57.6	50.1	66.2	58.3
15 / 1	65.7	57.2	49.6	65.8	57.9

Source: WJV Acoustics, Inc.

Reference to Table III indicates that under current conditions, with the Reina Road grade crossing, the combined noise exposure levels at the lots closest to the SRJV railroad line and Santa Fe Way would be in the range of approximately 66 to 72 dB CNEL. Such levels exceed the applicable 65 dB CNEL exterior noise level standard at all proposed lots, and mitigation measures would be

required. However, after the removal of the Reina Road grade crossing, the combined noise exposure level at the same lots would be expected to be in the range of approximately 58 to 64 dB CNEL. Such levels are below the applicable 65 dB CNEL exterior noise level standard at all proposed residential lots without the need for mitigation measures.

NOISE MITIGATION

With the existing Reina Road grade crossing in place, combined railroad and traffic noise exposure at the closest proposed lots to the BNSF railroad line and Santa Fe Way would be in the range of approximately 66 to 72 dB CNEL. Such levels exceed the applicable 65 dB CNEL exterior noise level standard, and mitigation measures would therefore be required.

To mitigate exterior traffic noise exposure along the proposed residential lots closest to the BNSF railroad line and Santa Fe Way, it will be necessary to construct a sound wall along the eastern portion of the project site and the lots analyzed in Table III. The sound wall would provide acoustical shielding of the outdoor activity areas (backyards) of the lots. The train noise represents the predominant source of project site noise exposure and, therefore, the sound wall must be designed to mitigate noise associated with railroad operations.

The effectiveness of a noise barrier is determined by the geometric relationship between the noise source, barrier and receiver. Noise barriers are most effective when they are located either close to the noise source or receiver. Due to the height of the railroad noise source on the elevated roadbed and the intervening Santa Fe Way roadway, the noise barrier should be placed as close to the receivers as practical.

A sound wall insertion loss program based on the FHWA Model was utilized to calculate the minimum required height of a noise barrier along the BNSF corridor. The model calculates the insertion loss (noise reduction) of a wall (or berm/wall combination) of a given height based on the effective height of the noise source, height of the receiver, distance from the receiver to the wall, and distance from the noise source to the wall. It was assumed for the sound wall calculations that the effective railroad source height is 10 feet above the tracks. The standard height of a residential receiver is 5 feet above the finished floor elevation.

Table IV provides the minimum sound wall heights for each lot, required to comply with the applicable 65 dB CNEL exterior noise level standard (for existing conditions, with the Reina Road grade crossing in place). The locations of the sound walls are provided as Figure 3, and represent the applicant's preferred sound wall location. The minimum wall heights are also provided in red text within each lot on Figure 3.

The variations in wall requirements are influenced by several factors, including overall distance from the receiver to the noise source and the relative distances between the source, sound wall and receiver. As described above, a sound wall is most effective when it is located as close as possible to either the receiver or the noise source. Conversely, a sound wall is less effective when it is located at or near a mid-point between a receiver and the noise source. These factors all come into play when determining the minimum required sound heights described in Table IV and provided on Figure 3. All sound wall height requirements are relative to finished lot pad elevations.

At proposed residential lots 21, 22, 31 and 27 (Phase 4) lot 1 and 27 (Phase 2) and lot 30 (Phase 1), the sound walls may taper down in elevation and terminate at a distance of ten (10) feet beyond the rear façade of the house, as approximated on Figure 3. The sound walls are not required to extend the full length of these lots, as the noise level standard applies to the backyard areas only. Additionally, in the vicinity of proposed Lot 22 (Phase 2) the sound wall would tie in to the existing 6-foot sound wall. The existing 6-foot sound wall that at this point extends to the southeast would be sufficient to provide adequate acoustical shielding to lots 22 and 23 (Phase 2) and lot 31 (Phase 1).

It should be noted, the above-described sound walls would be effective at first-floor receiver locations only. If two-story construction is proposed, second-floor balconies facing the BNSF railroad line should not be incorporated into final project design.

TABLE IV

TRACT 6812, KERN COUNTY
REQUIRED SOUND WALL HEIGHTS

Lot Number / Phase	Minimum Sound Wall Height, Feet Above Lot Pad Elevation (At Location Shown on Figure 3)
21 / 4	6
22 / 4	6
31 / 4	7
1 / 2	7
27 / 2	10
26 / 2	9.5
25 / 2	9
24 / 2	9
11 / 2	9
12 / 2	9
19 / 2	11
20 / 2	11
21 / 2	9
22 / 2	8
23 / 2	6
31 / 1	6
30 / 1	6
18 / 1	6
17 / 1	6
16 / 1	6
15 / 1	6

Source: WJV Acoustics, Inc.

Interior Noise Exposure:

The Metropolitan Bakersfield General Plan Noise Element interior noise level standard is 45 dB CNEL. The worst-case future noise exposure within the proposed residential development would be approximately 65 dB CNEL, with the above described sound walls in place. The sound walls are only effective at first-floor receiver locations. If two-story construction is proposed, the worst-case noise exposure at second-floor receiver locations (if proposed) would be approximately 72 dB CNEL. This means that the proposed residential construction must be capable of providing a minimum outdoor-to-indoor noise level reduction (NLR) of approximately 20 dB (65-45=20) at first-floor receiver locations and 27 dB (72-45) at second-floor receiver locations (if proposed).

A specific analysis of interior noise levels was not performed. However, it may be assumed that residential construction methods complying with current building code requirements will reduce exterior noise levels by approximately 25 dB if windows and doors are closed. This will be sufficient for compliance with the Noise Element's 45 dB CNEL interior standard at first-floor receiver locations of all proposed lots. Requiring that it be possible for windows and doors to remain closed for sound insulation means that air conditioning or mechanical ventilation will be required.

If two-story homes are proposed for the lots with anticipated exterior noise levels at or exceeding 70 dB CNEL (Lots 19-27 of Phase 2 and Lot 31 of Phase 1), a detailed acoustical analysis will be required once specific construction plans are known, to ensure compliance with the applicable 45 dB CNEL interior noise level standard.

CONCLUSIONS AND RECOMMENDATIONS

Exterior Noise Compliance:

The modified project's proposed single-family residential development will comply with the Metropolitan Bakersfield General Plan Noise Element exterior noise level standards with the following mitigation measures incorporated into final project design:

With Removal of Reina Road Grade Crossing-

- With the removal of the Reina Road grade crossing, all proposed residential lots will comply with applicable exterior noise level standard without the need for mitigation measures.

Without Removal of Reina Road Grade Crossing-

- A sound wall will be constructed at the locations provided in Figure 3, and to the minimum heights for each lot/phase as defined in Table IV and on Figure 3. Suitable construction materials include concrete blocks, masonry or stucco on both sides of a wood or steel stud wall.

- If two-story homes will be constructed on the first row of homes facing the BNSF railroad line and Santa Fe Way (lots 24-27 of Phase 2, Lots 16 and 17 of Phase 1), balconies facing the BNSF railroad line and Santa Fe Way will not be incorporated into project design.

Interior Noise Compliance:

The modified proposed project's single-family residential development will comply with the Metropolitan Bakersfield General Plan Noise Element interior noise level standards with the following mitigation measures incorporated into final project design:

With Removal of Reina Road Grade Crossing-

- Mechanical ventilation or air conditioning must be provided for all homes so that windows and doors can remain closed for sound insulation purposes.

Without Removal of Reina Road Grade Crossing-

- The sound walls identified for exterior noise compliance will be incorporated into project design.

- If two-story homes are proposed for the lots with anticipated exterior noise levels at or exceeding 70 dB CNEL (Lots 19-27 of Phase 2 and Lot 31 of Phase 1), a detailed acoustical analysis will be required once specific construction plans are known, to ensure compliance with the applicable 45 dB CNEL interior noise level standard.

- Mechanical ventilation or air conditioning will be provided for all homes so that windows and doors can remain closed for sound insulation purposes.

- Acoustic baffles will be installed on the interior side of gable vents that face, or are perpendicular to the BNSF railroad line and Santa Fe Way. An example of a suitable attic vent baffle is shown by Appendix C.

The conclusions and recommendations of this acoustical analysis are based upon the best information known to WJV Acoustics Inc. (WJVA) at the time the analysis was prepared concerning the modified proposed project site plan, project site elevations, traffic volumes, roadway configurations and railroad operations. Any significant changes in these factors will require a reevaluation of the findings of this report. Additionally, any significant future changes in motor vehicle technology, noise regulations or other factors beyond WJVA's control may result in long-term noise results different from those described by this analysis.

Respectfully submitted,

Walter J. Van Groningen
President

WJV:wjv

FIGURE 1: PROJECT SITE PLAN

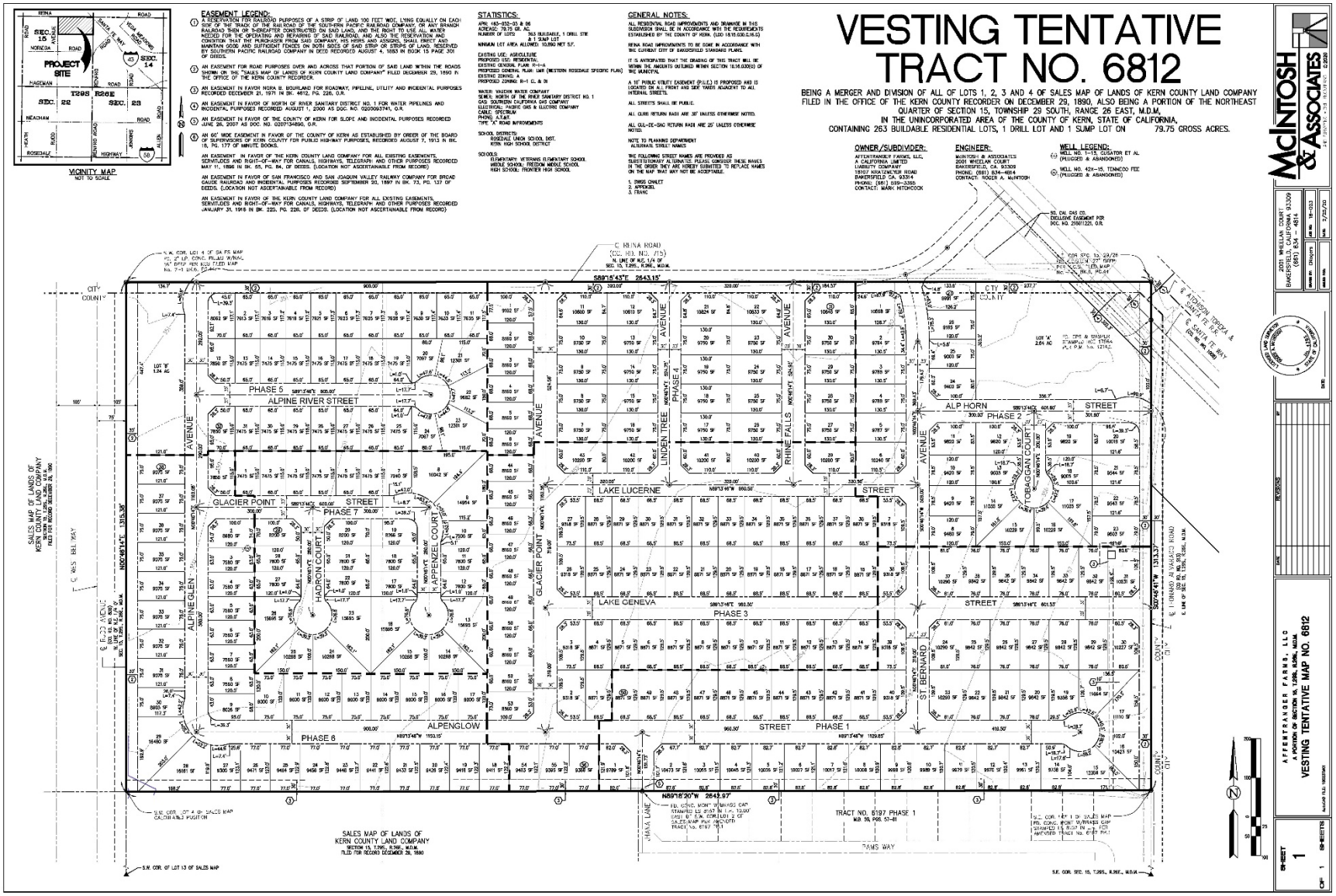
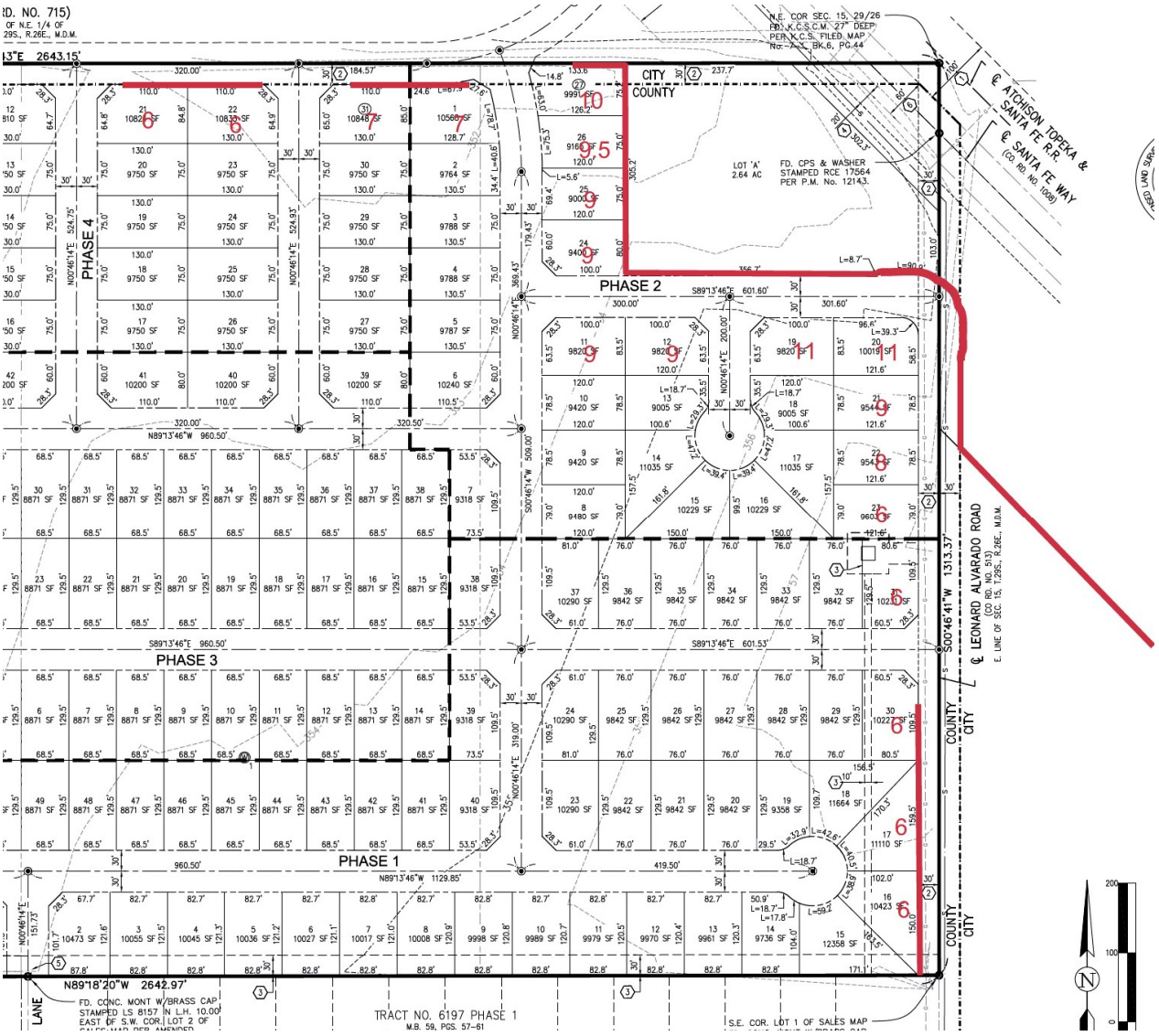


FIGURE 2: PROJECT SITE VICINITY AND NOISE MEASUREMENT SITE LOCATION

FIGURE 3: SOUND WALL LOCATIONS AND MINIMUM HEIGHT REQUIREMENTS (PROVIDED IN RED TEXT)



APPENDIX A

ACOUSTICAL TERMINOLOGY

AMBIENT NOISE LEVEL: The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

CNEL: Community Noise Equivalent Level. The average equivalent sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and ten decibels to sound levels in the night before 7:00 a.m. and after 10:00 p.m.

DECIBEL, dB: A unit for describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).

DNL/L_{dn}: Day/Night Average Sound Level. The average equivalent sound level during a 24-hour day, obtained after addition of ten decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m.

L_{eq}: Equivalent Sound Level. The sound level containing the same total energy as a time varying signal over a given sample period. L_{eq} is typically computed over 1, 8 and 24-hour sample periods.

NOTE: The CNEL and DNL represent daily levels of noise exposure averaged on an annual basis, while L_{eq} represents the average noise exposure for a shorter time period, typically one hour.

L_{max}: The maximum noise level recorded during a noise event.

L_n: The sound level exceeded "n" percent of the time during a sample interval (L_{90}, L_{50}, L_{10}, etc.). For example, L_{10} equals the level exceeded 10 percent of the time.

A-2

ACOUSTICAL TERMINOLOGY

NOISE EXPOSURE CONTOURS: Lines drawn about a noise source indicating constant levels of noise exposure. CNEL and DNL contours are frequently utilized to describe community exposure to noise.

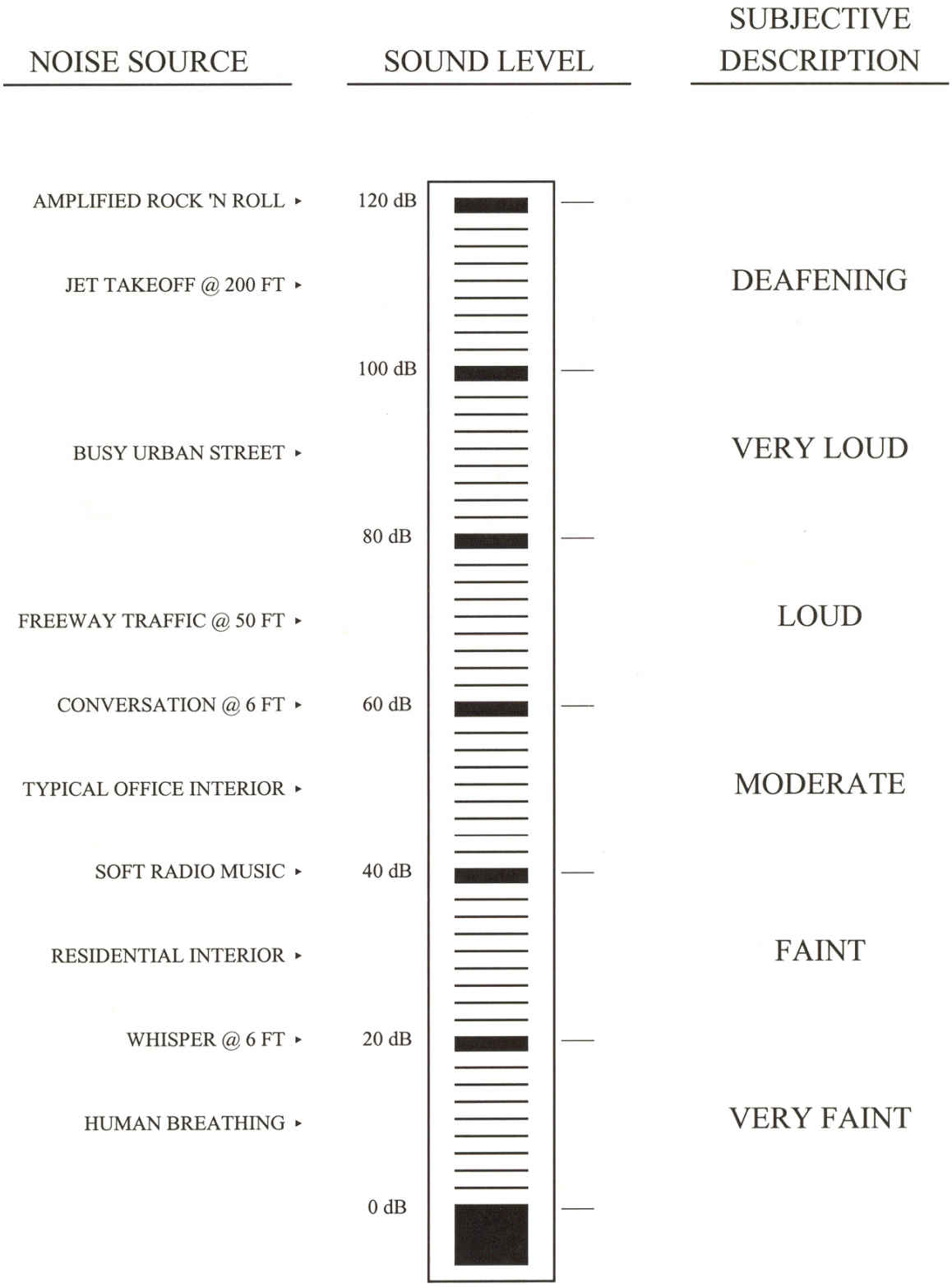
NOISE LEVEL REDUCTION (NLR): The noise reduction between indoor and outdoor environments or between two rooms that is the numerical difference, in decibels, of the average sound pressure levels in those areas or rooms. A measurement of noise level reduction@ combines the effect of the transmission loss performance of the structure plus the effect of acoustic absorption present in the receiving room.

SEL or SENEL: Sound Exposure Level or Single Event Noise Exposure Level. The level of noise accumulated during a single noise event, such as an aircraft overflight, with reference to a duration of one second. More specifically, it is the time-integrated A-weighted squared sound pressure for a stated time interval or event, based on a reference pressure of 20 micropascals and a reference duration of one second.

SOUND LEVEL: The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear and gives good correlation with subjective reactions to noise.

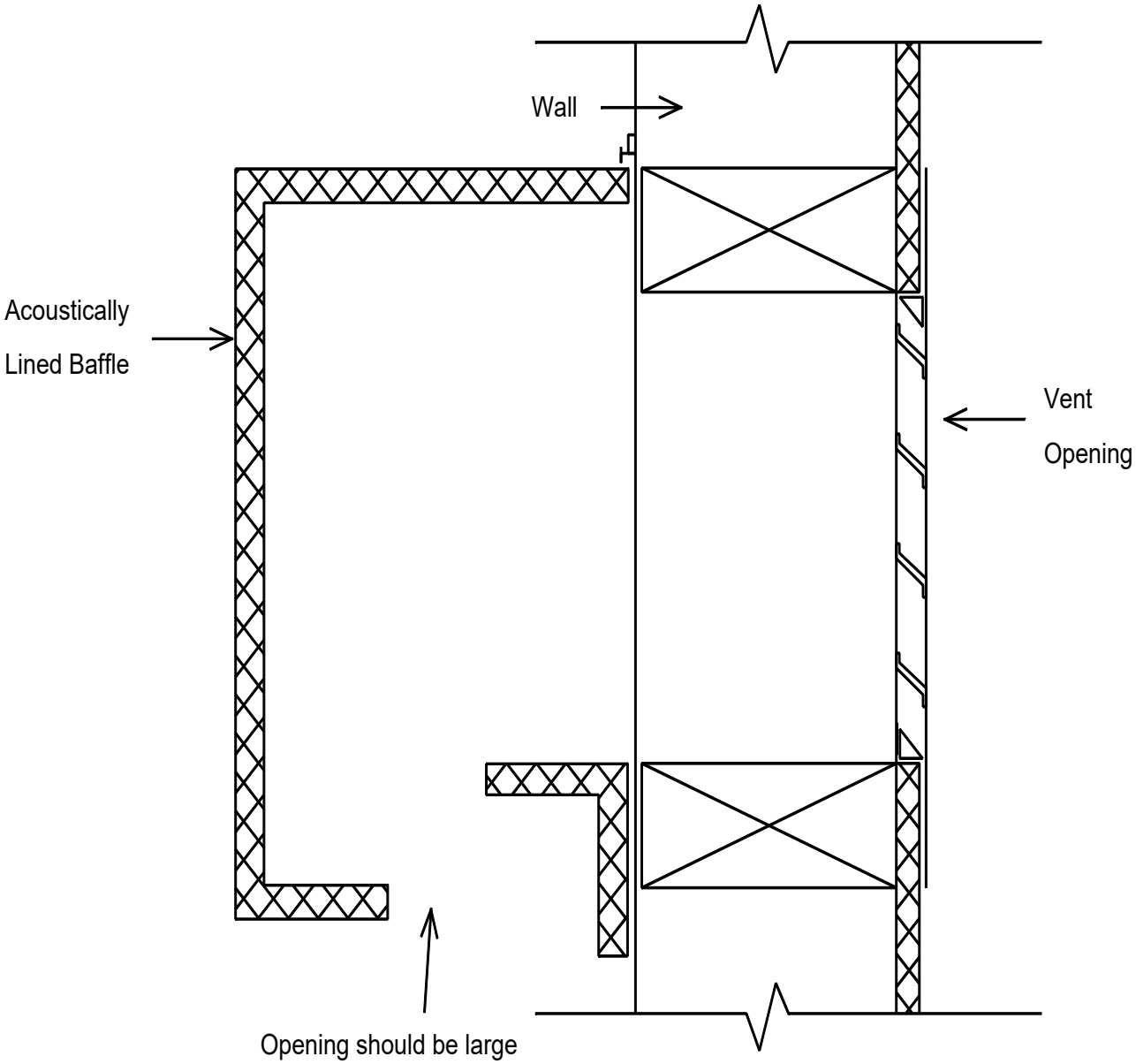
SOUND TRANSMISSION CLASS (STC): The single-number rating of sound transmission loss for a construction element (window, door, etc.) over a frequency range where speech intelligibility largely occurs.

APPENDIX B
EXAMPLES OF SOUND LEVELS



Appendix C

Example of Attic Vent Baffle Treatment



APPENDIX F
Review of Traffic Impact Study

RUETTGERS & SCHULER
CIVIL ENGINEERS

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February 23, 2021

346-06
Electronic Mail

Affentranger Farms, LLC
Attn: Marie Millan
18107 Kratzmeyer Road
Bakersfield, CA 93314

REF: Traffic Impact Study (TIS) Adequacy Review and Vehicle Miles Traveled (VMT) Evaluation for Addendum to the Reina Ranch Project EIR

Dear Ms. Millan:

In response to your request for a review of the adequacy of the 2008 Traffic Impact Study (TIS) prepared for the Reina Ranch Project and an evaluation of the Vehicle Miles Traveled (VMT), we present the following assessment.

We understand the review of the 2008 TIS adequacy is requested for an Addendum to the Reina Ranch Project Environmental Impact Report (EIR). The Reina Ranch Project EIR, which analyzed the impacts of a 253 single-family residential development, was certified by the Kern County Board of Supervisors on September 22, 2009. The approved project addressed in the EIR consists of the following:

- Site plan with a circulation system that provides access by linear streets for 253 single-family residential dwelling units with an average density of 7,200 to 9,600 square feet on approximately 72.0 net acres for a net average density of 3.51 dwelling unit/acre;
- Two storm water retention basins in the north central and northwest corner of the project site, respectively, totaling 3.65 acres; and
- A centrally located 2.57-acre drilling island on the project site preserved as undeveloped land for future oil drilling.

The approved project would realign Reina Road between Rudd Avenue and Santa Fe Way so that it intersects Santa Fe Road at a 90-degree angle, approximately 650 feet north of the existing intersection. In addition, the approved project would provide for connections to the Vaughn Water Company and North of the River (NOR) Sanitary District to provide domestic water and public sewer services to the project site.

The approved project provides for the following entitlements for the project site:

- Western Rosedale Specific Plan Amendment (SPA) No. 67, Map No. 101 consisting of a change in the land use map code designation from Resource-Intensive Agriculture (R-IA) to Low Medium Residential Density (LMR);

- Amendment of Zone Map 101, Zone Change Case (ZCC) No. 160 consisting of changes in the zone classification from A (Exclusive Agriculture) to DI (Drilling Island) and R-1 (Low-density Residential) Cluster (CL) Combining Overlay;
- Adoption of Specific Plan Line for Reina Road (between Rudd Avenue and Santa Fe Way) – Specific Plan Amendment No. 67, Map No. 101;
- Exclusion of the project site from administrative boundaries of Agricultural Preserve No. 9; and
- Approval of Vesting Tentative Tract Map No. 6812 (with the amendment to the land use designation and changes in the zone classification held in suspense pending the recordation of the Vesting Tentative Tract Map).

The Addendum to the EIR analyzes a proposed modified project that would result in the following modifications to the approved project:

- Redesign of the site plan with a circulation system with linear streets and cul-de-sacs resulting in an increase from 253 to 263 single-family residential dwelling units with an average density 7,200 to 9,600 square feet on approximately 72.0 net acres for a net average density of 3.51 dwelling unit/acre;
- Reduction from two storm water retention basins totaling 3.65 acres to one 1.24-acre storm water retention basin in the northwest corner of the project site;
- Relocation of a 2.57-acre drilling island preserve in the center of the site plan to a 2.64-acre drilling island to preserve undeveloped land for future oil drilling in the northeast corner of the project site; and
- Removal of the Cluster (CL) Combining Overlay on the project site.

The 2008 TIS was prepared for the Reina Ranch Project by Peters Engineering Group. For this evaluation of adequacy, we reviewed each of the five main sections of the TIS and provided a summary statement of adequacy for each section. These sections include: project trip generation, project trip distribution, existing and future traffic volumes, analysis/assessment of potentially significant impacts, and mitigation measures.

Trip Generation

Project trip generation in the 2008 TIS was estimated using the 7th Edition of the ITE Trip Generation Manual. With the analysis of 253 single-family residential units, the 2008 TIS estimated 2,422 daily trips and 256 PM peak hour trips. The ITE Trip Generation Manual has been updated to the 10th Edition and the trip generation rate for single-family residential units is slightly less than the 7th Edition (9.44 versus 9.57 trips per household for the daily rate). The modified proposed project would contain 263 single-family residential units, which would have an estimated daily and PM peak hour trip generation of 2,483 and 260 respectively using the 10th Edition of the ITE Manual. Given the directional splits in traffic distribution, the increase in 10 single-family residential units would result in a maximum increase of 1

or 2 trips in any direction. This increase in trip generation would not be significant. Therefore, the analysis of the 2008 TIS trip generation would be adequate for the Addendum to the EIR.

Trip Distribution
There have been no major changes in trip destinations or shifts in regional traffic patterns within the project vicinity. Therefore, the project trip distribution in the 2008 TIS would remain applicable and would be adequate for the Addendum to the EIR.

Existing and future traffic volumes
Existing traffic was counted in 2008 and future traffic was projected for the years 2010 and 2030. Future projections included known pending projects, KernCOG traffic model projections, and assumptions from other approved traffic studies, including the Rosedale Ranch project (approved in 2005). These projections were made prior to the downturn of the housing market and subsequent recession in 2008 and following years. Most of the anticipated development and growth has yet to occur, therefore, the study generally overstates the cumulative traffic conditions.

Since the 2008 TIS, the traffic pattern in the immediate project vicinity has been altered due to the realignment of Renfro Road south of Santa Fe Way and the construction of the BNSF railroad grade separation at Hageman Road/Allen Road/Santa Fe Way. These changes have been positive, with additional capacity being added to the local street system.

Therefore, the traffic volumes identified in the 2008 TIS would be adequate for the Addendum to the EIR.

Analysis and assessment of impact
The 2008 TIS determined the levels of service (LOS) of the intersections using the computer program Synchro 6, which was based on the 2000 Highway Capacity Manual procedures. Roadway LOS determination was based on the Florida Department of Transportation (DOT) Generalized Peak Hour table for urban roadways. The current versions of Synchro and the HCM are 11 and Edition 6 (2016), respectively, which reflect changes in multimodal analysis and active transportation. For purposes of evaluating LOS impacts based on vehicle delay and associated operational parameters, in accordance with the County's adopted criteria of significance, the procedures and methods used in the 2008 TIS are adequate for the Addendum to the EIR. Intersection and roadway LOS analysis was tabulated in Tables 6-11 and 14-19 of the 2008 TIS with LOS impacts highlighted. The Discussion section of the 2008 TIS summarizes the findings and identifies impacts for each of the scenarios. These findings and impacts in the 2008 TIS remain adequate for the Addendum to the EIR.

Mitigation
The 2008 TIS states that, "All of the impacted intersections listed above, with the exception of the intersection of Hageman and Heath Roads, are included in the Metropolitan Bakersfield Transportation Impact Fee Program Facilities List. Therefore, the Project will mitigate its fair share of the cumulative impacts with payment of traffic impact fees and with payment of a fair share of the cost of future signal improvements at the intersection of Hageman and Heath Roads."

For road segments, Santa Fe Way and Renfro Road are stated as being included in the Regional Traffic Impact Fee (RTIF). Allen Road and Reina Road are not on the RTIF Facilities list and, therefore, an equitable share cost was calculated.

The Phase III RTIF has been superseded by the Phase IV program and facilities list. The Phase IV RTIF facilities list was approved in 2009 and contains additional facilities, including: the intersection of Hageman and Heath Roads, the road segments of Allen Road; and the future Renfro Road/BNSF grade separation. Reina Road will be terminated from the west at Santa Fe Way and easterly traffic will use the future Renfro Road/BNSF grade separation.

Additionally, it should be noted that a number of significant roadway project have been completed in the project vicinity, including the Hageman-Allen underpass at the BNSF Railway, realignment of Renfro Road north of Noriega Road, signalization of the intersection of Allen Road at Meacham Road and Rosedale Highway at Heath Road.

It is assumed that the modified proposed project addressed in the Addendum to the EIR will participate in the RTIF program at the Phase IV rates and the associated facilities list. Therefore, the mitigation requirements for both intersection and roadway impacts and improvements is payment of the current traffic impact fees, with no additional equitable share contributions. Therefore, with the implementation of the Phase IV RTIF, the assessment of impacts in the 2008 TIS remains adequate for the Addendum to the EIR

Assessment of Vehicle Mile Travelled (VMT)
In 2013, the State of California changed the the California Environmental Quality Act (CEQA) metric for the assessment of traffic impacts from Level of Service (LOS) to Vehicle Miles Traveled (VMT) (Senate Bill 743). Guidelines for implementation of SB 743 were issued in December 2018 and final implementation by local agencies was required by July 2020. The County of Kern is currently in the process of developing its policies for evaluation of VMT impacts in accordance with the guidelines provided by the Governor's Office of Planning and Research (OPR).

Having been prepared in 2008, the TIS does not address the VMT metric. For purposes of this evaluation of the modified proposed project, a VMT assessment is included to address the current standards. The Govenor's Office of Planning and Research (OPR's) "Technical Advisory on Evaluating Transportation Impacts in CEQA," dated December 2018, was used as the basis for evaluation of VMT impacts for the modified proposed project. The OPR recommends a minimum reduction of 15% in the baseline (regional) VMT as the significance threshold for residential developments.

The analysis involved comparing an estimate of VMT attributable to the modified proposed project to a baseline VMT for the Kern County region and assessing whether the project-related VMT would result in a significant transportation impact based on the above stated criteria.

Kern Council of Governments (KernCOG) maintains a regional traffic model, from which daily vehicle miles traveled can be estimated. Data was obtained from KernCOG from their base year model, 2018, in order to establish a baseline for daily vehicle miles traveled within Kern County. Based on household and employment populations in the Bakersfield metropolitan area, as well as travel patterns throughout the region, KernCOG data shows an average residential VMT per trip of 9.76 miles.

An average VMT of 6.75 miles per trip was estimated for the modified proposed project based on several factors, including project location, trip generation and distribution, trip type, and probable trip destination. As discussed above, OPR guidelines recommend a minimum reduction of 15% in the baseline (regional) VMT as the significance threshold for residential developments. The modified proposed project VMT of 6.75 miles per trip corresponds to a 31% reduction in the residential baseline VMT of 9.76 miles per trip. Therefore, the modified proposed project addressed in the Addendum to the EIR would have a less than significant impact related to VMT under CEQA.

Conclusions

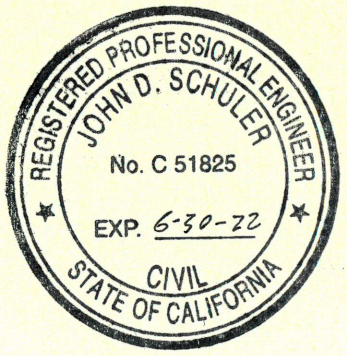
In conclusion, the 2008 TIS prepared for the approved project adequately identifies the modified proposed project LOS deficiencies and mitigation measures, provided the modified proposed project participates in the Phase IV RTIF program. Therefore, the analysis and findings in the 2008 TIS remain adequate for the Addendum to the EIR. Assessment of potential VMT impacts indicate that modified proposed project traffic would be considered less than significant.

Please contact me should you have any questions.

Very truly yours,

John D. Schuler
RCE #51825

JDS/



APPENDIX G
Will Serve Letter

VAN GRAYER
GENERAL MANAGER
DENNY ARMSTRONG
OPERATIONS SUPERVISOR
CARRIEANN LINENBERGER
OFFICE MANAGER
ELI BERGMAN
DISTRIBUTION SYSTEM SUPERVISOR

VAUGHN WATER COMPANY

OFFICE ADDRESS:
10014 GLENN STREET
BAKERSFIELD, CA. 93312
MAILING ADDRESS:
P. O. BOX 81497
BAKERSFIELD, CA. 93380-1497

PHONE: (661) 589-2931
FAX: (661) 589-7438
EMAIL: vwc@vaughnwater.org
WEB SITE:
www.vaughnwater.org

July 8, 2020

Ms. Rosemarie Millan
Affentranger Farms, LLC
18107 Kratzmeyer Road
Bakersfield, CA. 93314-9481

RE: **Conditional Will Serve** for residential development described as **Tract 6812** in Bakersfield, CA.

Dear Ms. Millan:

Vaughn Water Company agrees to supply domestic water to the above development subject to the following requirements:

1.) Based on information now available, Vaughn Water Company is capable of supplying water for fire protection, in accordance with the requirements set forth by the Kern county and/or City of Bakersfield Fire Departments. The potable water quality supplied to our water users meets the State and County standards.

2.) You must enter into a Water Service Agreement with Vaughn Water Company to provide for, among other things, payment for all costs connected with supplying the facility with water. Please advise us in ample time before you wish to proceed so we can provide you with the form of Agreement for execution. Pursuant to the Agreement, your contractor, which is approved by the Company, would install the system under conditions specified in the Agreement. In order to receive water service from Vaughn Water Company, under no conditions can construction begin until the Agreement is fully executed and you have met the conditions specified in the Agreement.

3.) As specified in the Agreement, a licensed civil engineer acceptable to the Company would, on your behalf, prepare the water plans and specifications. After those plans and specifications have been approved by the Company's engineer and general manager, they will be subject to further review and modification if construction is not commenced pursuant to an Agreement within six months of approval of plans and specifications.

4.) Technical Considerations:

A.) This "Conditional Will Serve" letter will be issued for this development and that it be contingent upon the Winfield Water Well Facility being operational. This well facility will provide redundancy and benefit the conditions described above in the event a water supply source must be taken off-line during peak hour demand periods.

B.) All tract piping must meet city and/or county fire flow requirements and Vaughn Water Company main line policy.

C.) Vaughn Water Company engineering hydraulic analysis will determine final tract water distribution pipe sizes.

D.) Water capacity for the intended purpose of constructing the tract infrastructure is now available and the capacity will very likely be available through peak demand periods this summer (year 2020).
Please be aware that the construction water made available is for non-human consumption and no warranty or representation is made as to the quality of such water. The Company reserves its right to interrupt the construction water service at any time or in the event of low pressure or fire flow demands.

5.) This "Will Serve" letter will terminate July 8, 2022.

Thank you for your inquiry. We look forward to working with you.

Sincerely,

Van Grayer
General Manager

APPENDIX H
Energy Utilization Memo

ENERGY UTILIZATION MEMO

For:

Reina Ranch Addendum EIR
79.75 Acres
Southwest Corner of Santa Fe Way and Reina Road
County of Kern, State of California

Section 15, Township 29 South, Range 26 East, M. D. B. & M.

Prepared for:

Affentranger Farms, LLC

Prepared by:

McIntosh & Associates
McIntosh & Associates Engineering, Inc.

2001 Wheelan Court
Bakersfield, California 93309
(661) 834-4814

Project No. 18-023

August 2021

8-31-21

Table of Contents

1.0 Executive Summary

This analysis is provided in accordance with the Public Resources Code Section 21100(b)(3) and Appendix F Energy Conservation of the California Environmental Quality Act (CEQA) Guidelines, which states that an Environmental Impact Report (EIR) "include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy." This summary includes:

1. A description of the project;
2. Energy conservation equipment and design features;
3. Energy consuming equipment used during construction and operation of the project; and
4. Potential changes in electrical usage.

1.1 Project Description

This energy utilization analysis has been prepared for use in the Addendum to the Reina Ranch Project EIR. The Reina Ranch Project EIR, which analyzed the impacts of a 253 single-family residential development on the 76.36 net acres (79.75 gross acres) project site, was certified by the Kern County Board of Supervisors on September 22, 2009. The approved project addressed in the EIR consists of the following:

- Site plan with a circulation system that provides access by linear streets for 253 single-family residential dwelling units with an average density of 7,200 to 9,600 square feet on approximately 72.0 net acres for a net average density of 3.51 dwelling unit/acre;

- Two storm water retention basins in the north central and northwest corner of the project site, respectively, totaling 3.65 acres; and

- A centrally located 2.57-acre drilling island on the project site preserved as undeveloped land for future oil drilling.

The approved project was proposed to realign Reina Road between Rudd Avenue and Santa Fe Way so that it intersects Santa Fe Road at a 90-degree angle, approximately 650 feet north of the existing intersection. In addition, the approved project would provide for connections to the Vaughn Water Company and North of the River (NOR) Sanitary District to provide domestic water and public sewer services to the project site.

The Addendum to the EIR analyzes a proposed modified project that would result in the following modifications to the approved project:

- Redesign of the site plan with a circulation system with linear streets and cul-de-sacs resulting in an increase from 253 to 263 single-family residential dwelling units with an average density 7,200 to 9,600 square feet on approximately 72.0 net acres for a net average density of 3.51 dwelling unit/acre;

- Reduction from two storm water retention basins totaling 3.65 acres to one 1.24-acre storm water retention basin in the northwest corner of the project site;

- Relocation of a 2.57-acre drilling island preserve in the center of the site plan to a 2.64-acre drilling island to preserve undeveloped land for future oil drilling in the northeast corner of the project site; and

- Removal of the Cluster (CL) Combining Overlay on the project site.

The boundaries of the project site for the proposed modified project would be unchanged from the approved project. The project site is located to the southwest of Santa Fe Way in unincorporated Kern County to the northwest of the City of Bakersfield, California, in Section 15, Township 29 South, Range 26 East, Mount Diablo Base and Meridian. The project site is bounded by Rudd Avenue to the west, Reina Road to the north, Leonard Alvarado Road to the east, and agricultural land and a single-family residential development to the south.

2.0 Environmental Setting

The Environmental Setting describes the setting of the proposed project as it relates to energy conservation.

2.1 Energy Conservation Features

The proposed project containing 263 single-family residential dwelling units will be constructed according to the 2019 Building Energy Efficiency Standards as adopted by the California Energy Commission and updated every three years. The 2019 standards were a major step towards meeting the Zero Net Energy goal by 2020 in California. Some of the enhanced features used to meet energy efficiency standards are: roofing products with high solar reflectance and thermal emittance, referred to as “cool roof” products; photovoltaic (PV) systems; energy, water and indoor air quality design performance features; high efficacy lighting sources; improvements for insulation in attics, walls, and water heating; and fenestration products.

2.2 Construction and Operational Energy Consumption

Project construction related activities could result in short-term emissions that while below significance thresholds, still have unmitigated health impacts and require additional mitigation.

As discussed in the certified EIR and Addendum EIR, short-term construction related impacts would generate emissions of fugitive dust, particulate matter and exhaust emissions generated by earthwork activities and operation of grading equipment during site preparation. The developer will comply with the regulations of the San Joaquin Valley Air Pollution Control District to mitigate construction related activities that would generate emissions both onsite and offsite.

Fuel usage for vehicles and construction equipment will be a result of short-term construction activities. These construction emissions were estimated through the CalEEMod program using a conservative analysis approach and found the short-term construction related emissions would not exceed SJVAPCD significance threshold levels and therefore would be a less than significant impact.

For additional information, please refer to the Air Quality Impact Analysis conducted by Trinity Consultants for the Addendum EIR. The Traffic Analysis can also provide data for fuel usage in vehicle miles traveled and daily trips during long-term operation of the site.

2.3 Changes in Electrical Usage

The electric power to the proposed single-family residential dwelling units will be supplied by Pacific Gas & Electric (PG&E). Electric power supply and distribution for the site would be served by PG&E's Renfro Road Substation located approximately a quarter mile north of Rosedale Highway. PG&E has indicated their electrical facilities are adequate to accommodate the power supply necessary for the proposed development. This is also in accordance with the Metropolitan Bakersfield General Plan utility policy goal is to provide uniform and adequate public lighting for all developed and developing portions of the planning area.

According to PG&E, the electric demand from the project is based on usage of approximately 7.9 Kilowatts (Kw) per residential unit, resulting in 2.07 Megawatts (Mw) for the entire development. During the construction phases of the project, temporary electrical power will be required to supply certain equipment and street lighting along the roadway. Each proposed dwelling unit within the project will comply with the performance standards in the "energy budget" calculation for the Standard Design Building using the CEC's Alternative Calculation Methods Approval Manual. Additionally, renewable solar electric generation systems will be equipped on each dwelling unit. Impacts due to electrical changes can be minimized if main lines adjacent to roadways are brought to the ultimate width at the initiation of the project and through utility easements made available as needed. The project developer shall comply with and adhere to all requirements identified by PG&E to fully mitigate impacts to electric services and facilities, as needed as project construction progresses.

3.0 Conclusion

The proposed project will have a less than significant impact regarding potential energy impacts on the environment. Incorporation of the mitigation measures outlined in the Addendum EIR would reduce impacts from the proposed project, in conjunction with other projects in the area, to a less than significant cumulative level. The certified EIR and Addendum EIR determined that, with implementation of Mitigation Measures MM 4.3-1, MM 4.3-2, MM 4.3-4, and MM 4.1-3, the short-term construction air quality impacts would be less than significant. The certified EIR and Addendum EIR also determined that energy impacts would be less than significant and no mitigation measures are required.

References

California Energy Commission. December 2018. *2019 building Energy Efficiency Standards for Residential and Nonresidential Buildings, For the 2019 Building Energy Efficiency Standards, Title 24, Part 6, and Associated Administrative Regulations in Part 1.* Available: https://www.energy.ca.gov/sites/default/files/2021-06/CEC-400-2018-020-CMF_0.pdf. Accessed August 24, 2021.

County of Kern. September 22, 2009. *Final Environmental Impact Report, SCH# 2007041068, Volume I Chapters 1 through 11, Reina Ranch Project, Jensen Design & Survey, Inc.* Accessed August 24, 2021.

County of Kern. December 11, 2007. *Metropolitan Bakersfield General Plan (Unincorporated Planning Area)*. Bakersfield, CA. Available: https://psbweb.co.kern.ca.us/planning/pdfs/mbgp/mbgp_complete.pdf. Accessed August 24, 2021.

Ruettgers & Schuler. February 23, 2021. *Letter - Traffic Impact Study (TIS) Adequacy Review and Vehicle Miles Traveled (VMT) Evaluation for Addendum to the Reina Ranch Project EIR.* Accessed August 24, 2021.

Trinity Consultants. July 2021. *Air Quality Impact Analysis for Addendum to the Reina Ranch Project Environmental Impact Report, Kern County, CA.* Accessed August 24, 2021.

APPENDIX I
Phase 1 Environmental Site Assessment Letter

McINTOSH & ASSOCIATES

Land Surveying

Civil Engineering

Photogrammetry

G P S

Planning

Environmental

Landscape Architecture

Petroleum Engineering

February 1, 2021

Kern County Planning Department
2700 M Street
Bakersfield, CA 93301

Attn: Craig Murphy
murphyc@kerncounty.com

Re: Reina Ranch EIR Addendum
Affentranger Farms, Phase 1
Mc #18023.00

Dear Mr. Murphy,

I have reviewed the Phase 1 Environmental Site Assessment dated January 26, 2007 prepared by Michael Brandman Associates and have obtained an updated EDR search report (enclosed) and have determined there has been only one new site identified in the EDR search since the original report was prepared. The new site is identified as Kern High School at Allen Road and Kratzmeyer Road and does not affect the conclusions or mitigation measures as listed in the original EIR for Reina Ranch Development.

Sincerely,

Roger A. McIntosh, RCE 33322
McIntosh & Associates Engineering, Inc.

RAM: cc

REGISTERED PROFESSIONAL ENGINEER
ROGER A. McINTOSH
No. 33322
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STATE OF CALIFORNIA

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