# APPENDICES

**Appendix A** **Notice of Preparation and Comments Received**

**Appendix B** **Air Quality and Greenhouse Gas Impact Analysis Report, Quad Knopf, Inc., January 2013**

**Appendix C** **Cultural Records Search Results, Central California Information Center, November 7, 2013**

**Appendix D** **Phase I / II Environmental Site Assessment, Avila & Sons North Washington Road Warehouse Project, J House Environmental, Inc., December, 2013**

**Appendix E** **Environmental Noise Analysis, Dan Avila & Sons (Washington Road) Warehouse EIR, Bollard Acoustical Consulting, Inc., November 5, 2013**

**Appendix F** **Traffic Impact Analysis for Washington Road Warehouse, KD Anderson & Associates, Inc., October 15, 2013**

**Appendix G** **Mitigation Monitoring & Reporting Program**

# APPENDIX A

**NOTICE OF PREPARATION**

**Date:** August 27, 2013

**To:** State Clearinghouse, Responsible Agencies, Trustee Agencies and Interested Parties

**From:** Miguel A. Galvez, Senior Planner
Stanislaus County Planning and Community Development Department
1010 10th Street, Suite 3400
Modesto, CA 95354

**Subject:** **Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Proposed N. Washington Road Warehouse Project (Stanislaus County Use Permit Application No. PLN2012-0017)**

**NOP Public Comment Period: <u>August 30, 2013, through October 2, 2013</u>**

***Project Overview***

Stanislaus County will serve as the Lead Agency under the California Environmental Quality Act (CEQA) for the preparation of an EIR for the Proposed N. Washington Road Warehouse Project. The following provides an overview of the proposed project, including project site location, proposed construction, proposed operations, and a list of probable project effects on the environment.

***Purpose and Background***

The project proponent, Dan Avila & Sons, proposes constructing a 180,000 square foot warehouse (in three phases) and utilizing an existing 5,500 square foot pole barn and associated facilities for receiving, handling, packaging, and shipping harvested crops (watermelons, sweet potatoes, beans, wheat, pumpkins, and squash) on two parcels totaling 61.7± acres in unincorporated Stanislaus County, in the A-2-40 (General Agriculture) Zoning District, with a General Plan Designation of Agriculture (AG).

In accordance with County requirements, the proposed operation would require a use permit. In its review of Use Permit Application No. PLN2012-0017, the County commissioned the preparation of an air quality/greenhouse gas emissions study. That study determined that projected air emissions associated with vehicle traffic from operation of the proposed warehouse would result in environmental impacts that cannot be mitigated to a level of less than significant. Accordingly, it was determined that an EIR is required in order for further consideration of the use permit application to occur.

***Location and Environmental Setting***

The project site is generally located on the west side of N. Washington Road, south of Fulkerth Road, at the western boundary of the City of Turlock City Limits. The project site address is 1301 N. Washington Road, Turlock, California 95380. N. Washington Road is also the western boundary of the Westside Industrial Specific Plan (WISP), a City of Turlock adopted specific plan. The site consists of the following two Assessor's Parcels: APN 023-039-017 and 023-039-018. **Figure 1** provides the Regional Vicinity Map and **Figure 2** provides the Local Vicinity Map.

The project site includes several existing structures, including two dwellings, a barn, a frame structure (pole barn), and a storage structure. In addition to buildings, the site includes numerous vehicles, irrigation equipment, and packing crates. The majority of the site is used for growing seasonal agricultural crops. Presently, there are two driveway access points onto N. Washington Road.

The topography of the project site is essentially flat. Vegetation consists primarily of cultivated vegetables. Several large trees grow at various locations within and along the site perimeter, including on the N. Washington Road frontage.

The entire site is currently enrolled in Williamson Act Contract No. 71-309.

The property to the east, across N. Washington Road, is located in the Turlock City Limits and is developed with Blue Diamond, an almond processing plant. The properties to the west and south are planted with almond trees. The property to the north is utilized to cultivate sweet potatoes.

***Project Description***

The project proponent, Dan Avila & Sons, proposes the construction and operation of a 180,000 square foot warehouse and associated facilities in order to conduct receiving, storage, packing, and shipping of watermelons, sweet potatoes, beans, wheat, pumpkins, and squash. Several structures would be constructed in addition to the existing buildings on the site, as described below, on a 26± acre portion of the 61.7± acre site. (See **Figure 3**, Site Plan.)

A maximum of approximately 75 employees would be on the site at any time. The facilities are planned to be operational 24 hours per day throughout the year.

Produce processed at the facility, consisting primarily of watermelons and sweet potatoes, would come from the fields on the site surrounding the buildings, as well as from other sites farmed by the project proponent.

According to the traffic impact analysis prepared by KD Anderson & Associates, Inc., dated January 24, 2013, the warehouse would be expected to generate 817 daily vehicle trips; however, the project proponent has indicated that, at least initially, the operation would not generate that volume of the daily traffic.

**Existing Dwelling/Conversion to Office** – One of the existing dwellings, a 1,200-square foot structure, would be converted to office use. A total of five parking spaces would be provided for office staff. The office would be used for routine operations. There would be four employees in this building.

**Existing Barn/Conversion to Packing Shed** – This existing barn structure has 8,424 square feet of floor area and would be approximately 32 feet in height. It would be constructed of wood and steel and would be painted red with white trim. This structure would be used for the sorting and packing of produce. Activities in this structure would include unloading of watermelons and sweet potatoes, hand washing, and packing. The number of employees in this building would vary from 10 to 35 depending on the season and the product. Hours of operation would mostly be 6:00 a.m. to 6:00 p.m., but could operate 24 hours on occasion.

**Pole Barn** – The existing pole structure (pole barn) measuring approximately 6,000 square feet (60 feet x 100 feet) would be retained. This structure has a maximum height of approximately 24 feet and is comprised of an aluminum roof supported by steel poles. The pole barn would be used to store, repair, and maintain farm equipment used on the site. Two employees would be at this location during the watermelon and sweet potato seasons. Hours of operation would mostly be 6:00 a.m. to 6:00 p.m., but could operate 24 hours on occasion.

**Warehouse** – This proposed structure would be 180,000 square feet in area (300 feet x 600 feet) with 10 truck shipping and receiving docking bays on the north and south sides of the building. The warehouse would include areas for packing and storage of produce. This structure would have a shed roof, with a maximum height of approximately 36 feet at the ridge line. The building sides and roof would be constructed of steel and would be painted in earth tone colors. The warehouse would be used for sorting, storing, packing, and shipping of produce. Seventy truck deliveries/loads per day are anticipated seasonally from June to October for a total of 7,000 annually. Evaporative coolers and refrigerators would be used to maintain produce freshness. A maximum of 60 employees would be in this building. Hours of operation would mostly be 6:00 a.m. to 6:00 p.m., but could operate 24 hours on occasion.

**Produce Stand** – A produce stand measuring 64 square feet (8 feet by 8 feet), currently in place, would remain and be used as the point of sale for seasonal produce grown on the landowner's property.

**Milk Barn** – A milk barn measuring 144 square feet (12 feet by 12 feet) would remain. The existing milk barn structure would be used for the storage of equipment parts.

**Impervious Surface Area** – Approximately 16 acres of the site, in addition to the buildings, would be covered with impervious surfaces, including 12 acres of asphalt concrete and 4 acres of concrete.

**Landscaping** – The Landscape Plan (see **Figure 4**) depicts a combination of landscaping along the N. Washington Road frontage between the two fences that demark the development area on the site. The plan includes a row of Chinese fringe trees along the site frontage in front of a 5-foot high chain link fence. Star jasmine will be planted along the fence and trained to grow upon the fence. In addition, 14 redwood trees are proposed in groups of two and three behind the fence and Chinese fringe trees. The landscaping plan is intended to provide visual screening of the development area from passersby on N. Washington Road.

**Lighting** – Outdoor lighting would be limited to the minimum required for security in parking areas and for worker safety at outdoor activity areas and the warehouse loading and docking areas.

**Water and Wastewater** – No domestic water or wastewater services are proposed. All water would be obtained on site and disposed of on site. Water for processing of produce and other uses (e.g., employee sinks and toilets) would be obtained from private wells on the site. The well will require testing to ensure that it meets standards. A septic leach field system would be used to dispose of wastewater from employee sinks and toilets.

**Site Access and Parking** – Access to the site is proposed from a single driveway onto N. Washington Road aligned with the existing traffic signaled driveway to the Blue Diamond facility, as shown in **Figure 3**. Additional traffic signalization improvements will be installed to accommodate access to and from the site onto N. Washington Road. Additionally, the applicant will provide dedication and street improvements along N. Washington Road as may be requested by the City of Turlock. Improvements would include curb, gutter, street re-striping, and road widening to accommodate acceleration and deceleration lanes onto N. Washington Road. On site vehicular circulation and parking will be reconfigured to accommodate N. Washington Road street dedication and improvements

In accordance with Stanislaus County Code requirements, a total of 111 parking spaces are proposed, in addition to large-truck parking, broken down as follows for the various functions proposed on the site:

- Office – 5 spaces
- Packing Shed – 35 spaces
- Pole Barn – 5 spaces
- Warehouse – 63 spaces
- Produce Stand – 3 spaces

**Water and Wastewater** – Approximately 2,000 gallons per day of water would be required for washing and processing of produce. Water would be obtained from an on-site well. Chlorine would likely be added to the washing water. Wastewater from washing operations would be conveyed to the retention basin on the site and allowed to dissipate through evaporation and percolation. Wash water may be recycled and used for irrigation.

**Grading and Storm Drainage** – The site will be graded the minimum amount required to facilitate collection and treatment of all storm water on site, before being conveyed to an on-site retention basin shown on the site plan. Similarly, proposed concrete and asphalt concrete areas will be graded and constructed to direct all run-off to the retention basin. Storm water collected on site would be conveyed by a combination of surface scales, culverts, and sheet flow to the retention basin. Before entering the retention basin, storm water would be filtered in accordance with best management practices (BMPs). The method of treatment, as well as the design and size of the retention basin, will be determined prior to issuance of grading and building permits. Storm water would be disposed of through a combination of percolation into the soil and evaporation. In addition, storm water may be recycled and used for irrigation.

### *Construction Equipment*

Equipment required for site development and construction of structures would include the following: scraper, grader, backhoe, compactor, crane, cherry picker, and forklift. Construction of the initial phase, including all buildings described above, and the first 200-foot by 300-foot section of the warehouse, is expected to require 4 months.

### *Construction Phasing*

The 180,000 square foot warehouse would be constructed in three phases, with each phase consisting of a 300-foot by 200-foot section. All other buildings and site improvements would be completed in the first construction phase. Construction is expected to commence by spring of 2017.

## *PURPOSE OF THE NOP*

### EIR Notification

Compliance with CEQA is required before the County can consider whether to approve the Proposed N. Washington Road Warehouse Project. The County has prepared this NOP to inform all responsible and trustee agencies and the Governor's Office of Planning and Research of the forthcoming EIR. The NOP and accompanying documents provide sufficient information about the proposed project and its potential environmental impacts to allow agencies and individuals to make a meaningful response related to the scope and content of the EIR and to the environmental information that pertains to each agency's statutory responsibilities.

**EIR Scoping**

Section 15082(b) of the State CEQA Guidelines requires that each responsible and trustee agency, as well as the Office of Planning and Research, provide the Lead Agency with specific details about the scope and content of the environmental information related to the responsible agency's area of statutory responsibility to be included in the Draft EIR. Specific concerns related to the proposed project are sought in order to provide a document that best informs decision-makers and the general public. At a minimum, public agency responses should identify:

1. The significant environmental issues and reasonable alternatives and mitigation measures which the Responsible Agency will need to have explored in the EIR; and

2. Whether the agency will be a Responsible Agency or Trustee Agency for the proposed project.

Public responses to significant environmental issues, reasonable alternatives, and mitigation measures are also welcomed. Comments to the NOP are most helpful when they disclose additional information about possible environmental issues. Commenters should explain the basis for their comments and support the comments by substantial evidence such as data, references, expert opinion, or other facts.

***EIR ISSUE AREAS TO BE ADDRESSED***

The County has determined that the Draft EIR will address the following issue areas**:**

- Aesthetics
- Agriculture
- Air Quality
- Biology
- Cultural Resources
- Geology/Soils
- Greenhouse Gases/Climate Change
- Hazards and Hazardous Materials
- Hydrology
- Land Use
- Noise
- Public Services
- Transportation and Circulation
- Utilities and Service Systems

While an Initial Study has not been prepared, it is anticipated that through the NOP process the following issue areas will be determined to not have potential impacts as a result of the proposed project and will be scoped out of the EIR: Mineral Resources, Population and Housing, and Recreation.

For each of the environmental concerns listed, the EIR will include a description of existing setting, potential impacts of the proposed project, cumulative effects, and recommended mitigation measures for any significant impacts.

**Early Consultation Responses**

The County initiated an Early Consultation process with responsible and trustee agencies on October 4, 2012, to solicit recommendations on the appropriate type of environmental document for this project, including the scope and content (i.e., the range of actions, alternatives, mitigation measures, and significant effects to be analyzed).

The County received written comments from the following agencies during the first consultation response period (October 4 - 22, 2012):

- Modesto Regional Fire Authority, letter dated October 4, 2012;
- Governor's Office of Planning and Research, letter dated October 9, 2012;
- Stanislaus County Department of Environmental Resources, letter dated October 9, 2012;
- Native American Heritage Commission, letter dated October 12, 2012;
- Central Valley Regional Water Quality Control Board, letter dated October 17, 2012;
- San Joaquin Valley Air Pollution Control District, letter dated October 18, 2012;
- TID Water and Power, letter dated October 19, 2012;
- Stanislaus County Building Permits Division, memorandum dated October 25, 2012;
- City of Turlock, letter dated October 29, 2012;
- Stanislaus County Public Works, memorandum dated November 1, 2012;
- Stanislaus County Environmental Review Committee, letter dated November 6, 2012;

The County considered the Early Consultation comments and confirmed that an EIR is the appropriate CEQA document for the project. The comments also serve as a basis for revisions and additions to the Proposed N. Washington Road Warehouse Project. These changes will be reflected in the Draft EIR and its technical appendices.

***DEADLINE FOR COMMENT SUBMITTAL***

All responses to this Notice of Preparation should be sent at the earliest date, but must not be received by the County later than 30 days after receipt of this notice. **It is anticipated that this deadline will be October 2, 2013**. Written or e-mail comments regarding potential environmental issues associated with the project must be sent to:

**Miguel A. Galvez, Senior Planner**
**Stanislaus County Planning and Community Development Department**
**1010 10th Street, Suite 3400**
**Modesto, CA 95354**
**E-mail: galvezm@stancounty.com**
**Phone: (209) 525-6330**
**Fax: (209) 525-5911**

All comments must include the sender's full name and contact information.

***PROJECT FILES***

Copies of this NOP, the application materials, and other information are on file and available for review at the County office address shown above or at the following website:
http://www.stancounty.com/planning/pl/act-projects.shtm

***PUBLIC MEETINGS/HEARINGS***

A public scoping meeting will be held during the NOP review period to receive oral and written comments from agencies and the public on the scope and content of the forthcoming Draft EIR. The scoping meeting is scheduled for:

**Tuesday, September 17, 2013**
**6:00 – 7:00 PM**
**City of Turlock**
**City Hall – Yosemite Conference Room**
**156 S. Broadway Street**
**Turlock, CA 95380**

Please contact the County using the above contact information to be notified of the availability of the Draft EIR. Notice of the Planning Commission Meeting will be provided in the future.

***DATE PREPARED***

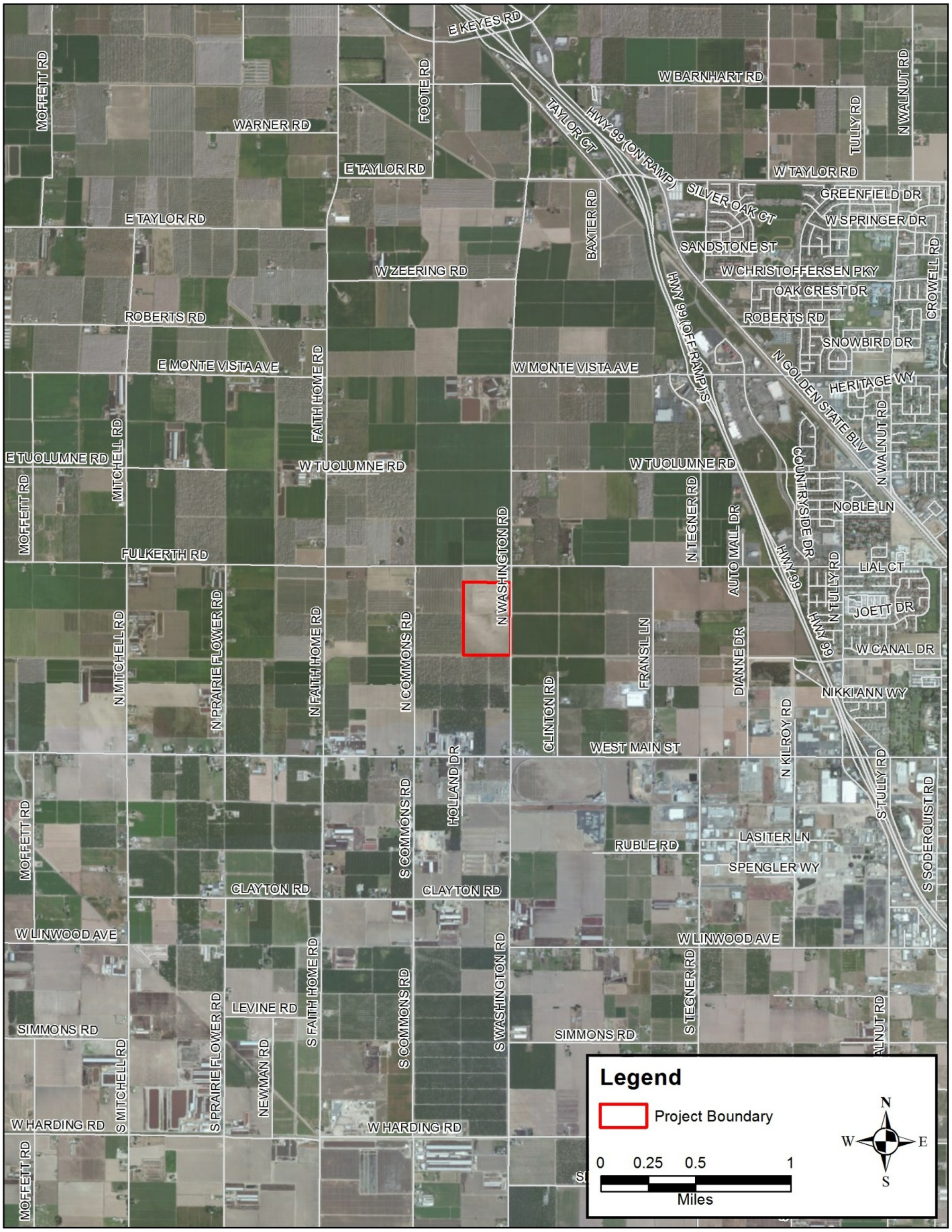
**August 27, 2013**

**Lead Agency Signature**

Miguel A. Galvez, Senior Planner
Stanislaus County Planning and Community Development Department
1010 10th Street, Suite 3400
Modesto, CA 95354
Telephone: (209) 525-6330
Fax: (209) 525-5911
E-mail: galvezm@stancounty.com

Attachments:

| | |
|---|---|
| Figure 1 - | Regional Vicinity Map |
| Figure 2 - | Local Vicinity Map |
| Figure 3 - | Site Plan |
| Figure 4 - | Landscape Plan |




REGIONAL VICINITY

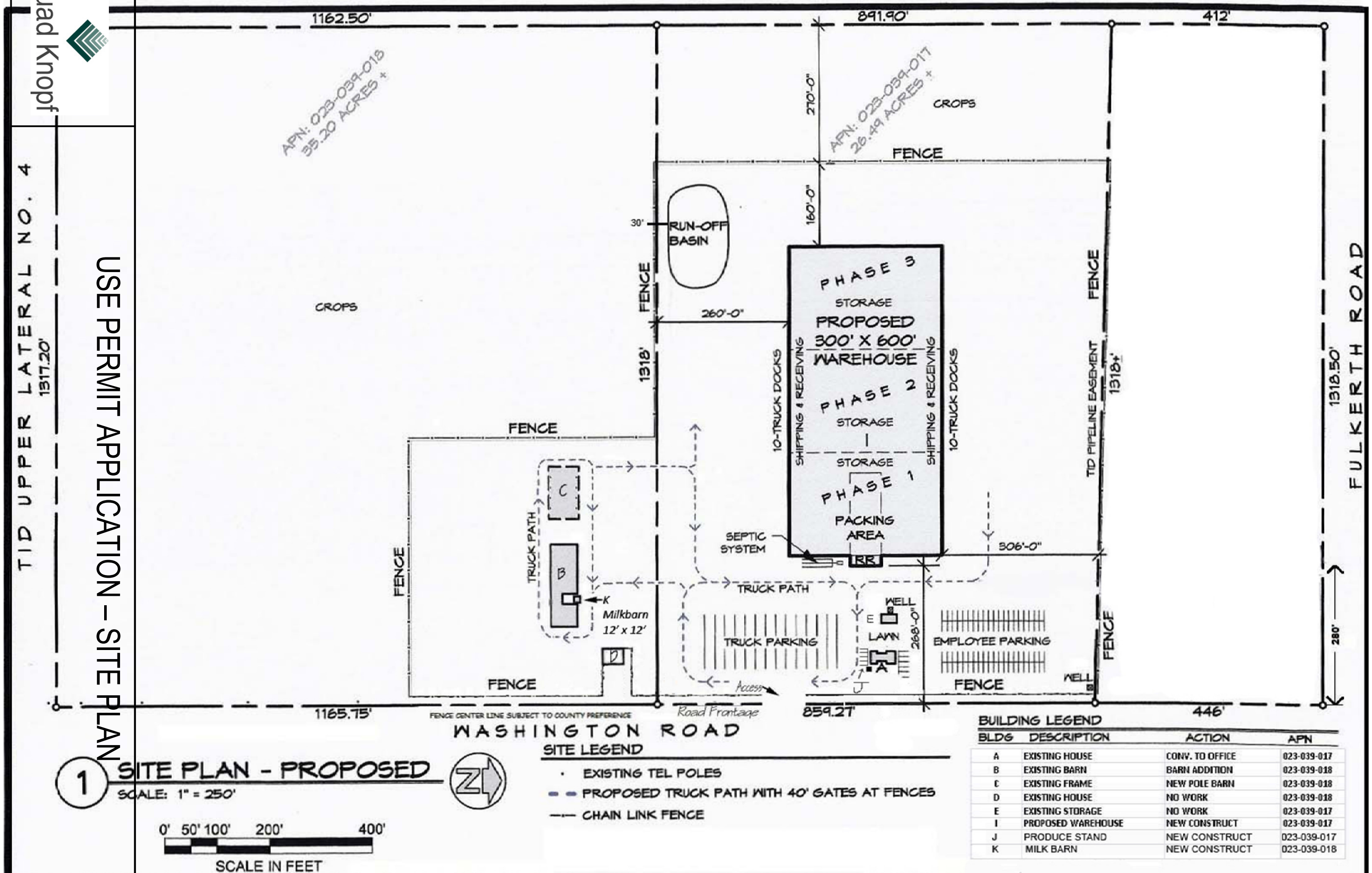
Figure 1

Quad Knopf


| | | |
|---|---|---|
| Quad Knopf | LOCAL VICINITY | Figure 2 |

Quad Knopf

USE PERMIT APPLICATION – SITE PLAN




BUILDING LEGEND

| BLDG | DESCRIPTION | ACTION | APN |
|---|---|---|---|
| A | EXISTING HOUSE | CONV. TO OFFICE | 023-039-017 |
| B | EXISTING BARN | BARN ADDITION | 023-039-018 |
| C | EXISTING FRAME | NEW POLE BARN | 023-039-018 |
| D | EXISTING HOUSE | NO WORK | 023-039-018 |
| E | EXISTING STORAGE | NO WORK | 023-039-017 |
| I | PROPOSED WAREHOUSE | NEW CONSTRUCT | 023-039-017 |
| J | PRODUCE STAND | NEW CONSTRUCT | 023-039-017 |
| K | MILK BARN | NEW CONSTRUCT | 023-039-018 |

# SITE PLAN

## DAN AVILA & SONS

1301 N. WASHINGTON RD, Turlock, CA 95380 PHONE: (209) 495-3899

APN: 023-039-016, 023-039-017, 023-039-018

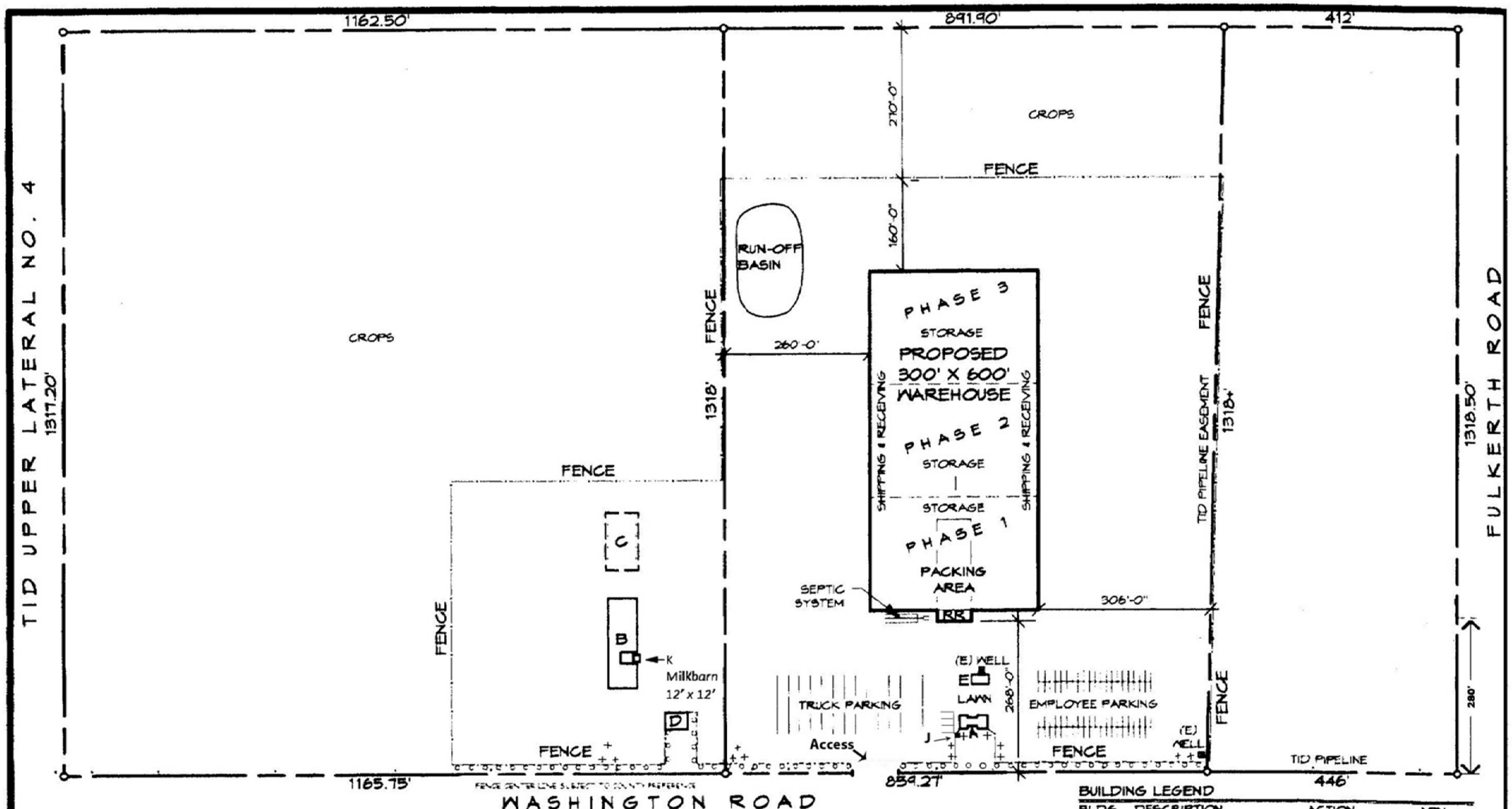
| DATE | BY | SHEET: |
|---|---|---|
| 08-10-12 | KAL | 1 |
| REVISED | REVISED | |
| JOB 1213 | PLOT 08-10-12 | |
| FILE AVILA 08-10-12 SM | | OF: 2 |

Figure 3

Quad Knopf

LANDSCAPE PLAN

Figure 4




## 1 SITE PLAN - PROPOSED

SCALE: 1" = 250'

0' 50' 100' 200' 400'

SCALE IN FEET

**SITE LEGEND**

- · EXISTING TEL POLES
- PROPOSED TRUCK PATH WITH 40' GATES AT FENCES
- CHAIN LINK FENCE 60" TALL
- CHAIN LINK FENCE & LANDSCAPING WITH GROUND COVER & SHRUBS, AND CLIMBING JASMINE AT FENCE
- ∘ ∘ ∘ CHINESE FRINGE
- + REDWOODS

**BUILDING LEGEND**

| BLDG | DESCRIPTION | ACTION | APN |
|---|---|---|---|
| A | EXISTING HOUSE | CONV. TO OFFICE | 023-039-017 |
| B | EXISTING BARN | BARN ADDITION | 023-039-018 |
| C | EXISTING FRAME | NEW POLE BARN | 023-039-018 |
| D | EXISTING HOUSE | NO WORK | 023-039-018 |
| E | EXISTING STORAGE | NO WORK | 023-039-017 |
| I | PROPOSED WAREHOUSE | NEW CONSTRUCT. | 023-039-017 |
| J | PRODUCE STAND | NEW CONSTRUCT | 023-039-017 |
| K | MILK BARN | NEW CONSTRUCT | 023-039-018 |

# LANDSCAPE PLAN

# DAN AVILA & SONS

1301 N. WASHINGTON RD, Turlock, CA 95380 PHONE: (209) 495-3899

APN: 023-039-016, 023-039-017, 023-039-018

| DATE | BY |
|---|---|
| 08-10-12 | KAL |
| REVISED | REVISED |
| REVISED | REVISED |
| JOB 1213 | PLOT 08-10-12 |
| FILE AVILA 08-10-12 SM | |

SHEET: 1 OF: 2

STATE OF CALIFORNIA
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

**Notice of Preparation**

September 3, 2013

To: Reviewing Agencies

Re: N. Washington Road Warehouse Project
SCH# 2013082091

Attached for your review and comment is the Notice of Preparation (NOP) for the N. Washington Road Warehouse Project draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

**Miguel Galvez**
**Stanislaus County**
**1010 10th Street, Suite 3400**
**Modesto, CA 95354**

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Attachments
cc: Lead Agency



1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Edmund G. Brown Jr.
Governor

STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit

Ken Alex
Director

**Notice of Preparation**

September 4, 2013

To: Reviewing Agencies

Re: Use Permit Application No. PLN2012-0017 - Proposed N. Washinghton Road Warehouse Project
SCH# 2012102021

Attached for your review and comment is the Notice of Preparation (NOP) for the Use Permit Application No. PLN2012-0017 - Proposed N. Washinghton Road Warehouse Project draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

**Miguel Galvez**
**Stanislaus County Planning & Comm. Dev.**
**1010 10th Street, Suite 3400**
**Modesto, CA 95354**

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Attachments
cc: Lead Agency

RECEIVED
SEP 09 2013
STANISLAUS CO. PLANNING &
COMMUNITY DEVELOPMENT DEPT.

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL (916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit

Edmund G. Brown Jr.
Governor

Ken Alex
Director

# Memorandum

**Date:** September 9, 2013

**To:** All Reviewing Agencies

**From:** Scott Morgan, Director

**Re:** SCH# 2013082091

N. Washington Road Warehouse Project

RECEIVED
SEP 12 2013
STANISLAUS CO. PLANNING & COMMUNITY DEVELOPMENT DEPT.

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The above-mentioned document was sent to your office on **September 3 & 4, 2013** for review and comment. It has come to the attention of the State Clearinghouse that this document was assigned a State Clearinghouse Number that is incorrect. Please refer to this project using the **original** SCH number **2012102021** for all future correspondence and comments.

Please make note of the following information for your files:

Review period began: **September 3, 2013**

Review period ends: **October 2, 2013**

We apologize for any inconvenience this may have caused. All other project information remains the same.

cc: Miguel Galvez
Stanislaus County
1010 10th Street, Suite 3400
Modesto, CA 95354

**NOP Distribution List** SX **County:** Stanislaus **SCH#** 2012102021

## Resources Agency

- [x] **Resources Agency**
  Nadell Gayou
- [ ] **Dept. of Boating & Waterways**
  Nicole Wong
- [ ] **California Coastal Commission**
  Elizabeth A. Fuchs
- [ ] **Colorado River Board**
  Tamya M. Trujillo
- [x] **Dept. of Conservation**
  Elizabeth Carpenter
- [ ] **California Energy Commission**
  Eric Knight
- [ ] **Cal Fire**
  Dan Foster
- [x] **Central Valley Flood Protection Board**
  James Herota
- [ ] **Office of Historic Preservation**
  Ron Parsons
- [x] **Dept of Parks & Recreation**
  Environmental Stewardship Section
- [ ] **California Department of Resources, Recycling & Recovery**
  Sue O'Leary
- [ ] **S.F. Bay Conservation & Dev't. Comm.**
  Steve McAdam
- [x] **Dept. of Water Resources** Resources Agency
  Nadell Gayou

## Fish and Game

- [ ] **Depart. of Fish & Wildlife**
  Scott Flint
  Environmental Services Division
- [ ] **Fish & Wildlife Region 1**
  Donald Koch
- [ ] **Fish & Wildlife Region 1E**
  Laurie Harnsberger
- [ ] **Fish & Wildlife Region 2**
  Jeff Drongesen
- [ ] **Fish & Wildlife Region 3**
  Charles Armor
- [x] **Fish & Wildlife Region 4**
  Julie Vance
- [ ] **Fish & Wildlife Region 5**
  Leslie Newton-Reed
  Habitat Conservation Program
- [ ] **Fish & Wildlife Region 6**
  Gabrina Gatchel
  Habitat Conservation Program
- [ ] **Fish & Wildlife Region 6 I/M**
  Heidi Sickler
  Inyo/Mono, Habitat Conservation Program
- [ ] **Dept. of Fish & Wildlife M**
  George Isaac
  Marine Region

## Other Departments

- [x] **Food & Agriculture**
  Sandra Schubert
  Dept. of Food and Agriculture
- [ ] **Depart. of General Services**
  Public School Construction
- [ ] **Dept. of General Services**
  Anna Garbeff
  Environmental Services Section
- [ ] **Dept. of Public Health**
  Jeffery Worth
  Dept. of Health/Drinking Water
- [ ] **Delta Stewardship Council**
  **Kevan Samsam**

## Independent Commissions, Boards

- [ ] **Delta Protection Commission**
  Michael Machado
- [ ] **Cal EMA (Emergency Management Agency)**
  Dennis Castrillo
- [x] **Native American Heritage Comm.**
  Debbie Treadway
- [x] **Public Utilities Commission**
  Leo Wong
- [ ] **Santa Monica Bay Restoration**
  Guangyu Wang
- [ ] **State Lands Commission**
  Jennifer Deleong
- [ ] **Tahoe Regional Planning Agency (TRPA)**
  Cherry Jacques

## Business, Trans & Housing

- [ ] **Caltrans - Division of Aeronautics**
  Philip Crimmins
- [ ] **Caltrans - Planning**
  Terri Pencovic
- [x] **California Highway Patrol**
  Suzann Ikeuchi
  Office of Special Projects
- [ ] **Housing & Community Development**
  CEQA Coordinator
  Housing Policy Division

## Dept. of Transportation

- [ ] **Caltrans, District 1**
  Rex Jackman
- [ ] **Caltrans, District 2**
  Marcelino Gonzalez
- [ ] **Caltrans, District 3**
  Gary Arnold
- [ ] **Caltrans, District 4**
  Erik Alm
- [ ] **Caltrans, District 5**
  David Murray
- [ ] **Caltrans, District 6**
  Michael Navarro
- [ ] **Caltrans, District 7**
  Dianna Watson
- [ ] **Caltrans, District 8**
  Dan Kopulsky
- [ ] **Caltrans, District 9**
  Gayle Rosander
- [x] **Caltrans, District 10**
  Tom Dumas
- [ ] **Caltrans, District 11**
  Jacob Armstrong
- [ ] **Caltrans, District 12**
  Marlon Regisford

## Cal EPA

**Air Resources Board**

- [ ] Airport/Energy Projects
  Jim Lerner
- [ ] Transportation Projects
  Douglas Ito
- [ ] Industrial Projects
  Mike Tollstrup
- [ ] **State Water Resources Control Board**
  Regional Programs Unit
  Division of Financial Assistance
- [ ] **State Water Resources Control Board**
  Student Intern, 401 Water Quality Certification Unit
  Division of Water Quality
- [ ] **State Water Resouces Control Board**
  Phil Crader
  Division of Water Rights
- [ ] **Dept. of Toxic Substances Control**
  CEQA Tracking Center
- [ ] **Department of Pesticide Regulation**
  CEQA Coordinator

## Regional Water Quality Control Board (RWQCB)

- [ ] **RWQCB 1**
  Cathleen Hudson
  North Coast Region (1)
- [ ] **RWQCB 2**
  Environmental Document Coordinator
  San Francisco Bay Region (2)
- [ ] **RWQCB 3**
  Central Coast Region (3)
- [ ] **RWQCB 4**
  Teresa Rodgers
  Los Angeles Region (4)
- [x] **RWQCB 5S**
  Central Valley Region (5)
- [ ] **RWQCB 5F**
  Central Valley Region (5)
  Fresno Branch Office
- [ ] **RWQCB 5R**
  Central Valley Region (5)
  Redding Branch Office
- [ ] **RWQCB 6**
  Lahontan Region (6)
- [ ] **RWQCB 6V**
  Lahontan Region (6)
  Victorville Branch Office
- [ ] **RWQCB 7**
  Colorado River Basin Region (7)
- [ ] **RWQCB 8**
  Santa Ana Region (8)
- [ ] **RWQCB 9**
  San Diego Region (9)

- [ ] **Other** ______________
- [ ] ______________
  Conservancy

Last Updated 08/27/2013

STATE OF CALIFORNIA Edmund G. Brown, Jr.,, Govemor

**NATIVE AMERICAN HERITAGE COMMISSION**
1550 Harbor Boulevard
West Sacramento, CA 95691
(916) 373-3715
(916) 373-5471 – FAX
e-mail: ds_nahc@pacbell.net

RECEIVED
SEP 12 2013
STANISLAUS CO. PLANNING & COMMUNITY DEVELOPMENT DEPT.

September 10, 3013

Mr. Miguel Galvez, Planner
**Stanislaus County Planning & Community Development Department**
1010 Tenth Street, Suite 3400
Modesto, CA 95354

RE: SCH#2012102021 CEQA Notice of Preparation (NOP); draft Environmental Impact Report (DEIR) for the **"Use Permit Application No. PLN2012-0017 – Proposed Washington Road Warehouse Project;"** located in the City of Turlock; Stanislaus County, California

Dear Mr. Galvez:

The Native American Heritage Commission (NAHC) has reviewed the CEQA Notice regarding the above referenced project. In the 1985 Appellate Court decision (170 Cal App 3rd 604), the court held that the NAHC has jurisdiction and special expertise, as a state agency, over affected Native American resources impacted by proposed projects, including archaeological places of religious significance to Native Americans, and to Native American burial sites.

The California Environmental Quality Act (CEQA) states that any project which includes archeological resources, is a significant effect requiring the preparation of an EIR (CEQA guidelines 15064.5(b). To adequately comply with this provision and mitigate project-related impacts on archaeological resources, the Commission recommends the following actions be required:

Contact the appropriate Information Center for a record search to determine :If a part or all of the area of project effect (APE) has been previously surveyed for cultural places(s), The NAHC recommends that known traditional cultural resources recorded on or adjacent to the APE be listed in the draft Environmental Impact Report (DEIR).

If an additional archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey. We suggest that this be coordinated with the NAHC, if possible. This area is known to the NAHC to be very culturally sensitive. The final report containing site forms, site significance, and mitigation measurers should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure pursuant to California Government Code Section 6254.10.

A list of appropriate Native American Contacts for consultation concerning the project site has been provided and is attached to this letter to determine if the proposed active might impinge on any cultural resources. Lack of surface evidence of archeological resources does not preclude their subsurface existence.

Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, pursuant to California Health & Safety Code Section 7050.5 and California Environmental Quality Act (CEQA) §15064.5(f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities. Also, California Public Resources Code Section 21083.2 require documentation and analysis of archaeological items that meet the standard in Section 15064.5 (a)(b)(f). Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans. Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code §7050.5, CEQA §15064.5(e), and Public Resources Code §5097.98 mandates the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

Sincerely,

Dave Singleton
Program Analyst

CC: State Clearinghouse

Attachment: Native American Contacts list

## Native American Contacts
## Stanislaus County
## September 10, 2013

Tule River Indian Tribe
Neil Peyron, Chairperson
P.O. Box 589 Yokuts
Porterville , CA 93258
chairman@tulerivertribe-nsn.
(559) 781-4271
(559) 781-4610 FAX

Buena Vista Rancheria
Rhonda Morningstar Pope, Chairperson
1418 20th Street, Suite 200 Me-Wuk / Miwok
Sacramento , CA 95811
rhonda@buenavistatribe.
916 491-0011
916 491-0012 - fax

California Valley Miwok Tribe
Chairperson
10601 N Escondido PL Miwok
Stockton , CA 95212
office@cvmt.net
209-931-4567
209-931-4333

North Valley Yokuts Tribe
Katherine Erolinda Perez
PO Box 717 Ohlone/Costanoan
Linden , CA 95236 Northern Valley Yokuts
(209) 887-3415 Bay Miwok
canutes@verizon.net

Southern Sierra Miwuk Nation
Anthony Brochini, Chairperson
P.O. Box 1200 Miwok
Mariposa , CA 95338 Pauite
209-379-1008 Northern Valley Yokut

Tuolumne Band of Me-Wuk
Kevin Day, Chairperson
P.O. Box 699 Me-Wuk - Miwok
Tuolumne , CA 95379
receptionist@mlode.com
(209) 928-3475 - Tribal Office
(209) 928-1677 - Fax

Tuolumne Band of Me-Wuk
Mary Camp, Tribal Administrator
P.O. Box 699 Me-Wuk - Miwok
Tuolumne , CA 95379
receptionist@mlode.com
(209) 928-3475 - Tribal Office
(209) 928-1677 - Fax

Calaveras Band of Mi-Wuk Indians
Gloria Grimes, Chairperson
PO Box 899 Mi-Wuk
West Point , CA 95255
CBmiwukindians@aol.com
(209-470-8688

**This list is current only as of the date of this document.**

**Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.**

**his list s only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH#2012102021; CEQA Notice of Preparation (NOP); draft Environmental Impact Report (DEIR) for the Washington Road Warehouse Project; located in Turlock; Stanislaus County, California.**

**Native American Contacts**
**Stanislaus County**
**September 10, 2013**

Southern Sierra Miwuk Nation
Les James, Spiritual Leader
PO Box 1200 — Miwok
Mariposa , CA 95338 — Pauite
209-966-3690 — Northern Valley Yokut

Tuolumne Band of Me-Wuk
Stanley Cox, Cultural Resources Dr
P.O. Box 699 — Me-Wuk - Miwok
Tuolumne , CA 95379
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Tuolumne Band of Me-Wuk
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rfuller@mlode.com
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(209) 928-1677 - Fax

Calaveras Band of Mi-Wuk Indians
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Dmiwuk@aol.com
209-770-4137
209-470-8688

Calaveras Band of Mi-Wuk Indians
Adam Lewis, Tribal Preservation Assistant
PO Box 899 — Mi-Wuk
West Point , CA 95255 — Miwok

Tule River Indian Tribe
Kerri Vera, Environmental Department
P.O. Box 589 — Yokuts
Porterville , CA 93258
(559) 783-8892

Tule River Indian Tribe
Joey Garfield, Tribal Archeological
P.O. Box 589 — Yokuts
Porterville , CA 93258
(559) 783-8892

**This list is current only as of the date of this document.**

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18 September 2013

Miguel Galvez
Stanislaus County
Planning and Community Development
1010 10th Street; Suite 3400
Modesto, CA 95354

CERTIFIED MAIL
7013 1090 0001 3130 2670

**COMMENTS TO NOTICE OF PREPARATION FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, USE PERMIT APPLICATION NO. PLN2012-0017 – PROPOSED N. WASHINGTON ROAD WAREHOUSE PROJECT, SCH NO. 2012102021, STANISLAUS COUNTY**

Pursuant to the State Clearinghouse's 4 September 2013 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Notice of Preparation for the Draft Environmental Impact Report* for the Use Permit Application No. PLN2012-0017 – Proposed N. Washington Road Warehouse Project, located in Stanislaus County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

**<u>Construction Storm Water General Permit</u>**

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml.

**Phase I and II Municipal Separate Storm Sewer System (MS4) Permits**[1]

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/.

**Industrial Storm Water General Permit**

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 97-03-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml.

**Clean Water Act Section 404 Permit**

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

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[1] Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

**Clean Water Act Section 401 Permit – Water Quality Certification**
If an USACOE permit, or any other federal permit, is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

**Waste Discharge Requirements**
If USACOE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project will require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml.

If you have questions regarding these comments, please contact me at (916) 464-4684 or tcleak@waterboards.ca.gov.

for Trevor Cleak
Environmental Scientist

cc: State Clearinghouse Unit, Governor's Office of Planning and Research, Sacramento

September 26, 2013

Miguel A. Galvez
Stanislaus County
Planning and Community Development Department
1010 10th Street, Suite 3400
Modesto, CA 95354

**Project: Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Proposed N. Washington Road Warehouse Project (Stanislaus County Use Permit Application No. PLN2012-0017)**

**District CEQA Reference No: 20130762**

Dear Mr. Galvez:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the Notice of Preparation (NOP) for the Proposed N. Washington Road Warehouse Project. The proposed project consists of the construction a 180,000 square foot warehouse (in three phases) and utilizing an existing 5,500 square foot pole barn and associated facilities for receiving, handling, packaging, and shipping harvested crops (watermelons, sweet potatoes, beans, wheat, pumpkins, and squash) on two parcels totaling 61.7± acres in unincorporated Stanislaus County, in the A-2-40 (General Agriculture) Zoning District, with a General Plan Designation of Agriculture (AG). The District offers the following comments:

## Emissions Analysis

1) The District is currently designated as extreme nonattainment for the 8-hour ozone standard, attainment for PM10 and CO, and nonattainment for PM2.5 for the federal air quality standards. At the state level, the District is designated as nonattainment for the 8-hour ozone, PM10, and PM2.5 air quality standards. The District recommends that the Air Quality section of the Environmental Impact Report (EIR) include a discussion of the following impacts:

   1a) **Criteria Pollutants:** Project related criteria pollutant emissions should be identified and quantified. The discussion should include existing and post-project emissions.

   i) Construction Emissions: Construction emissions are short-term emissions and should be evaluated separate from operational emissions. The District recommends preparation of an Environmental Impact Report (EIR) if annual construction emissions cannot be reduced or mitigated to below the following levels of significance: 10 tons per year of oxides of nitrogen (NOx), 10 tons per year of reactive organic gases (ROG), or 15 tons per year particulate matter of 10 microns or less in size (PM10).

(1) *Recommended Mitigation:* To reduce impacts from construction related exhaust emissions, the District recommends feasible mitigation for the project to utilize off-road construction fleets that can achieve fleet average emissions equal to or cleaner than the Tier II emission standards, as set forth in §2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 Code of Federal Regulations. This can be achieved through any combination of uncontrolled engines and engines complying with Tier II and above engine standards.

ii) Operational Emissions: Permitted (stationary sources) and non-permitted (mobile sources) sources should be analyzed separately. The District recommends preparation of an Environmental Impact Report (EIR) if the sum of annual permitted and non-permitted emissions cannot be reduced or mitigated to below the following levels of significance: 10 tons per year of oxides of nitrogen (NOx), 10 tons per year of reactive organic gases (ROG), or 15 tons per year particulate matter of 10 microns or less in size (PM10).

(1) *Recommended Mitigation:* Project related impacts on air quality can be reduced through incorporation of design elements, for example, that increase energy efficiency, reduce vehicle miles traveled, and reduce construction exhaust related emissions. However, design elements and compliance with District rules and regulations may not be sufficient to reduce project related impacts on air quality to a less than significant level. Another example of a feasible mitigation measure is the mitigation of project emissions through a Voluntary Emission Reduction Agreement (VERA). The VERA is an instrument by which the project proponent provides monies to the District, which is used by the District to fund emission reduction projects that achieve the reductions required by the lead agency. District staff is available to meet with project proponents to discuss a VERA for specific projects. For more information, or questions concerning this topic, please call District Staff at (559) 230-6000.

iii) Recommended Model: Project related criteria pollutant emissions should be identified and quantified. Emissions analysis should be performed using CalEEMod (**California Emission Estimator Model**), which uses the most recent approved version of relevant Air Resources Board (ARB) emissions models and emission factors. CalEEMod is available to the public and can be downloaded from the CalEEMod website at: www.caleemod.com.

1b) **Nuisance Odors:** The project should be evaluated to determine the likelihood that the project would result in nuisance odors. Nuisance orders are subjective, thus the District has not established thresholds of significance for nuisance odors. Nuisance odors may be assessed qualitatively taking into consideration of project design elements and proximity to off-site receptors that potentially would be exposed objectionable odors.

1c) **Health Impacts:** Project related health impacts should be evaluated to determine if emissions of toxic air contaminants (TAC) will pose a significant health risk to nearby sensitive receptors. TACs are defined as air pollutants that which may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. The most common source of TACs can be attributed to diesel exhaust fumes that are emitted from both stationary and mobile sources. Health impacts may require a detailed health risk assessment (HRA).

Prior to conducting an HRA, an applicant may perform a prioritization on all sources of emissions to determine if it is necessary to conduct an HRA. A prioritization is a screening tool used to identify projects that may have significant health impacts. If the project has a prioritization score of 10.0 or more for either carcinogens or non-carcinogens, the project has the potential to exceed the District's significance threshold for health impacts of 10 in a million and an HRA should be performed.

If an HRA is to be performed, it is recommended that the project proponent contact the District to review the proposed modeling approach. The project would be considered to have a significant health risk if the HRA demonstrates that project related health impacts would exceed the District's significance threshold of 10 in a million.

More information on TACs, prioritizations and HRAs can be obtained by:

- E-mailing inquiries to: hramodeler@valleyair.org; or
- Visiting the District's website at:

http://www.valleyair.org/busind/pto/Tox_Resources/AirQualityMonitoring.htm.

2) In addition to the discussions on potential impacts identified above, the District recommends the EIR also include the following discussions:

2a) A discussion of the methodology, model assumptions, inputs and results used in characterizing the project's impact on air quality. To comply with CEQA requirements for full disclosure, the District recommends that the modeling outputs be provided as appendices to the EIR. The District further recommends that the District be provided with an electronic copy of all input and output files for all modeling.

2b) A discussion of the components and phases of the project and the associated emission projections, including ongoing emissions from each previous phase.

2c) A discussion of project design elements and mitigation measures, including characterization of the effectiveness of each mitigation measure incorporated into the project.

2d) A discussion of whether the project would result in a cumulatively considerable net increase of any criteria pollutant or precursor for which the San Joaquin Valley Air Basin is in non-attainment. More information on the District's attainment status can be found online by visiting the District's website at: http://valleyair.org/aqinfo/attainment.htm.

## District Rules and Regulations

3) The proposed project may be subject to District rules and regulations, including: Regulation VIII (Fugitive PM10 Prohibitions), Rule 4102 (Nuisance), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations). In the event an existing building will be renovated, partially demolished or removed, the

project may be subject to District Rule 4002 (National Emission Standards for Hazardous Air Pollutants).

4) Based on information provided, the proposed project would equal or exceed the relevant District Rule 9510 (Indirect Source Review) applicability threshold of 25,000 square feet of light industrial space. Therefore, the District concludes that the proposed project may be subject to District Rule 9510.

   Any applicant subject to District Rule 9510 is required to submit an Air Impact Assessment (AIA) application to the District no later than applying for final discretionary approval, and to pay any applicable off-site mitigation fees before issuance of the first building permit. If approval of the subject project constitutes the last discretionary approval by your agency, the District recommends that demonstration of compliance with District Rule 9510, including payment of all applicable fees before issuance of the first building permit, be made a condition of project approval. Information about how to comply with District Rule 9510 can be found online at: http://www.valleyair.org/ISR/ISRHome.htm.

5) The proposed project may require District permits. Prior to the start of construction the project proponent should contact the District's Small Business Assistance Office at (209) 557-6446 to determine if an Authority to Construct (ATC) is required.

6) The above list of rules is neither exhaustive nor exclusive. To identify other District rules or regulations that apply to this project or to obtain information about District permit requirements, the applicant is strongly encouraged to contact the District's Small Business Assistance (SBA) Office at (209) 557-6446. Current District rules can be found online at the District's website at: www.valleyair.org/rules/1ruleslist.htm.

The District recommends that a copy of the District's comments be provided to the project proponent. If you have any questions or require further information, please call Angel Lor at (559) 230-5808.

Sincerely,

David Warner
Director of Permit Services

For: Arnaud Marjollet
Permit Services Manager

DW:al

cc: File

CITY OF TURLOCK INC. 1908

DEBRA A. WHITMORE
DEPUTY DIRECTOR OF DEVELOPMENT SERVICES
dwhitmore@turlock.ca.us

DEVELOPMENT SERVICES
PLANNING DIVISION

156 S. BROADWAY, SUITE 120 | TURLOCK, CALIFORNIA 95380 | PHONE 209-668-5542 EXT 2218 | FAX 209-668-5107

September 30, 2013

Miguel A. Galvez, Senior Planner
Stanislaus County Planning and Community Development Department
1010 Tenth Street, Suite 3400
Modesto, CA 95354

**SUBJECT: NOP FOR USE PERMIT APPLICATION NO. 2012-17 – DAN AVILA AND SONS (1301 WASHINGTON ROAD; APN's 023-039-017 & -018)**

Dear Mr. Galvez:

Thank you for providing the City of Turlock an opportunity to comment on the Notice of Preparation for the proposed project.

The applicant is proposing to construct a 180,000 square foot warehouse (in three phases) and utilize an existing 5,500 square foot pole barn and associated facilities for receiving, handling, packaging, and shipping harvested crops (watermelons, sweet potatoes, beans, wheat, pumpkins, and squash) on two parcels totaling 61.7± acres in the A-2-40 (General Agriculture) Zoning District. Several structures would be constructed on a 26± acre portion of the 61.7± acre site. A maximum of 75 employees would be on the site at any time. The facilities are planned to be operational 24 hours per day throughout the year. The project involves the conversion of a 1,200 square foot residence to office, conversion of an existing barn to a packing shed, the use of a pole barn to repair farm equipment used on site, the construction of a 180,000 10-truck shipping and receiving warehouse, continuation of the existing produce stand, and the use of an existing milk barn for storage. Operations would mostly occur between 6:00 a.m. and 6:00 p.m., but could operate 24 hours on occasion.

Site improvements would include approximately 16 acres of impervious surface (not depicted on site plan), landscaping along the frontage, water wells, septic leach field, 111 parking spaces, and a retention basin (for produce washing wastewater as well as storm water retention).

Equipment operated on the site will include construction-related equipment and farm-related equipment (scraper, grader, backhoe, compactor, crane, cherry picker, and forklift).

The 180,000 square foot warehouse will be constructed in three phases, with each phase consisting of a 300' by 200' section. The first section will be constructed along with all of the other buildings and site improvements included in the project description. Construction is expected to commence by spring of 2017.

**ENVIRONMENTAL COMMENTS**

The City concurs with the County's determination that this project would have a significant adverse impact on the environment; however, we are concerned that the Notice of Preparation mentions only "air emissions from vehicle traffic" as the environmental impact that cannot be mitigated to a level of less than significant. The City certified an Environmental Impact Report for the Turlock General Plan Update on September 25, 2012, that concludes that the impacts to City, County and Regional roadways are significant and unavoidable impacts of the new General Plan. The proposed project will add traffic to transportation facilities evaluated in the General Plan Environmental Impact Report that are projected to be adversely affected by future growth. We encourage the County to review the Turlock General Plan Environmental Impact Report as the project will generate additional adverse impacts in the areas evaluated by the City of Turlock including the conversion of important farmland to a non-agricultural use, criteria pollutants and greenhouse gas emissions, noise, water quality, and groundwater quality and supply.

The City also requests that the County clarify certain facts regarding the proposed project. Certain proposed improvements referenced in the Notice of Preparation are not depicted on the associated site plan. The applicant is proposing that "certain" portions of the property would be covered with impervious surface while others would not. These areas need to be clearly depicted on the site plan. Transportation-related particulate matter and dust are a concern on both a local and regional level. The project description is also unclear on the total number of employees that will employed by the facility and which operations and buildings are proposed to operate throughout the year, as described in the project description. The City would also like clarification on the number, type, and size of the equipment that will be used in the warehouse for refrigeration and evaporative cooling as well as the produce processing that is proposed at the site. The NOP mentions that "approximately 2,000 gallons per day of water would be required for washing and processing of produce" but it is unclear what the processing would be. In addition, it mentions that the water would be mixed with chlorine but there is no mention of the quantity or dilution rate that would be used.

The City of Turlock concurs that the project is not likely to have a potential impact on Mineral Resources; however, the City does not concur that the project would have no impact on Population and Housing, or Recreation. The project is expected to have a number of employees (a maximum of 75 employees at any time). These employees could potentially relocate into the area and as such would have an impact on the City's population growth and its recreation facilities. As such, the City feels that these two areas need to be included within the scope of the EIR.

**AREAS OF CONCERN**

The City of Turlock encourages the County to comprehensively evaluate each of the topic areas under CEQA with the exception of mineral resources as well as the cumulative impacts associated with approval of the proposed project. Below is a list of questions and concerns raised by the revised project description:

1. ***AESTHETICS:*** Given the use of existing buildings and residences, what will the visual impact of this development be on adjacent businesses? The project proposes minimal screening to the public view through the use of slow-growing Chinese fringe trees that only reach a height of 15 to 20 feet and star jasmine trained onto a 5-foot chain link fence. The proposed redwoods are located sporadically throughout the frontage and will not provide any screening value.
2. ***AGRICULTURAL RESOURCES:*** The proposed project will permanently cover 16 acres of the property in asphalt concrete or concrete paving in addition to the construction of several major structures. Not only will this permanently convert agricultural land to non-agricultural uses, but approval of the project sets a precedent for such uses on Williamson Act contracted lands. What is the immediate and cumulative impact of the project?
3. ***AIR QUALITY:*** The project will result in a substantial increase in air emissions and greenhouse gas emissions due to truck traffic, commercial traffic (to the produce stand) and employee traffic, and potentially due to the processing of produce on site. The City is concerned about the potential odors and emissions that would result from the disposal of wastewater from the processing of produce on the site into the open-air retention basin. The City is also concerned about the potential air quality impacts that may be associated with the evaporative cooling and refrigeration systems.
4. ***BIOLOGICAL RESOURCES:*** The project will result in the reduction of foraging areas and habitat for various wildlife and threatened or endangered species. In addition, through its General Plan Update process, the project area is known for occasional wetlands.

5. ***GEOLOGY AND SOILS:*** Will the proposed on-site septic system be able to accommodate the volume and quantity of wastewater that is proposed? Particularly with year-round operation, will the above-ground retention basin be able to accommodate the storm water and wastewater proposed? What is the duration that wastewater would be retained on site?
6. ***HAZARDS AND HAZARDOUS MATERIALS:*** What health risks to people and to groundwater are potentially posed due to the retention of produce wash water in the retention basin? What types of chemicals are proposed to be used to control rodents and pests given the large amount of storage space? What controls will be in place to prevent attraction and expansion of rodent and pest populations on the site? How will chemical spills be handled? What are the building standards that will be used in the warehouse to safely process produce for public consumption?
7. ***HYDROLOGY AND WATER QUALITY:*** What is the volume and potential quality of the wastewater generated from the site (flow, biochemical oxygen demand, and total suspended solids) (please notify the Regional Water Quality Control Board for any permitting and water quality requirements)? What will the impact be on the groundwater supply? What will be the impact on the City's potable water supply? What is the impact on the groundwater system of dumping produce processing water in the retention basin? The City will be requiring frontage improvements along N. Washington consistent with City standards. How will the basin be sized and the site graded to ensure that storm water runoff is retained on site?
8. ***NOISE:*** The traffic generated by the truck and passenger vehicle traffic as well as any equipment used for process of produce has the potential to increase noise in the project area. What are the sources of noise that will be approved and what is the projected increase or frequency of noise? Please ensure that the City's noise standards are utilized within the City Limits.
9. ***POPULATION, HOUSING AND RECREATION:*** See comments above. Evaluate the potential impact on population and housing due to the number of employees that the project will generate.
10. ***PUBLIC SERVICES:*** The project is located immediately adjacent to the City Limits. Please evaluate the potential impact the project will have on City and County police (sheriff) and fire services.
11. ***TRANSPORTATION/TRAFFIC:*** The project will generate a significant amount of vehicular and truck traffic including the commercial traffic for the fruit stand. Please provide a detailed traffic analysis showing proposed traffic mitigation. It is unclear from the site plan whether the fruit stand will be accessed by customer through the main entrance or via a separate entrance. Also, the home labeled D does not currently have a driveway approach. The City will be requiring an approach and possibly an acceleration/deceleration lane that extends from the primary truck entrance. The analysis should include, as background, the traffic projected by StanCOG and the City of Turlock in its new General Plan. In the past, the City has provided detailed comments

on the scope of the traffic study required. If additional information is required, please contact the Turlock City Engineer at (209) 668-5520.

12. ***UTILITIES AND SERVICE SYSTEMS:*** Evaluate the impacts of the on-site well and septic system on the City's potable water supply and the aquifer in general. What is the quality of the water supply to serve the needs of the project? Does it meet Department of Public Health and USEPA standards? Will the processing water meet the standards for food processing? Does the well have the capacity to meet process water demands (provide an SB 610 analysis)?

Please contact me if you have any questions regarding these comments at (209) 668-5542 x2218.

Sincerely,

Debra A. Whitmore
Deputy Director of Development Services (Planning)

Stanislaus County
Striving to be the Best

*CHIEF EXECUTIVE OFFICE*

***Stan Risen***
***Interim Chief Executive Officer***

***Patricia Hill Thomas***
***Chief Operations Officer/***
***Assistant Executive Officer***

***Keith D. Boggs***
***Assistant Executive Officer***

*1010 10th Street, Suite 6800, Modesto, CA 95354*
*Post Office Box 3404, Modesto, CA 95353-3404*

*Phone: 209.525.6333 Fax 209.544.6226*

**STANISLAUS COUNTY ENVIRONMENTAL REVIEW COMMITTEE**

October 4, 2013

Miguel A. Galvez, Senior Planner
Stanislaus County Planning & Community Development
1010 10th Street, Suite 3400
Modesto, CA 95354

**SUBJECT: ENVIRONMENTAL REFERRAL – DAN AVILA AND SONS – NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE PROPOSED N. WASHINGTON ROAD WAREHOUSE PROJECT (STANISLAUS COUNTY USE PERMIT APPLICATION NO. PLN2012-017)**

Mr. Galvez:

The Stanislaus County Environmental Review Committee (ERC) has reviewed the subject project and provides the following comments/conditions:

Hazards/Hazardous Materials

The applicant shall determine, to the satisfaction of the Department of Environmental Resources (DER), that a site containing (or formerly containing) residences or farm buildings, or structures, has been fully investigated (via Phase I study, and Phase II study if necessary) prior to the issuance of a grading permit. Any discovery of underground storage tanks, former underground storage tank locations, buried chemicals, buried refuse, or contaminated soil shall be brought to the immediate attention of DER.

Transportation/Traffic

The Traffic Impact Analysis shall be updated to reflect the current project description. The current analysis by KD Anderson has the access to the site being taken off the Fulkerth frontage of the project. That particular parcel is no longer part of the project description. All access for the project will now be taken off of Washington Road only.

The Traffic Impact Analysis needs to be updated to reflect the current project description.

The ERC appreciates the opportunity to comment on this project.

Sincerely,

for Tera Chumley

Tera Chumley
Senior Management Consultant
Environmental Review Committee

TC:ss

cc: ERC Members

Print Form

*Appendix C*

# Notice of Completion & Environmental Document Transmittal

*Mail to:* State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
*For Hand Delivery/Street Address:* 1400 Tenth Street, Sacramento, CA 95814

SCH # 2013082091

**Project Title:** N. Washington Road Warehouse Project

Lead Agency: County of Stanislaus | Contact Person: Miguel Galvez
Mailing Address: 1010 10th Street, Suite 3400 | Phone: 209.525.6330
City: Modesto | Zip: 95354 | County: Stanislaus

**Project Location:** County: Stanislaus | City/Nearest Community: Turlock
Cross Streets: N. Washington Road/Fulkerth Road | Zip Code: 95380
Longitude/Latitude (degrees, minutes and seconds): ____° ____′ ____″ N / ____° ____′ ____″ W Total Acres: 61.7
Assessor's Parcel No.: 023-039-017 and 023-039-018 | Section: ____ Twp.: ____ Range: ____ Base: ____
Within 2 Miles: State Hwy #: 99 | Waterways: Turlock Irrigation District Canal
Airports: ____ | Railways: ____ | Schools: ____

**Document Type:**

CEQA: ☒ NOP ☐ Early Cons ☐ Neg Dec ☐ Mit Neg Dec ☐ Draft EIR ☐ Supplement/Subsequent EIR (Prior SCH No.) ____ Other: ____

NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI

Other: ☐ Joint Document ☐ Final Document ☐ Other: ____

**Local Action Type:**

☐ General Plan Update ☐ General Plan Amendment ☐ General Plan Element ☐ Community Plan ☐ Specific Plan ☐ Master Plan ☐ Planned Unit Development ☒ Site Plan ☐ Rezone ☐ Prezone ☒ Use Permit ☐ Land Division (Subdivision, etc.) ☐ Annexation ☐ Redevelopment ☐ Coastal Permit ☐ Other: ____

**Development Type:**

☐ Residential: Units ____ Acres ____
☐ Office: Sq.ft. ____ Acres ____ Employees ____
☐ Commercial: Sq.ft. ____ Acres ____ Employees ____
☒ Industrial: Sq.ft. 180,000 Acres 61.7 Employees 75
☐ Educational: ____
☐ Recreational: ____
☐ Water Facilities: Type ____ MGD ____
☐ Transportation: Type ____
☐ Mining: Mineral ____
☐ Power: Type ____
☐ Waste Treatment: Type ____ MGD ____
☐ Hazardous Waste: Type ____
☐ Other: ____

RECEIVED
2:10pm
AUG MW) 2013
STATE CLEARING HOUSE

**Project Issues Discussed in Document:**

☒ Aesthetic/Visual ☒ Agricultural Land ☒ Air Quality ☒ Archeological/Historical ☒ Biological Resources ☐ Coastal Zone ☒ Drainage/Absorption ☐ Economic/Jobs
☐ Fiscal ☒ Flood Plain/Flooding ☐ Forest Land/Fire Hazard ☒ Geologic/Seismic ☐ Minerals ☒ Noise ☐ Population/Housing Balance ☒ Public Services/Facilities
☐ Recreation/Parks ☐ Schools/Universities ☒ Septic Systems ☒ Sewer Capacity ☒ Soil Erosion/Compaction/Grading ☒ Solid Waste ☒ Toxic/Hazardous ☒ Traffic/Circulation
☒ Vegetation ☒ Water Quality ☒ Water Supply/Groundwater ☐ Wetland/Riparian ☒ Growth Inducement ☒ Land Use ☒ Cumulative Effects ☐ Other: Greenhouse Gases

**Present Land Use/Zoning/General Plan Designation:**
Agriculture/Agriculture

**Project Description:** *(please use a separate page if necessary)*
The applicant proposes the construction and operation of an 180,000 square foot warehouse and associated facilities in order to conduct receiving, storage, packing and shipping of watermelons, sweet potatoes, beans, wheat, pumpkins and squash. Several structures would be constructed in addition to the existing buildings on the site, as described below, on an approximately 26-acre portion of the approximately 61.7-acre site. A maximum of approximately 75 employees would be on the site at any time. The facilities are planned to be operational 24 hours per day throughout the year. Produce processed at the facility, consisting primarily of watermelons and sweet potatoes, would come from the fields on the site and other sites.

*Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.*

Revised 2010

## Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "**X**".
If you have already sent your document to the agency please denote that with an "**S**".

| | | | |
|---|---|---|---|
| | Air Resources Board | | Office of Historic Preservation |
| | Boating & Waterways, Department of | | Office of Public School Construction |
| | California Emergency Management Agency | | Parks & Recreation, Department of |
| x | California Highway Patrol | | Pesticide Regulation, Department of |
| X | Caltrans District # 10 | | Public Utilities Commission |
| | Caltrans Division of Aeronautics | x | Regional WQCB # 5S |
| | Caltrans Planning | | Resources Agency |
| | Central Valley Flood Protection Board | | Resources Recycling and Recovery, Department of |
| | Coachella Valley Mtns. Conservancy | | S.F. Bay Conservation & Development Comm. |
| | Coastal Commission | | San Gabriel & Lower L.A. Rivers & Mtns. Conservancy |
| | Colorado River Board | | San Joaquin River Conservancy |
| x | Conservation, Department of | | Santa Monica Mtns. Conservancy |
| | Corrections, Department of | | State Lands Commission |
| | Delta Protection Commission | | SWRCB: Clean Water Grants |
| | Education, Department of | | SWRCB: Water Quality |
| | Energy Commission | | SWRCB: Water Rights |
| x | Fish & Game Region # 4 | | Tahoe Regional Planning Agency |
| | Food & Agriculture, Department of | | Toxic Substances Control, Department of |
| | Forestry and Fire Protection, Department of | | Water Resources, Department of |
| | General Services, Department of | | |
| | Health Services, Department of | x | Other: San Joaquin Valley APCD |
| | Housing & Community Development | | Other: |
| | Native American Heritage Commission | | |

**Local Public Review Period (to be filled in by lead agency)**

Starting Date August 30, 2013 Ending Date October 2, 2013

**Lead Agency (Complete if applicable):**

Consulting Firm: Quad Knopf
Address: 735 Sunrise Avenue
City/State/Zip: Roseville, CA, 95661
Contact: Randy Chafin, AICP
Phone: 916.784.7823

Applicant: Avila & Sons
Address: 2718 Roberts Road
City/State/Zip: Ceres, CA 95307
Phone: 209.495.3899

**Signature of Lead Agency Representative:** [signature] for M. Galvez **Date:** 8.30.13

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

Revised 2010

# APPENDIX B

# AIR QUALITY AND GREENHOUSE GAS IMPACT ANALYSIS REPORT

# DAN AVILA & SONS STANISLAUS COUNTY, CALIFORNIA

## January 2013

Quad Knopf

# Air Quality and Greenhouse Gas Impact Analysis Report
# Dan Avila & Sons
# Stanislaus County, California

**Prepared for:**

Dan Avila & Sons
2718 Roberts Road
Ceres, CA 95307
Contact Person: Dan Avila
Phone: (209) 495-3899

Consultant:

Quad Knopf

6051 N. Fresno Street, Suite 200
Fresno, California 93710
Contact: Elena Nuño, Senior Associate Planner
Phone: (559) 449-2400
FAX: (559) 435-2905

**January 2013**

120198

# TABLE OF CONTENTS

## APPENDICES

Appendix A CalEEMod Outputs/Refrigerant Output
Appendix B Health Risk Screening

## LIST OF TABLES

# LIST OF FIGURES

# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| $\mu g/m^3$ | micrograms per cubic meter |
| AQAP | Air Quality Attainment Plan |
| ARB | California Air Resources Control Board |
| CalEEMod | California Emissions Estimator Model |
| CAPCOA | California Air Pollution Control Officer's Association |
| CEQA | California Environmental Quality Act |
| CO | carbon monoxide |
| CO2 | carbon dioxide |
| $CO_2e$ | Carbon Dioxide Equivalent |
| DPM | Diesel Particulate Matter |
| EPA | Environmental Protection Agency |
| GAMAQI | Guide for Assessing and Mitigating Air Quality Impacts |
| GHG | Greenhouse Gas |
| HDDT | Heavy-duty diesel truck |
| ISR | Indirect Source Review |
| ITE | Institute of Transportation Engineers |
| LOS | Level of Service |
| $MTCO_2e$ | metric tons carbon dioxide eqivalent |
| $MMTCO_2e$ | million metric tons carbon dioxide equivalent |
| $N_2O$ | nitrogen dioxide |
| $NO_x$ | nitrogen oxides |
| PM10 | particulate matter less than 10 microns in diameter |
| PM2.5 | particulate matter less than 2.5 microns in diameter |
| ppm | parts per million |
| ppt | parts per trillion |
| ROG | reactive organic gases |
| SJVAB | San Joaquin Valley Air Basin |
| SJVAPCD | San Joaquin Valley Air Pollution Control District |
| $SO_x$ | sulfur oxides |
| VOC | volatile organic compounds |

# SECTION 1: INTRODUCTION

## *1.1 - Purpose and Methods of Analysis*

The following air quality analysis was prepared to evaluate whether the expected criteria air pollutant emissions generated from the project would cause significant impacts to air resources in the Project area. This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000 et seq.). The methodology follows the Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI) prepared by the San Joaquin Valley Air Pollution Control District (SJVAPCD) for quantification of emissions and evaluation of potential impacts to air resources (SJVAPCD 2002) and the . The methodology also follows the SJVAPCD's Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (2009).

## *1.2 - Findings*

- Construction and operation of the project would exceed the SJVAPCD NOx regional significance emission thresholds.

- Operation of the project would not result in a localized carbon monoxide hot spot and thus would not cause or contribute to the violation of any federal or State carbon monoxide standard.

- The project is not consistent with the Air Quality Attainment Plans.

- The project would result in an air quality violation.

- The project would result in a cumulative impact.

- The project would not expose sensitive receptors to substantial pollutant concentrations.

- The project would not create objectionable odors that affect sensitive receptors near the project area.

## 1.3 - Mitigation Measures

**Mitigation Measure GHG-1**: The applicant shall implement an employer-based trip reduction program. The trip reduction program may include ride-sharing information, carpools, and vanpools.

**Mitigation Measure GHG-2**: The applicant shall implement a recycling program to reduce the quantity of solid waste disposed to landfills.

## 1.4 - Project Description

### 1.4.1 - PROJECT LOCATION

The proposed project is located in the Turlock area in Stanislaus County (Figure 1). The project site is located at 1301 Washington Road, on the southwest corner of Fulkerth Road and North Washington Road, east of North Commons Road outside the City limits of Turlock (Figure 2).

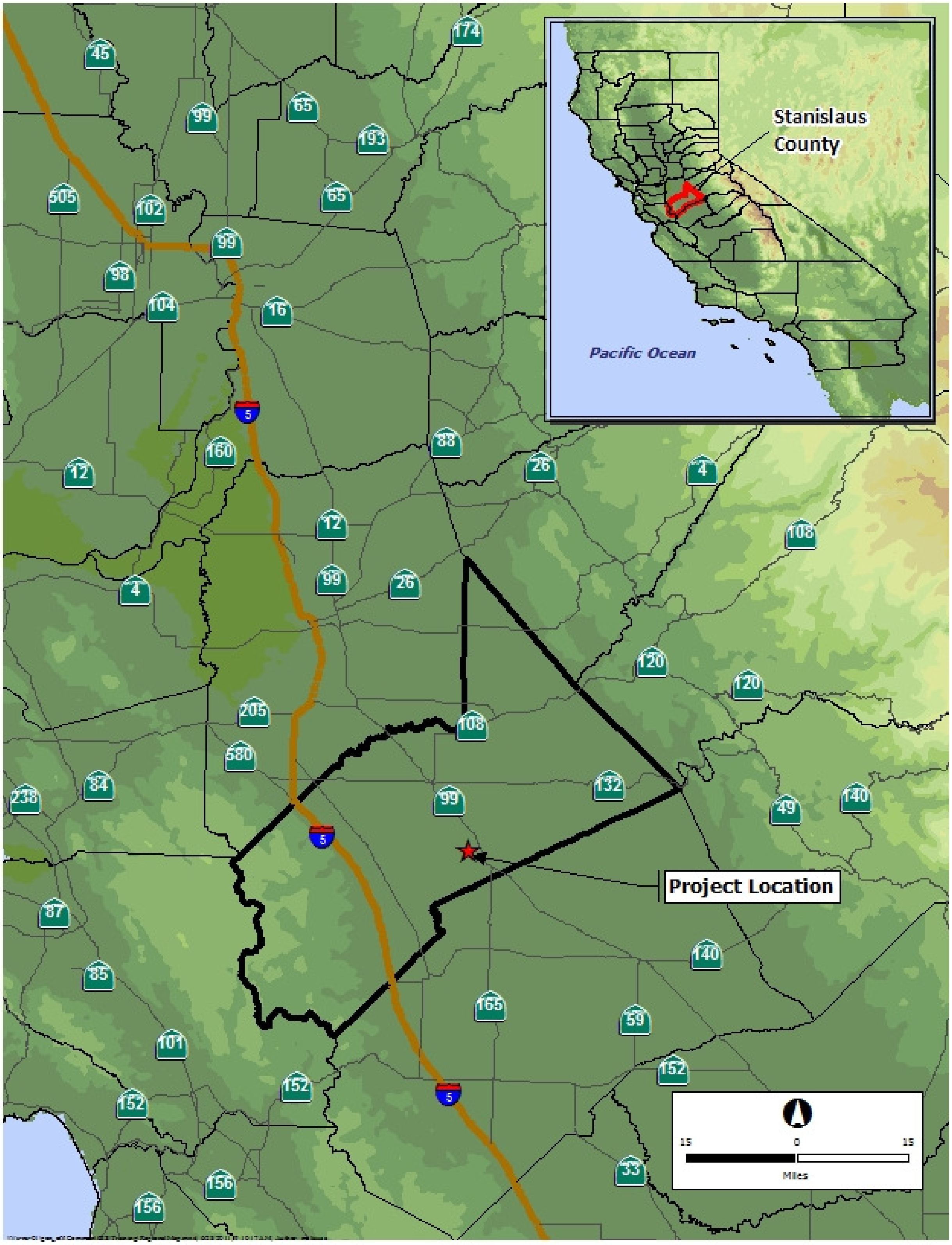
### 1.4.2 - PROPOSED LAND USES

The proposed project is the development of an 180,000 square foot agricultural warehouse for the receiving, storing, packing, and shipping of sweet potatoes and watermelons on ±74 acres (Figure 3). The warehouse would be located on an approximately 26-acre site located on the west side of Washington Road, north of the Turlock Irrigation District (TID) Lateral #4 Canal and south of Fulkerth Road. The remainder of the project site will be used for farm equipment storage, and growing fields for watermelon and sweet potatoes. Growing fields for the warehouse are located generally north and south of the site as far south as Stevinson and Merced/Atwater and as far north as Ceres. The majority of the growing fields are located to the south (Figure 4). Table 1 provides a summary of the Assessor Parcel Numbers (APNs) and acreages. The project site is designated by the Stanislaus County General Plan as Agriculture. The project site is zoned by the Stanislaus municipal code zoning ordinance as A-2-40 (General Agriculture). The proposed project requires the approval of a Use Permit to allow the establishment of the warehouse and associated facilities.

**Table 1: Project Parcels**

| Parcel Number | Acreage | General Plan Designation | Zoning |
|---|---|---|---|
| 023-039-016 | 13.00 | A (Agriculture) | A-2-40 (General Agriculture) |
| 023-039-017 | 26.49 | A (Agriculture) | A-2-40 (General Agriculture) |
| 023-039-018 | 35.20 | A (Agriculture) | A-2-40 (General Agriculture) |
| **Total** | **74.69** | A (Agriculture) | A-2-40 (General Agriculture) |

Source: Stanislaus County Use Permit PLN2012-0017, 2012




Quad Knopf

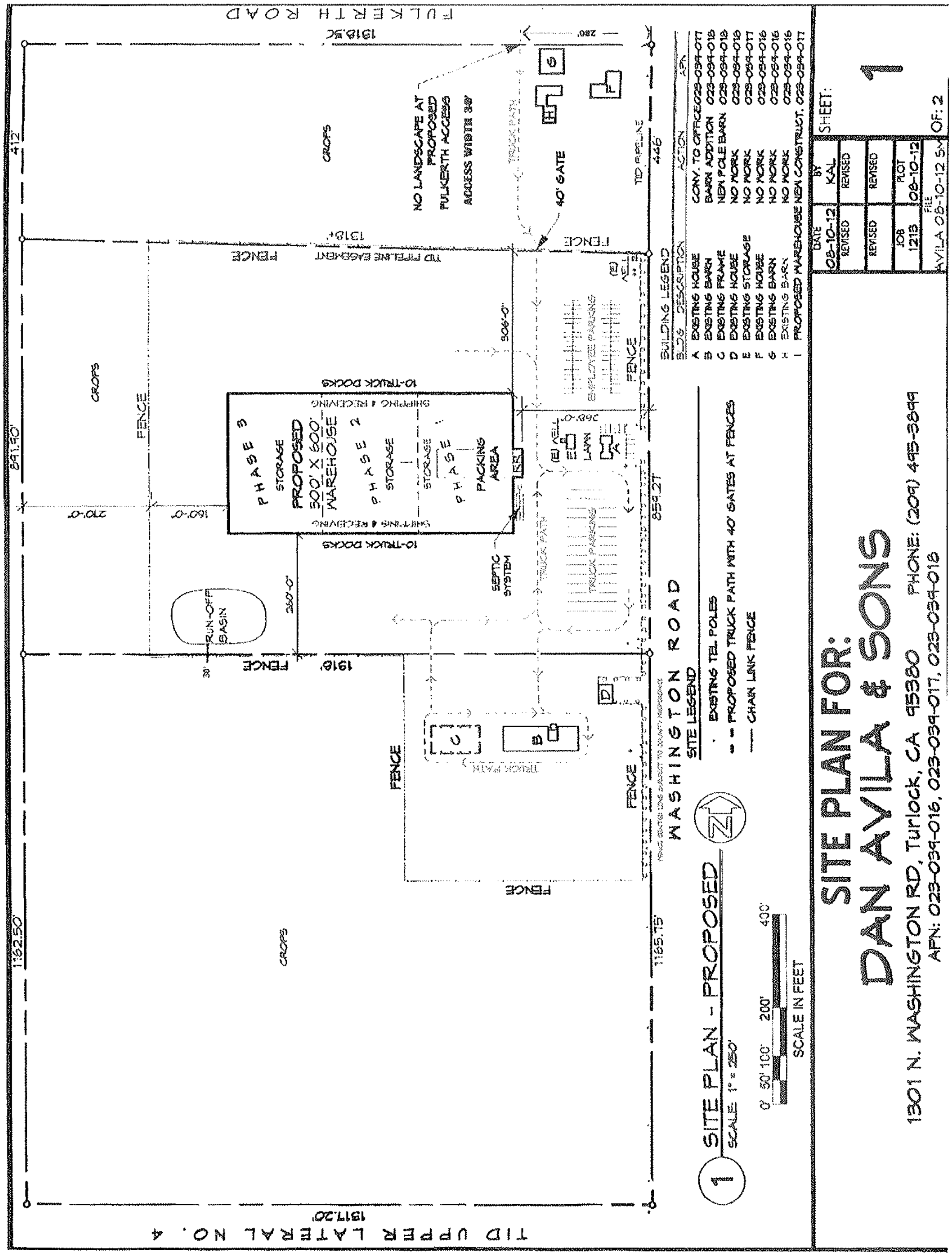
REGIONAL VICINTY MAP

Figure
1


Quad Knopf

*LOCAL VICINITY MAP*

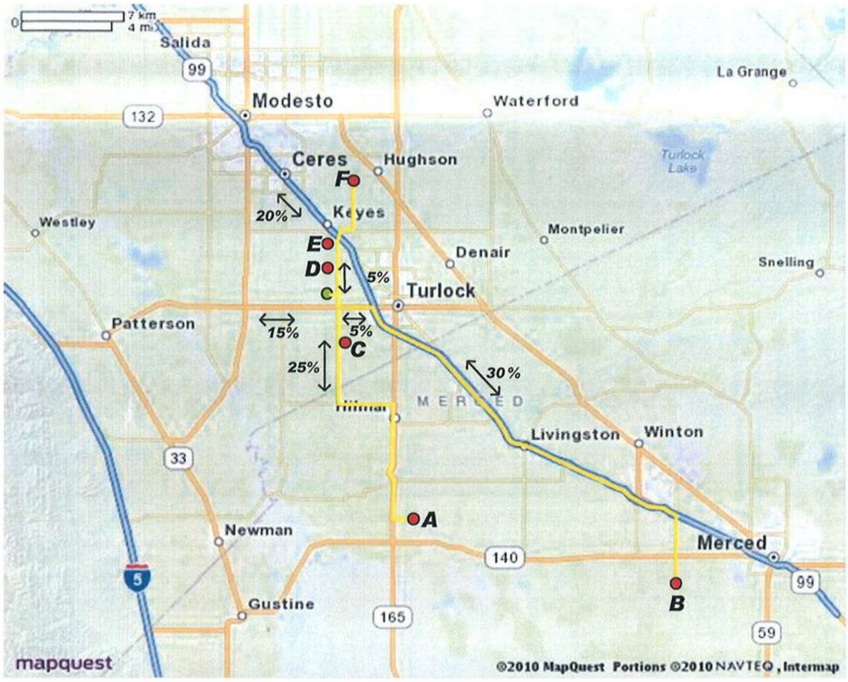
Figure
2




Quad Knopf

SITE PLAN

Figure 3




**Legend**

- Project Site
- Fields
- Projected Crop Truck Routes
- xx% Overall Trip Distribution (includes inbound crop trucks, outbound product trucks and employees)

A) 600 acres
B) 190 acres
C) 135 acres
D) 40 acres
E) 20 acres
F) 30 acres

*KD Anderson & Associates, Inc.*
Transportation Engineers

FIELD LOCATIONS AND
TRIP DISTRIBUTION

| Quad Knopf | *FIELD LOCATIONS AND TRIP DISTRIBUTION* | Figure 4 |
|---|---|---|

### 1.4.3 - PROJECT CONSTRUCTION SCHEDULE

The proposed project would be constructed in three phases over a period of six years as shown in Table 2. Each phase would take between three to four months to construct. In order to provide a "worst-case" scenario for potential construction emissions full buildout was assumed to occur within 12 months.

**Table 2: Project Construction Schedule**

| Phase | Construction Year | Square Feet | Length of Construction (Months) |
|---|---|---|---|
| 1 | 2013 | 60,000 | 3-4 |
| 2 | 2016 | 60,000 | 3-4 |
| 3 | 2019 | 60,000 | 3-4 |
| **Total** | **-** | **180,000** | **9 - 12** |

Source: Dan Avila, personal communication, December 12, 2012

### 1.4.4 - PROJECT TRAFFIC AND TRIP LENGTHS

The proposed project will construct an 180,000 square foot warehouse to be used to store, package and ship watermelons and sweet potatoes to distribution centers in Los Angeles, northern California, Oregon and Washington. The Institute of Transportation Engineers (ITE) publishes trip generation rates for a variety of land uses including Warehouses.

#### *Project Traffic*

Specific project information was provided by the applicant with regard to the intent of the project, a warehouse / shipping facility for watermelon and sweet potatoes. Based on information provided by the applicant, and calculated over an entire year consisting of a six day work week the site would be expected to generate 147 average daily trips. This consists of 80 employee trips, 23 field to warehouse trips, 21 warehouse to distribution center trips, 3 ancillary support trips and 20 local sales trips; these figures include both inbound and outbound trips. Table 3 shows the project applicant's estimated trip generation for the warehouse operation.

**Table 3: Project Trip Generation (Applicant Supplied Information)**

| Vehicle Type | Rate | Annual Trips | Average Daily Traffic |
|---|---|---|---|
| Employees (Passenger Vehicles) | 2 trips per day | 25,040 | 120 |
| Field Trucks (Watermelons) (Heavy-Duty Diesel Trucks) | 49,500 tons harvested* | 6,188[a] | 72 |
| Shipping Trucks (Watermelons) (Heavy-Duty Diesel Trucks) | 49,500 tons shipped | 4,950[b] | 52 |
| Field Trucks (Sweet Potatoes) | 8,000 tons harvested* | 890[c] | 3 |
| Shipping Trucks (Sweet Potatoes) | 8,0000 tons shipped | 1,600[d] | |
| Material Delivery (Medium –Heavy-Duty Vehicles) | 30 trips per month | 714 | 3 |
| Local Sales | 10 trips per day | 6,260 | 20 |
| **Total** | - | 45.642 | 147 |

Notes: Annual trips based on 2010 data supplied by applicant; includes 313 working days, product hauled per trailer (inbound and outbound), material delivery (bins, pallets, cartons) and local sales.
* Volumes rounded
a. 16 ton trucks
b. 20 ton trucks
c. 18 ton trucks
d, 10 ton trucks
Source: KD Anderson & Associates, Inc.

It is possible that a more intensive trip generating warehouse could use the site. Therefore, ITE Trip Generation, 8th Edition, was also considered to evaluate the project site. Evaluating the site using ITE rates provides a documented source to analyze a warehouse facility. The ITE Warehouse rates indicate a higher land use rate, and it provides a conservative estimate of trip generation relative to the projected land use.

Table 4 displays the daily trip generation for the proposed project using data contained in ITE Trip Generation. Trip generation for the 180,000 square foot warehouse was calculated following the guidelines for estimating trip generation in Chapter 3 of the Trip Generation Handbook, 2nd Edition. The proposed project is expected to generate 817 daily trips.

**Table 4: Project Trip Generation (ITE Trip Rates)**

| Land Use | Amount | Daily Trip Rate | Total Trips |
|---|---|---|---|
| Warehouse (LU 150) | 180,000 square feet | 4.54* | 817 |

* - rate based on fitted curve equation - $Ln(T) = 0.86Ln(X)+2.24$
Source: KD Anderson & Associates, Inc.

Based on direction received from Stanislaus County staff, the trip generation rates and trips developed using the applicant's seasonal estimates were used as the basis for the air quality analysis.

### *Trip Lengths*

Six growing fields ranging from 600 acres near Stevenson to 30 acres in Hughson will be used to supply the warehouse with product. Table 5 identifies the growing field locations, acreage, and trip length to the project site.

**Table 5: Field Locations**

| | Field Location | Acreage | Percentage of Total Acreage | One-Way Trip Length (miles) |
|---|---|---|---|---|
| A | Weir Rd/Atwater-Jordan Rd | 600 (550 watermelon, 50 sweet potato) | 59 | 18 |
| B | S. Buhach Rd/W. Dickenson Ferry Rd | 190 (watermelon) | 19 | 28 |
| C | W. Simmons Rd/S. Washington Rd. | 135 (sweet potato) | 13 | 2 |
| D | W. Tuolumne Rd/N. Washington Rd | 40 (sweet potato) | 4 | 0.5 |
| E | W. Taylor Rd/N. Washington Rd | 20 (sweet potato) | 2 | 2 |
| F | E. Grayson Rd/Tully Rd | 30 (sweet potato) | 3 | 8 |
| | Total | 1,015 | 100 | - |

Source: KD Anderson & Associates, Memorandum, 2010

The crops delivered to the warehouse will include sweet potatoes and watermelons. Melon season, i.e. harvesting and shipping of fruit, is generally between June 15$^{th}$ and October 15$^{th}$. Sweet potato harvest and shipping season is generally between September 20$^{th}$ through March. Harvest and shipping will normally occur six days per week with much of the crop shipped the same day. The product will be crated at the warehouse with about 50 percent shipped to southern California. The remaining 50 percent will be shipped to northern California, Oregon, and Washington.

# SECTION 2: SETTING

## *2.1 - Criteria Pollutant Regulatory Setting*

Air pollutants are regulated at the national, State, and air basin level; each agency has a different level of regulatory responsibility. The United States Environmental Protection Agency (EPA) regulates at the national level. The California Air Resources Board (ARB) regulates at the State level. The San Joaquin Valley Air Pollution Control District (SJVAPCD) regulates at the air basin level.

### 2.1.1 - NATIONAL AND STATE REGULATORY AGENCIES

The EPA handles global, international, national, and interstate air pollution issues and policies. The EPA sets national vehicle and stationary source emission standards, oversees approval of all State Implementation Plans, provides research and guidance for air pollution programs, and sets National Ambient Air Quality Standards, also known as federal standards. There are National standards for six common air pollutants, called criteria air pollutants, which were identified from provisions of the Clean Air Act of 1970. The criteria pollutants are:

- Ozone
- Particulate matter (PM10 and PM2.5)
- Nitrogen dioxide ($N_2O$)
- Carbon monoxide (CO)
- Lead
- Sulfur dioxide

The National standards were set to protect public health, including that of sensitive individuals; thus, the standards continue to change as more medical research is available regarding the health effects of the criteria pollutants. Primary National standards are the levels of air quality necessary, with an adequate margin of safety, to protect the public health (ARB 2008).

A State Implementation Plan is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain National standards. The State Implementation Plan for the State of California is administered by the ARB, which has overall responsibility for statewide air quality maintenance and air pollution prevention. The ARB also administers California Ambient Air Quality Standards for the 10 air pollutants designated in the California Clean Air Act. The 10 State air pollutants are the six National standards listed above as well as the following: visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride.

The national and State ambient air quality standards are summarized in Table 6.

Several pollutants listed in Table 6 are not addressed in this analysis. Analysis of lead is not included in this report because the project is not anticipated to emit lead. Visibility-reducing particles are not explicitly addressed in this analysis because particulate matter is addressed. The project is not expected to generate or be exposed to vinyl chloride because proposed project uses do not utilize the chemical processes that create this pollutant and there are no such uses in the project vicinity. The proposed project is not expected to cause exposure to hydrogen sulfide because it would not generate hydrogen sulfide in any substantial quantity. There is no generation of hydrogen sulfide usage in the project area.

### 2.1.2 - SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT

The air pollution control agency for the San Joaquin Valley Air Basin (SJVAB) is the SJVAPCD. The SJVAPCD is responsible for regulating emissions primarily from stationary sources, certain areawide sources, and indirect sources. The SJVAPCD maintains air quality monitoring stations throughout the Air Basin. The SJVAPCD, in coordination with the eight countywide transportation agencies, is also responsible for developing, updating, and implementing the Air Quality Attainment Plans (AQAPs) for the Air Basin. In addition, the SJVAPCD has prepared the Guide for Assessing and Mitigating Air Quality Impacts, which sets forth recommended thresholds of significance, analysis methodologies, and provides guidance on mitigating significant impacts.

## Table 6: Air Pollutants

| Ambient Air Quality Standards | | | | | | |
|---|---|---|---|---|---|---|
| **Pollutant** | **Averaging Time** | **California Standards [1]** | | **National Standards [2]** | | |
| | | **Concentration [3]** | **Method [4]** | **Primary [3,5]** | **Secondary [3,6]** | **Method [7]** |
| **Ozone ($O_3$)** | 1 Hour | 0.09 ppm (180 $\mu g/m^3$) | Ultraviolet Photometry | — | Same as Primary Standard | Ultraviolet Photometry |
| | 8 Hour | 0.070 ppm (137 $\mu g/m^3$) | | 0.075 ppm (147 $\mu g/m^3$) | | |
| **Respirable Particulate Matter (PM10)** | 24 Hour | 50 $\mu g/m^3$ | Gravimetric or Beta Attenuation | 150 $\mu g/m^3$ | Same as Primary Standard | Inertial Separation and Gravimetric Analysis |
| | Annual Arithmetic Mean | 20 $\mu g/m^3$ | | — | | |
| **Fine Particulate Matter (PM2.5)** | 24 Hour | — | — | 35 $\mu g/m^3$ | Same as Primary Standard | Inertial Separation and Gravimetric Analysis |
| | Annual Arithmetic Mean | 12 $\mu g/m^3$ | Gravimetric or Beta Attenuation | 15 $\mu g/m^3$ | | |
| **Carbon Monoxide (CO)** | 1 Hour | 20 ppm (23 $mg/m^3$) | Non-Dispersive Infrared Photometry (NDIR) | 35 ppm (40 $mg/m^3$) | — | Non-Dispersive Infrared Photometry (NDIR) |
| | 8 Hour | 9.0 ppm (10 $mg/m^3$) | | 9 ppm (10 $mg/m^3$) | — | |
| | 8 Hour (Lake Tahoe) | 6 ppm (7 $mg/m^3$) | | — | — | |
| **Nitrogen Dioxide ($NO_2$)[8]** | 1 Hour | 0.18 ppm (339 $\mu g/m^3$) | Gas Phase Chemiluminescence | 100 ppb (188 $\mu g/m^3$) | — | Gas Phase Chemiluminescence |
| | Annual Arithmetic Mean | 0.030 ppm (57 µg/m3) | | 0.053 ppm (100 $\mu g/m^3$) | Same as Primary Standard | |
| **Sulfur Dioxide ($SO_2$)[9]** | 1 Hour | 0.25 ppm (655 $\mu g/m^3$) | Ultraviolet Fluorescence | 75 ppb (196 $\mu g/m^3$) | — | Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method) |
| | 3 Hour | — | | — | 0.5 ppm (1300 $\mu g/m^3$) | |
| | 24 Hour | 0.04 ppm (105 $\mu g/m^3$) | | 0.14 ppm (for certain areas)[9] | — | |
| | Annual Arithmetic Mean | — | | 0.030 ppm (for certain areas)[9] | — | |
| **Lead[10,11]** | 30 Day Average | 1.5 $\mu g/m^3$ | Atomic Absorption | — | — | High Volume Sampler and Atomic Absorption |
| | Calendar Quarter | — | | 1.5 $\mu g/m^3$ (for certain areas)[11] | Same as Primary Standard | |
| | Rolling 3-Month Average | — | | 0.15 $\mu g/m^3$ | | |
| **Visibility Reducing Particles[12]** | 8 Hour | See footnote 12 | Beta Attenuation and Transmittance through Filter Tape | No National Standards | | |
| **Sulfates** | 24 Hour | 25 $\mu g/m^3$ | Ion Chromatography | | | |
| **Hydrogen Sulfide** | 1 Hour | 0.03 ppm (42 $\mu g/m^3$) | Ultraviolet Fluorescence | | | |
| **Vinyl Chloride[10]** | 24 Hour | 0.01 ppm (26 $\mu g/m^3$) | Gas Chromatography | | | |

Source: California Air Resources Board, 2012

See footnotes on next page.

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

8. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

9. On June 2, 2010, a new 1-hour $SO_2$ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 $SO_2$ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

   Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

10. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

11. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

12. In 1989, the ARB converted both the general statewide 10-mile visibility standard 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.

### 2.1.3 - RULES AND REGULATIONS

#### *California Air Resources Board Regulations*

ARB Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling adopts new section 2485 within Chapter 10, Article 1, Division 3, title 13 in the California Code of Regulations (ARB 2005b). The measure limits the idling of diesel vehicles to reduce emissions of toxics and criteria pollutants. The driver of any vehicle subject to this section: (1) shall not idle the vehicle's primary diesel engine for greater than five (5) minutes at any location; and (2) shall not idle a diesel-fueled auxiliary power system for more than five (5) minutes to power a heater, air conditioner, or any ancillary equipment on the vehicle if it has a sleeper berth and the truck is located within 100 feet of a restricted area (homes and schools).

ARB Final Regulation Order, Requirements to Reduce Idling Emissions from New and In-Use Trucks, would require that new 2008 and subsequent model-year heavy-duty diesel engines shall be equipped with an engine shutdown system that automatically shuts down the engine after 300 seconds of continuous idling operation once the vehicle is stopped, the transmission is set to "neutral" or "park", and the parking brake is engaged. If the parking brake is not engaged, then the engine shutdown system shall shut down the engine after 900 seconds of continuous idling operation once the vehicle is stopped and the transmission is set to "neutral" or "park."

ARB Regulation for In-Use Off-Road Diesel Vehicles. On July 26, 2007, the ARB adopted a regulation to reduce diesel particulate matter and NOx emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. In December 2011, the ARB adopted amendments to the regulation. The regulation imposes limits on idling, buying older off-road diesel vehicles, and selling vehicles beginning in 2008; requires all vehicles to be reported to ARB and labeled in 2009; and then in 2014 begins gradual requirements for fleets to clean up their fleet by getting rid of older engines, using newer engines, and installing exhaust retrofits. The overall purpose of the regulation is to reduce emissions of oxides of nitrogen (NOx) and particulate matter (PM) from off-road diesel vehicles.

Statewide Truck and Bus Rule. In December 2010, ARB adopted an amendment to a regulation to reduce emissions of diesel particulate matter, oxides of nitrogen and other criteria pollutants from in-use on-road diesel fueled vehicles, the heavy-duty vehicle greenhouse gas emission reduction measure, and the regulation to control emissions from in-use on-road diesel fueled heavy-duty drayage trucks at ports and intermodal rail yard facilities. The amended regulation would require installation of PM retrofits beginning January 1, 2012 and replacement of older trucks starting January 1, 2015. By January 1, 2023, almost all vehicles would need to have 2010 model year engines or equivalent.

### *San Joaquin Valley Air Pollution Control District Regulations*

The air quality attainment plans for the basin establishes a program of rules and regulations administered by the SJVAPCD to obtain attainment of the State and national air quality standards. The rules and regulations that apply to this project include, but are not limited to, the following.

SJVAPCD Rule 2201 – New and Modified Stationary Source Review. The purpose of this rule is to provide for the review of new and modified stationary sources of air pollution and to provide mechanisms including emission trade-offs by which Authorities to Construct for such sources may be granted, without interfering with the attainment or maintenance of Ambient Air Quality Standards; and to ensure no net increase in emissions above specified thresholds from new and modified stationary sources of all nonattainment pollutants and their precursors.

SJVAPCD Rule 3180 – Administrative Fees for Indirect Source Review (ISR). The purpose of this rule is to recover the SJVAPCD's costs for administering the requirements of Rule 9510 (Indirect Source Review).

SJVAPCD Rule 4102 – Nuisance. The purpose of this rule is to protect the health and safety of the public, and applies to any source operation that emits or may emit air contaminants or other materials.

SJVAPCD Rule 4601 – Architectural Coatings. The purpose of this rule is to limit Volatile Organic Compounds (VOC) emissions from architectural coatings. Emissions are reduced by limits on VOC content and providing requirements on coatings storage, cleanup, and labeling.

SJVAPCD Rule 4641 – Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations. The purpose of this rule is to limit VOC emissions from asphalt paving and maintenance operations. If asphalt paving will be used, then the paving operations will be subject to Rule 4641.

SJVAPCD Regulation VIII – Fugitive PM10 Prohibitions. Rule 8011-8081 are designed to reduce PM10 emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and trackout, etc.

SJVAPCD Rule 9410 – Employer Based Trip Reduction. The purpose of this rule is reduce vehicle miles traveled (VMT) from private vehicles used by employees to commute to and from their worksites to reduce emissions of oxides of nitrogen (NOx), volatile organic compounds (VOC) and particulate matter (PM).

SJVAPCD Rule 9510 – Indirect Source Review. This rule reduces the impact of NOx and PM10 emissions from growth on the Air Basin. The rule places application and emission reduction requirements on development projects meeting applicability criteria in order to reduce emissions through onsite mitigation, offsite SJVAPCD-administered projects, or a combination of the two. This project will submit an Air Impact Assessment application in accordance with Rule 9510's requirements.

**INDIRECT SOURCE REVIEW**

The Indirect Source Review (ISR) Rule (Rule 9510) and the Administrative ISR Fee Rule (Rule 3180) are the result of State requirements outlined in the California Health and Safety Code, Section 40604 and the SIP. The District's SIP commitments are contained in the District's 2003 PM10 Plan and Extreme Ozone Attainment Demonstration Plan (Plans), which identify the need to reduce PM10 and NOx in order to reach the ambient air-pollution standards on schedule. The Plans identify growth and reductions in multiple source categories. The Plans quantify the reduction from current District rules and proposed rules, as well as state and federal regulations, and then model future emissions to determine if the District may reach attainment for applicable pollutants.

This new rule applies to new developments seeking a final discretionary approval that are over a certain threshold size. Any of the following projects require an application to be submitted unless the projects have mitigated emissions of less than two tons per year each of NOx and PM10. Projects that are at least:

- 50 residential units;
- 2,000 square feet of commercial space;
- 9,000 square feet of educational space;
- 10,000 square feet of government space;
- 20,000 square feet of medical or recreational space;
- 25,000 square feet of light industrial space;
- 39,000 square feet of general office space;
- 100,000 square feet of heavy industrial space; and
- Or, 9,000 square feet of any land use not identified above.

Compliance with SJVAPCD Rule 9510 reduces the emissions impact of the project through incorporation of onsite measures as well as payment of an offsite fee that funds emission reduction projects in the Air Basin. The emissions analysis for Rule 9510 is highly detailed and is dependent on the exact project design that is expected to be constructed or installed. Compliance with Rule 9510 is separate from the CEQA process, though the control measures used to comply with Rule 9510 may be used to mitigate CEQA impacts. Minor changes to project components between the CEQA analysis and project construction often occur. An example of such a change is a change in construction year, operational year, etc. The required amounts of emission reductions required by Rule 9510 are as follows:

Construction Exhaust: 20 percent of the total NOx emissions, and 45 percent of the total PM10 exhaust emissions.

Operational Emissions: 33 percent of NOx emissions over the first 10 years, and 50 percent of the total PM10 emissions over the first 10 years.

Rule 9510 requires the submission of an Air Impact Assessment application to the SJVAPCD no later than applying for the final discretionary permit. The proposed project will submit an application concurrent with the processing of the project approval through Stanislaus County.

## 2.2 - Physical Setting

The project is located on the southwest corner of Fulkerth Road and North Washington Road, east of North Commons Road, in the Turlock area within the San Joaquin Valley Air Basin (Air Basin) (see Figure 4). Regional and local air quality is affected by topography, dominant airflows, atmospheric inversions, location and season.

### 2.2.1 - REGIONAL AIR QUALITY

Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographic features. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal and, consequently, their effect on air quality. The combination of topography and inversion layers generally prevents dispersion of air pollutants in the Air Basin.


Source: California Environmental Protection Agency
Air Resources Board

Quad Knopf

CALIFORNIA AIR BASINS

Figure 5

### *Climate and Meteorology*

The Air Basin has an "inland Mediterranean" climate and is characterized by long, hot, dry summers and short, foggy winters. Sunlight is a catalyst in the formation of some air pollutants (such as ozone), and the Air Basin averages more than 260 sunny days per year. Temperatures in the Turlock area range from an average high of 94.7 degrees Fahrenheit (°F) in July to an average low of 38 °F in December. The average annual rainfall in the project area as recorded between 1893 and 2012 was 11.86 inches.

### *Dominant Airflow*

Dominant airflows provide the driving mechanism for transport and dispersion of air pollution. Marine air moves into the Air Basin from the San Joaquin River Delta. The wind generally flows south-southeast through the valley, through the Tehachapi Pass and into the Mojave Desert Air Basin portion of Kern County. As the wind moves through the Air Basin, it mixes with the air pollution generated locally, generally transporting air pollutants from the north to the south in the summer and in a reverse flow in the winter.

### *Inversions*

Inversions are also an important component of regional air quality. In general, air temperature decreases with distance from the earth's surface, creating a gradient from warmer air near the ground to cooler air at elevation. Under normal circumstances, the air close to the earth warms as it absorbs surface heat and begins to rise. Winds occur when cooler air rushes in to take the place of the rising warm air. The wind and upward movement of air causes "mixing" in the atmosphere and can carry away or dilute pollution. Inversions occur when a layer of warm air sits over cooler air, trapping the cooler air beneath. These inversions trap pollutants from dispersing vertically and the mountains surrounding the Air Basin trap the pollutants from dispersing horizontally. Strong temperature inversions occur throughout the Air Basin in the summer, fall, and winter. Daytime temperature inversions occur at elevations of 2,000 to 2,500 feet above the San Joaquin Valley floor during the summer and at 500 to 1,000 feet during the winter. The result is a relatively high concentration of air pollution in the valley during inversion episodes. These inversions cause haziness, which, in addition to moisture, may include suspended dust, a variety of emissions from vehicles, particulates from wood stoves, and other pollutants.

## 2.2.2 - AIR POLLUTANT EMISSIONS INVENTORY

An emissions inventory is an account of the amount of air pollution generated by various emissions sources. To estimate the sources and quantities of pollution, the ARB, in cooperation with local air districts, other government agencies, and industry, maintains an inventory of

California emission sources. Sources are subdivided into the four major emission categories: mobile, stationary, areawide, and natural sources.

Mobile sources include on-road sources and off-road mobile sources. The on-road emissions inventory, which includes automobiles, motorcycles, and trucks, is based on an estimation of population, activity, and emissions of the on-road motor vehicles used in California. The off-road emissions inventory is based on an estimate of the population, activity, and emissions of various off-road equipment, including recreational vehicles, farm and construction equipment, lawn and garden equipment, forklifts, locomotives, commercial marine ships, and marine pleasure craft.

Stationary sources are large, fixed sources of air pollution, such as power plants, refineries, and manufacturing facilities. Stationary sources also include aggregated point sources. These include many small point sources, or facilities, that are not inventoried individually but are estimated as a group and reported as a single-source category. Examples include gas stations and dry cleaners. Each of the local air districts estimates the emissions for the majority of stationary sources within its jurisdiction. Stationary source emissions are based on estimates made by facility operators and local air districts. Emissions from specific facilities can be identified by name and location.

Areawide sources include source categories associated with human activity that take place over a wide geographic area. Emissions from areawide sources may be either from small, individual sources, such as residential fireplaces, or from widely distributed sources that cannot be tied to a single location, such as consumer products, and dust from unpaved roads or farming operations (such as tilling).

Natural, or non-anthropogenic, sources include source categories with naturally occurring emissions such as geogenic (e.g., petroleum seeps), wildfires, and biogenic emissions from plants.

### *Stanislaus Emissions Inventory*

Emissions inventory information is compiled by ARB and is available on its Almanac Emission Projection Data website. Table 7 summarizes the Air Basins's most recently available emissions inventory estimate emissions for the main pollutants of concern in the Air Basin. Included are reactive organic gases (ROG), carbon monoxide (CO), oxides of nitrogen (NOx), and particulate matter (PM). Particulate matter is a general category that is further divided by the size of the particulates, into PM10 for particulates 10 microns or less in diameter, and PM2.5 for particulates 2.5 microns or less in diameter. Table 8 summarizes Stanislaus County's most recently available emissions inventory estimate for the main pollutants of concern for the Air

Basin.

**Table 7: 2008 San Joaquin Valley Air Basin Emissions Inventory**

| Emissions Classification | Emission Category | Pollutants (tons per day) | | | | |
|---|---|---|---|---|---|---|
| | | **ROG** | **CO** | $NO_x$ | PM10 | PM2.5 |
| Stationary | Fuel Combustion | 11.1 | 36.3 | 57.9 | 6.9 | 6.7 |
| | Waste Disposal | 2.6 | 0.5 | 0.2 | 0.1 | 0.1 |
| | Cleaning and Surface Coatings | 15.3 | 0.0 | 0.0 | 0.1 | 0.1 |
| | Petroleum Production and Marketing | 36.1 | 1.1 | .4 | 0.2 | 0.1 |
| | Industrial Processes | 18.6 | 4.0 | 21.4 | 17.8 | 10.4 |
| | *Total Stationary* | *83.7* | *41.8* | *80.0* | *25.1* | *17.5* |
| Areawide | Solvent Evaporation | 58.9 | - | - | - | - |
| | Miscellaneous Processes | 90.6 | 268.4 | 17.9 | 250.9 | 67.7 |
| | *Total Areawide* | *149.5* | *268.4* | *17.9* | *250.9* | *67.7* |
| Mobile | On-Road Motor Vehicles | 79.2 | 705.6 | 330.0 | 14.6 | 11.8 |
| | Other Mobile Sources | 56.9 | 336.5 | 138.2 | 9.1 | 8.3 |
| | *Total Mobile* | *136.1* | *1,042.1* | *468.2* | *23.7* | *20.2* |
| Natural (Non-Anthropogenic) | Biogenic Sources | 210.8 | - | - | - | - |
| | Geogenic Sources | 0.3 | - | - | - | - |
| | Wildfires | 24.2 | 347.5 | 10.6 | 35.1 | 29.8 |
| | *Total Natural* | *235.2* | *347.5* | *10.6* | *35.1* | *29.8* |
| **San Joaquin Valley Air Basin Total*** | | **604.4** | **1,699.7** | **576.7** | **334.8** | **135.1** |

Notes:
*Total based on non-rounded emissions estimates.
Source: California Air Resources Board, 2009.

## Table 8: 2008 Stanislaus County Emissions Inventory

| Emissions Classification | Emission Category | Pollutants (tons per day) ROG | CO | NOx | PM10 | PM2.5 |
|---|---|---|---|---|---|---|
| Stationary | Fuel Combustion | 0.25 | 1.79 | 3.67 | 0.38 | 0.37 |
| | Waste Disposal | 0.34 | 0.13 | 0.03 | 0.03 | 0.03 |
| | Cleaning and Surface Coatings | 2.30 | - | - | 0.03 | 0.03 |
| | Petroleum Production and Marketing | 0.85 | 0.00 | 0.00 | 0.00 | 0.00 |
| | Industrial Processes | 1.30 | 0.02 | 0.44 | 2.02 | 1.00 |
| *Total Stationary Sources* | | *5.04* | *1.95* | *4.14* | *2.47* | *1.42* |
| Areawide | Solvent Evaporation | 6.76 | - | - | - | - |
| | Miscellaneous Processes | 15.14 | 20.68 | 1.64 | 24.60 | 6.84 |
| *Total Areawide Sources* | | *21.90* | *20.68* | *1.64* | *24.60* | *6.84* |
| Mobile | On-Road Motor Vehicles | 9.62 | 81.11 | 28.38 | 1.23 | 0.96 |
| | Other Mobile Sources | 5.71 | 29.39 | 13.55 | 0.85 | 0.76 |
| *Total Mobile Sources* | | *15.33* | *110.50* | *41.93* | *2.08* | *1.72* |
| Natural (Non-Anthropogenic) | Biogenic Sources | 11.99 | - | - | - | - |
| | Wildfires | 1.10 | 15.74 | 0.51 | 1.61 | 1.37 |
| *Total Natural (Non-Anthropogenic) Sources* | | *13.09* | *15.74* | *0.51* | *1.61* | *1.37* |
| **Stanislaus County Total*** | | **55.37** | **148.87** | **48.22** | **30.75** | **11.35** |

Notes:
Total based on non-rounded emissions estimates.
Source: California Air Resources Board, 2009

ROG. Areawide sources contributed the majority of ROG emissions in Stanislaus County in 2008, generating approximately 39 percent of the total inventory. On-Road Motor Vehicle emissions constituted the majority of ROG source emissions. Within area wide sources, the largest single contributor of ROG emissions was farming operations, with 24 percent of the County's total area wide ROG inventory. The next largest contributor of ROG emissions came from mobile sources with approximately 28 percent of the total inventory. On-Road Mobile sources accounted for approximately 17 percent of the 2008 emissions inventory. Natural Sources accounted for approximately 24 percent of the total ROG inventory in Stanislaus County.

CO. Mobile sources generated the majority of CO emissions in the County at approximately 74 percent of the total CO inventory, with on-road motor vehicles contributing approximately 54 percent.

$NO_x$. Mobile sources generated the majority of $NO_x$ emissions in the County at approximately 87 percent of the total $NO_x$ inventory, with on-road motor vehicles contributing approximately 59 percent. Heavy-duty diesel trucks are the predominant source of $NO_x$ from on-road vehicles, contributing approximately 36 percent of the County's total $NO_x$ inventory.

PM10. For PM10, area wide sources contributed approximately 80 percent of the 2008 inventory. The main PM10-generating, area wide sources include farming operations, fugitive windblown dust, and paved and unpaved road dust.

PM2.5. Area wide sources contributed approximately 60 percent of the 2008 County inventory. The main PM2.5-generating area wide source came from farming and residential fuel combustion, contributing 35 percent of the County's total PM2.5 emissions. Mobile sources contributed approximately 15 percent of the County's total PM2.5 inventory.

### 2.2.3 - LOCAL AIR QUALITY

Existing local air quality, historical trends, and projections of air quality are best evaluated by reviewing relevant air pollutant concentrations from near the project area. The ARB and the SJVAPCD each operate one air monitoring station in Stanislaus County. The Turlock S. Minaret Street monitoring site operated by the SJVAPCD, located 3.82 miles southeast of the project site is the closest monitoring station to the project site; it measures gaseous (ozone, carbon monoxide, nitrogen dioxide), particulate matter, and meteorological data. Because of increased regulations reducing oxides of sulfur ($SO_x$) from fuel, the Air Basin is in attainment for sulfur dioxide ($SO_2$) consequently this pollutant is only monitored at the Fresno First Street Monitoring station located 80 miles southeast of the project site. Table 9 summarizes 2009 through 2011 published monitoring data from ARB's Aerometric Data Analysis and Management System for both stations.

**Table 9: Air Quality Monitoring Summary**

| Pollutant | Averaging Time (Units) | 2009 | 2010 | 2011 |
|---|---|---|---|---|
| Ozone | Maximum 1 Hour (ppm) | **0.125** | **0.123** | **0.111** |
| | Days > State Standard (0.09 ppm) | 8 | 8 | 4 |
| | Maximum 8 Hour (ppm) | **0.102** | **0.096** | **0.093** |
| | Days > 2008 Federal Standard (0.075 ppm) | 18 | 10 | 17 |
| | Days > State Standard (0.07 ppm) | 34 | 19 | 34 |
| Nitrogen dioxide ($NO_2$) | Annual Average (ppm) | 0.012 | 0.010 | 0.011 |
| | Max 1 Hour (ppm) | 0.058 | 0.050 | 0.054 |
| | Days > State 1 Hour Standard (0.18 ppm) | 0 | 0 | 0 |
| | Days > State Annual Average (0.030 ppm) | 0 | 0 | 0 |
| Sulfur dioxide ($SO_2$) | Maximum 1 Hour (ppm) | 0.000 | 0.000 | 0.000 |
| | Maximum 24 Hour (ppm) | 0.005 | 0.004 | 0.004 |
| | Days > State 24 Hour Standard (0.04 ppm) | 0 | 0 | 0 |
| | Days > State 1 Hour Standard (0.25 ppm) | 0 | 0 | 0 |
| | Annual Average (ppm) | 0.001 | 0.000 | 0.000 |
| Carbon monoxide (CO) | Maximum 1 Hour (ppm)[1] | 2.13 | 2.19 | 2.05 |
| | Maximum 8 Hour (ppm) | 1.49 | 1.53 | 1.44 |
| | Days > State 1 Hour Standard (9 ppm) | 0 | 0 | 0 |
| | Days > State 8 Hour Standard (20 ppm) | 0 | 0 | 0 |
| | Days > Federal 1 Hour Standard (9 ppm) | 0 | 0 | 0 |
| | Days > Federal 8 Hour Standard (35 ppm) | 0 | 0 | 0 |
| Fine particulate matter (PM10) | State Annual Average (20 $\mu g/m^3$) | **31.0** | **23.7** | * |
| | Maximum 24 Hour ($\mu g/m^3$) | 64.6 | 74.6 | 69.0 |
| | Days > State Standard (50 $\mu g/m^3$) | 72 | 23.7 | * |
| | Days > Federal Standard (150 $\mu g/m^3$) | 0 | 0 | 0 |
| Ultra fine particulate matter (PM2.5) | Annual Average ($\mu g/m^3$) | **16.0** | **12.7** | **17.1** |
| | Annual Average State Standard (12 $\mu g/m^3$) | - | - | - |
| | Annual Average Federal Standard (15 $\mu g/m^3$) | - | - | - |
| | Maximum 24 Hour ($\mu g/m^3$) | 65.7 | 56.6 | 77.9 |
| | Est. Days > Federal Standard (35 $\mu g/m^3$) | 35 | * | 36.3 |

Notes:
> = exceed ppm = parts per million Exceedances are listed in bold.
* There was insufficient (or no) data available to determine the value.
1. The CARB does not report 1-hour average CO concentrations in its database, only 8-hour CO concentrations. Therefore, the 1-hour CO concentration was derived by dividing the 8-hour concentration by 0.7.
2. Measurements of PM10 and PM2.5 are made every sixth day. Data is the estimated number of days that the standard would have been exceeded had measurements been collected every day.
Source: California Air Resources Board, 2012.

As shown in Table 9, ambient air pollution concentrations in the project area regularly exceeded the state 1-hour ozone standard and the federal 8-hour standard in the last 3 years. In the same timeframe, the project area exceeded the state daily PM10 standard and the federal PM2.5 standards. However, the project area did not exceed the federal or state CO, $NO_2$, and $SO_2$ standards, nor did the project area exceed the federal PM10 standard.

### *Local Sources of Air Pollution*

Local sources of air pollution include mobile source emissions (traffic) from the adjacent roadways (North Washington Road and Fulkerth Road) and from State Route (SR) 99, located 1.4 miles east of the project site. Additional sources of air pollution include area sources from farming activities on the surrounding lands. Farming activities generate fugitive dust (PM10 and PM2.5) from tilling and windblown dust, and exhaust emissions (ROG, NOx, and CO) from agricultural equipment.

### *Sensitive Receptors*

Certain populations, such as children, the elderly, and persons with preexisting respiratory or cardiovascular illness, are particularly sensitive to the health impacts of air pollution. For purposes of CEQA, the SJVAPCD considers a sensitive receptor to be a location that houses or attracts children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Examples of sensitive receptors include hospitals, residences, convalescent facilities, and schools. Office workers may also be considered sensitive receptors, based on their proximity to sources of toxic air contaminants and that workers may be exposed over the duration of their employment. The nearest sensitive receptors to the project is the existing residential home located 250 feet east of the project site's northern boundary on the southeast corner of North Washington Road and Fulkerth Road. Additional sensitive receptors are the residential homes located 280 feet northeast of the project site's northern boundary on the northeast corner of North Washington Road and Fulkerth Road.)

## 2.2.4 - ATTAINMENT PLANS

As described above under Federal and State Regulatory Agencies, a State Implementation Plan is a federal requirement; each state prepares a plan to describe existing air quality conditions and measures that will be followed to attain and maintain the National Ambient Air Quality Standards. In addition, state ozone standards have planning requirements. However, state PM10 standards have no attainment planning requirements, but air districts must demonstrate that all measures feasible for the area have been adopted.

### *Ozone Plans*

The Air Basin is designated nonattainment of state and federal health-based air quality standards for ozone. To meet CAA requirements for the one-hour ozone standard, the SJVAPCD adopted an Extreme Ozone Attainment Demonstration Plan in 2004, with an attainment date of 2010. EPA revoked the federal 1-hour ozone standard and replaced it with an 8-hour standard. Although EPA revoked the 1-hour ozone standard effective June 15, 2005, the requirement to submit a plan for that standard remained in effect for the San Joaquin Valley. On June 30, 2009, EPA proposed approval and partial disapproval of San Joaquin Valley's 2004 Extreme Ozone Attainment Plan for 1-hour ozone. EPA proposed to approve the plan revisions for the San Joaquin Valley as meeting applicable Clean Air Act requirements except for the provision addressing the reasonably available control technology requirements that the State withdrew. On December 11, 2009, the final approval of the San Joaquin Valley's 2004 Extreme Ozone Attainment Demonstration Plan was signed by EPA. The plan, prepared by the San Joaquin Valley Air Pollution Control District, showed that the area would have in place the controls necessary to meet the 1-hour ozone standard by the area's Clean Air Act deadline of 2010, however the District was unable to show attainment by the 2010 deadline. As a result, pursuant to Section 185 of the Clean Air Act, the SJVAPCD Governing Board approved amendments to Rule 3170 to provide for a $12 per vehicle fee to all motor vehicles registered in the Air Basin to achieve surplus emissions reductions to remediate air pollution problems caused by motor vehicles. The vehicle fee will sunset upon attainment of the one-hour ozone standard. An anticipated attainment date has not been provided by the SJVAPCD.

The Air Basin is classified as serious nonattainment for the federal 8-hour ozone standard with an attainment date of 2013. On April 30, 2007, the SJVAPCD's Governing Board adopted the 2007 Ozone Plan, which contained analysis showing a 2013 attainment target to be unfeasible. The 2007 Ozone Plan details the plan for achieving attainment on schedule with an "extreme nonattainment" deadline of 2026. At its adoption of the 2007 Ozone Plan, the SJVAPCD also requested a reclassification to extreme nonattainment. CARB approved the plan in June 2007.

In December 2008, the SJVAPCD adopted the "Amendment to the 2007 Ozone Plan to Extend the Rule Adoption Schedule for Organic Waste Operations." This amendment revised a table of the 2007 plan to extend the completion date for the Composting Green Waste control measure to the fourth quarter of 2010. This extension allows time for further study before rule adoption, and this rule extension does not impact reasonable further progress or the attainment demonstration. EPA proposed approval of the 2007 Ozone Plan in October 2011.

State ozone standards do not have an attainment deadline but require implementation of all feasible measures to achieve attainment at the earliest date possible.

#### *Particulate Matter Plans*

The Air Basin was designated nonattainment of state and federal health-based air quality standards for PM10. To meet Clean Air Act requirements for the PM10 standard, the SJVAPCD adopted a PM10 Attainment Demonstration Plan (Amended 2003 PM10 Plan and 2006 PM10 Plan), which has an attainment date of 2010.

The SJVAPCD adopted the 2007 PM10 Maintenance Plan and Request for Redesignation (2007

PM10 Plan) on September 20, 2007. The 2007 PM10 Plan contains modeling demonstrations that show the Air Basin will not exceed the federal PM10 standard for 10 years after the expected EPA redesignation, monitoring, and verification measures, and a contingency plan. Even though EPA revoked the federal annual PM10 standard, the 2007 PM10 Maintenance Plan addresses both the annual and 24-hour standards because both standards were included in the EPA-approved State Implementation Plan. EPA finalized the determination that the Air Basin attained the PM10 standards on October 17, 2007, effective October 30, 2007. On September 25, 2008, EPA redesignated the Air Basin as attainment for the federal PM10 standard and approved the PM10 Maintenance Plan.

The Air Basin is also designated nonattainment for the new federal PM2.5 annual standard. The SJVAPCD adopted the 2008 PM2.5 Plan on April 30, 2008. The PM2.5 Plan that demonstrates the Air Basin will attain the 1997 federal standard by 2015 and make progress toward attaining the 2006 federal 24-hour standard. Barring delays due to legal challenges, the SJVAPCD estimates that attainment plans for the federal 2006 standard will be required by 2012 or 2013 with an attainment deadline of 2020. Measures contained in the 2003 PM10 Plan will also help reduce PM2.5 levels and will provide progress toward attainment until new measures are implemented for the PM2.5 Plan, if needed.

State PM10 standards have no attainment planning requirements, but air districts must demonstrate that all measures feasible for the area have been adopted.

### 2.2.5 - ATTAINMENT STATUS

The EPA and the ARB designate air basins where ambient air quality standards are exceeded as “nonattainment” areas. If standards are met, the area is designated as an “attainment” area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered “unclassified.” National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards.

The proposed project is within the SJVAB. The current attainment designations for the basin are shown in Table 10. The basin is designated as nonattainment for the State and national ozone, and PM2.5, ambient air quality standards. The basin is designated as attainment for federal PM10 standards and nonattainment for state PM10 standards.

**Table 10: San Joaquin Valley Air Basin Attainment Status**

| Pollutant | State Status | National Status |
|---|---|---|
| Ozone | Nonattainment | Nonattainment |
| Carbon Monoxide | Attainment/Unclassified | Attainment/Unclassified |
| Nitrogen Dioxide | Attainment | Unclassified |
| Sulfur Dioxide | Attainment | Attainment/Unclassified |
| PM10 | Nonattainment | Nonattainment |
| PM2.5 | Nonattainment | Nonattainment |
| Lead | Attainment | Attainment |
| Sulfates | Attainment | No Federal Standards |
| Hydrogen Sulfide | Unclassified | No Federal Standards |
| Visibility Reducing Particles | Unclassified | No Federal Standards |

Source: San Joaquin Valley Air Pollution Control District, 2011

## *2.3 - Climate Change*

Climate change is a change in the average weather of the earth that is measured by alterations in wind patterns, storms, precipitation, and temperature. These changes are assessed using historical records of temperature changes occurring in the past, such as during previous ice ages. Many of the concerns regarding climate change use this data to extrapolate a level of statistical significance specifically focusing on temperature records from the last 150 years (the Industrial Age) that differ from previous climate changes in rate and magnitude.

The United Nations Intergovernmental Panel on Climate Change constructed several emission trajectories of greenhouse gases needed to stabilize global temperatures and climate change impacts. The Intergovernmental Panel on Climate Change predicted that global mean temperature change from 1990 to 2100, given six scenarios, could range from 1.1 degrees Celsius (°C) to 6.4°C. Regardless of analytical methodology, global average temperatures and sea levels are expected to rise under all scenarios (IPCC 2007a).

In California, climate change may result in consequences such as the following (from CCCC 2006 and Moser et al. 2009).

- A reduction in the quality and supply of water from the Sierra snowpack. If heat-trapping emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. This can lead to challenges in securing adequate water supplies. It can also lead to a potential reduction in hydropower.

- 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 percent 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 percent more northern California fires by the end of the century by drying out and increasing the flammability of forest vegetation.

- 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 percent 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.

- 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 heat-trapping 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. Elevations 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.

- Damage to marine ecosystems and the natural environment.

- An increase in infections, disease, asthma, and other health-related problems.

- A decrease in the health and productivity of California’s forests.

### 2.3.1 - GREENHOUSE GASES

Gases that trap heat in the atmosphere are referred to as greenhouse gases. The effect is analogous to the way a greenhouse retains heat. Common greenhouse gases include water vapor, carbon dioxide, methane, nitrous oxides, chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, ozone, and aerosols. Natural processes and human activities emit greenhouse gases. The presence of greenhouse gases in the atmosphere affects the earth’s temperature. It is believed that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

Climate change is driven by forcings and feedbacks. Radiative forcing is the difference between the incoming energy and outgoing energy in the climate system. Positive forcing tends to warm the surface while negative forcing tends to cool it. Radiative forcing values are typically expressed in watts per square meter. A feedback is a climate process that can strengthen or weaken a forcing. For example, when ice or snow melts, it reveals darker land underneath which absorbs more radiation and causes more warming. The global warming potential is the potential of a gas or aerosol to trap heat in the atmosphere. The global warming potential of a gas is essentially a measurement of the radiative forcing of a greenhouse gas compared with the reference gas, carbon dioxide.

Individual greenhouse gas compounds have varying global warming potential and atmospheric lifetimes. Carbon dioxide, the reference gas for global warming potential, has a global warming potential of one. The global warming potential of a greenhouse gas is a measure of how much a given mass of a greenhouse gas is estimated to contribute to global warming. To describe how much global warming a given type and amount of greenhouse gas may cause, use is made of a metric called the carbon dioxide equivalent. The calculation of the carbon dioxide equivalent is a consistent methodology for comparing greenhouse gas emissions since it normalizes various greenhouse gas emissions to a consistent metric reference gas, carbon dioxide. For example, methane's warming potential of 21 indicates that methane has a 21 times greater warming affect than carbon dioxide on a molecule per molecule basis. A carbon dioxide equivalent is the mass emissions of an individual greenhouse gas multiplied by its global warming potential.

Greenhouse gases as defined by AB 32 include the following gases: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexaflouride. Greenhouse gases as defined by AB 32 are summarized in Table 11.

Greenhouse gases not defined by AB 32 include water vapor, ozone, and aerosols. Water vapor is an important component of our climate system and is not regulated. Ozone and aerosols are short-lived greenhouse gases; global warming potentials for short-lived greenhouse gases are not defined by the IPCC. Aerosols can remain suspended in the atmosphere for about a week and can warm the atmosphere by absorbing heat and cool the atmosphere by reflecting light. Black carbon is a type of aerosol that can also cause warming from deposition on snow.

**Table 11: Greenhouse Gases**

| Greenhouse Gas | Description and Physical Properties | Sources |
|---|---|---|
| Nitrous oxide | Nitrous oxide is also known as laughing gas and is a colorless greenhouse gas. It has a lifetime of 114 years. Its global warming potential is 310. | Microbial processes in soil and water, fuel combustion, and industrial processes. |
| Methane | Methane is a flammable gas and is the main component of natural gas. It has a lifetime of 12 years. Its global warming potential is 21. | Methane is extracted from geological deposits (natural gas fields). Other sources are landfills, fermentation of manure, decay of organic matter, and cattle. |
| Carbon dioxide | Carbon dioxide ($CO_2$) is an odorless, colorless, natural greenhouse gas. Carbon dioxide's global warming potential is 1. The concentration in 2005 was 379 parts per million (ppm), which is an increase of about 1.4 ppm per year since 1960. | Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood. |
| Chloro-fluorocarbons | These are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. They are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). Global warming potentials range from 3,800 to 8,100. | Chlorofluorocarbons were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone. The Montreal Protocol on Substances that Deplete the Ozone Layer prohibited their production in 1987. |
| Hydro-fluorocarbons | Hydrofluorocarbons are a group of greenhouse gases containing carbon, chlorine, and at least one hydrogen atom. Global warming potentials range from 140 to 11,700. | Hydrofluorocarbons are synthetic manmade chemicals used as a substitute for chlorofluorocarbons in applications such as automobile air conditioners and refrigerants. |
| Per-fluorocarbons | Perfluorocarbons have stable molecular structures and only break down by ultraviolet rays about 60 kilometers above Earth's surface. Because of this, they have long lifetimes, between 10,000 and 50,000 years. Global warming potentials range from 6,500 to 9,200. | Two main sources of perfluorocarbons are primary aluminum production and semiconductor manufacturing. |
| Sulfur hexafluoride | Sulfur hexafluoride is an inorganic, odorless, colorless, and nontoxic, nonflammable gas. It has a lifetime of 3,200 years. It has a high global warming potential, 23,900. | This gas is manmade and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas. |

Sources: Compiled from a variety of sources, primarily IPCC 2007a and IPCC 2007b.

There are no adverse health effects from the concentration of greenhouse gases in the atmosphere at the current levels, with the exception of ozone and aerosols (particulate matter). The potential health effects of ozone and particulate matter are discussed in criteria pollutant analyses. At very high concentrations, carbon dioxide, methane, sulfur hexafluoride, and some chlorofluorocarbons can cause suffocation as the gases can displace oxygen (NIOSH 2005, OSHA 2003).

#### *Emission Inventories*

Emissions worldwide were approximately 49,000 million metric tons of carbon dioxide equivalents ($MMTCO_2e$) in 2004 (IPCC 2007b). In 2004, greenhouse gas emissions in the United States were 7,074.4 $MMTCO_2e$. California is the 2nd largest contributor of greenhouse gases in the U.S. and the 16th largest in the world.

According to the ARB's recent greenhouse gas inventory for the State, the single largest source of greenhouse gases in California is transportation, contributing 37 percent of the State's total greenhouse gas emissions in 2008. Electricity generation (both in and out of State) is the 2nd largest source contributing 25 percent of the State's greenhouse gas emissions. The inventory for California's greenhouse gas emissions between 2008 and 2008, by even years is presented in

**Table 12: CaliforniaGreenhouse Gas Inventory 2000 to 2008**

| Main Sector[1] | Emissions MMTCO2e | | | | |
|---|---|---|---|---|---|
| | **2000** | **2002** | **2004** | **2006** | **2008** |
| Agriculture & Forestry | 25.63 | 28.61 | 29.01 | 30.08 | 28.25 |
| Commercial | 12.80 | 14.44 | 13.20 | 13.01 | 14.69 |
| Electricity Generation (Imports) | 44.31 | 56.00 | 62.92 | 51.68 | 61.58 |
| Electricity Generation (In state) | 60.76 | 51.57 | 58.09 | 56.99 | 55.74 |
| Industrial | 104.56 | 103.57 | 97.76 | 97.80 | 100.03 |
| Not Specified | 8.72 | 10.26 | 11.85 | 13.18 | 14.02 |
| Residential | 30.13 | 29.35 | 29.34 | 28.46 | 28.45 |
| Transportation | 171.13 | 180.36 | 181.71 | 184.11 | 174.99 |
| **Total** | **458.04** | **474.16** | **483.88** | **475.31** | **477.75** |

Notes:
1 Excludes military sector, aviation, and international marine bunker fuel.
$MMTCO_2e$ = million metric tons of carbon dioxide equivalent.
Source: California Air Resources Board, 2010.

### 2.3.2 - REGULATORY ENVIRONMENT

#### *FEDERAL POLICIES, REGULATIONS AND LAWS*

Greenhouse Gas Endangerment. Massachusetts v. EPA (Supreme Court Case 05-1120) was argued before the United States Supreme Court on November 29, 2006, in which it was petitioned that the EPA regulate four greenhouse gases, including carbon dioxide, under Section 202(a)(1) of the Clean Air Act. A decision was made on April 2, 2007, in which the Supreme Court found that greenhouse gases are air pollutants covered by the Clean Air Act. The Court held that the Administrator must determine whether emissions of greenhouse gases from new motor vehicles cause or contribute to air pollution, which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. On December 7, 2009, the EPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act:

- Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride in the atmosphere threaten the public health and welfare of current and future generations.

- Cause or Contribute Finding: The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution, which threatens public health and welfare.

Clean Vehicles. Congress first passed the Corporate Average Fuel Economy law in 1975 to increase the fuel economy of cars and light duty trucks. The law has become more stringent over time. On May 19, 2009, President Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. On April 1, 2010, the EPA and the Department of Transportation's National Highway Safety Administration announced a joint final rule establishing a national program that would reduce greenhouse gas emissions and improve fuel economy for new cars and trucks sold in the United States.

The first phase of the national program would apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide per mile, equivalent to 35.5 miles per gallon if the automobile industry were to meet this carbon dioxide level solely through fuel economy improvements. Together, these standards would cut carbon dioxide emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016). The EPA and the National Highway Safety Administration are working on a second-phase joint rulemaking to establish national standards for light-duty vehicles for model years 2017 and beyond.

On October 25, 2010, the EPA and the U.S. Department of Transportation proposed the first national standards to reduce greenhouse gas emissions and improve fuel efficiency of heavy-duty trucks and buses. For combination tractors, the agencies are proposing engine and vehicle standards that begin in the 2014 model year and achieve up to a 20 percent reduction in carbon dioxide emissions and fuel consumption by the 2018 model year. For heavy-duty pickup trucks and vans, the agencies are proposing separate gasoline and diesel truck standards, which phase in starting in the 2014 model year and achieve up to a 10 percent reduction for gasoline vehicles and 15 percent reduction for diesel vehicles by 2018 model year (12 and 17 percent respectively if accounting for air conditioning leakage). Lastly, for vocational vehicles, the agencies are proposing engine and vehicle standards starting in the 2014 model year, which would achieve up to a 10 percent reduction in fuel consumption and carbon dioxide emissions by 2018 model year.

Mandatory Reporting of Greenhouse Gases. The Consolidated Appropriations Act of 2008, passed in December 2007, requires the establishment of mandatory greenhouse gas reporting requirements. On September 22, 2009, the EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule. The rule requires reporting of greenhouse gas emissions from large sources and suppliers in the United States, and is intended to collect accurate and timely emissions data to inform future policy decisions. Under the rule, suppliers of fossil fuels or industrial greenhouse gases, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of greenhouse gas emissions are required to submit annual reports to the EPA.

New Source Review. The EPA issued a final rule on May 13, 2010 that establishes thresholds for greenhouse gases that define when permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. This final rule "tailors" the requirements of these Clean Air Act permitting programs to limit which facilities will be required to obtain Prevention of Significant Deterioration and Title V permits. In the preamble to the revisions to the federal code of regulations, EPA states:

> This rulemaking is necessary because without it the Prevention of Significant Deterioration and Title V requirements would apply, as of January 2, 2011, at the 100 or 250 tons per year levels provided under the Clean Air Act, greatly increasing the number of required permits, imposing undue costs on small sources, overwhelming the resources of permitting authorities, and severely impairing the functioning of the programs. EPA is relieving these resource burdens by phasing in the applicability of these programs to greenhouse gas sources, starting with the largest greenhouse gas emitters. This rule establishes two initial steps of the phase-in. The rule also commits the agency to take certain actions on future steps addressing smaller sources, but excludes certain smaller

sources from Prevention of Significant Deterioration and Title V permitting for greenhouse gas emissions until at least April 30, 2016.

EPA estimates that facilities responsible for nearly 70 percent of the national greenhouse gas emissions from stationary sources will be subject to permitting requirements under this rule. This includes the nation's largest greenhouse gas emitters: power plants, refineries, and cement production facilities.

### *STATE PLANS, POLICIES, REGULATIONS, AND LAWS*

Renewable Portfolio Standard (RPS). In 2002, SB 1078 required electric utilities to increase procurement of power generated by eligible renewable energy sources to 20 percent of total generation by 2017. In 2006, SB 107 accelerated the timetable to require 20 percent renewable energy by 2010. Then, in 2008, the Governor Schwarzenegger signed Executive Order S-14-08, which increased the required renewables content to 33 percent by 2020. In September 2009, the Governor signed Executive Order S-21-09, which directed the Air Resources Board to adopt regulations consistent with the 33 percent renewable energy target in Executive Order S-14-08.

In the ongoing effort to codify the ambitious 33 percent by 2020 goal, Senate Bill X1-2 was signed by Governor Edmund G. Brown, Jr., in April 2011. This new RPS preempts the California Air Resources Boards' 33 percent Renewable Electricity Standard and applies to all electricity retailers in the state including publicly owned utilities (POUs), investor-owned utilities, electricity service providers, and community choice aggregators. All of these entities must adopt the new RPS goals of 20 percent of retails sales from renewables by the end of 2013, 25 percent by the end of 2016, and the 33 percent requirement being met by the end of 2020.

Title 24. Although it was not originally intended to reduce greenhouse gas emissions, California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. All buildings for which an application for a building permit is submitted on or after January 1, 2011 must follow the 2008 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions.

California Green Building Standards. On January 12, 2010, the State Building Standards Commission unanimously adopted updates to the California Green Building Standards Code, which went into effect on January 1, 2011. The Code is a comprehensive and uniform regulatory code for all residential, commercial, and school buildings.

The California Green Building Standards Code does not prevent a local jurisdiction from adopting a more stringent code as state law provides methods for local enhancements. The Code recognizes that many jurisdictions have developed existing construction and demolition ordinances, and defers to them as the ruling guidance provided they provide a minimum 50-percent diversion requirement. The code also provides exemptions for areas not served by construction and demolition recycling infrastructure. State building code provides the minimum standard, which buildings need to meet in order to be certified for occupancy. Enforcement is generally through the local building official.

The California Green Building Standards Code (code section in parentheses) requires:

- Short-term bicycle parking. If a commercial project is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for five percent of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack (5.106.4.1).

- Long-term bicycle parking. For buildings with over 10 tenant-occupants, provide secure bicycle parking for five percent of tenant-occupied motorized vehicle parking capacity, with a minimum of one space (5.106.4.2).

- Designated parking. Provide designated parking in commercial projects for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table 5.106.6.2 (5.106.5.2).

- Recycling by Occupants. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of non-hazardous materials for recycling.

- Construction waste. A minimum 50-percent diversion of construction and demolition waste from landfills, increasing voluntarily to 65 and-75 percent for new homes and 80-percent for commercial projects. All (100 percent) of trees, stumps, rocks and associated vegetation and soils resulting from land clearing shall be reused or recycled.

- Wastewater reduction. Each building shall reduce the generation of wastewater by one of the following methods:

1. The installation of water-conserving fixtures or

2. Using non-potable water systems (5.303.4).

- Water use savings. 20-percent mandatory reduction in indoor water use with voluntary goal standards for 30, 35, and 40-percent reductions.

- Water meters. Separate water meters for buildings in excess of 50,000 square feet orbuildings projected to consume more than 1,000 gallons per day.

- Irrigation efficiency. Moisture-sensing irrigation systems for larger landscaped areas.

- Materials pollution control. Low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring, and particleboard.

- Building commissioning. Mandatory inspections of energy systems (i.e. heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working at their maximum capacity according to their design efficiencies.

Pavley Regulations. California Assembly Bill 1493 (Pavley), enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce greenhouse gases emitted by passenger vehicles and light-duty trucks. Regulations adopted by CARB would apply to 2009 and later-model-year vehicles. CARB estimates that the regulation would reduce climate change emissions from the light-duty passenger vehicle fleet by an estimated 18 percent in 2020 and by 27 percent in 2030. However, the regulation was stalled by automaker lawsuits and by the EPA's refusal to grant California an implementation waiver. However, President Obama asked the EPA to review its denial of the waiver. The EPA granted California's waiver June 30, 2009, enabling California to enforce AB 1493.

Executive Order S-3-05. California Governor Arnold Schwarzenegger signed Executive Order S 3 05 on June 1, 2005, which established the following reduction targets for greenhouse gas emissions:

- By 2010, reduce greenhouse gas emissions to 2000 levels;

- By 2020, reduce greenhouse gas emissions to 1990 levels; and

- By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

The 2050 reduction goal represents what scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be an aggressive, but achievable, mid-term target. To meet these targets, the Governor directed the Secretary of the California EPA to lead a Climate Action Team made up of representatives from the Business, Transportation, and Housing Agency; the Department of Food and Agriculture; the Resources Agency; the CARB;

the Energy Commission; and the Public Utilities Commission. The Climate Action Team's Report to the Governor in 2006 contains recommendations and strategies to help ensure the targets in Executive Order S-3-05 are met.

Low Carbon Fuel Standard - Executive Order S-01-07. Executive Order S-01-07 was signed by the Governor on January 18, 2007. The order mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. It also requires that a Low Carbon Fuel Standard for transportation fuels be established for California.

SB 1368. In 2006, the State Legislature adopted Senate Bill (SB) 1368, which was subsequently signed into law by the Governor. SB 1368 directs the California Public Utilities Commission to adopt a performance standard for greenhouse gas emissions for the future power purchases of California utilities. SB 1368 seeks to limit carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than 5 years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant. Because of the carbon content of its fuel source, a coal-fired plant cannot meet this standard because such plants emit roughly twice as much carbon as natural gas, combined cycle plants. Accordingly, the new law will effectively prevent California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the State. Thus, SB 1368 will lead to dramatically lower greenhouse gas emissions associated with California's energy demand, as SB 1368 will effectively prohibit California utilities from purchasing power from out-of-state producers that cannot satisfy the performance standard for greenhouse gas emissions required by SB 1368. The California Public Utilities Commission adopted the regulations required by SB 1368 on August 29, 2007.

Assembly Bill 32 (AB 32). In 2006, the California State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 focuses on reducing greenhouse gas emissions in California. Greenhouse gases, as defined under AB 32, include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. AB 32 requires that greenhouse gases emitted in California be reduced to 1990 levels by the year 2020. CARB is the state agency charged with monitoring and regulating sources of emissions of greenhouse gases that cause global warming in order to reduce emissions of greenhouse gases. AB 32 states the following:

> Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses

and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

The ARB approved the 1990 greenhouse gas emissions level of 427 $MMTCO_2e$ on December 6, 2007. Therefore, emissions generated in California in 2020 are required to be equal to or less than 427 $MMTCO_2e$.

Under the current "business as usual" scenario, statewide emissions are increasing at a rate of approximately 1 percent per year as noted below. Also shown are the average reductions needed from all statewide sources (including all existing sources) to reduce greenhouse gas emissions back to 1990 levels.

- 1990: 427 $MMTCO_2e$
- 2004: 480 $MMTCO_2e$ (an average 11 percent reduction needed to achieve 1990 base)
- 2008: 495 $MMTCO_2e$ (an average 14 percent reduction needed to achieve 1990 base)
- 2020: 596 $MMTCO_2e$ Business As Usual (an average 28 percent reduction needed to achieve 1990 base)

Under AB 32, the ARB published its Final Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California in 2007. Discrete early action measures are currently underway or are enforceable by January 1, 2010. Early action measures are regulatory or non-regulatory and are currently in progress or to be initiated by the ARB in the 2007 to 2012 timeframe. The ARB has 44 early action measures that apply to the transportation, commercial, forestry, agriculture, cement, oil and gas, fire suppression, fuels, education, energy efficiency, electricity, and waste sectors. Of those early action measures, nine are considered discrete early action measures, as they are regulatory and enforceable by January 1, 2010. The ARB estimates that the 44 recommendations are expected to result in reductions of at least 42 $MMTCO_2e$ by 2020, representing approximately 25 percent of the 2020 target.

The ARB approved the Climate Change Scoping Plan (Scoping Plan) in December 2008. The Scoping Plan outlines actions to obtain the goal set out in AB 32 of reducing emissions to 1990 levels by the year 2020. The Scoping Plan "proposes a comprehensive set of actions designed to reduce overall greenhouse gas emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health." The measures in the Scoping Plan will be in place by 2012. The Scoping Plan's recommendations for reducing greenhouse gas emissions to 1990 levels by 2020 providing for emission reduction measures, including a cap-and-trade program linked to Western Climate Initiative partner jurisdictions, green building strategies, recycling and waste-related measures, and Voluntary Early Actions and Reductions. AB 32 did not amend CEQA or establish regulatory standards to be applied to new development or environmental review of projects within the State.

The Scoping Plan calls for an "ambitious but achievable" reduction in California's greenhouse gas emissions, cutting approximately 30 percent from business-as-usual emission levels projected for 2020, or about 10 percent from today's levels. On a per-capita basis, that means reducing annual emissions of 14 tons of carbon dioxide for every man, woman and child in California down to about 10 tons per person by 2020.

The Scoping Plan states that "The 2020 goal was established to be an aggressive, but achievable, mid-term target, and the 2050 greenhouse gas emissions reduction goal represents the level scientists believe is necessary to reach levels that will stabilize climate". The year 2020 goal of AB 32 corresponds with the mid-term target established by S 3-05, which aims to reduce California's fair-share contribution of greenhouse gases in 2050 to levels that will stabilize the climate.

Emission reductions in California would not be able to stabilize the concentration of greenhouse gases in the atmosphere. However, California's actions set an example and drive progress towards a reduction in greenhouse gases. If other countries were to follow California's emission reduction targets, this could avoid medium or higher ranges of global temperature increases. Thus, severe consequences of climate change could also be avoided.

It should be noted that AB 32 did not amend CEQA or establish regulatory standards to be applied to new development or environmental review of projects with the State. Accordingly, the California Legislature adopted SB 97.

Senate Bill 97 (SB 97). SB 97 was passed in August 2007 and added Section 21083.05 to the Public Resources Code. The code states "(a) On or before July 1, 2009, the Office of Planning and Research shall prepare, develop, and transmit to the Resources Agency guidelines for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions as required by this division, including, but not limited to, effects associated with transportation or energy consumption. (b) On or before January 1, 2010, the Resources Agency shall certify and adopt guidelines prepared and developed by the Office of Planning and Research pursuant to subdivision (a)." The SB 97 CEQA Guidelines Amendments were proposed in 2009 and took effect on March 18, 2010.

CEQA Guidelines. The CEQA Guidelines amendments for greenhouse gas emissions confirm that an EIR or other environmental document must analyze the incremental contribution of a project to greenhouse gas levels and determine whether those emissions are cumulatively considerable. CEQA Guideline § 15064.4. To help shape the discussion, the amendments make general suggestions regarding a methodology, and state that a lead agency may take into account the following three considerations in assessing the significance of impacts from greenhouse gas emissions.

- Consideration No. 1: The extent to which the project may increase or reduce greenhouse gas emissions compared with the existing environmental setting. This discussion could involve a quantification of greenhouse gas emissions to the extent feasible.

- Consideration No. 2: Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

- Consideration No. 3: The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

The CEQA Guideline amendments did not identify a threshold of significance for greenhouse gas emissions, nor did they prescribe assessment methodologies or specific mitigation measures. Instead, they called for a "good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project." The amendments encouraged lead agencies to consider many factors in performing a CEQA analysis and preserved lead agencies' discretion to make their own determinations based upon substantial evidence. The amendments also encouraged public agencies to make use of programmatic mitigation plans and programs from which to tier when they perform individual project analyses.

The amendments further expand a lead agency's degree of discretion by providing that they may determine whether to use a quantitative model or methodology and/or rely on a qualitative analysis or performance based standards when assessing the impact of greenhouse gas emissions. CEQA Guideline Section 15064.4(a) ("A lead agency shall have discretion to determine, in the context of a particular project, whether to: (1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which methodology to use . . .; and/or (2) Rely on a qualitative analysis or performance based standards.").

The CEQA Guidelines amendments include two new checklist questions pertaining to greenhouse gas emissions, listed below:

Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

Attorney General CEQA Guidance. In March 2009, the Attorney General's office issued an eight-page document entitled Climate Change, the California Environmental Quality Act, and General Plan Updates: Straightforward Answers to Some Frequently Asked Questions ("FAQs") to provide EIR applicants with guidance on preparing documents. In essence, the document informs lead agencies and prospective project developers that: lead agencies must calculate climate change impacts in EIRs; technical guidance documents and tools to calculate GHG emissions are available; lead agencies should consider lower-carbon alternatives; and lead agencies' mitigation must be fully enforceable. The Attorney General's office also published a document entitled Addressing Climate Change at the Project Level, which included a non-exhaustive list of recommended mitigation measures to reduce greenhouse gas emissions. These measures related to such areas as energy efficiency, renewable energy and energy storage; water conservation and efficiency, solid waste measures, land use measures, transportation and motor vehicles; agriculture and forestry, and offsite measures.

Senate Bill 375 (SB 375). In September 2008, the California legislature adopted SB 375, legislation which (1) relaxes CEQA requirements for some housing projects that meet goals for reducing greenhouse gas emissions and (2) requires the regional governing bodies in each of the state's major metropolitan areas to adopt, as part of their regional transportation plan, "sustainable community strategies" that will meet the region's target for reducing greenhouse gas emissions. SB 375 creates incentives for implementing the sustainable community strategies by allocating federal transportation funds only to projects that are consistent with the emissions reductions.

SB 375 also directs ARB to develop regional greenhouse gas emission reduction targets to e achieved from the automobile and ligt truck sectors for 2020 and 2035. ARB will determine the level of emissions produced by cars and light trucks, including sport utility vehicles, in each of

California's 17 metropolitan planning areas. Emissions reduction goals for 2020 and 2035 would have been assigned to each area. CARB appointed a Regional Targets Advisory Committee on January 23, 2009 to provide recommendations on factors to consider and methodologies to use in this the target setting processing. The ARB Board adopted targets on September 23, 2010. The targets call for a percent reduction in per-capita emissions by the years 2020 and 2035 as follows:

- The San Diego Area: 7 percent and 13 percent;
- Sacramento Region: 7 percent and 16 percent;
- Bay Area Region: 7 percent and 15 percent;
- Southern California: 8 percent and 13 percent, with the 2035 target conditioned on discussions with the MPO;
- San Joaquin Valley (includes eight planning organizations): placeholder of 5 percent and 10 percent, to be revisited in 2012; and
- Targets for the remaining six Metropolitan Planning Organizations—the Monterey Bay, Butte, San Luis Obispo, Santa Barbara, Shasta and Tahoe Basin regions—generally match or improve upon their current plans for 2020 and 2035.

In adopting these regional targets, the Board recognized and committed to help identify the funding and resources that are essential tools for regions to move forward successfully towards more sustainable communities. With the targets now largely in place, the cities within each region will work together with their planning agency to begin developing a Sustainable Community Strategy. Each strategy, designed to accommodate the specific needs and requirements of each region, outlines where growth and development will occur, and how the transportation system can support that growth so that their region's targets can be achieved. Cities are full partners in this process and retain full local decision making and zoning authority. Regions that meet the targets may receive incentives in the form of easier access to federal funding and streamlined environmental review for development projects.

Executive Order S-13-08. Executive Order S-13-08 indicates that "climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California's economy, to the health and welfare of its population and to its natural resources." Pursuant to the requirements in the order, in December 2009, the California Natural Resources Agency released its 2009 California Climate Adaptation Strategy. The Strategy is the " . . . first statewide, multi-sector, region-specific, and information-based climate change adaptation strategy in the United States." Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

ARB Preliminary Draft Staff Proposal, October 2008. On October 24, 2008, CARB released a Preliminary Draft Staff Proposal entitled, Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under California Environmental Quality Act (Draft Staff Proposal). The staff proposal is a rough framework for determining significance thresholds. The guidance provides that if certain projects meet performance standards and remain below numeric thresholds, they will be considered less than significant. In its proposal, Staff noted that non-zero thresholds can be supported by substantial evidence, but thresholds should nonetheless be sufficiently stringent to meet the State's interim (2020) and long-term (2050) emissions reduction targets. The proposal takes different approaches for different sectors: (1) industrial projects and (2) residential and commercial projects. Although ARB Staff proposed a numerical threshold for the GHG emissions of industrial projects, none were proposed for commercial (and residential) projects. The draft proposal was very controversial and CARB Staff no longer has any plans to move forward with any final thresholds. A key preliminary conclusion from the draft thresholds, however, was that ARB Staff, in setting a numerical threshold for industrial projects and suggesting performance standards, does not believe a "zero threshold" is mandated by CEQA. It is unknown at this time whether ARB will finalize its draft proposal.

Guidance from Professional Organizations. On January 8, 2008, the California Air Pollution Control Officers Association (CAPCOA) released a report that provides a common platform of information and tools for public agencies in addressing the climate change issue. The disclaimer states that it is not a guidance document but a resource to enable local decision makers to make the best decisions they can in the face of incomplete information during a period of change. The report indicates that it is an interim resource and does not endorse any particular approach. It discusses three groups of potential thresholds, including a no significance threshold, a threshold of zero, and non-zero thresholds. Non-zero quantitative thresholds identified in the paper range from 900 to 50,000 metric tons per year. The report also identified non-zero qualitative thresholds.

CAPCOA issued another report entitled "Quantifying Greenhouse Gas Mitigation Measures" in August 2010. The report is also intended as a resource and not as a guidance document. CAPCOA's disclaimer states that it is not intended, and should not be interpreted, to dictate the manner in which a city or county chooses to address greenhouse gas emissions in the context of projects it reviews, or in the preparation of its General Plan. The report provides detailed methodologies quantifying emission reductions for a large number of mitigation measures that could be used to reduce greenhouse gas impacts.

### *LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES*

### SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT

#### *SJVAPCD CEQA Greenhouse Gas Guidance*

On December 17, 2009, the SJVAPCD Governing Board adopted "Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA" and the policy, "District Policy—Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency." The SJVAPCD concluded that the existing science is inadequate to support quantification of the impacts that project specific greenhouse gas emissions have on global climatic change. The SJVAPCD found the effects of project-specific emissions to be cumulative, and without mitigation, that their incremental contribution to global climatic change could be considered cumulatively considerable. The SJVAPCD found that this cumulative impact is best addressed by requiring all projects to reduce their greenhouse gas emissions, whether through project design elements or mitigation.

The SJVAPCD's approach is intended to streamline the process of determining if project-specific greenhouse gas emissions would have a significant effect. Projects exempt from the requirements of CEQA, and projects complying with an approved plan or mitigation program would be determined to have a less than significant cumulative impact. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources and have a certified final CEQA document.

For non-exempt Projects or those not complying with an approved plan or program, the lead agency would evaluate the project against a performance-based standards and would require the adoption of design elements, known as a Best Performance Standard, to reduce greenhouse gas emissions. The Best performance Standards have not yet fully been established, though they must be designed to effect a 29 percent reduction when compared to the "business-as-usual" projections identified in CARB's AB 32 Scoping Plan. "Business-as-usual" is the emissions occurring in 2020 if the average baseline emissions during the 2002-2004 period were grown to 2020 levels, without control. These standards thus would carry with them pre-quantified emissions reductions, eliminating the need for project specific quantification. Therefore, Projects incorporating these Best Performance Standards would not require specific quantification of greenhouse gas emissions, and automatically would be determined to have a less than significant cumulative impact for greenhouse gas emissions. Again, the air district has not yet fully described the standards, but some general precepts have been established. For instance, for stationary source permitting projects, Best Performance Standards means "The most stringent of the identified alternatives for control of greenhouse gas emissions, including type of equipment, design of equipment and operational and maintenance practices, which are achieved-in-practice for the identified service, operation, or emissions unit class." For development projects, Best Performance Standards means "Any combination of identified greenhouse gas emission reduction measures, including project design elements and land use decisions that reduce project specific greenhouse gas emission reductions by at least 29 percent compared with business as usual."

The SJVAPCD proposes to create a list of all approved Best Performance Standards to help in the determination as to whether a proposed project has reduced its greenhouse gas emissions by 29 percent. No timeline has been established for the development of said list.

Projects not incorporating Best Performance Standards would require quantification of greenhouse gas emissions and demonstration that "business-as-usual" greenhouse gas emissions have been reduced or mitigated by 29 percent. Quantification of greenhouse gas emissions would be required for all projects for which the lead agency has determined that an Environmental Impact Report is required, regardless of whether the project incorporates Best Performance Standards.

# SECTION 3: THRESHOLDS

## *3.1 - CEQA Guidelines*

The CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." To determine if a project would have a significant impact on air quality, the type, level, and impact of emissions generated by the project must be evaluated.

The following air quality significance thresholds are contained in Appendix G of the CEQA Guidelines. A significant impact would occur if the project would:

a) Conflict with or obstruct implementation of the applicable air quality plan;

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable national or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);

d) Expose sensitive receptors to substantial pollutant concentrations; or

e) Create objectionable odors affecting a substantial number of people.

CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." To determine if a project would have a significant impact on greenhouse gases, the type, level, and impact of emissions generated by the project must be evaluated.

The following greenhouse gas significance thresholds are contained in Appendix G of the CEQA Guidelines, which were amendments adopted into the Guidelines on March 18, 2010, pursuant to SB 97. A significant impact would occur if the project would:

f) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

g) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." To determine if a project would have a significant impact on air quality, the type, level, and impact of emissions generated by the project must be evaluated.

## 3.2 - San Joaquin Valley Air Pollution Control District Thresholds

While the final determination of whether a project is significant is within the purview of the Lead Agency pursuant to Section 15064(b) of the CEQA Guidelines, SJVAPCD recommends that its quantitative air pollution thresholds be used to determine the significance of project emissions. If the Lead Agency finds that the project has the potential to exceed these air pollution thresholds, the project should be considered to have significant air quality impacts.

### 3.2.1 - REGIONAL SIGNIFICANCE THRESHOLDS

According to the *Guide for Assessing and Mitigating Air Quality Impacst* (GAMAQI), the SJVAPCD based the ozone precursor thresholds' "significant contribution" definition on the California Clean Air Act's offset requirements for $NO_x$ and ROG. The ROG and $NO_x$ offset thresholds are described in SJVAPCD Rule 2201 (New and Modified Stationary Source Review). Since the GAMAQI was published, the SJVAPCD has been recommending use of a PM10 threshold of 15 tons per year, which is the offset thresholds for PM10 in Rule 2201. Because the Air Basin is in nonattainment for PM2.5 and because PM2.5 is a subset of PM10, the threshold for PM2.5 for this project will also be 15 tons per year.

The following regional significance thresholds have been established by the SJVAPCD to protect air resources within the basin as a whole, as project emissions can potentially contribute to the existing emission burden and possibly affect the attainment and maintenance of ambient air quality standards. Projects within the San Joaquin Valley Air Basin with regional construction or operational emissions in excess of any of the thresholds presented in

Table 13 are considered to have a significant regional air quality impact.

**Table 13: SJVAPCD Regional Thresholds**

| Pollutant | Tons Per Year |
|---|---|
| Nitrogen oxides ($NO_x$) | 10 |
| Reactive Organic Gases (ROG) | 10 |
| Particulate matter (PM10) | 15 |
| Particulate matter (PM2.5) | 15 |

Source: SJVAPCD 2002

### 3.2.2 - CARBON MONOXIDE HOT SPOT ANALYSIS THRESHOLD

A carbon monoxide (CO) hotspot analysis is the appropriate tool to determine if project emissions of CO during operation would exceed ambient air quality standards. The main source of air pollutant emissions during operation are from offsite motor vehicles traveling on the roads surrounding the project site.

Project emissions may be considered significant if a CO hotspot intersection analysis determines that project-generated emissions cause a localized violation of the state CO 1-hour standard of 20 ppm, state CO 8-hour standard of 9 ppm, federal CO 1-hour standard of 35 ppm, or federal CO 8-hour standard of 9 ppm.

Because increased CO concentrations are usually associated with roadways that are congested and with heavy traffic volume, the SJVAPCD has established that preliminary screening can be used to determine with fair certainty that the effect a project has on any given intersection would not cause a potential CO hotspot. Therefore, the SJVAPCD has established that if all project-affected intersections are negative for both of the following criteria, then the project can be said to have no potential to create a violation of the CO standard:

- 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.

If either of the criteria can be associated with any intersection affected by the project, a CO Protocol Analysis must be prepared to determine significance.

### 3.2.3 - NUISANCE THRESHOLD

Any project with the potential to frequently expose members of the public to objectionable odors will be deemed to have a significant impact. The SJVAPCD has a regulation that governs the discharge from any source of such quantities of air contaminants, which cause a nuisance or annoyance to any considerable number of persons or to the public. Creating the potential for a violation of the SJVAPCD's Nuisance Rule (Rule 4102) would create a potentially significant effect.

While offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the SJVAPCD. Odor impacts on residential areas and other sensitive receptors, such as hospitals, day-care centers, schools, etc., warrant the closest scrutiny, but consideration should also be given to other land uses where people may congregate, such as recreational facilities, worksites, and commercial areas.

Two situations create a potential for odor impact. The first occurs when a new odor source is located near an existing sensitive receptor. The second occurs when a new sensitive receptor locates near an existing source of odor. The SJVAPCD has determined the common land use types that are known to produce odors in the SJVAB. Included in the types of land uses that are known to create odors are wastewater treatment facilities, chemical manufacturing plants, painting/coating operations, feed lots/dairies, composting facilities, landfills, and transfer stations.

This project would be located near existing sensitive receptors. The project's land use types are not listed in Table 4-2 of the GAMAQI as a known source of odor. The analysis qualitatively assesses if the project could be a generator of significant odor emissions.

#### 3.2.4 - HEALTH RISK THRESHOLD

The SJVAPCD has adopted the following significance thresholds for toxic air contaminants:

- Probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeds 10 in one million, or

- Ground-level concentrations of non-carcinogenic toxic air contaminants would result in a Hazard Index greater than 1 for the MEI.

#### 3.2.5 - CONFORMANCE WITH AIR QUALITY ATTAINMENT PLANS (AQAPS) THRESHOLD

The CEQA Guidelines indicate that a significant impact would occur if the proposed project would conflict with or obstruct implementation of the applicable air quality plan. The GAMAQI does not provide specific guidance on analyzing conformity with the AQAPs. Therefore, this document proposes the following criteria for determining project consistency with the current AQAPs:

Because of the region's non-attainment status for ozone, PM2.5, and PM10, if the project-generated emissions of either of the ozone precursor pollutants (ROG or NOx), PM10, or PM2.5 were to exceed the SJVAPCD's significance thresholds, then the project uses would be considered to conflict with the attainment plans. Additionally, the project must comply with the control measures in the attainment plans.

### 3.2.6 - CUMULATIVE IMPACTS THRESHOLD

Section 15130(b) of the CEQA Guidelines states the following:

The following elements are necessary to an adequate discussion of significant cumulative impacts use either: (A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or areawide conditions contributing to the cumulative impact.

In accordance with CEQA Guidelines 15130(b), this analysis of cumulative impacts incorporates a summary of projections; the following approach (consistent with approach B) will be used:

1. Consistency with existing AQP.

2. Assessment of cumulative health effect of project air pollutants.

### 3.2.7 - CONSISTENCY WITH AIR QUALITY PLANS

The AQAP's are plans for reaching attainment of the air quality standards. The assumptions, inputs, and control measures are analyzed to determine if the SJVAB can reach attainment for the ambient air quality standards. In order to show attainment of the standards, the SJVAPCD analyzes the growth projections in the valley, contributing factors in air pollutant emissions and formation, and existing and future emissions controls. The SJVAPCD then formulates a control strategy to reach attainment. Therefore, if a project is consistent with the AQAP, the project's cumulative contribution to air emissions is less than significant.

### 3.2.8 - CUMULATIVE HEALTH EFFECTS

For some pollutants, such as ozone, the background concentrations in the air are already high. Therefore, small emissions of pollutants from various sources around the SJVAB combined can cause cumulative impacts. Cumulative health effects can be inferred from the analyses for the following criteria:

- Violates any Air Quality Standard or Contribute Substantially to an Existing or Projected Air Quality Violation, and

- Results in a Cumulatively Considerable Net Increase of any Criteria Pollutant for which the SJVAB is Non-Attainment

Although the SJVAB is in attainment for the CO standards, the vehicle traffic from the project may be great enough to cause a CO hotspot, or substantially contribute to a project CO Hotspot. The SJVAB is nonattainment for ozone, PM10 and PM2.5, and the project may substantially contribute to the existing violation through ROG, NOx, PM10, and PM2.5 emissions. The following analyses will be used for this criterion:

- CO Hotspot as discussed in - CO Hotspot
- Regional Operational Thresholds as discussed in Regional Air Pollutants

## *3.3 - Greenhouse Gas Threshold*

An individual project cannot generate enough greenhouse gas emissions to effect a discernible change in global climate. However, the proposed project may participate in this potential impact by its incremental contribution combined with the cumulative increase of all other sources of greenhouse gases, which when taken together constitute potential influences on global climate change. Because these changes may have serious environmental consequences, this section will evaluate the potential for the proposed project to have a significant effect upon California's environment as a result of its potential contribution to the enhanced greenhouse effect.

### 3.3.1 - ESTABLISHMENT OF GREENHOUSE GAS SIGNIFICANCE THRESHOLDS

This analysis will evaluate whether the project will:

h) Generate Greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; and

i) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose or reducing the emissions of greenhouse gases.

With regard to the first question, the evaluation of an impact under CEQA requires measuring data from a project against both existing conditions and a "threshold of significance." With regard to establishing a significance threshold, the Office of Planning and Research's amendments to the CEQA Guidelines state that "[w]hen adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence."

Guideline 15064.4(a) further states, " . . . A lead agency shall have discretion to determine, in the context of a particular project, whether to: (1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use . . . ; or (2) Rely on a qualitative analysis or performance based standards."

Here, the SJVACPD has established a menu of performance standards, some of which depend on the existence of an adopted climate action plan or the establishment of Best Performance Standards. Given neither of the above currently exist; this analysis adopts the following alternative threshold provided by SJVAPCD: whether the project will reduce or mitigate greenhouse gas levels by 29 percent from business-as-usual levels. To do so, the analysis first will quantify project-related greenhouse gas emissions under a "business-as-usual" scenario, and then compare these emissions to those that would occur when all project-related design features are accounted for, and when compliance with new regulatory measures is assumed. The standard and methodology is explained in further detail, below.

In answering the second question (i.e., does the project conflict with any applicable plan, policy, or regulation), a qualitative determination will be made as to whether the project promotes attainment of California's goals of reducing greenhouse gas emissions to 1990 levels by the year 2020 as stated in AB 32, including whether the project is consistent with goals to effect an 80-percent reduction in greenhouse gas emissions below 1990 levels by 2050, as stated in Executive Order S-03-05. The California Resources Agency has stated that, to be used for the purpose of determining significance, a plan must contain specific requirements that result in reductions of greenhouse gas emissions to a less-than-significant level. A plan meeting these requirements does not yet exist at the local, regional, or state level, and so this analysis adopts goals under AB 32. This reasoning is further explained below.

The above approach is consistent with provisions of the CEQA Guidelines amendments for greenhouse gas emissions, which state that a lead agency may take into account the following three considerations in assessing the significance of impacts from greenhouse gas emissions.

- Consideration No. 1: The extent to which the project may increase or reduce greenhouse gas emissions compared with the existing environmental setting. This discussion could involve a quantification of greenhouse gas emissions to the extent feasible.
  Consideration No. 2: Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

- Consideration No. 3: The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

### *ADOPTION OF THE SJVACPD THRESHOLD*

The following supports and explains the election of the SJVACPD threshold in answering the question of whether the project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

As stated previously, the SJVAPCD, which has jurisdiction over a geographic area that includes the project site, adopted the guidance document, "Addressing Greenhouse Gas Emissions Impacts Under the California Environmental Quality Act." The guidance document does not propose a specific numeric threshold, but it requires all new projects with increased greenhouse gas emissions to implement performance based standards or otherwise demonstrate the project-specific greenhouse gas emissions have been mitigated by at least 29 percent, compared with the "business-as-usual" scenario. For development projects (residential, commercial or industrial), business-as-usual is the total baseline emissions for all emissions sources within the development type, projected for the year 2020, assuming no change in greenhouse gas emissions per unit of activity as established for the baseline period. The 29 percent emission reductions in greenhouse gases would be composed of both (a) the emission reduction achieved through implementation of Best Performance Standards and (b) greenhouse gas emission reductions achieved since the 2002–2004 baseline period through efficiencies such as improved energy standards, increased vehicle fuel standards, etc. Improving standards are detailed more completely below, but the following examples help to illustrate how regulatory changes will lead to greenhouse gas emissions reductions:

- The energy used by the project purchased from the grid will result in much lower emissions as the renewable energy portfolio standard is implemented over time;

- Motor vehicle greenhouse gas emissions associated with the project will also decline over time as state and federal fuel efficiency standards are implemented;

- The ARB adopted regulation to control emissions of refrigerants in commercial refrigeration systems (Regulation for the Management of High Global Warming Potential Refrigerants for Stationary Sources) is expected to reduce emissions from this source by 50 percent by 2020. Refrigerants are the second-largest source of emissions estimated for the project; and

- The project's emissions related to electricity consumption are expected to be substantially lower than the forecasted amounts due to meeting 2005 and 2008 Title 24 Building

Energy Efficiency Standards. Many of these standards are discussed in more detail below.

As applied to the proposed project, the SJVAPCD threshold means that the project's greenhouse gas emissions in the year 2020 must be reduced by 29 percent. This can be achieved through a combination of project design features and regulations adopted since 2002-2004, including improved Building Code requirements, AB 32 scoping plan measures, and updated Building Code requirements and other regulations. Again, for a list of such requirements and regulations, please see the "Regulation Reductions" discussion, below.

The SJVAPCD emission reduction target is consistent with AB 32 emission reduction targets. Note also that the adoption of a non-zero threshold is supported by a number of experts.

On January 8, 2008, the CAPCOA released a paper that provides a common platform of information and tools for public agencies in addressing the climate change issue. The disclaimer states that it is not a guidance document but a resource to enable local decision makers to make the best decisions they can in the face of incomplete information during a period of change. The paper indicates that it is an interim resource and does not endorse any particular approach. It discusses three groups of potential thresholds, including a no significance threshold, a threshold of zero, and non-zero thresholds. Non-zero quantitative thresholds identified in the paper range from 900 to 50,000 metric tons per year. The paper also identified non-zero qualitative thresholds.

On October 24, 2008, ARB released a Preliminary Draft Staff Proposal entitled, Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under California Environmental Quality Act (Draft Staff Proposal). The staff proposal is a rough framework for determining significance thresholds. The guidance provides that if certain projects meet performance standards and remain below numeric thresholds, they will be considered less than significant. In its proposal, Staff noted that non-zero thresholds can be supported by substantial evidence, but thresholds should nonetheless be sufficiently stringent to meet the State's interim (2020) and long-term (2050) emissions reduction targets. The proposal takes different approaches for different sectors: (1) industrial projects and (2) residential and commercial projects. Although CARB Staff proposed a numerical threshold for the greenhouse gas emissions of industrial projects, none were proposed for commercial (and residential) projects. The draft proposal was very controversial and CARB Staff no longer has any plans to move forward with any final thresholds. A key preliminary conclusion from the draft thresholds, however, was that ARB Staff, in setting a numerical threshold for industrial projects and suggesting performance standards, does not believe a "zero threshold" is mandated by CEQA. It is unknown at this time whether ARB will finalize its draft proposal.

### *Selection of Applicable Plan, Policy, or Regulation*

The CEQA Guidelines provide that the key question is whether a project complies with a plan for the reduction of greenhouse gases that contains specific requirements that would result in the reduction of such emissions to a less-than-significant level. There is no applicable local, regional, or plan that sets forth a reduction plan with the requisite specificity. While CARB has adopted its statewide Scoping Plan in conjunction with AB 32, the plan largely is conceptual at this stage and relies on the future development or regulations to implement the strategies identified in the Scoping Plan. Regulations that will require actual reductions of greenhouse gas emissions may not be enforceable until 2012. To the extent SJVAPCD significance thresholds function as such a plan, the consistency of the project with its terms will be addressed in the manner explained above.

Nevertheless, to provide the most detailed discussion possible, this analysis will explore the consistency of the project with AB 32 and CARB's Scoping Plan to the full extent possible. As explained in the regulatory section, the California State Legislature adopted AB 32 in 2006. AB 32 states that "global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California." AB 32 focuses on reducing greenhouse gases (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) to 1990 levels by the year 2020 within the state of California, such that California can contribute its fair share toward reduction on a global scale. Pursuant to the requirements in AB 32, a Scoping Plan was adopted, which states that the 2020 goal was established to be an aggressive, but achievable, mid-term target, and the 2050 greenhouse gas emissions reduction goal (of 80 percent below 1990 levels) represents the level scientists believe is necessary to reach levels that will stabilize the climate.

To achieve these goals, the Scoping Plan outlines strategies recommended to obtain that goal, though AB 32 envisions that CARB will formulate specific measures that implement those strategies during the next two years, with major rulemaking to be adopted by January 1, 2011. The measures would become legally enforceable the following year, on January 1, 2012. Please note the Legislature has adopted some early action measures that became enforceable on January 1, 2010, and those will be addressed to the extent they are relevant.

Thus, the analysis will focus on the project's consistency with the overarching goals of AB 32 and the strategies of CARB's Scoping Plan.

## SECTION 4: AIR QUALITY IMPACT ANALYSIS

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.

| Would the project: | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| a) Conflict with or obstruct implementation of the applicable air quality plan? | ☒ | ☐ | ☐ | ☐ |
| b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | ☒ | ☐ | ☐ | ☐ |
| c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)? | ☒ | ☐ | ☐ | ☐ |
| d) Expose sensitive receptors to substantial pollutant concentrations? | ☐ | ☐ | ☒ | ☐ |
| e) Create objectionable odors affecting a substantial number of people? | ☐ | ☐ | ☒ | ☐ |

**Impact AIR-1 – Violate any air quality standard or contribute substantially to an existing or projected air quality violation.**

This impact will evaluate the proposed project's potential to violate any air quality standard or contribute substantially to an existing or projected air quality violation as a result of construction or operational emissions.

### *Construction Assumptions and Modeling Parameters*

Construction of the project would result in the generation of air pollutant emissions. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from onsite and offsite activities. Onsite emissions principally consist of exhaust emissions (NOx, SOx, CO, ROG, PM10, and PM2.5) from heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM10) from disturbed soil. Additionally, paving operations and application of architectural coatings would release ROG emissions. Offsite emissions are caused by motor vehicle exhaust from delivery vehicles, worker traffic, and road dust (PM10 and PM2.5).

The proposed project would be constructed in three phases of approximately three to four months each over the course of approximately six years, however to provide a "worst-case" scenario, the project's construction was conservatively estimated to be built out simultaneously within a year following entitlement approvals. It was assumed that the project's construction would start in June 2013 and be completed by July 2014. It was assumed that the entire 75 acres would be graded at once. Construction phasing assumptions are shown in Table 14.

**Table 14: Construction Phasing Assumptions**

| Year | Phase Duration | Construction Phase Assumptions |
|---|---|---|
| 2013 | 10 days | **Site Preparation** of 75 acres (grubbing and land clearing)<br>Equipment:<br>• Rubber Tired Dozers (6)<br>• Tractors/Loaders/Backhoes (8) |
| 2013 | 30 days | **Site Grading** of 75 acres<br>Equipment:<br>• Excavators (4)<br>• Graders (2)<br>• Rubber Tired Dozers (2)<br>• Scrapers (4)<br>• Tractors/Loaders/Backhoes (4) |
| 2013/2014 | 190 days | **Construct** 180,000 square feet of warehouse facilities<br>Equipment:<br>• Cranes (2)<br>• Forklifts (6)<br>• Generator Sets (2)<br>• Tractors/Loaders/Backhoes (6)<br>• Welders (2) |
| 2014 | 25 days | **Asphalt Paving**<br>Equipment:<br>• Pavers (4)<br>• Paving Equipment (4)<br>• Rollers (4)<br>• Tractors/Loaders/Backhoes (2) |
| 2014 | 25 days | **Paint** Buildings<br>Equipment:<br>• Air Compressors (2) |

Notes: Equipment quantities were doubled to reflect the project acreage.
Source: CalEEMod, 2011

### *Operational Assumptions*

Operational, or long-term, emissions occur over the life of the project and would begin once the warehouse is in operation. Operational emissions include mobile and area source emissions. Area source emissions are from consumer products, heaters that consume natural gas, gasoline-powered landscape equipment, and architectural coatings (painting). Mobile emissions from motor vehicles are the largest single long-term source of air pollutants from the project.

As discussed in the project description the proposed project would generate 817 total daily trips. Based on the applicant's information, approximately 124 of those trips would be HDDT trips and the remaining 693 trips would be a mixture of passenger vehicles and other vehicle categories. The fleet mix percentages for the remaining 693 trips are shown in Table 15.

**Table 15: Fleet Mix for Employees**

| CalEEMod Default Vehicle Type | CalEEMod Default Fleet Percentage | NEW Fleet Percentage |
|---|---|---|
| Light Auto | 41.6% | 45.5% |
| Light Truck < 3750 lbs. | 11.8% | 12.8% |
| Light truck 3751-5750 lbs | 19.9% | 21.7% |
| Med Truck 5751-8500 lbs | 11.6% | 12.7% |
| Lite-heavy truck 8501-10,000 lbs | 2.8% | 2.8% |
| Lite-heavy truck 10,001-14,000lbs | 0.9% | 0.9% |
| Med-heavy truck 14,001-33,000 lbs | 1.9% | 1.9% |
| Heavy-heavy truck 33,001-60,000 lbs | 7.6% | 0.0% |
| Other Bus | 0.1% | 0.1% |
| Urban Bus | 0.1% | 0.1% |
| Motorcycle | 1.0% | 1.0% |
| School Bus | 0.1% | 0.1% |
| Motor Home | 0.4% | 0.4% |
| **Total** | **100.0%** | **100.0%** |

Notes: Heavy-duty diesel truck trip percentage was reduced to 0 and calculated separately for field trucks and shipping trucks. Because the majority of the trips would be passenger type vehicles, the HDDT trips percentage was allocated to the first four categories of the CalEEMod default fleet mix.
Source: CalEEMod, 2011, Quad Knopf, 2012.

HDDT trips were calculated separately for field trucks and shipping trucks. Those truck trips would have different trip lengths than the default values in CalEEMod. As discussed in Section 1, Project Description, field trucks would travel to six different locations between two to 28 miles in distance from the warehouse facility. A weighted trip length was derived for the field truck trip lengths based on the percentage acreage of the fields with the assumption that the more acreage, the more produce that would need to be hauled. As shown in Table 16, a 16.5 mile weighted trip length was calculated.

**Table 16: Field Truck Trip Length**

| | Field Location | Acreage | Percentage of Total Acreage | One-Way Trip Length (miles) | Weighted Trip Length |
|---|---|---|---|---|---|
| A | Weir Rd/Atwater-Jordan Rd | 600 (550 watermelon, 50 sweet potato) | 59 | 18 | 10.62 |
| B | S. Buhach Rd/W. Dickenson Ferry Rd | 190 (watermelon) | 19 | 28 | 5.32 |
| C | W. Simmons Rd/S. Washington Rd. | 135 (sweet potato) | 13 | 2 | 0.26 |
| D | W. Tuolumne Rd/N. Washington Rd | 40 (sweet potato) | 4 | 0.5 | 0.02 |
| E | W. Taylor Rd/N. Washington Rd | 20 (sweet potato) | 2 | 2 | 0.04 |
| F | E. Grayson Rd/Tully Rd | 30 (sweet potato) | 3 | 8 | 0.24 |
| | Total | 1,015 | 100 | - | 16.5 |

Source: KD Anderson & Associates, Memorandum, 2010

As discussed in Section 1, Project Description, the product will be crated at the warehouse with about 50 percent shipped to southern California and 50 percent shipped to northern California, Oregon, and Washington. Under CEQA, the threshold for determining significance is based on regional thresholds established by the SJVAPCD for the Air Basin. These thresholds were developed to help the Air Basin reach attainment for criteria pollutants (see Section 2.2.4 for additional attainment plan information). Because the geographic basis for the analysis is the Air Basin, the trip length to the southern boundary of the basin and the northern boundary were used to develop a weighted trip length for shipping truck trips.

**Table 17: Shipping Truck Trip Length**

| Air Basin Boundary | Distance | Percentage of Trips | Weighted Trip Length |
|---|---|---|---|
| Northern Boundary | 222 miles | 50 | 111 |
| Southern Boundary | 60 miles | 50 | 30 |
| Total | - | 100 | 141 |

Source: Quad Knopf, 2012

### *Emissions*

The construction and operational emissions were derived using the California Emissions Estimator Model (CalEEMod).

The estimated annual construction emissions output of the project is provided in Table 18 The estimated annual operational emissions output of the project is provided in Table 19. The project would have some overlapping construction and operational emissions in 2014, those emissions are shown in Table 20. The first full year of operation would occur in 2015; those emissions are shown in Table 21.

**Table 18: Construction Emissions (Tons/Year)**

| Year | ROG | $NO_x$ | CO | $SO_2$ | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total |
|---|---|---|---|---|---|---|---|---|---|---|
| 2013 | 1.11 | 7.92 | 5.32 | 0.01 | 0.30 | 0.44 | 0.74 | 0.10 | 0.44 | 0.54 |
| 2014 | 1.81 | 3.57 | 2.79 | 0.01 | 0.07 | 0.24 | 0.31 | 0.00 | 0.24 | 0.24 |
| SJVAPCD Threshold | 10 | 10 | N/A | N/A | * | * | 15 | * | * | 15 |
| Any Year Exceed Threshold? | No | No | N/A | N/A | * | * | No | * | * | No |
| Significant? | No | No | No | No | * | * | No | * | * | No |

Notes: * Significance is determined by the total PM10 and total PM2.5
Source: CalEEMod, 2011, Quad Knopf 2012

**Table 19: 2014 Operational Emissions (Tons/Year)**

| Source | ROG | $NO_x$ | CO | $SO_2$ | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Area | 0.42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Employee Vehicles | 0.07 | 0.09 | 0.57 | 0.00 | 0.09 | 0.01 | 0.09 | 0.01 | 0.01 | 0.01 |
| Field Trucks | 0.06 | 0.73 | 0.31 | 0.00 | 0.04 | 0.03 | 0.06 | 0.01 | 0.03 | 0.03 |
| Shipping Trucks | 0.37 | 4.80 | 1.73 | 0.01 | 0.26 | 0.18 | 0.44 | 0.03 | 0.18 | 0.20 |
| **Total** | **0.91** | **5.61** | **2.61** | **0.01** | **0.38** | **0.21** | **0.58** | **0.04** | **0.21** | **0.23** |
| SJVAPCD Threshold | 10 | 10 | N/A | N/A | * | * | 15 | * | * | 15 |
| Exceed Threshold? | No | No | N/A | N/A | * | * | No | * | * | No |
| Significant? | No | No | No | No | * | * | No | * | * | No |

Notes: * Significance is determined by the total PM10 and total PM2.5 Emission totals were divided by two to represent a half year of operations.
Source: CalEEMod, 2011, Quad Knopf 2012

**Table 20: 2014 Construction and Operational Emissions (Tons/Year)**

| Source | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total |
|---|---|---|---|---|---|---|---|---|---|---|
| 2014 Construction | 1.81 | 3.57 | 2.79 | 0.01 | 0.07 | 0.24 | 0.31 | 0.00 | 0.24 | 0.24 |
| 2014 Operational | 0.91 | 5.61 | 2.61 | 0.01 | 0.38 | 0.21 | 0.58 | 0.04 | 0.21 | 0.23 |
| **Total** | **2.72** | **9.18** | **5.40** | **0.02** | **0.45** | **0.45** | **0.89** | **0.04** | **0.45** | **0.47** |
| SJVAPCD Threshold | 10 | 10 | N/A | N/A | * | * | 15 | * | * | 15 |
| Exceed Threshold? | No | No | No | No | * | * | No | * | * | No |
| Significant? | No | No | No | No | * | * | No | * | * | No |

Notes: * Significance is determined by the total PM10 and total PM2.5 Operational emission totals were divided by two to represent a half year of operations.
Source: CalEEMod, 2011, Quad Knopf 2012

**Table 21: 2015 Operational Emissions (Tons/Year)**

| Source | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Area Sources | 0.83 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Employee Vehicles | 0.12 | 0.16 | 1.04 | 0.00 | 0.17 | 0.01 | 0.18 | 0.01 | 0.01 | 0.01 |
| Field Trucks | 0.11 | 1.30 | 0.56 | 0.00 | 0.07 | 0.04 | 0.11 | 0.01 | 0.04 | 0.05 |
| Shipping Trucks | 0.66 | 8.39 | 3.13 | 0.01 | 0.52 | 0.31 | 0.83 | 0.05 | 0.31 | 0.36 |
| **Total** | **1.72** | **9.85** | **4.73** | **0.01** | **0.76** | **0.36** | **1.12** | **0.07** | **0.36** | **0.42** |
| SJVAPCD Threshold | 10 | 10 | N/A | N/A | * | * | 15 | * | * | 15 |
| Exceed Threshold? | No | No | N/A | N/A | * | * | No | * | * | No |
| Significant? | No | No | No | No | * | * | No | * | * | No |

Notes: * Significance is determined by the total PM10 and total PM2.5
Source: CalEEMod, 2011, Quad Knopf 2012

As shown in the tables above, the combined construction and operational emissions would not exceed the ozone precursor threshold, which means the project would not contribute to a violation of the ozone standards PM standards; this is a less than significant impact.

The Air Basin is in attainment for the nitrogen dioxide ambient air quality standards. The national ambient air quality standard for 1 hour nitrogen dioxide is 0.100 ppm. As shown in Table 9, the highest 1 hour concentration of nitrogen dioxide is 0.058 ppm, which is below 0.100 ppm. The project emissions do not exceed the ozone precursor threshold of 10 tons per year. The ozone threshold was not set to determine exceedances of the nitrogen dioxide standard. Even though project emissions of NOx are relatively high, the emissions will be distributed throughout the State and will be dispersed. Rule 9510 will also reduce NOx emissions in the Air Basin. This impact is less than significant and the project would not contribute to an exceedance of the nitrogen dioxide standard.

The project would produce minimal emissions of sulfur oxides (SOx), primarily due to increased regulations for reducing SOx from fuel. As shown in Tables 18 through 21, SOx emissions range from 0.00 to 0.01 ton per year. As shown in Table 9, the highest background 24-hour concentration of sulfur dioxide is 0.005 ppm, substantially under the state ambient air quality standard of 0.04 ppm. The project emissions would not cause or contribute to an air quality standard violation for sulfur dioxide. This impact is less than significant.

Other pollutants such as visibility reducing particles, lead, hydrogen sulfide, and vinyl chloride emissions would either not be emitted or would be at low levels. The project would emit CO during construction and operation. Operational emissions of CO are discussed in Impact AIR-2. Construction emissions of CO are minimal and thus would not contribute to a violation of the CO ambient air quality standards. This impact is less than significant.

**Conclusion**: The project would not exceed the SJVAPCD's regional thresholds during construction and operation, therefore, this would be considered a ***less than significant impact***. The project would not contribute to a violation of ozone standards, PM standards, and nitrogen dioxide standards; this would be considered a ***less than significant impact***.

**Mitigation Measures**: None are required

**Impact AIR-2 – Violate any air quality standard or contribute substantially to an existing or projected air quality violation associated with carbon monoxide hotspots.**

This impact will evaluate the proposed project's potential to violate any air quality standard or contribute substantially to an existing or projected air quality violation as a result of the creation of carbon monoxide (CO) hot spots.

Localized high levels of CO are associated with traffic congestion and idling or slow-moving vehicles. The SJVAPCD provides screening criteria to determine when to quantify local CO concentrations based on impacts to the level of service (LOS) of roadways in the project vicinity.

The Traffic Impact Study prepared by KD Anderson & Associates, Inc. did not identify any streets or intersections where the Level of Service (LOS) would be reduced to LOS E or F nor are there any existing LOS F streets or intersections in the project vicinity that would be worsened by the project. Therefore, the proposed project would not significantly contribute to an exceedance that will exceed state or federal CO standards.

**Conclusion**: The proposed project would not cause a CO violation; this impact would be less than significant.

**Mitigation Measures**: None are required.

**Impact AIR-3 – Conflict with or obstruct implementation of any applicable air quality plan.**

This impact will evaluate the proposed project's potential to conflict with or obstruct implementation of the applicable air quality plan.

Because of the region's non-attainment status for ozone, PM2.5, and PM10, if the project generated emissions of either of the ozone precursor pollutants (i.e., ROG and NOx), PM10, or PM2.5 would exceed the SJVAPCD's significance thresholds, then the project would be considered to conflict with the attainment plans. In addition, if the project would result in a change in land use and corresponding increases in vehicle miles traveled, they may result in an increase in vehicle miles traveled that is unaccounted for in regional emissions inventories contained in regional air quality control plans.

As discussed in Impact AIR-1, predicted construction and operational emissions of NOx, ROG, PM10, and PM2.5 would not exceed the SJVAPCD significance thresholds. As a result, the proposed project would not conflict with emissions inventories contained in regional air quality attainment plans and result in a significant contribution to the region's air quality non-attainment status.

The SJVAPCD adopted the 2003 PM10 Plan on June 19, 2003 and first amended it on December 15, 2003 to comply with federal Clean Air Act requirements. The EPA approved the amended 2003 PM10 Plan effective June 25, 2004. The Air Basin is currently in attainment of the national standards for PM10.

The SJVAPCD Governing Board adopted the 2008 PM2.5 Plan following a public hearing on April 30, 2008. This plan will assure that the Valley will attain all the PM2.5 standards - the 1997 federal standards, the 2006 federal standards, and the state standard - as soon as possible. The CARB submitted the 2008 PM2.5 Plan to the EPA June 30, 2008. The 2008 PM2.5 Plan builds upon the comprehensive strategy adopted in the 2007 Ozone Plan to bring the Valley into attainment of the 1997 national standards for PM2.5. The EPA has identified NOx and sulfur dioxide as precursors that must be addressed in air quality plans for the 1997 PM2.5 standards. The 2008 PM2.5 Plan is a continuation of the SJVAPCD's strategy to improve the air quality in the San Joaquin Valley.

As an extreme nonattainment area for the 1-hour ozone national standard, the SJVAPCD adopted the Extreme Ozone Attainment Demonstration Plan in 2004. On March 8, 2010, the EPA approved the Plan for 1-hour ozone. Although effective June 15, 2005, the EPA revoked the 1-hour standard, the control requirements remain in effect to ensure progress toward meeting the new more stringent 8-hour ozone standard that has replaced the 1-hour standard. The Plan contains commitments to reduce a precursor of ozone, NOx, including NOx reductions from indirect sources.

The 2007 Ozone Plan contains measures to reduce ozone and particulate matter precursor emissions to bring the Air Basin into attainment with the federal 8-hour ozone standard. The 2007 Ozone Plan calls for a 75-percent reduction of NOx and 25-percent reduction of ROG. The SJVAPCD Governing Board adopted the 2007 Ozone Plan on April 30, 2007. The plan, with innovative measures and a "dual path" strategy, assures expeditious attainment of the federal 8-hour ozone standard for all Air Basin residents. The ARB approved the plan on June 14, 2007.

In December 2005, the SJVAPCD adopted the ISR and the accompanying administrative fee rule (Rule 3180). The ISR requires certain development projects within the San Joaquin Valley Air Basin to reduce emissions by specified amounts either through on-site measures or through the payment of air quality impact fees to the SJVAPCD to obtain emission reductions off-site. The emission reduction requirements are designed to reduce PM10 and NOx by amounts needed to meet the commitments of the 2003 PM10 Plan necessary to achieve attainment on schedule. Emission reduction projects envisioned by the ISR include retrofitting heavy-duty engines, replacing agricultural machinery and pumps, paving unpaved roads and road shoulders, trading out combustion-based lawn and agricultural equipment for electrical and other equipment, as well as a host of other projects that result in quantifiable emission reductions of PM10 and NOx. Compliance with Rule 9510 is required.

**Conclusion**: The proposed project would not conflict or obstruct implementation of the applicable air quality attainment plans. Impacts would be ***less than significant***.

**Mitigation Measures**: None are required.

**Impact AIR-4 – Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable national or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).**

The Air Basin is in nonattainment for ozone, PM10, and PM2.5. Each pollutant is addressed individually in the following analysis.

### *Ozone*

As discussed in Impact AIR-1, the project emissions emitted within the Air Basin would exceed not the significance thresholds for NOx, ROG, PM10, or PM2.5. Therefore, project emissions would not cumulatively combine with other sources in the Air Basin and cause a future violation of the ozone standards. This is a less than significant impact. As such, there would not be health effects from ozone from cumulative exposure of the pollutants.

### *Particulate Matter*

As discussed in Impact AIR-1, emissions during operation would not exceed the PM10 or PM2.5 significance threshold. This would be a less than significant impact. As such, there would not be cumulative exposure from the PM10 and PM2.5 pollutants.

### *Air Quality Plan*

Section 15130(b) of the CEQA Guidelines states the following:

The following elements are necessary to an adequate discussion of significant cumulative impacts: 1) Either: (A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or areawide conditions contributing to the cumulative impact.

In accordance with CEQA Guidelines 15130(b), this analysis of cumulative impacts is based on a summary of projections analysis. This analysis considers the current CEQA Guidelines, which includes the recent amendments approved by the Natural Resources Agency and effective on March 18, 2010. Under the amended CEQA Guidelines, cumulative impacts may be analyzed using other plans that evaluate relevant cumulative effects. The air quality attainment plans describe and evaluate the future projected emissions sources in the Air Basin and sets forth a strategy to meet both state and federal Clean Air Act planning requirements and federal ambient air quality standards. Therefore, the plans are relevant plans for a CEQA cumulative impacts analysis. As discussed in Impact AIR-3, the proposed project is consistent with the air quality attainment plans. Therefore, this is a less than significant impact.

**Conclusion**: Impacts would be ***less than significant***.

**Mitigation Measures**: None are required.

**Impact AIR-5 – Expose sensitive receptors to substantial pollutant concentrations.**

This impact will evaluate the proposed project's potential to expose sensitive receptors to substantial pollutant concentrations. The primary air quality issue of concern is toxic air contaminants.

***Construction: Toxic Air Contaminants***

Health-related risks associated with diesel exhaust emissions are primarily associated with long-term exposure and associated risk of contracting cancer. The estimation of cancer risk associated with exposure to toxic air contaminants is typically calculated based on a 70-year period of exposure. The use of diesel-powered construction equipment for the Master Plan uses, however, would be temporary (approximately 7 years in duration) and episodic and would occur over a relatively large area. For this reason, diesel-exhaust generated by construction, in and of itself, would not be expected to create conditions where the probability of contracting cancer over a 70-year lifetime of exposure is greater than 10 in 1 million for nearby receptors.

***Operation Toxic Air Contaminants***

The ARB Air Quality and Land Use Handbook contains recommendations that will "help keep California's children and other vulnerable populations out of harm's way with respect to nearby sources of air pollution" (ARB 2005), including recommendations for distances between sensitive receptors and certain land uses. These recommendations are assessed as follows.

Heavily traveled roads. ARB recommends avoiding new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. Epidemiological studies indicate that the distance from the roadway and truck traffic densities were key factors in the correlation of health effects, particularly in children. Roads assessed in the traffic study do not exceed a volume of 100,000 vehicles per day.

Distribution centers. ARB also recommends avoiding siting new sensitive land uses within 1,000 feet of a distribution center. There are no distribution centers within the vicinity of the project site.

Fueling stations. ARB recommends avoiding new sensitive land uses within 300 feet of a large fueling station (a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities. The proposed project does not include a fueling station.

Dry cleaning operations. ARB recommends avoiding siting new sensitive land uses within 300 feet of any dry cleaning operation that uses perchloroethylene. For operations with two or more machines, ARB recommends a buffer of 500 feet. For operations with three or more machines, ARB recommends consultation with the local air district. The proposed project does not include dry cleaning operations.

The project would include warehouse uses (approximately 180,000 square feet) that would have field trucks and shipping trucks that generate diesel particulate matter (DPM), a toxic air contaminant. As discussed in Section 1, Project Description, the applicant provided information on the number of field trucks and shipping trucks that would access the facilities. There would be a total of 52 shipping truck trips per day and 72 field truck trips per day. The SJVAPCD has a screening tool to determine if project impacts exceed the SJVAPCD threshold of 10 in one million probability of contracting cancer for the Maximally Exposed Individual (MEI). The screening tool requires information on the anticipated number of HDDT servicing the project site. The following assumptions were included in the modeling:

- 72 Field Truck trips per day, 6 days per week, 52 weeks per year
- 52 Shipping Truck Trips per day, 6 days per week, 52 weeks per year
- Idling time of 15 minutes

Table 22 provides an estimate of the cancer risks to the MEI, who are the residential receptors located east of the northern boundary of the project site. As shown in the table, the proposed project would not exceed the SJVAPCD threshold of 10 in one million; therefore, the project would not expose sensitive receptors to substantial concentrations of DPM. Impacts would be less than significant.

**Table 22: 2015 Cancer Risks**

| **Project Year** | **Locations** | **Cancer Risk (Risk per Million)** | **Significance Threshold (Risk per Million)** |
|---|---|---|---|
| 2014 | Maximum Exposed Residential Receptor | 5.9 | 10 |

Notes: See output file in Appendix B. Project impacts were analyzed using 2014 emission factors to provide a worst-case scenario of potential impacts.
Source: Quad Knopf, 2012

**Conclusion**: Impacts would be ***less than significant***.

**Mitigation Measures**: No mitigation is necessary.

**Impact AIR-6 – Exposure of a substantial number of people to sources of objectionable odors.**

This impact will evaluate the proposed project's potential to create objectionable odors affecting a substantial number of people.

If the proposed project were to result in a sensitive odor receptor being located in the vicinity of an undesirable odor generator, the impact would be considered significant. The SJVAPCD regulates odor sources through its nuisance rule, Rule 4102, but has no quantitative standards for odors. The SJVAPCD presents a list of project screening trigger levels for potential odor sources in its GAMAQI, which is displayed in Table 23. If the project were to result in sensitive receptors being located closer to an odor generator in the list in Table 23 than the recommended distances, a more detailed analysis including a review of SJVAPCD odor complaint records is recommended.

**Table 23: Screening Levels for Potential Odor Sources**

| Odor Generator | Distance (Miles) |
|---|---|
| Wastewater Treatment Facilities | 2 |
| Sanitary Landfill | 1 |
| Transfer Station | 1 |
| Composting Facility | 1 |
| Petroleum Refinery | 2 |
| Asphalt Batch Plant | 1 |
| Chemical Manufacturing | 1 |
| Fiberglass Manufacturing | 1 |
| Painting/Coating Operations (e.g., auto body shop) | 1 |
| Food Processing Facility | 1 |
| Feed Lot/Dairy | 1 |
| Rendering Plant | 1 |

Source: San Joaquin Valley Air Pollution Control District, 2002

### *Odors from the Project*

The proposed project would allow for the development of warehouse uses within the 75 acre project area. This land use is not considered a source of objectionable odors. This impact would be less than significant.

During construction, the various diesel-powered vehicles and equipment in use onsite would create localized odors. These odors would be temporary and would not likely be noticeable for extended periods of time beyond the project's site boundaries. The potential for diesel odor impacts would be less than significant.

### *Odors from Surrounding Land Uses*

The project site is not located within the Project Screening Levels distances from the common odor producing facilities presented in Table 23. This impact would be less than significant.

Conclusion: The impact would be *less than significant*.

**Mitigation Measures**: No mitigation measures are required.

# SECTION 5: GREENHOUSE GAS IMPACT ANALYSIS

| Would the project: | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? | ☒ | ☐ | ☐ | ☐ |
| b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases? | ☒ | ☐ | ☐ | ☐ |

**Impact GHG-1 – Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.**

This impact will evaluate the proposed project's potential to generate greenhouse gas emissions that may have a significant impact on the environment.

### *Construction*

The project would emit GHGs from upstream emission sources and direct sources (combustion of fuels from worker vehicles and construction equipment).

An upstream emission source (also known as life cycle emissions) refers to emissions that were generated during the manufacture of products to be used for construction of the project. Upstream emission sources for the project include but are not limited to the following: emissions from the manufacture of cement; emissions from the manufacture of steel; and/or emissions from the transportation of building materials to the seller. The upstream emissions were not estimated because they are not within the control of the project and to do so would be speculative. Additionally, the California Air Pollution Control Officers Association White Paper on CEQA and Climate Change supports this conclusion by stating, "The full life-cycle of GHG [greenhouse gas] emissions from construction activities is not accounted for … and the information needed to characterize [life-cycle emissions] would be speculative at the CEQA analysis level" (CAPCOA 2008). Therefore, pursuant to CEQA Guidelines Sections 15144 and 15145, upstream/life cycle emissions are speculative; no further discussion is necessary.

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from onsite and offsite activities. Onsite emissions principally consist of exhaust emissions (NOx, SOx, CO, $CO_2$, $CH_4$, $N_2O$, VOC, PM10, and PM2.5) from heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM10) from disturbed soil. Additionally, paving operations and application of architectural coatings would release VOC emissions. Offsite emissions are caused by motor vehicle exhaust (NOx, SOx, CO, $CO_2$, $CH_4$, $N_2O$, VOC, PM10, and PM2.5) from delivery vehicles, worker traffic, and road dust (PM10 and PM2.5).

The proposed project would be constructed in three phases of approximately three to four months each over the course of approximately six years, however to provide a "worst-case" scenario, the project's construction was conservatively estimated to be built out simultaneously within a year following entitlement approvals. It was assumed that the project's construction would start in June 2013 and be completed by July 2014.

Greenhouse gas emissions generated during construction are shown in Table 24. The SJVAPCD does not have a recommendation for assessing the significance of construction-related emissions. The majority of construction-related emissions would occur prior to the year 2020, which is the year the State is required to reduce its greenhouse gas emissions to 1990 levels. Therefore, any construction-related emissions would be less than significant.

**Table 24: Construction Greenhouse Gas Emissions**

| Year | Bio-$CO_2$ | Nbio-$CO_2$ | Total $CO_2$ | $CH_4$ | $N_2O$ | $CO_2e$ |
|---|---|---|---|---|---|---|
| 2013 | - | 883.39 | 883.39 | 0.09 | - | 885.26 |
| 2014 | - | 430.67 | 430.67 | 0.04 | - | 431.61 |
| **Total** | - | 1,314.06 | 1,314.06 | 0.13 | - | 1,316.87 |

Source: CalEEMod output, Appendix B

As shown in Table 25, emissions would be approximately 7,675.20MT$CO_2$e in 2020. The emissions presented account for reductions attributable to regulations that occurred after 2004 (Mobile – Pavley and Low Carbon Fuel Standard as calculated by CalEEMod and Renewable Portfolio Standards requiring a 33 percent renewable portfolio by the year 2020). As shown in Table 25, the regulations alone would not achieve the required target reduction of 29 percent below business as usual, which is a potentially significant impact.

**Table 25: 2020 Operational Greenhouse Gas Emissions**

| Source | 2020 Business as Usual (BAU) $CO_2e$ | 2020 With Regulations $CO_2e$ | 2020 with Regulations and Mitigation Measures $CO_2e$ |
|---|---|---|---|
| Area | 0.00 | 0.00 | 0.00 |
| Energy | 1,483.97 | 1,047.46 | 1,047.46 |
| Employee Vehicles | 159.96 | 122.80 | 112.83 |
| Field Trucks | 230.61 | 209.14 | 209.14 |
| Shipping Trucks | 1,732.10 | 1,564.35 | 1,564.35 |
| Waste | 884.36 | 442.18 | 442.18 |
| Water | 2,276.20 | 1,880.94 | 1,504.75 |
| Refrigerants | 908.00 | 454.00 | 454.00 |
| **Total** | **7,675.20** | **5,720.87** | **5,334.71** |
| Reduction | N/A | 25% | 30% |
| Significance Threshold | N/A | 29% | 29% |
| Significant? | N/A | Yes | No |

Source: CalEEMod, 2011, Quad Knopf, 2012

The proposed project would comply with California Green Building standards requiring indoor water conservation and would also implement mitigation measures to reduce employee vehicle trips and solid waste. Implementation of these measures would reduce GHG emissions below 29 percent BAU.

**Conclusion**: Construction emissions would primarily occur prior to 2020, therefore they would be less than significant. Operational emissions would not meet the target thresholds of 29 percent below BAU. Impacts would be ***potentially significant***.

**Mitigation Measure GHG-1**: The applicant shall implement an employer-based trip reduction program. The trip reduction program may include ride-sharing information, carpools, and vanpools.

**Mitigation Measure GHG-2**: The applicant shall implement a recycling program to reduce the quantity of solid waste disposed to landfills.

**Effectiveness of Mitigation**: The above mitigation measure would achieve the required reduction of 29 percent below BAU; therefore, the residual significance of this impact is ***less than significant***.

**Impact GHG-2 - Conflict with any applicable plan, policy, or regulation adopted for the**

**purpose of reducing the emissions of GHG.**

Stanislaus County does not have a greenhouse gas reduction plan or climate action plan. In the absence of a local, regional, or state plan that fully satisfies the requirements of the CEQA Guidelines. the project's compliance with AB 32 is evaluated through compliance with the applicable measures in the Scoping Plan below.

The ARB Governing Board approved a Climate Change Scoping Plan in December 2008. The Scoping Plan outlines the State's strategy to achieve the 2020 greenhouse gas emissions limit. The Scoping Plan "proposes a comprehensive set of actions designed to reduce overall greenhouse gas emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health" (ARB 2008).

Project consistency with applicable strategies in the Scoping Plan is assessed in Table 26. As shown, the project is consistent with the applicable strategies in the Scoping Plan.

**Table 26: 2020 Consistency with Applicable Scoping Plan Reduction Measures**

| Scoping Plan Reduction Measure | Project Consistency or Reason Why Not Applicable |
|---|---|
| 1. California Cap-and-Trade Program Linked to Western Climate Initiative. Implement a broadbased California Cap-and-Trade program to provide a firm limit on emissions. Link the California cap–and-trade program with other Western Climate Initiative Partner programs to create a regional market system to achieve greater benefits for California. | Not Applicable. This cap and trade program began in Fall 2012, products or services (such as electricity) are covered and the cost of the cap-and-trade system will be transferred to the consumers. |
| 2. California Light-Duty Vehicle Greenhouse Gas Standards. Implement adopted standards and planned second phase of the program. Align zeroemission vehicle, alternative and renewable fuel and vehicle technology programs with long-term climate change goals. | Not Applicable. This is a statewide measure that cannot be implemented by a project applicant or lead agency. When this measure is initiated, the standards would be applicable to the light-duty vehicles that would access the project site. |
| 3. Energy Efficiency. Maximize energy efficiency building and appliance standards; pursue additional efficiency including new technologies, policy, and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California | Consistent. This is a measure for the State to increase its energy efficiency standards. However, the project would increase its energy efficiency through project design features (through implementing Title 24 and Green Building Standards). |
| 4. Renewable Portfolio Standard. Achieve 33 percent renewable energy mix statewide. Renewable energy sources include (but are not limited to) wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas. | Consistent. TID continues to diversify its power supply portfolio through the incorporation of solar, hydroelectric, wind, and fuel cells. |

| Scoping Plan Reduction Measure | Project Consistency or Reason Why Not Applicable |
|---|---|
| 5. Low Carbon Fuel Standard. Develop and adopt the Low Carbon Fuel Standard | Not Applicable. This is a statewide measure that cannot be implemented by a project applicant or lead agency. When this measure is initiated, the standard would be applicable to the fuel used by vehicles that would access the project site. |
| 6. Regional Transportation-Related Greenhouse Gas Targets. Develop regional greenhouse gas emissions reduction targets for passenger vehicles. This measure refers to SB 375. | Not Applicable. The project is not related to developing greenhouse gas emission reduction targets. |
| 7. Vehicle Efficiency Measures. Implement lightduty vehicle efficiency measures. | Not Applicable. When this measure is initiated, the standards would be applicable to the light-duty vehicles that would access the project site. |
| 8. Goods Movement. Implement adopted regulations for the use of shore power for ships at berth. Improve efficiency in goods movement activities. | Not Applicable. The project does not propose any changes to maritime, rail, or intermodal facilities or forms of transportation. |
| 9. Million Solar Roofs Program. Install 3,000 MW of solar-electric capacity under California's existing solar programs. | Not Applicable. This measure is being implemented by various agencies throughout California. |
| 10. Medium/Heavy-Duty Vehicles. Adopt medium and heavy-duty vehicle efficiency measures. | Not Applicable. This is a statewide measure that cannot be implemented by a project applicant or lead agency. When this measure is initiated, the standards would be applicable to vehicles that access the project site. |
| 11. Industrial Emissions. Require assessment of large industrial sources to determine whether individual sources within a facility can cost-effectively reduce greenhouse gas emissions and provide other pollution reduction co-benefits. Reduce greenhouse gas emissions from fugitive emissions from oil and gas extraction and gas transmission. Adopt and implement regulations to control fugitive methane emissions and reduce flaring at refineries. | Not Applicable. The project would not be considered a large industrial source. |
| 12. High Speed Rail. Support implementation of a high-speed rail system. | Not Applicable. This is a statewide measure that cannot be implemented by a project applicant or the City. |
| 13. Green Building Strategy. Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings. | Consistent. The State's goal is to increase the use of green building practices. The project would implement comply with California Greenbuilding code. |
| 14. High Global Warming Potential Gases. Adopt measures to reduce high global warming potential gases. | Not Applicable. When this measure is initiated, it would be applicable to those gases that have high global warming potential that would be used by the project (such as in air conditioning and refrigerators). |
| 15. Recycling and Waste. Reduce methane emissions at landfills. Increase waste diversion, | Consistent. The project would not contain a landfill. The State's goal is to help increase waste |

| Scoping Plan Reduction Measure | Project Consistency or Reason Why Not Applicable |
|---|---|
| composting, and commercial recycling. Move toward zero-waste. | diversion. The project would participate in the County's recycling program. |
| 16. Sustainable Forests. Preserve forest sequestration and encourage the use of forest biomass for sustainable energy generation. | Not Applicable. The project site is in disturbed condition. No forested lands exist onsite. |
| 17. Water. Continue efficiency programs and use cleaner energy sources to move and treat water. | Consistent. This is a measure for state and local agencies. The project would implement water conservation features pursuant to the California Greenbuilding code. |
| 18. Agriculture. In the near-term, encourage investment in manure digesters and at the five-year Scoping Plan update determine if the program should be made mandatory by 2020. | Not Applicable. No grazing, feedlot, or other agricultural activities that generate manure occur onsite or are proposed to be implemented by the project. |

Source of ARB Scoping Plan Reduction Measure: California Air Resources Board 2008.
Source of Project Consistency or Applicability: Quad Knopf.

Although the project would be consistent with applicable Scoping Plan Reduction Measures, the project would not achieve the required 29 percent below BAU reduction that would help the State meet the overall reductions necessary to bring emissions to 1990 levels by 2020.

**Conclusion**: The proposed project may obstruct attainment of of the goals established under AB 32. The project would comply with all present and future regulatory measures developed in accordance with AB 32 and ARB's Scoping Plan, and will incorporate a number of measures that would minimize greenhouse gas emissions beyond existing regulatory requirements, however impacts are ***potentially significant***.

**Mitigation Measures:** Implement Mitigation Measures GHG-1 and GHG-2

**Effectiveness of Mitigation**: The above mitigation measure would achieve the required reduction of 29 percent below BAU; therefore, the residual significance of this impact is ***less than significant***.

## SECTION 6: REFERENCES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# APPENDIX A:

# CalEEMod Outputs

# Dan_Avila&Sons_Operational

**Stanislaus County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric |
|---|---|---|
| Refrigerated Warehouse-No Rail | 180 | 1000sqft |

### 1.2 Other Project Characteristics

**Urbanization** Rural

**Wind Speed (m/s)** 2.2

**Utility Company** Turlock Irrigation District

**Climate Zone** 3

**Precipitation Freq (Days)** 46

### 1.3 User Entered Comments

Project Characteristics -

Land Use - Based on Project Description

Construction Phase - No construction, operational emissions only

Off-road Equipment - no construction, operational emissions only

Vehicle Trips - Based on TIS - ITE Trip Rate for Warehouse (LU 150) and applicant operational information - Sunday through Friday operations Does not include HHD trucks, calculated separately

Vechicle Emission Factors - Based on new fleet mix - HHD calculated separately

Vechicle Emission Factors - based on new fleet - HHD calculated separately

Vechicle Emission Factors - based on new fleet - HHD calculated separately

Land Use Change -

Consumer Products -

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Water Mitigation -

Waste Mitigation -

## 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 | | | | | |
| 2014 | 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 |
| **Total** | **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** |

### 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 | | | | | |
| 2014 | 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 |
| **Total** | **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** |

## 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 | 0.83 | 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 |
| Energy | 0.00 | 0.00 | 0.00 | 0.00 | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 1,416.32 | 1,416.32 | 0.06 | 0.02 | 1,424.66 |
| Mobile | 0.13 | 0.17 | 1.14 | 0.00 | 0.17 | 0.01 | 0.18 | 0.01 | 0.01 | 0.01 | 0.00 | 150.03 | 150.03 | 0.01 | 0.00 | 150.18 |
| Waste | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 394.61 | 0.00 | 394.61 | 23.32 | 0.00 | 884.36 |
| Water | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 1,492.45 | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | **0.96** | **0.17** | **1.14** | **0.00** | **0.17** | **0.01** | **0.18** | **0.01** | **0.01** | **0.01** | **394.61** | **3,058.80** | **3,453.41** | **50.47** | **0.71** | **4,735.40** |

### 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 | 0.83 | 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 |
| Energy | 0.00 | 0.00 | 0.00 | 0.00 | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 1,416.32 | 1,416.32 | 0.06 | 0.02 | 1,424.66 |
| Mobile | 0.12 | 0.16 | 1.07 | 0.00 | 0.16 | 0.01 | 0.17 | 0.01 | 0.01 | 0.01 | 0.00 | 137.85 | 137.85 | 0.01 | 0.00 | 137.99 |
| Waste | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 197.31 | 0.00 | 197.31 | 11.66 | 0.00 | 442.18 |
| Water | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 1,193.96 | 1,193.96 | 21.66 | 0.56 | 1,820.96 |
| **Total** | **0.95** | **0.16** | **1.07** | **0.00** | **0.16** | **0.01** | **0.17** | **0.01** | **0.01** | **0.01** | **197.31** | **2,748.13** | **2,945.44** | **33.39** | **0.58** | **3,825.79** |

### 2.3 Vegetation

**Vegetation**

| | ROG | NOx | CO | SO2 | CO2e |
|---|---|---|---|---|---|
| Category | tons | | | | MT |
| Vegetation Land Change | | | | | -465.00 |
| **Total** | | | | | **-465.00** |

## 3.0 Construction Detail

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2014

### 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 | 0.00 | 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 |
| **Total** | **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** |

### 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 | 0.00 | 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 |
| Vendor | 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 |
| Worker | 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 |
| **Total** | **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** |

### 3.2 Demolition - 2014

**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 | 0.00 | 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 |
| **Total** | **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** |

**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 | 0.00 | 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 |
| Vendor | 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 |
| Worker | 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 |
| **Total** | **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** |

## 4.0 Mobile Detail

### 4.1 Mitigation Measures Mobile

Increase Diversity

Improve Pedestrian Network

Implement Trip Reduction Program

Provide Riade Sharing Program

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.12 | 0.16 | 1.07 | 0.00 | 0.16 | 0.01 | 0.17 | 0.01 | 0.01 | 0.01 | 0.00 | 137.85 | 137.85 | 0.01 | 0.00 | 137.99 |
| Unmitigated | 0.13 | 0.17 | 1.14 | 0.00 | 0.17 | 0.01 | 0.18 | 0.01 | 0.01 | 0.01 | 0.00 | 150.03 | 150.03 | 0.01 | 0.00 | 150.18 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Refrigerated Warehouse-No Rail | 102.60 | 0.00 | 102.60 | 339,764 | 311,712 |
| Total | 102.60 | 0.00 | 102.60 | 339,764 | 311,712 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | |
|---|---|---|---|---|---|---|
| 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 |
| Refrigerated Warehouse-No Rail | 14.70 | 6.60 | 6.60 | 59.00 | 0.00 | 41.00 |

# 5.0 Energy Detail

## 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 | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 1,414.79 | 1,414.79 | 0.06 | 0.02 | 1,423.12 |
| Electricity Unmitigated | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 1,414.79 | 1,414.79 | 0.06 | 0.02 | 1,423.12 |
| NaturalGas Mitigated | 0.00 | 0.00 | 0.00 | 0.00 | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 1.54 | 1.54 | 0.00 | 0.00 | 1.55 |
| NaturalGas Unmitigated | 0.00 | 0.00 | 0.00 | 0.00 | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 1.54 | 1.54 | 0.00 | 0.00 | 1.55 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 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 | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Refrigerated Warehouse-No Rail | 28800 | 0.00 | 0.00 | 0.00 | 0.00 | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 1.54 | 1.54 | 0.00 | 0.00 | 1.55 |
| **Total** | | **0.00** | **0.00** | **0.00** | **0.00** | | **0.00** | **0.00** | | **0.00** | **0.00** | **0.00** | **1.54** | **1.54** | **0.00** | **0.00** | **1.55** |

**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 | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Refrigerated Warehouse-No Rail | 28800 | 0.00 | 0.00 | 0.00 | 0.00 | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 1.54 | 1.54 | 0.00 | 0.00 | 1.55 |
| **Total** | | **0.00** | **0.00** | **0.00** | **0.00** | | **0.00** | **0.00** | | **0.00** | **0.00** | **0.00** | **1.54** | **1.54** | **0.00** | **0.00** | **1.55** |

### 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | kWh | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 4.5702e+006 | | | | | 1,414.79 | 0.06 | 0.02 | 1,423.12 |
| **Total** | | | | | | **1,414.79** | **0.06** | **0.02** | **1,423.12** |

**Mitigated**

| | Electricity Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | kWh | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 4.5702e+006 | | | | | 1,414.79 | 0.06 | 0.02 | 1,423.12 |
| **Total** | | | | | | **1,414.79** | **0.06** | **0.02** | **1,423.12** |

## 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 | 0.83 | 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 |
| Unmitigated | 0.83 | 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 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 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 | 0.13 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | 0.70 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscaping | 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 |
| **Total** | **0.83** | **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** |

## 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 | 0.13 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | 0.70 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscaping | 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 |
| **Total** | **0.83** | **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** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

| | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | MT/yr | | | |
| Mitigated | | | | | 1,193.96 | 21.66 | 0.56 | 1,820.96 |
| Unmitigated | | | | | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | Mgal | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 885.049 / 0 | | | | | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | | | | | | **1,492.45** | **27.08** | **0.69** | **2,276.20** |

### 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | Mgal | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 708.039 / 0 | | | | | 1,193.96 | 21.66 | 0.56 | 1,820.96 |
| **Total** | | | | | | **1,193.96** | **21.66** | **0.56** | **1,820.96** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|
| | tons/yr | | | | MT/yr | | | |
| Mitigated | | | | | 197.31 | 11.66 | 0.00 | 442.18 |
| Unmitigated | | | | | 394.61 | 23.32 | 0.00 | 884.36 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | tons | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 1944 | | | | | 394.61 | 23.32 | 0.00 | 884.36 |
| **Total** | | | | | | **394.61** | **23.32** | **0.00** | **884.36** |

**Mitigated**

| | Waste Disposed | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | tons | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 972 | | | | | 197.31 | 11.66 | 0.00 | 442.18 |
| **Total** | | | | | | **197.31** | **11.66** | **0.00** | **442.18** |

# 9.0 Vegetation

| | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|
| Category | tons | | | | MT | | | |
| Unmitigated | | | | | -465.00 | 0.00 | 0.00 | -465.00 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 9.1 Vegetation Land Change

**<u>Vegetation Type</u>**

| | Initial/Final | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| | Acres | tons | | | | MT | | | |
| Cropland | 75 / 0 | | | | | -465.00 | 0.00 | 0.00 | -465.00 |
| **Total** | | | | | | **-465.00** | **0.00** | **0.00** | **-465.00** |

# Dan_Avila&Sons_FieldTrucks_2014

**Stanislaus County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric |
|---|---|---|
| Refrigerated Warehouse-No Rail | 180 | 1000sqft |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Rural | **Wind Speed (m/s)** | 2.2 | **Utility Company** | Turlock Irrigation District |
| **Climate Zone** | 3 | **Precipitation Freq (Days)** | 46 | | |

### 1.3 User Entered Comments

Project Characteristics -

Land Use - Based on Project Description

Construction Phase - no construction, operational only from field trucks

Off-road Equipment - no construction, operational only from field trucks

Trips and VMT - no construction

Vehicle Trips - Based on Field Truck Information from Applicant

Vechicle Emission Factors - Heavy Heavy Diesel Trucks for Field Trucks

Vechicle Emission Factors - Heavy Heavy Diesel Trucks for Field Trucks

Vechicle Emission Factors - Heavy Heavy Diesel Trucks for Field Trucks

Consumer Products - only calculating mobile source emissions from trucks

Area Coating - only calculating mobile source emissions from trucks

Landscape Equipment - only calculating mobile source emissions from trucks

Energy Use - only calculating mobile source emissions from trucks

Water And Wastewater - only calculating mobile source emissions from trucks

Solid Waste - only calculating mobile source emissions from trucks

Area Mitigation - only calculating mobile source emissions from trucks

## 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 | | | | | |
| 2011 | 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 |
| **Total** | **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** |

### 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 | | | | | |
| 2011 | 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 |
| **Total** | **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** |

## 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 | 0.70 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Energy | 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 |
| Mobile | 0.12 | 1.45 | 0.62 | 0.00 | 0.07 | 0.05 | 0.11 | 0.01 | 0.05 | 0.05 | 0.00 | 228.31 | 228.31 | 0.00 | 0.00 | 228.41 |
| Waste | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Water | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **0.82** | **1.45** | **0.62** | **0.00** | **0.07** | **0.05** | **0.11** | **0.01** | **0.05** | **0.05** | **0.00** | **228.31** | **228.31** | **0.00** | **0.00** | **228.41** |

## 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 | 0.70 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Energy | 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 |
| Mobile | 0.12 | 1.45 | 0.62 | 0.00 | 0.07 | 0.05 | 0.11 | 0.01 | 0.05 | 0.05 | 0.00 | 228.31 | 228.31 | 0.00 | 0.00 | 228.41 |
| Waste | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Water | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **0.82** | **1.45** | **0.62** | **0.00** | **0.07** | **0.05** | **0.11** | **0.01** | **0.05** | **0.05** | **0.00** | **228.31** | **228.31** | **0.00** | **0.00** | **228.41** |

# 3.0 Construction Detail

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2011

### 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 | 0.00 | 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 |
| **Total** | **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** |

### 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 | 0.00 | 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 |
| Vendor | 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 |
| Worker | 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 |
| **Total** | **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** |

### 3.2 Demolition - 2011

**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 | 0.00 | 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 |
| **Total** | **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** |

**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 | 0.00 | 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 |
| Vendor | 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 |
| Worker | 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 |
| **Total** | **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** |

## 4.0 Mobile Detail

### 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.12 | 1.45 | 0.62 | 0.00 | 0.07 | 0.05 | 0.11 | 0.01 | 0.05 | 0.05 | 0.00 | 228.31 | 228.31 | 0.00 | 0.00 | 228.41 |
| Unmitigated | 0.12 | 1.45 | 0.62 | 0.00 | 0.07 | 0.05 | 0.11 | 0.01 | 0.05 | 0.05 | 0.00 | 228.31 | 228.31 | 0.00 | 0.00 | 228.41 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

### 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Refrigerated Warehouse-No Rail | 23.40 | 0.00 | 23.40 | 120,463 | 120,463 |
| Total | 23.40 | 0.00 | 23.40 | 120,463 | 120,463 |

### 4.3 Trip Type Information

| | Miles | | | Trip % | | |
|---|---|---|---|---|---|---|
| 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 |
| Refrigerated Warehouse-No Rail | 16.50 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 |

## 5.0 Energy Detail

### 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 | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Electricity Unmitigated | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| NaturalGas Mitigated | 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 |
| NaturalGas Unmitigated | 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 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 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 | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Refrigerated Warehouse-No Rail | 0 | 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 |
| **Total** | | **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** |

## 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Refrigerated Warehouse-No Rail | 0 | 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 |
| **Total** | | **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** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | kWh | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 0 | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | **0.00** | **0.00** | **0.00** | **0.00** |

### 5.3 Energy by Land Use - Electricity

**Mitigated**

| | Electricity Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | kWh | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 0 | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | **0.00** | **0.00** | **0.00** | **0.00** |

## 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 | 0.70 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Unmitigated | 0.70 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 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 | 0.00 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | 0.70 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscaping | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **0.70** | | | | | **0.00** | **0.00** | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

**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 | 0.00 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | 0.70 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscaping | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **0.70** | | | | | **0.00** | **0.00** | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | MT/yr | | | |
| Mitigated | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| Unmitigated | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | Mgal | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 0 / 0 | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | **0.00** | **0.00** | **0.00** | **0.00** |

## 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | Mgal | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 0 / 0 | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | **0.00** | **0.00** | **0.00** | **0.00** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

**Category/Year**

| | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|
| | tons/yr | | | | MT/yr | | | |
| Mitigated | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| Unmitigated | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | tons | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 0 | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | **0.00** | **0.00** | **0.00** | **0.00** |

**Mitigated**

| | Waste Disposed | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | tons | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 0 | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | **0.00** | **0.00** | **0.00** | **0.00** |

# 9.0 Vegetation

# Dan_Avila&Sons_ShippingTrucks_2014

**Stanislaus County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric |
|---|---|---|
| Refrigerated Warehouse-No Rail | 180 | 1000sqft |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Rural | **Wind Speed (m/s)** | 2.2 | **Utility Company** | Turlock Irrigation District |
| **Climate Zone** | 3 | **Precipitation Freq (Days)** | 46 | | |

### 1.3 User Entered Comments

Project Characteristics -

Land Use - Based on Project Description

Construction Phase - no construction, operational emissions from shipping trucks only

Off-road Equipment - no construction, operational emissions from shipping trucks only

Vehicle Trips - based on  applicant provided information for shipping trucks

Vechicle Emission Factors - shipping trucks = HHD

Vechicle Emission Factors - shipping trucks = HHD

Vechicle Emission Factors - shipping trucks = HHD

Consumer Products - mobile source emissions from trucks only

Area Coating - mobile source emissions from trucks only

Landscape Equipment - mobile source emissions from trucks only

Energy Use - mobile source emissions from trucks only

Water And Wastewater - mobile source emissions from trucks only

Solid Waste - mobile source emissions from trucks only

Area Mitigation - mobile source emissions from trucks only

Trips and VMT -

## 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 | | | | | |
| 2011 | 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 |
| **Total** | **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** |

### 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 | | | | | |
| 2011 | 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 |
| **Total** | **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** |

## 2.2 Overall Operational

### <u>Unmitigated Operational</u>

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.70 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Energy | 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 |
| Mobile | 0.73 | 9.59 | 3.46 | 0.01 | 0.52 | 0.35 | 0.87 | 0.05 | 0.35 | 0.40 | 0.00 | 1,709.80 | 1,709.80 | 0.03 | 0.00 | 1,710.42 |
| Waste | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Water | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **1.43** | **9.59** | **3.46** | **0.01** | **0.52** | **0.35** | **0.87** | **0.05** | **0.35** | **0.40** | **0.00** | **1,709.80** | **1,709.80** | **0.03** | **0.00** | **1,710.42** |

## 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 | 0.70 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Energy | 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 |
| Mobile | 0.73 | 9.59 | 3.46 | 0.01 | 0.52 | 0.35 | 0.87 | 0.05 | 0.35 | 0.40 | 0.00 | 1,709.80 | 1,709.80 | 0.03 | 0.00 | 1,710.42 |
| Waste | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Water | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **1.43** | **9.59** | **3.46** | **0.01** | **0.52** | **0.35** | **0.87** | **0.05** | **0.35** | **0.40** | **0.00** | **1,709.80** | **1,709.80** | **0.03** | **0.00** | **1,710.42** |

# 3.0 Construction Detail

## 3.1 Mitigation Measures Construction

### 3.2 Demolition - 2011

**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 | 0.00 | 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 |
| **Total** | **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** |

**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 | 0.00 | 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 |
| Vendor | 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 |
| Worker | 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 |
| **Total** | **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** |

### 3.2 Demolition - 2011

**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 | 0.00 | 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 |
| **Total** | **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** |

**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 | 0.00 | 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 |
| Vendor | 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 |
| Worker | 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 |
| **Total** | **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** |

## 4.0 Mobile Detail

### 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.73 | 9.59 | 3.46 | 0.01 | 0.52 | 0.35 | 0.87 | 0.05 | 0.35 | 0.40 | 0.00 | 1,709.80 | 1,709.80 | 0.03 | 0.00 | 1,710.42 |
| Unmitigated | 0.73 | 9.59 | 3.46 | 0.01 | 0.52 | 0.35 | 0.87 | 0.05 | 0.35 | 0.40 | 0.00 | 1,709.80 | 1,709.80 | 0.03 | 0.00 | 1,710.42 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

### 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Refrigerated Warehouse-No Rail | 21.60 | 0.00 | 21.60 | 950,227 | 950,227 |
| Total | 21.60 | 0.00 | 21.60 | 950,227 | 950,227 |

### 4.3 Trip Type Information

| | Miles | | | Trip % | | |
|---|---|---|---|---|---|---|
| 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 |
| Refrigerated Warehouse-No Rail | 141.00 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 |

## 5.0 Energy Detail

### 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 | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Electricity Unmitigated | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| NaturalGas Mitigated | 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 |
| NaturalGas Unmitigated | 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 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 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 | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Refrigerated Warehouse-No Rail | 0 | 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 |
| **Total** | | **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** |

## 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Refrigerated Warehouse-No Rail | 0 | 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 |
| **Total** | | **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** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | kWh | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 0 | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | **0.00** | **0.00** | **0.00** | **0.00** |

### 5.3 Energy by Land Use - Electricity

**Mitigated**

| | Electricity Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | kWh | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 0 | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | **0.00** | **0.00** | **0.00** | **0.00** |

## 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 | 0.70 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Unmitigated | 0.70 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 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 | 0.00 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | 0.70 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscaping | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **0.70** | | | | | **0.00** | **0.00** | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

### 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 | 0.00 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | 0.70 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscaping | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **0.70** | | | | | **0.00** | **0.00** | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

# 7.0 Water Detail

### 7.1 Mitigation Measures Water

| | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | MT/yr | | | |
| Mitigated | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| Unmitigated | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

### 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | Mgal | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 0 / 0 | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | **0.00** | **0.00** | **0.00** | **0.00** |

## 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | Mgal | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 0 / 0 | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | **0.00** | **0.00** | **0.00** | **0.00** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

**Category/Year**

| | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|
| | tons/yr | | | | MT/yr | | | |
| Mitigated | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| Unmitigated | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 8.2 Waste by Land Use

### Unmitigated

| | Waste Disposed | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | tons | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 0 | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | **0.00** | **0.00** | **0.00** | **0.00** |

### Mitigated

| | Waste Disposed | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | tons | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 0 | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | **0.00** | **0.00** | **0.00** | **0.00** |

## 9.0 Vegetation

# Dan_Avila&Sons_Operational_2015

**Stanislaus County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric |
|---|---|---|
| Refrigerated Warehouse-No Rail | 180 | 1000sqft |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Rural | **Wind Speed (m/s)** | 2.2 | **Utility Company** | Turlock Irrigation District |
| **Climate Zone** | 3 | **Precipitation Freq (Days)** | 46 | | |

### 1.3 User Entered Comments

Project Characteristics -

Land Use - Based on Project Description

Construction Phase - No construction, operational emissions only

Off-road Equipment - no construction, operational emissions only

Vehicle Trips - Based on TIS - ITE Trip Rate for Warehouse (LU 150) and applicant operational information - Sunday through Friday operations Does not include HHD trucks, calculated separately

Vechicle Emission Factors - Based on new fleet mix - HHD calculated separately

Vechicle Emission Factors - based on new fleet - HHD calculated separately

Vechicle Emission Factors - based on new fleet - HHD calculated separately

Consumer Products -

Land Use Change -

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Water Mitigation -

Waste Mitigation -

Trips and VMT -

Area Coating -

Landscape Equipment -

Energy Use -

Water And Wastewater -

Solid Waste -

Area Mitigation -

## 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 | | | | | |
| 2011 | 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 |
| **Total** | **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** |

**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 | | | | | |
| 2011 | 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 |
| **Total** | **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** |

## 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 | 0.83 | 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 |
| Energy | 0.00 | 0.00 | 0.00 | 0.00 | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 1,416.32 | 1,416.32 | 0.06 | 0.02 | 1,424.66 |
| Mobile | 0.12 | 0.16 | 1.04 | 0.00 | 0.17 | 0.01 | 0.18 | 0.01 | 0.01 | 0.01 | 0.00 | 145.43 | 145.43 | 0.01 | 0.00 | 145.57 |
| Waste | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 394.61 | 0.00 | 394.61 | 23.32 | 0.00 | 884.36 |
| Water | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 1,492.45 | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | **0.95** | **0.16** | **1.04** | **0.00** | **0.17** | **0.01** | **0.18** | **0.01** | **0.01** | **0.01** | **394.61** | **3,054.20** | **3,448.81** | **50.47** | **0.71** | **4,730.79** |

## 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 | 0.83 | 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 |
| Energy | 0.00 | 0.00 | 0.00 | 0.00 | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 1,416.32 | 1,416.32 | 0.06 | 0.02 | 1,424.66 |
| Mobile | 0.11 | 0.15 | 0.97 | 0.00 | 0.16 | 0.01 | 0.17 | 0.01 | 0.01 | 0.01 | 0.00 | 133.62 | 133.62 | 0.01 | 0.00 | 133.75 |
| Waste | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 197.31 | 0.00 | 197.31 | 11.66 | 0.00 | 442.18 |
| Water | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 1,193.96 | 1,193.96 | 21.66 | 0.56 | 1,820.96 |
| **Total** | **0.94** | **0.15** | **0.97** | **0.00** | **0.16** | **0.01** | **0.17** | **0.01** | **0.01** | **0.01** | **197.31** | **2,743.90** | **2,941.21** | **33.39** | **0.58** | **3,821.55** |

## 2.3 Vegetation

### Vegetation

| | ROG | NOx | CO | SO2 | CO2e |
|---|---|---|---|---|---|
| Category | tons | | | | MT |
| Vegetation Land Change | | | | | -465.00 |
| **Total** | | | | | **-465.00** |

# 3.0 Construction Detail

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2011

### 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 | 0.00 | 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 |
| **Total** | **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** |

### 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 | 0.00 | 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 |
| Vendor | 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 |
| Worker | 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 |
| **Total** | **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** |

### 3.2 Demolition - 2011

**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 | 0.00 | 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 |
| **Total** | **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** |

**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 | 0.00 | 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 |
| Vendor | 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 |
| Worker | 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 |
| **Total** | **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** |

## 4.0 Mobile Detail

### 4.1 Mitigation Measures Mobile

Increase Diversity

Improve Pedestrian Network

Implement Trip Reduction Program

Provide Riade Sharing Program

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.11 | 0.15 | 0.97 | 0.00 | 0.16 | 0.01 | 0.17 | 0.01 | 0.01 | 0.01 | 0.00 | 133.62 | 133.62 | 0.01 | 0.00 | 133.75 |
| Unmitigated | 0.12 | 0.16 | 1.04 | 0.00 | 0.17 | 0.01 | 0.18 | 0.01 | 0.01 | 0.01 | 0.00 | 145.43 | 145.43 | 0.01 | 0.00 | 145.57 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Refrigerated Warehouse-No Rail | 102.60 | 0.00 | 102.60 | 339,764 | 311,712 |
| Total | 102.60 | 0.00 | 102.60 | 339,764 | 311,712 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | |
|---|---|---|---|---|---|---|
| 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 |
| Refrigerated Warehouse-No Rail | 14.70 | 6.60 | 6.60 | 59.00 | 0.00 | 41.00 |

# 5.0 Energy Detail

## 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 | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 1,414.79 | 1,414.79 | 0.06 | 0.02 | 1,423.12 |
| Electricity Unmitigated | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 1,414.79 | 1,414.79 | 0.06 | 0.02 | 1,423.12 |
| NaturalGas Mitigated | 0.00 | 0.00 | 0.00 | 0.00 | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 1.54 | 1.54 | 0.00 | 0.00 | 1.55 |
| NaturalGas Unmitigated | 0.00 | 0.00 | 0.00 | 0.00 | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 1.54 | 1.54 | 0.00 | 0.00 | 1.55 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 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 | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Refrigerated Warehouse-No Rail | 28800 | 0.00 | 0.00 | 0.00 | 0.00 | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 1.54 | 1.54 | 0.00 | 0.00 | 1.55 |
| **Total** | | **0.00** | **0.00** | **0.00** | **0.00** | | **0.00** | **0.00** | | **0.00** | **0.00** | **0.00** | **1.54** | **1.54** | **0.00** | **0.00** | **1.55** |

### 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 | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Refrigerated Warehouse-No Rail | 28800 | 0.00 | 0.00 | 0.00 | 0.00 | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 1.54 | 1.54 | 0.00 | 0.00 | 1.55 |
| **Total** | | **0.00** | **0.00** | **0.00** | **0.00** | | **0.00** | **0.00** | | **0.00** | **0.00** | **0.00** | **1.54** | **1.54** | **0.00** | **0.00** | **1.55** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | kWh | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 4.5702e+006 | | | | | 1,414.79 | 0.06 | 0.02 | 1,423.12 |
| **Total** | | | | | | **1,414.79** | **0.06** | **0.02** | **1,423.12** |

**Mitigated**

| | Electricity Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | kWh | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 4.5702e+006 | | | | | 1,414.79 | 0.06 | 0.02 | 1,423.12 |
| **Total** | | | | | | **1,414.79** | **0.06** | **0.02** | **1,423.12** |

# 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 | 0.83 | 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 |
| Unmitigated | 0.83 | 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 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 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 | 0.13 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | 0.70 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscaping | 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 |
| **Total** | **0.83** | **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** |

## 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 | 0.13 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | 0.70 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscaping | 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 |
| **Total** | **0.83** | **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** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

| | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | MT/yr | | | |
| Mitigated | | | | | 1,193.96 | 21.66 | 0.56 | 1,820.96 |
| Unmitigated | | | | | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | Mgal | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 885.049 / 0 | | | | | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | | | | | | **1,492.45** | **27.08** | **0.69** | **2,276.20** |

## 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | Mgal | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 708.039 / 0 | | | | | 1,193.96 | 21.66 | 0.56 | 1,820.96 |
| **Total** | | | | | | **1,193.96** | **21.66** | **0.56** | **1,820.96** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|
| | tons/yr | | | | MT/yr | | | |
| Mitigated | | | | | 197.31 | 11.66 | 0.00 | 442.18 |
| Unmitigated | | | | | 394.61 | 23.32 | 0.00 | 884.36 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | tons | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 1944 | | | | | 394.61 | 23.32 | 0.00 | 884.36 |
| **Total** | | | | | | **394.61** | **23.32** | **0.00** | **884.36** |

**Mitigated**

| | Waste Disposed | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | tons | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 972 | | | | | 197.31 | 11.66 | 0.00 | 442.18 |
| **Total** | | | | | | **197.31** | **11.66** | **0.00** | **442.18** |

# 9.0 Vegetation

| | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|
| Category | tons | | | | MT | | | |
| Unmitigated | | | | | -465.00 | 0.00 | 0.00 | -465.00 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 9.1 Vegetation Land Change

**<u>Vegetation Type</u>**

| | Initial/Final | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| | Acres | tons | | | | MT | | | |
| Cropland | 75 / 0 | | | | | -465.00 | 0.00 | 0.00 | -465.00 |
| **Total** | | | | | | **-465.00** | **0.00** | **0.00** | **-465.00** |

# Dan_Avila&Sons_FieldTrucks_2015

**Stanislaus County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric |
|---|---|---|
| Refrigerated Warehouse-No Rail | 180 | 1000sqft |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Rural | **Wind Speed (m/s)** | 2.2 | **Utility Company** | Turlock Irrigation District |
| **Climate Zone** | 3 | **Precipitation Freq (Days)** | 46 | | |

### 1.3 User Entered Comments

Project Characteristics -

Land Use - Based on Project Description

Construction Phase - no construction, operational only from field trucks

Off-road Equipment - no construction, operational only from field trucks

Trips and VMT - no construction

Vehicle Trips - Based on Field Truck Information from Applicant

Vechicle Emission Factors - Heavy Heavy Diesel Trucks for Field Trucks

Vechicle Emission Factors - Heavy Heavy Diesel Trucks for Field Trucks

Vechicle Emission Factors - Heavy Heavy Diesel Trucks for Field Trucks

Consumer Products - only calculating mobile source emissions from trucks

Area Coating - only calculating mobile source emissions from trucks

Landscape Equipment - only calculating mobile source emissions from trucks

Energy Use - only calculating mobile source emissions from trucks

Water And Wastewater - only calculating mobile source emissions from trucks

Solid Waste - only calculating mobile source emissions from trucks

Area Mitigation - only calculating mobile source emissions from trucks

## 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 | | | | | |
| 2011 | 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 |
| **Total** | **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** |

**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 | | | | | |
| 2011 | 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 |
| **Total** | **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** |

## 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 | 0.70 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Energy | 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 |
| Mobile | 0.11 | 1.30 | 0.56 | 0.00 | 0.07 | 0.04 | 0.11 | 0.01 | 0.04 | 0.05 | 0.00 | 226.12 | 226.12 | 0.00 | 0.00 | 226.20 |
| Waste | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Water | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **0.81** | **1.30** | **0.56** | **0.00** | **0.07** | **0.04** | **0.11** | **0.01** | **0.04** | **0.05** | **0.00** | **226.12** | **226.12** | **0.00** | **0.00** | **226.20** |

## 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 | 0.70 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Energy | 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 |
| Mobile | 0.11 | 1.30 | 0.56 | 0.00 | 0.07 | 0.04 | 0.11 | 0.01 | 0.04 | 0.05 | 0.00 | 226.12 | 226.12 | 0.00 | 0.00 | 226.20 |
| Waste | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Water | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **0.81** | **1.30** | **0.56** | **0.00** | **0.07** | **0.04** | **0.11** | **0.01** | **0.04** | **0.05** | **0.00** | **226.12** | **226.12** | **0.00** | **0.00** | **226.20** |

# 3.0 Construction Detail

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2011

### 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 | 0.00 | 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 |
| **Total** | **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** |

### 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 | 0.00 | 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 |
| Vendor | 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 |
| Worker | 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 |
| **Total** | **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** |

### 3.2 Demolition - 2011

**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 | 0.00 | 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 |
| **Total** | **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** |

**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 | 0.00 | 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 |
| Vendor | 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 |
| Worker | 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 |
| **Total** | **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** |

## 4.0 Mobile Detail

### 4.1 Mitigation Measures Mobile

| Category | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.11 | 1.30 | 0.56 | 0.00 | 0.07 | 0.04 | 0.11 | 0.01 | 0.04 | 0.05 | 0.00 | 226.12 | 226.12 | 0.00 | 0.00 | 226.20 |
| Unmitigated | 0.11 | 1.30 | 0.56 | 0.00 | 0.07 | 0.04 | 0.11 | 0.01 | 0.04 | 0.05 | 0.00 | 226.12 | 226.12 | 0.00 | 0.00 | 226.20 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

### 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Refrigerated Warehouse-No Rail | 23.40 | 0.00 | 23.40 | 120,463 | 120,463 |
| Total | 23.40 | 0.00 | 23.40 | 120,463 | 120,463 |

### 4.3 Trip Type Information

| | Miles | | | Trip % | | |
|---|---|---|---|---|---|---|
| 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 |
| Refrigerated Warehouse-No Rail | 16.50 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 |

## 5.0 Energy Detail

### 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 | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Electricity Unmitigated | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| NaturalGas Mitigated | 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 |
| NaturalGas Unmitigated | 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 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 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 | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Refrigerated Warehouse-No Rail | 0 | 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 |
| **Total** | | **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** |

## 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Refrigerated Warehouse-No Rail | 0 | 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 |
| **Total** | | **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** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | kWh | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 0 | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | **0.00** | **0.00** | **0.00** | **0.00** |

### 5.3 Energy by Land Use - Electricity

**Mitigated**

| | Electricity Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | kWh | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 0 | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | **0.00** | **0.00** | **0.00** | **0.00** |

## 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 | 0.70 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Unmitigated | 0.70 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

### 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 | 0.00 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | 0.70 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscaping | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **0.70** | | | | | **0.00** | **0.00** | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

**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 | 0.00 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | 0.70 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscaping | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **0.70** | | | | | **0.00** | **0.00** | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | MT/yr | | | |
| Mitigated | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| Unmitigated | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | Mgal | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 0 / 0 | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | **0.00** | **0.00** | **0.00** | **0.00** |

### 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | Mgal | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 0 / 0 | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | **0.00** | **0.00** | **0.00** | **0.00** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

**Category/Year**

| | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|
| | tons/yr | | | | MT/yr | | | |
| Mitigated | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| Unmitigated | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | tons | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 0 | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | **0.00** | **0.00** | **0.00** | **0.00** |

**Mitigated**

| | Waste Disposed | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | tons | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 0 | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | **0.00** | **0.00** | **0.00** | **0.00** |

# 9.0 Vegetation

# Dan_Avila&Sons_ShippingTrucks_2015

**Stanislaus County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric |
| --- | --- | --- |
| Refrigerated Warehouse-No Rail | 180 | 1000sqft |

### 1.2 Other Project Characteristics

| | | | | | |
| --- | --- | --- | --- | --- | --- |
| **Urbanization** | Rural | **Wind Speed (m/s)** | 2.2 | **Utility Company** | Turlock Irrigation District |
| **Climate Zone** | 3 | **Precipitation Freq (Days)** | 46 | | |

### 1.3 User Entered Comments

Project Characteristics -

Land Use - Based on Project Description

Construction Phase - no construction, operational emissions from shipping trucks only

Off-road Equipment - no construction, operational emissions from shipping trucks only

Vehicle Trips - based on  applicant provided information for shipping trucks

Vechicle Emission Factors - shipping trucks = HHD

Vechicle Emission Factors - shipping trucks = HHD

Vechicle Emission Factors - shipping trucks = HHD

Consumer Products - mobile source emissions from trucks only

Area Coating - mobile source emissions from trucks only

Landscape Equipment - mobile source emissions from trucks only

Energy Use - mobile source emissions from trucks only

Water And Wastewater - mobile source emissions from trucks only

Solid Waste - mobile source emissions from trucks only

Area Mitigation - mobile source emissions from trucks only

Trips and VMT -

## 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 | | | | | |
| 2011 | 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 |
| **Total** | **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** |

### 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 | | | | | |
| 2011 | 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 |
| **Total** | **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** |

## 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 | 0.70 | 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 |
| Energy | 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 |
| Mobile | 0.66 | 8.39 | 3.13 | 0.01 | 0.52 | 0.31 | 0.83 | 0.05 | 0.31 | 0.36 | 0.00 | 1,692.88 | 1,692.88 | 0.02 | 0.00 | 1,693.31 |
| Waste | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Water | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **1.36** | **8.39** | **3.13** | **0.01** | **0.52** | **0.31** | **0.83** | **0.05** | **0.31** | **0.36** | **0.00** | **1,692.88** | **1,692.88** | **0.02** | **0.00** | **1,693.31** |

## 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 | 0.70 | 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 |
| Energy | 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 |
| Mobile | 0.66 | 8.39 | 3.13 | 0.01 | 0.52 | 0.31 | 0.83 | 0.05 | 0.31 | 0.36 | 0.00 | 1,692.88 | 1,692.88 | 0.02 | 0.00 | 1,693.31 |
| Waste | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Water | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **1.36** | **8.39** | **3.13** | **0.01** | **0.52** | **0.31** | **0.83** | **0.05** | **0.31** | **0.36** | **0.00** | **1,692.88** | **1,692.88** | **0.02** | **0.00** | **1,693.31** |

# 3.0 Construction Detail

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2011

### 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 | 0.00 | 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 |
| **Total** | **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** |

### 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 | 0.00 | 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 |
| Vendor | 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 |
| Worker | 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 |
| **Total** | **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** |

### 3.2 Demolition - 2011

**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 | 0.00 | 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 |
| **Total** | **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** |

**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 | 0.00 | 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 |
| Vendor | 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 |
| Worker | 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 |
| **Total** | **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** |

## 4.0 Mobile Detail

### 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.66 | 8.39 | 3.13 | 0.01 | 0.52 | 0.31 | 0.83 | 0.05 | 0.31 | 0.36 | 0.00 | 1,692.88 | 1,692.88 | 0.02 | 0.00 | 1,693.31 |
| Unmitigated | 0.66 | 8.39 | 3.13 | 0.01 | 0.52 | 0.31 | 0.83 | 0.05 | 0.31 | 0.36 | 0.00 | 1,692.88 | 1,692.88 | 0.02 | 0.00 | 1,693.31 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

### 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Refrigerated Warehouse-No Rail | 21.60 | 0.00 | 21.60 | 950,227 | 950,227 |
| Total | 21.60 | 0.00 | 21.60 | 950,227 | 950,227 |

### 4.3 Trip Type Information

| | Miles | | | Trip % | | |
|---|---|---|---|---|---|---|
| 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 |
| Refrigerated Warehouse-No Rail | 141.00 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 |

## 5.0 Energy Detail

### 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 | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Electricity Unmitigated | | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| NaturalGas Mitigated | 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 |
| NaturalGas Unmitigated | 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 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 5.2 Energy by Land Use - NaturalGas

**<u>Unmitigated</u>**

| | 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 | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Refrigerated Warehouse-No Rail | 0 | 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 |
| **Total** | | **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** |

## 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Refrigerated Warehouse-No Rail | 0 | 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 |
| **Total** | | **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** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | kWh | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 0 | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | **0.00** | **0.00** | **0.00** | **0.00** |

## 5.3 Energy by Land Use - Electricity

**Mitigated**

| | Electricity Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | kWh | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 0 | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | **0.00** | **0.00** | **0.00** | **0.00** |

# 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 | 0.70 | 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 |
| Unmitigated | 0.70 | 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 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 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 | 0.00 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | 0.70 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscaping | 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 |
| **Total** | **0.70** | **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** |

**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 | 0.00 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | 0.70 | | | | | 0.00 | 0.00 | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscaping | 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 |
| **Total** | **0.70** | **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** |

## 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | MT/yr | | | |
| Mitigated | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| Unmitigated | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 7.2 Water by Land Use

### <u>Unmitigated</u>

| | Indoor/Outdoor Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | Mgal | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 0 / 0 | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | **0.00** | **0.00** | **0.00** | **0.00** |

## 7.2 Water by Land Use

### Mitigated

| | Indoor/Outdoor Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | Mgal | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 0 / 0 | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | **0.00** | **0.00** | **0.00** | **0.00** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

### Category/Year

| | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|
| | tons/yr | | | | MT/yr | | | |
| Mitigated | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| Unmitigated | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | tons | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 0 | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | **0.00** | **0.00** | **0.00** | **0.00** |

**Mitigated**

| | Waste Disposed | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | tons | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 0 | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | **0.00** | **0.00** | **0.00** | **0.00** |

# 9.0 Vegetation

# Dan_Avila&Sons_Operational_BAU_NoHDD

**Stanislaus County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric |
|---|---|---|
| Refrigerated Warehouse-No Rail | 180 | 1000sqft |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Rural | **Wind Speed (m/s)** | 2.2 | **Utility Company** | Turlock Irrigation District |
| **Climate Zone** | 3 | **Precipitation Freq (Days)** | 46 | | |

### 1.3 User Entered Comments

Project Characteristics - Based on RPS reduction

Land Use - Based on Project Description

Construction Phase - No construction, operational emissions only

Off-road Equipment - no construction, operational emissions only

Vehicle Trips - Based on TIS - ITE Trip Rate for Warehouse (LU 150) and applicant operational information - Sunday through Friday operations Does not include HHD trucks, calculated separately

Vechicle Emission Factors - Based on new fleet mix - HHD calculated separately

Vechicle Emission Factors - based on new fleet - HHD calculated separately

Vechicle Emission Factors - based on new fleet - HHD calculated separately

Consumer Products -

Area Coating -

Landscape Equipment -

Energy Use - Based on historical data

Water And Wastewater -

Solid Waste -

Land Use Change -

Area Mitigation -

Water Mitigation -

Waste Mitigation -

Mobile Commute Mitigation -

## 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 | | | | | |
| 2011 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

### 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 | | | | | |
| 2011 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

**Unmitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Energy | | | | | | | | | | | 0.00 | 1,430.54 | 1,430.54 | 0.06 | 0.02 | 1,438.97 |
| Mobile | | | | | | | | | | | 0.00 | 159.61 | 159.61 | 0.02 | 0.00 | 159.96 |
| Waste | | | | | | | | | | | 394.61 | 0.00 | 394.61 | 23.32 | 0.00 | 884.36 |
| Water | | | | | | | | | | | 0.00 | 1,492.45 | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | | | | | | | | | | | **394.61** | **3,082.60** | **3,477.21** | **50.48** | **0.71** | **4,759.49** |

## 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Energy | | | | | | | | | | | 0.00 | 1,430.54 | 1,430.54 | 0.06 | 0.02 | 1,438.97 |
| Mobile | | | | | | | | | | | 0.00 | 159.61 | 159.61 | 0.02 | 0.00 | 159.96 |
| Waste | | | | | | | | | | | 394.61 | 0.00 | 394.61 | 23.32 | 0.00 | 884.36 |
| Water | | | | | | | | | | | 0.00 | 1,492.45 | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | | | | | | | | | | | **394.61** | **3,082.60** | **3,477.21** | **50.48** | **0.71** | **4,759.49** |

# 3.0 Construction Detail

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2011

**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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

**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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Vendor | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Worker | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 3.2 Demolition - 2011

### 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

### 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Vendor | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Worker | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

# 4.0 Mobile Detail

## 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | | | | | | | | | | | 0.00 | 159.61 | 159.61 | 0.02 | 0.00 | 159.96 |
| Unmitigated | | | | | | | | | | | 0.00 | 159.61 | 159.61 | 0.02 | 0.00 | 159.96 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

### 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Refrigerated Warehouse-No Rail | 102.60 | 0.00 | 102.60 | 339,764 | 339,764 |
| Total | 102.60 | 0.00 | 102.60 | 339,764 | 339,764 |

### 4.3 Trip Type Information

| | Miles | | | Trip % | | |
|---|---|---|---|---|---|---|
| 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 |
| Refrigerated Warehouse-No Rail | 14.70 | 6.60 | 6.60 | 59.00 | 0.00 | 41.00 |

## 5.0 Energy Detail

### 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 | | | | | | | | | | | 0.00 | 1,428.72 | 1,428.72 | 0.06 | 0.02 | 1,437.13 |
| Electricity Unmitigated | | | | | | | | | | | 0.00 | 1,428.72 | 1,428.72 | 0.06 | 0.02 | 1,437.13 |
| NaturalGas Mitigated | | | | | | | | | | | 0.00 | 1.83 | 1.83 | 0.00 | 0.00 | 1.84 |
| NaturalGas Unmitigated | | | | | | | | | | | 0.00 | 1.83 | 1.83 | 0.00 | 0.00 | 1.84 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 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 | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Refrigerated Warehouse-No Rail | 34200 | | | | | | | | | | | 0.00 | 1.83 | 1.83 | 0.00 | 0.00 | 1.84 |
| **Total** | | | | | | | | | | | | **0.00** | **1.83** | **1.83** | **0.00** | **0.00** | **1.84** |

## 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Refrigerated Warehouse-No Rail | 34200 | | | | | | | | | | | 0.00 | 1.83 | 1.83 | 0.00 | 0.00 | 1.84 |
| **Total** | | | | | | | | | | | | **0.00** | **1.83** | **1.83** | **0.00** | **0.00** | **1.84** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | kWh | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 4.6152e+006 | | | | | 1,428.72 | 0.06 | 0.02 | 1,437.13 |
| **Total** | | | | | | **1,428.72** | **0.06** | **0.02** | **1,437.13** |

### 5.3 Energy by Land Use - Electricity

**Mitigated**

| | Electricity Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | kWh | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 4.6152e+006 | | | | | 1,428.72 | 0.06 | 0.02 | 1,437.13 |
| **Total** | | | | | | **1,428.72** | **0.06** | **0.02** | **1,437.13** |

## 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Unmitigated | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscaping | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

**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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscaping | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | MT/yr | | | |
| Mitigated | | | | | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| Unmitigated | | | | | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 7.2 Water by Land Use

### <u>Unmitigated</u>

| | Indoor/Outdoor Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | Mgal | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 885.049 / 0 | | | | | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | | | | | | **1,492.45** | **27.08** | **0.69** | **2,276.20** |

### 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | Mgal | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 885.049 / 0 | | | | | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | | | | | | **1,492.45** | **27.08** | **0.69** | **2,276.20** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

**Category/Year**

| | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|
| | tons/yr | | | | MT/yr | | | |
| Mitigated | | | | | 394.61 | 23.32 | 0.00 | 884.36 |
| Unmitigated | | | | | 394.61 | 23.32 | 0.00 | 884.36 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | tons | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 1944 | | | | | 394.61 | 23.32 | 0.00 | 884.36 |
| **Total** | | | | | | **394.61** | **23.32** | **0.00** | **884.36** |

**Mitigated**

| | Waste Disposed | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | tons | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 1944 | | | | | 394.61 | 23.32 | 0.00 | 884.36 |
| **Total** | | | | | | **394.61** | **23.32** | **0.00** | **884.36** |

## 9.0 Vegetation

# Dan_Avila&Sons_FieldTrucks_BAU

**Stanislaus County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric |
|---|---|---|
| Refrigerated Warehouse-No Rail | 180 | 1000sqft |

### 1.2 Other Project Characteristics

**Urbanization** Rural

**Wind Speed (m/s)** 2.2

**Utility Company** Turlock Irrigation District

**Climate Zone** 3

**Precipitation Freq (Days)** 46

### 1.3 User Entered Comments

Project Characteristics -

Land Use - Based on Project Description

Construction Phase - no construction, operational only from field trucks

Off-road Equipment - no construction, operational only from field trucks

Vehicle Trips - Based on Field Truck Information from Applicant

Vechicle Emission Factors - Heavy Heavy Diesel Trucks for Field Trucks

Vechicle Emission Factors - Heavy Heavy Diesel Trucks for Field Trucks

Vechicle Emission Factors - Heavy Heavy Diesel Trucks for Field Trucks

Consumer Products - only calculating mobile source emissions from trucks

Area Coating - only calculating mobile source emissions from trucks

Landscape Equipment - only calculating mobile source emissions from trucks

Energy Use - only calculating mobile source emissions from trucks

Water And Wastewater - only calculating mobile source emissions from trucks

Solid Waste - only calculating mobile source emissions from trucks

Area Mitigation - only calculating mobile source emissions from trucks

## 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 | | | | | |
| 2011 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

**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 | | | | | |
| 2011 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

**Unmitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Energy | | | | | | | | | | | 0.00 | 1,416.32 | 1,416.32 | 0.06 | 0.02 | 1,424.66 |
| Mobile | | | | | | | | | | | 0.00 | 230.41 | 230.41 | 0.01 | 0.00 | 230.61 |
| Waste | | | | | | | | | | | 394.61 | 0.00 | 394.61 | 23.32 | 0.00 | 884.36 |
| Water | | | | | | | | | | | 0.00 | 1,492.45 | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | | | | | | | | | | | **394.61** | **3,139.18** | **3,533.79** | **50.47** | **0.71** | **4,815.83** |

## 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Energy | | | | | | | | | | | 0.00 | 1,416.32 | 1,416.32 | 0.06 | 0.02 | 1,424.66 |
| Mobile | | | | | | | | | | | 0.00 | 230.41 | 230.41 | 0.01 | 0.00 | 230.61 |
| Waste | | | | | | | | | | | 394.61 | 0.00 | 394.61 | 23.32 | 0.00 | 884.36 |
| Water | | | | | | | | | | | 0.00 | 1,492.45 | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | | | | | | | | | | | **394.61** | **3,139.18** | **3,533.79** | **50.47** | **0.71** | **4,815.83** |

# 3.0 Construction Detail

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2011

### 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

### 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Vendor | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Worker | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

### 3.2 Demolition - 2011

**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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

**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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Vendor | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Worker | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 4.0 Mobile Detail

### 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | | | | | | | | | | | 0.00 | 230.41 | 230.41 | 0.01 | 0.00 | 230.61 |
| Unmitigated | | | | | | | | | | | 0.00 | 230.41 | 230.41 | 0.01 | 0.00 | 230.61 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

### 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Refrigerated Warehouse-No Rail | 23.40 | 0.00 | 23.40 | 120,463 | 120,463 |
| Total | 23.40 | 0.00 | 23.40 | 120,463 | 120,463 |

### 4.3 Trip Type Information

| | Miles | | | Trip % | | |
|---|---|---|---|---|---|---|
| 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 |
| Refrigerated Warehouse-No Rail | 16.50 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 |

## 5.0 Energy Detail

### 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 | | | | | | | | | | | 0.00 | 1,414.79 | 1,414.79 | 0.06 | 0.02 | 1,423.12 |
| Electricity Unmitigated | | | | | | | | | | | 0.00 | 1,414.79 | 1,414.79 | 0.06 | 0.02 | 1,423.12 |
| NaturalGas Mitigated | | | | | | | | | | | 0.00 | 1.54 | 1.54 | 0.00 | 0.00 | 1.55 |
| NaturalGas Unmitigated | | | | | | | | | | | 0.00 | 1.54 | 1.54 | 0.00 | 0.00 | 1.55 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 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 | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Refrigerated Warehouse-No Rail | 28800 | | | | | | | | | | | 0.00 | 1.54 | 1.54 | 0.00 | 0.00 | 1.55 |
| **Total** | | | | | | | | | | | | **0.00** | **1.54** | **1.54** | **0.00** | **0.00** | **1.55** |

## 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Refrigerated Warehouse-No Rail | 28800 | | | | | | | | | | | 0.00 | 1.54 | 1.54 | 0.00 | 0.00 | 1.55 |
| **Total** | | | | | | | | | | | | **0.00** | **1.54** | **1.54** | **0.00** | **0.00** | **1.55** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | kWh | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 4.5702e+006 | | | | | 1,414.79 | 0.06 | 0.02 | 1,423.12 |
| **Total** | | | | | | **1,414.79** | **0.06** | **0.02** | **1,423.12** |

### 5.3 Energy by Land Use - Electricity

**Mitigated**

| | Electricity Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | kWh | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 4.5702e+006 | | | | | 1,414.79 | 0.06 | 0.02 | 1,423.12 |
| **Total** | | | | | | **1,414.79** | **0.06** | **0.02** | **1,423.12** |

## 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Unmitigated | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscaping | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

### 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscaping | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | MT/yr | | | |
| Mitigated | | | | | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| Unmitigated | | | | | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | Mgal | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 885.049 / 0 | | | | | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | | | | | | **1,492.45** | **27.08** | **0.69** | **2,276.20** |

### 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | Mgal | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 885.049 / 0 | | | | | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | | | | | | **1,492.45** | **27.08** | **0.69** | **2,276.20** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

**Category/Year**

| | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|
| | tons/yr | | | | MT/yr | | | |
| Mitigated | | | | | 394.61 | 23.32 | 0.00 | 884.36 |
| Unmitigated | | | | | 394.61 | 23.32 | 0.00 | 884.36 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | tons | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 1944 | | | | | 394.61 | 23.32 | 0.00 | 884.36 |
| **Total** | | | | | | **394.61** | **23.32** | **0.00** | **884.36** |

**Mitigated**

| | Waste Disposed | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | tons | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 1944 | | | | | 394.61 | 23.32 | 0.00 | 884.36 |
| **Total** | | | | | | **394.61** | **23.32** | **0.00** | **884.36** |

# 9.0 Vegetation

# Dan_Avila&Sons_ShippingTrucks_BAU

**Stanislaus County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric |
| --- | --- | --- |
| Refrigerated Warehouse-No Rail | 180 | 1000sqft |

### 1.2 Other Project Characteristics

**Urbanization** Rural

**Wind Speed (m/s)** 2.2

**Utility Company** Turlock Irrigation District

**Climate Zone** 3

**Precipitation Freq (Days)** 46

### 1.3 User Entered Comments

Project Characteristics -

Land Use - Based on Project Description

Construction Phase - no construction, operational emissions from shipping trucks only

Off-road Equipment - no construction, operational emissions from shipping trucks only

Vehicle Trips - based on applicant provided information for shipping trucks

Vechicle Emission Factors - shipping trucks = HHD

Vechicle Emission Factors - shipping trucks = HHD

Vechicle Emission Factors - shipping trucks = HHD

Consumer Products - mobile source emissions from trucks only

Area Coating - mobile source emissions from trucks only

Landscape Equipment - mobile source emissions from trucks only

Energy Use - mobile source emissions from trucks only

Water And Wastewater - mobile source emissions from trucks only

Solid Waste - mobile source emissions from trucks only

Area Mitigation - mobile source emissions from trucks only

## 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 | | | | | |
| 2011 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

### 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 | | | | | |
| 2011 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

**Unmitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Energy | | | | | | | | | | | 0.00 | 1,430.54 | 1,430.54 | 0.06 | 0.02 | 1,438.97 |
| Mobile | | | | | | | | | | | 0.00 | 1,730.86 | 1,730.86 | 0.06 | 0.00 | 1,732.10 |
| Waste | | | | | | | | | | | 394.61 | 0.00 | 394.61 | 23.32 | 0.00 | 884.36 |
| Water | | | | | | | | | | | 0.00 | 1,492.45 | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | | | | | | | | | | | **394.61** | **4,653.85** | **5,048.46** | **50.52** | **0.71** | **6,331.63** |

## 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Energy | | | | | | | | | | | 0.00 | 1,430.54 | 1,430.54 | 0.06 | 0.02 | 1,438.97 |
| Mobile | | | | | | | | | | | 0.00 | 1,730.86 | 1,730.86 | 0.06 | 0.00 | 1,732.10 |
| Waste | | | | | | | | | | | 394.61 | 0.00 | 394.61 | 23.32 | 0.00 | 884.36 |
| Water | | | | | | | | | | | 0.00 | 1,492.45 | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | | | | | | | | | | | **394.61** | **4,653.85** | **5,048.46** | **50.52** | **0.71** | **6,331.63** |

# 3.0 Construction Detail

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2011

### 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

### 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Vendor | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Worker | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

### 3.2 Demolition - 2011

**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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

**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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Vendor | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Worker | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 4.0 Mobile Detail

### 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | | | | | | | | | | | 0.00 | 1,730.86 | 1,730.86 | 0.06 | 0.00 | 1,732.10 |
| Unmitigated | | | | | | | | | | | 0.00 | 1,730.86 | 1,730.86 | 0.06 | 0.00 | 1,732.10 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

### 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Refrigerated Warehouse-No Rail | 21.60 | 0.00 | 21.60 | 950,227 | 950,227 |
| Total | 21.60 | 0.00 | 21.60 | 950,227 | 950,227 |

### 4.3 Trip Type Information

| | Miles | | | Trip % | | |
|---|---|---|---|---|---|---|
| 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 |
| Refrigerated Warehouse-No Rail | 141.00 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 |

## 5.0 Energy Detail

### 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 | | | | | | | | | | | 0.00 | 1,428.72 | 1,428.72 | 0.06 | 0.02 | 1,437.13 |
| Electricity Unmitigated | | | | | | | | | | | 0.00 | 1,428.72 | 1,428.72 | 0.06 | 0.02 | 1,437.13 |
| NaturalGas Mitigated | | | | | | | | | | | 0.00 | 1.83 | 1.83 | 0.00 | 0.00 | 1.84 |
| NaturalGas Unmitigated | | | | | | | | | | | 0.00 | 1.83 | 1.83 | 0.00 | 0.00 | 1.84 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 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 | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Refrigerated Warehouse-No Rail | 34200 | | | | | | | | | | | 0.00 | 1.83 | 1.83 | 0.00 | 0.00 | 1.84 |
| **Total** | | | | | | | | | | | | **0.00** | **1.83** | **1.83** | **0.00** | **0.00** | **1.84** |

## 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Refrigerated Warehouse-No Rail | 34200 | | | | | | | | | | | 0.00 | 1.83 | 1.83 | 0.00 | 0.00 | 1.84 |
| **Total** | | | | | | | | | | | | **0.00** | **1.83** | **1.83** | **0.00** | **0.00** | **1.84** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | kWh | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 4.6152e+006 | | | | | 1,428.72 | 0.06 | 0.02 | 1,437.13 |
| **Total** | | | | | | **1,428.72** | **0.06** | **0.02** | **1,437.13** |

### 5.3 Energy by Land Use - Electricity

**Mitigated**

| | Electricity Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | kWh | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 4.6152e+006 | | | | | 1,428.72 | 0.06 | 0.02 | 1,437.13 |
| **Total** | | | | | | **1,428.72** | **0.06** | **0.02** | **1,437.13** |

## 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Unmitigated | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscaping | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

**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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscaping | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | MT/yr | | | |
| Mitigated | | | | | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| Unmitigated | | | | | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | Mgal | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 885.049 / 0 | | | | | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | | | | | | **1,492.45** | **27.08** | **0.69** | **2,276.20** |

## 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | Mgal | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 885.049 / 0 | | | | | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | | | | | | **1,492.45** | **27.08** | **0.69** | **2,276.20** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

**Category/Year**

| | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|
| | tons/yr | | | | MT/yr | | | |
| Mitigated | | | | | 394.61 | 23.32 | 0.00 | 884.36 |
| Unmitigated | | | | | 394.61 | 23.32 | 0.00 | 884.36 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | tons | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 1944 | | | | | 394.61 | 23.32 | 0.00 | 884.36 |
| **Total** | | | | | | **394.61** | **23.32** | **0.00** | **884.36** |

**Mitigated**

| | Waste Disposed | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | tons | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 1944 | | | | | 394.61 | 23.32 | 0.00 | 884.36 |
| **Total** | | | | | | **394.61** | **23.32** | **0.00** | **884.36** |

# 9.0 Vegetation

# Dan_Avila&Sons_Operational_2020

**Stanislaus County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric |
|---|---|---|
| Refrigerated Warehouse-No Rail | 180 | 1000sqft |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Rural | **Wind Speed (m/s)** | 2.2 | **Utility Company** | Turlock Irrigation District |
| **Climate Zone** | 3 | **Precipitation Freq (Days)** | 46 | | |

### 1.3 User Entered Comments

Project Characteristics - Based on RPS reduction

Land Use - Based on Project Description

Construction Phase - No construction, operational emissions only

Off-road Equipment - no construction, operational emissions only

Vehicle Trips - Based on TIS - ITE Trip Rate for Warehouse (LU 150) and applicant operational information - Sunday through Friday operations Does not include HHD trucks, calculated separately

Vechicle Emission Factors - Based on new fleet mix - HHD calculated separately

Vechicle Emission Factors - based on new fleet - HHD calculated separately

Vechicle Emission Factors - based on new fleet - HHD calculated separately

Consumer Products -

Area Coating -

Landscape Equipment -

Energy Use - Based on RPS

Water And Wastewater -

Solid Waste -

Land Use Change -

Area Mitigation -

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Water Mitigation -

Waste Mitigation -

## 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 | | | | | |
| 2011 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

**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 | | | | | |
| 2011 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

### <u>Unmitigated Operational</u>

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Energy | | | | | | | | | | | 0.00 | 1,041.40 | 1,041.40 | 0.04 | 0.02 | 1,047.46 |
| Mobile | | | | | | | | | | | 0.00 | 122.69 | 122.69 | 0.00 | 0.00 | 122.80 |
| Waste | | | | | | | | | | | 394.61 | 0.00 | 394.61 | 23.32 | 0.00 | 884.36 |
| Water | | | | | | | | | | | 0.00 | 1,099.57 | 1,099.57 | 27.06 | 0.69 | 1,880.94 |
| **Total** | | | | | | | | | | | **394.61** | **2,263.66** | **2,658.27** | **50.42** | **0.71** | **3,935.56** |

## 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Energy | | | | | | | | | | | 0.00 | 1,041.40 | 1,041.40 | 0.04 | 0.02 | 1,047.46 |
| Mobile | | | | | | | | | | | 0.00 | 112.73 | 112.73 | 0.00 | 0.00 | 112.83 |
| Waste | | | | | | | | | | | 197.31 | 0.00 | 197.31 | 11.66 | 0.00 | 442.18 |
| Water | | | | | | | | | | | 0.00 | 879.66 | 879.66 | 21.65 | 0.55 | 1,504.75 |
| **Total** | | | | | | | | | | | **197.31** | **2,033.79** | **2,231.10** | **33.35** | **0.57** | **3,107.22** |

# 3.0 Construction Detail

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2011

### 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

### 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Vendor | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Worker | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

### 3.2 Demolition - 2011

**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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

**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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Vendor | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Worker | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 4.0 Mobile Detail

### 4.1 Mitigation Measures Mobile

Increase Diversity

Improve Pedestrian Network

Implement Trip Reduction Program

Provide Riade Sharing Program

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | | | | | | | | | | | 0.00 | 112.73 | 112.73 | 0.00 | 0.00 | 112.83 |
| Unmitigated | | | | | | | | | | | 0.00 | 122.69 | 122.69 | 0.00 | 0.00 | 122.80 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Refrigerated Warehouse-No Rail | 102.60 | 0.00 | 102.60 | 339,764 | 311,712 |
| Total | 102.60 | 0.00 | 102.60 | 339,764 | 311,712 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | |
|---|---|---|---|---|---|---|
| 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 |
| Refrigerated Warehouse-No Rail | 14.70 | 6.60 | 6.60 | 59.00 | 0.00 | 41.00 |

## 5.0 Energy Detail

### 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 | | | | | | | | | | | 0.00 | 1,039.86 | 1,039.86 | 0.04 | 0.02 | 1,045.92 |
| Electricity Unmitigated | | | | | | | | | | | 0.00 | 1,039.86 | 1,039.86 | 0.04 | 0.02 | 1,045.92 |
| NaturalGas Mitigated | | | | | | | | | | | 0.00 | 1.54 | 1.54 | 0.00 | 0.00 | 1.55 |
| NaturalGas Unmitigated | | | | | | | | | | | 0.00 | 1.54 | 1.54 | 0.00 | 0.00 | 1.55 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 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 | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Refrigerated Warehouse-No Rail | 28800 | | | | | | | | | | | 0.00 | 1.54 | 1.54 | 0.00 | 0.00 | 1.55 |
| **Total** | | | | | | | | | | | | **0.00** | **1.54** | **1.54** | **0.00** | **0.00** | **1.55** |

**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 | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Refrigerated Warehouse-No Rail | 28800 | | | | | | | | | | | 0.00 | 1.54 | 1.54 | 0.00 | 0.00 | 1.55 |
| **Total** | | | | | | | | | | | | **0.00** | **1.54** | **1.54** | **0.00** | **0.00** | **1.55** |

### 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | kWh | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 4.5702e+006 | | | | | 1,039.86 | 0.04 | 0.02 | 1,045.92 |
| **Total** | | | | | | **1,039.86** | **0.04** | **0.02** | **1,045.92** |

**Mitigated**

| | Electricity Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | kWh | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 4.5702e+006 | | | | | 1,039.86 | 0.04 | 0.02 | 1,045.92 |
| **Total** | | | | | | **1,039.86** | **0.04** | **0.02** | **1,045.92** |

## 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Unmitigated | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscaping | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscaping | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

| | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | MT/yr | | | |
| Mitigated | | | | | 879.66 | 21.65 | 0.55 | 1,504.75 |
| Unmitigated | | | | | 1,099.57 | 27.06 | 0.69 | 1,880.94 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | Mgal | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 885.049 / 0 | | | | | 1,099.57 | 27.06 | 0.69 | 1,880.94 |
| **Total** | | | | | | **1,099.57** | **27.06** | **0.69** | **1,880.94** |

### 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | Mgal | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 708.039 / 0 | | | | | 879.66 | 21.65 | 0.55 | 1,504.75 |
| **Total** | | | | | | **879.66** | **21.65** | **0.55** | **1,504.75** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|
| | tons/yr | | | | MT/yr | | | |
| Mitigated | | | | | 197.31 | 11.66 | 0.00 | 442.18 |
| Unmitigated | | | | | 394.61 | 23.32 | 0.00 | 884.36 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

### 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | tons | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 1944 | | | | | 394.61 | 23.32 | 0.00 | 884.36 |
| **Total** | | | | | | **394.61** | **23.32** | **0.00** | **884.36** |

**Mitigated**

| | Waste Disposed | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | tons | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 972 | | | | | 197.31 | 11.66 | 0.00 | 442.18 |
| **Total** | | | | | | **197.31** | **11.66** | **0.00** | **442.18** |

## 9.0 Vegetation

# Dan_Avila&Sons_FieldTrucks_2020

**Stanislaus County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric |
|---|---|---|
| Refrigerated Warehouse-No Rail | 180 | 1000sqft |

### 1.2 Other Project Characteristics

**Urbanization** Rural **Wind Speed (m/s)** 2.2 **Utility Company** Turlock Irrigation District

**Climate Zone** 3 **Precipitation Freq (Days)** 46

### 1.3 User Entered Comments

Project Characteristics -

Land Use - Based on Project Description

Construction Phase - no construction, operational only from field trucks

Off-road Equipment - no construction, operational only from field trucks

Vehicle Trips - Based on Field Truck Information from Applicant

Vechicle Emission Factors - Heavy Heavy Diesel Trucks for Field Trucks

Vechicle Emission Factors - Heavy Heavy Diesel Trucks for Field Trucks

Vechicle Emission Factors - Heavy Heavy Diesel Trucks for Field Trucks

Consumer Products - only calculating mobile source emissions from trucks

Area Coating - only calculating mobile source emissions from trucks

Landscape Equipment - only calculating mobile source emissions from trucks

Energy Use - only calculating mobile source emissions from trucks

Water And Wastewater - only calculating mobile source emissions from trucks

Solid Waste - only calculating mobile source emissions from trucks

Area Mitigation - only calculating mobile source emissions from trucks

## 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 | | | | | |
| 2011 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

### 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 | | | | | |
| 2011 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

**Unmitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Energy | | | | | | | | | | | 0.00 | 1,416.32 | 1,416.32 | 0.06 | 0.02 | 1,424.66 |
| Mobile | | | | | | | | | | | 0.00 | 209.10 | 209.10 | 0.00 | 0.00 | 209.14 |
| Waste | | | | | | | | | | | 394.61 | 0.00 | 394.61 | 23.32 | 0.00 | 884.36 |
| Water | | | | | | | | | | | 0.00 | 1,492.45 | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | | | | | | | | | | | **394.61** | **3,117.87** | **3,512.48** | **50.46** | **0.71** | **4,794.36** |

## 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Energy | | | | | | | | | | | 0.00 | 1,416.32 | 1,416.32 | 0.06 | 0.02 | 1,424.66 |
| Mobile | | | | | | | | | | | 0.00 | 209.10 | 209.10 | 0.00 | 0.00 | 209.14 |
| Waste | | | | | | | | | | | 394.61 | 0.00 | 394.61 | 23.32 | 0.00 | 884.36 |
| Water | | | | | | | | | | | 0.00 | 1,492.45 | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | | | | | | | | | | | **394.61** | **3,117.87** | **3,512.48** | **50.46** | **0.71** | **4,794.36** |

# 3.0 Construction Detail

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2011

### 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

### 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Vendor | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Worker | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

### 3.2 Demolition - 2011

**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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

**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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Vendor | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Worker | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 4.0 Mobile Detail

### 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | | | | | | | | | | | 0.00 | 209.10 | 209.10 | 0.00 | 0.00 | 209.14 |
| Unmitigated | | | | | | | | | | | 0.00 | 209.10 | 209.10 | 0.00 | 0.00 | 209.14 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

### 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Refrigerated Warehouse-No Rail | 23.40 | 0.00 | 23.40 | 120,463 | 120,463 |
| Total | 23.40 | 0.00 | 23.40 | 120,463 | 120,463 |

### 4.3 Trip Type Information

| | Miles | | | Trip % | | |
|---|---|---|---|---|---|---|
| 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 |
| Refrigerated Warehouse-No Rail | 16.50 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 |

## 5.0 Energy Detail

### 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 | | | | | | | | | | | 0.00 | 1,414.79 | 1,414.79 | 0.06 | 0.02 | 1,423.12 |
| Electricity Unmitigated | | | | | | | | | | | 0.00 | 1,414.79 | 1,414.79 | 0.06 | 0.02 | 1,423.12 |
| NaturalGas Mitigated | | | | | | | | | | | 0.00 | 1.54 | 1.54 | 0.00 | 0.00 | 1.55 |
| NaturalGas Unmitigated | | | | | | | | | | | 0.00 | 1.54 | 1.54 | 0.00 | 0.00 | 1.55 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 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 | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Refrigerated Warehouse-No Rail | 28800 | | | | | | | | | | | 0.00 | 1.54 | 1.54 | 0.00 | 0.00 | 1.55 |
| **Total** | | | | | | | | | | | | **0.00** | **1.54** | **1.54** | **0.00** | **0.00** | **1.55** |

## 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Refrigerated Warehouse-No Rail | 28800 | | | | | | | | | | | 0.00 | 1.54 | 1.54 | 0.00 | 0.00 | 1.55 |
| **Total** | | | | | | | | | | | | **0.00** | **1.54** | **1.54** | **0.00** | **0.00** | **1.55** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | kWh | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 4.5702e+006 | | | | | 1,414.79 | 0.06 | 0.02 | 1,423.12 |
| **Total** | | | | | | **1,414.79** | **0.06** | **0.02** | **1,423.12** |

### 5.3 Energy by Land Use - Electricity

**Mitigated**

| | Electricity Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | kWh | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 4.5702e+006 | | | | | 1,414.79 | 0.06 | 0.02 | 1,423.12 |
| **Total** | | | | | | **1,414.79** | **0.06** | **0.02** | **1,423.12** |

## 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Unmitigated | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscaping | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

**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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscaping | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | MT/yr | | | |
| Mitigated | | | | | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| Unmitigated | | | | | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | Mgal | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 885.049 / 0 | | | | | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | | | | | | **1,492.45** | **27.08** | **0.69** | **2,276.20** |

## 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | Mgal | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 885.049 / 0 | | | | | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | | | | | | **1,492.45** | **27.08** | **0.69** | **2,276.20** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

**Category/Year**

| | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|
| | tons/yr | | | | MT/yr | | | |
| Mitigated | | | | | 394.61 | 23.32 | 0.00 | 884.36 |
| Unmitigated | | | | | 394.61 | 23.32 | 0.00 | 884.36 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 8.2 Waste by Land Use

### Unmitigated

| | Waste Disposed | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | tons | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 1944 | | | | | 394.61 | 23.32 | 0.00 | 884.36 |
| **Total** | | | | | | **394.61** | **23.32** | **0.00** | **884.36** |

### Mitigated

| | Waste Disposed | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | tons | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 1944 | | | | | 394.61 | 23.32 | 0.00 | 884.36 |
| **Total** | | | | | | **394.61** | **23.32** | **0.00** | **884.36** |

# 9.0 Vegetation

# Dan_Avila&Sons_ShippingTrucks_2020

**Stanislaus County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric |
|---|---|---|
| Refrigerated Warehouse-No Rail | 180 | 1000sqft |

### 1.2 Other Project Characteristics

**Urbanization** Rural **Wind Speed (m/s)** 2.2 **Utility Company** Turlock Irrigation District

**Climate Zone** 3 **Precipitation Freq (Days)** 46

### 1.3 User Entered Comments

Project Characteristics -

Land Use - Based on Project Description

Construction Phase - no construction, operational emissions from shipping trucks only

Off-road Equipment - no construction, operational emissions from shipping trucks only

Vehicle Trips - based on  applicant provided information for shipping trucks

Vechicle Emission Factors - shipping trucks = HHD

Vechicle Emission Factors - shipping trucks = HHD

Vechicle Emission Factors - shipping trucks = HHD

Consumer Products - mobile source emissions from trucks only

Area Coating - mobile source emissions from trucks only

Landscape Equipment - mobile source emissions from trucks only

Energy Use - mobile source emissions from trucks only

Water And Wastewater - mobile source emissions from trucks only

Solid Waste - mobile source emissions from trucks only

Area Mitigation - mobile source emissions from trucks only

## 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 | | | | | |
| 2011 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

### 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 | | | | | |
| 2011 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

**Unmitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Energy | | | | | | | | | | | 0.00 | 1,416.32 | 1,416.32 | 0.06 | 0.02 | 1,424.66 |
| Mobile | | | | | | | | | | | 0.00 | 1,564.13 | 1,564.13 | 0.01 | 0.00 | 1,564.35 |
| Waste | | | | | | | | | | | 394.61 | 0.00 | 394.61 | 23.32 | 0.00 | 884.36 |
| Water | | | | | | | | | | | 0.00 | 1,492.45 | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | | | | | | | | | | | **394.61** | **4,472.90** | **4,867.51** | **50.47** | **0.71** | **6,149.57** |

## 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Energy | | | | | | | | | | | 0.00 | 1,416.32 | 1,416.32 | 0.06 | 0.02 | 1,424.66 |
| Mobile | | | | | | | | | | | 0.00 | 1,564.13 | 1,564.13 | 0.01 | 0.00 | 1,564.35 |
| Waste | | | | | | | | | | | 394.61 | 0.00 | 394.61 | 23.32 | 0.00 | 884.36 |
| Water | | | | | | | | | | | 0.00 | 1,492.45 | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | | | | | | | | | | | **394.61** | **4,472.90** | **4,867.51** | **50.47** | **0.71** | **6,149.57** |

# 3.0 Construction Detail

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2011

### 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

### 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Vendor | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Worker | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 3.2 Demolition - 2011

**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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

**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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Vendor | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Worker | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

# 4.0 Mobile Detail

## 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | | | | | | | | | | | 0.00 | 1,564.13 | 1,564.13 | 0.01 | 0.00 | 1,564.35 |
| Unmitigated | | | | | | | | | | | 0.00 | 1,564.13 | 1,564.13 | 0.01 | 0.00 | 1,564.35 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

### 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Refrigerated Warehouse-No Rail | 21.60 | 0.00 | 21.60 | 950,227 | 950,227 |
| Total | 21.60 | 0.00 | 21.60 | 950,227 | 950,227 |

### 4.3 Trip Type Information

| | Miles | | | Trip % | | |
|---|---|---|---|---|---|---|
| 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 |
| Refrigerated Warehouse-No Rail | 141.00 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 |

## 5.0 Energy Detail

### 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 | | | | | | | | | | | 0.00 | 1,414.79 | 1,414.79 | 0.06 | 0.02 | 1,423.12 |
| Electricity Unmitigated | | | | | | | | | | | 0.00 | 1,414.79 | 1,414.79 | 0.06 | 0.02 | 1,423.12 |
| NaturalGas Mitigated | | | | | | | | | | | 0.00 | 1.54 | 1.54 | 0.00 | 0.00 | 1.55 |
| NaturalGas Unmitigated | | | | | | | | | | | 0.00 | 1.54 | 1.54 | 0.00 | 0.00 | 1.55 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 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 | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Refrigerated Warehouse-No Rail | 28800 | | | | | | | | | | | 0.00 | 1.54 | 1.54 | 0.00 | 0.00 | 1.55 |
| **Total** | | | | | | | | | | | | **0.00** | **1.54** | **1.54** | **0.00** | **0.00** | **1.55** |

## 5.2 Energy by Land Use - NaturalGas

### Mitigated

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Refrigerated Warehouse-No Rail | 28800 | | | | | | | | | | | 0.00 | 1.54 | 1.54 | 0.00 | 0.00 | 1.55 |
| **Total** | | | | | | | | | | | | **0.00** | **1.54** | **1.54** | **0.00** | **0.00** | **1.55** |

## 5.3 Energy by Land Use - Electricity

### Unmitigated

| | Electricity Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | kWh | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 4.5702e+006 | | | | | 1,414.79 | 0.06 | 0.02 | 1,423.12 |
| **Total** | | | | | | **1,414.79** | **0.06** | **0.02** | **1,423.12** |

### 5.3 Energy by Land Use - Electricity

**Mitigated**

| | Electricity Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | kWh | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 4.5702e+006 | | | | | 1,414.79 | 0.06 | 0.02 | 1,423.12 |
| **Total** | | | | | | **1,414.79** | **0.06** | **0.02** | **1,423.12** |

## 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Unmitigated | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscaping | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

**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 | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscaping | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total** | | | | | | | | | | | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | MT/yr | | | |
| Mitigated | | | | | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| Unmitigated | | | | | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 7.2 Water by Land Use

### <u>Unmitigated</u>

| | Indoor/Outdoor Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | Mgal | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 885.049 / 0 | | | | | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | | | | | | **1,492.45** | **27.08** | **0.69** | **2,276.20** |

## 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | Mgal | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 885.049 / 0 | | | | | 1,492.45 | 27.08 | 0.69 | 2,276.20 |
| **Total** | | | | | | **1,492.45** | **27.08** | **0.69** | **2,276.20** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

**Category/Year**

| | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|
| | tons/yr | | | | MT/yr | | | |
| Mitigated | | | | | 394.61 | 23.32 | 0.00 | 884.36 |
| Unmitigated | | | | | 394.61 | 23.32 | 0.00 | 884.36 |
| **Total** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** | **NA** |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | tons | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 1944 | | | | | 394.61 | 23.32 | 0.00 | 884.36 |
| **Total** | | | | | | **394.61** | **23.32** | **0.00** | **884.36** |

**Mitigated**

| | Waste Disposed | ROG | NOx | CO | SO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | tons | tons/yr | | | | MT/yr | | | |
| Refrigerated Warehouse-No Rail | 1944 | | | | | 394.61 | 23.32 | 0.00 | 884.36 |
| **Total** | | | | | | **394.61** | **23.32** | **0.00** | **884.36** |

# 9.0 Vegetation

## Air Conditioning and Refrigeration Fugitive Emissions

| Type of Unit | Units | Capacity of Unit (pounds) | Capacity of Unit (kg) | Annual Leak Rate in percent of capacity | Emissions (kg/year) | Emissions (tons/year) | Global Warming Potential | MTCO2e per year |
|---|---|---|---|---|---|---|---|---|
| **Without Regulations** | | | | | | | | |
| Domestic Refrigeration | | 1 | 0.5 | 0.5% | 0 | 0.00 | 2065 | 0 |
| Small Refrigeration Condensing Unit | | 122 | 55 | 14% | 0 | 0.00 | 2065 | 0 |
| Packaged chiller air conditioning (medium) | 36.0 | 526 | 239 | 7% | 601 | 0.66 | 1513 | 908 |
| **Total** | | | | | | **0.66** | | **908** |
| | | | | | | | | |
| **With Regulation and Mitigation** | | | | | | | | |
| Domestic Refrigeration | 0 | 1 | 0.5 | 0.5% | 0 | 0.00 | 2065 | 0 |
| Small Refrigeration Condensing Unit | | 122 | 55 | 5% | 0 | 0.00 | 2065 | 0 |
| Packaged chiller air conditioning (medium) | 36.0 | 526 | 239 | 4% | 301 | 0.33 | 1513 | 454 |
| **Total** | | | | | | **0.33** | | **454** |

Sources:
- U.S. Environmental Protection Agency, Climate Leaders. May 2008. Direct HFC and PFC Emissions from Use of Refrigeration and Air Conditioning Equipment. EPA430-K-03-004. http://www.epa.gov/stateply/documents/resources/mfgrfg.pdf
- California Air Resources Board. Appendix B, California Facilities and Greenhouse Gas Emissions Inventory - High-Global Warming Potential Stationary Source Refrigerant Management Program. www.arb.ca.gov/cc/reftrack/APPENDIX_B_10_22_.pdf
- Global warming potential is an average of the refrigerants used. Source: Bay Area Air Quality Management District Greenhouse Gas Model, version 1.1.9 Beta.
- With regulation refers to a change in the annual leak rate pursuant to California Air Resources Board Stationary Equipment Refrigerant Management Program. http://www.arb.ca.gov/cc/reftrack/reftrack.htm

# APPENDIX B:

## Health Risk Screening

**Health Risk Screening Summary**

| | | | |
|---|---|---|---|
| Truck Travel | 0.00000175986 | | |
| | 0.00000023980 | | |
| | 0.00000199332 | | |
| | 0.00000013619 | | |
| | 0.00000146635 | | |
| | 0.00000010019 | | |
| *Total Truck Travel* | *0.00000569570* | | |
| Truck Idling | 0.00000013941 | | |
| | 0.00000010232 | | |
| *Total Truck Idling* | *0.00000024173* | | |
| **Grand Total** | **0.00000593742** | = | 5.9 in 1 million |
| Threshold | 0.00001000000 | = | 10 in 1 million |
| Exceed Threshold? | No | | |

# Truck Idling & TRU's

Date : 8-Jan-13
Facility Name: Dan Avila & Sons
Facility Location: Turlock, Stanislaus County, Ca
Facility ID #:

**Calculate Risk**

**Receptor Quad**

| **NW** | **N** | **NE** |
|---|---|---|
| 4 | | 1 |
| **W** | | **E** |
| 3 | | 2 |
| **SW** | **S** | **SE** |

| Unit # | Unit Type T = TRU HH = High Horizontal HV = High Vertical LL = Low Level | Operational Time / Event (Hour) | PM10 g/hr | Events/ Year | Receptor Distance (m) | Quad | Load % | Emissions Lb / Yr | **Location** U=Urban UB=Urban Near Building R=Rural RB=Rural Near Building | Unit Risk |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | hh | 0.25 | 0.331745 | 22536 | 300 | 1 | 100 | 4.12E+00 | RB | **1.39E-07** |
| 2 | hh | 0.25 | 0.337145 | 16276 | 300 | 1 | 100 | 3.02E+00 | RB | **1.02E-07** |
| | | | | | | | 100 | 0.00E+00 | | |
| | | | | | | | 100 | 0.00E+00 | | |
| | | | | | | | 100 | 0.00E+00 | | |
| | | | | | | | 100 | 0.00E+00 | | |
| | | | | | | | 100 | 0.00E+00 | | |
| | | | | | | | 100 | 0.00E+00 | | |
| | | | | | | | 100 | 0.00E+00 | | |
| | | | | | | | 100 | 0.00E+00 | | |
| | | | | | | | 100 | 0.00E+00 | | |
| | | | | | | | 100 | 0.00E+00 | | |
| | | | | | | | 100 | 0.00E+00 | | |
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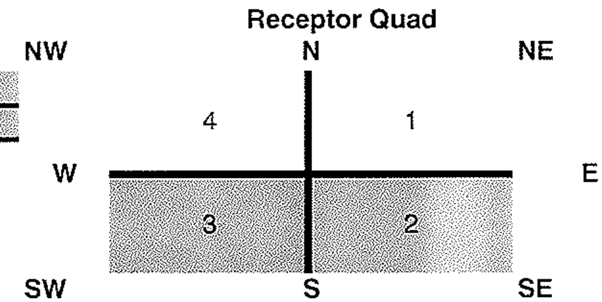
| | | | | | | | 100 | 0.00E+00 | | |
| | | | | | | | 100 | 0.00E+00 | | |
| | | | | | | | 100 | 0.00E+00 | | |
| | | | | | | | 100 | 0.00E+00 | | |
| | | | | | | | 100 | 0.00E+00 | | |
| | | | | | | | 100 | 0.00E+00 | | |
| | | | | | | | | | | |

754

# Truck Travel

Date : 8-Jan-13
Facility Name: Dan Avila & Sons
Facility Location: Turlock, Stanislaus County, CA
Facility ID #:

**Calculate Risk**




| Unit # | Segment Direction<br>EW = East-West<br>NS = North-South<br>NWSE = Northwest-Southeast<br>NESW = Northeast-Southwest | # (50m) Segments | PM10 g/mi | Events/ Year | Receptor Distance (m) | Quad | Load % | Emissions Lb / Yr | Location U=Urban R=Rural | Segment Risk |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ns | 8 | 0.39509 | 22536 | 76 | 1 | 100 | 4.88E+00 | R | **1.76E-06** |
| 2 | ns | 8 | 0.07454 | 16276 | 76 | 1 | 100 | 6.65E-01 | R | **2.40E-07** |
| 1 | ew | 4 | 0.895 | 22536 | 76 | 1 | 100 | 5.53E+00 | R | **1.99E-06** |
| 2 | ew | 4 | 0.084668 | 16276 | 76 | 1 | 100 | 3.78E-01 | R | **1.36E-07** |
| 1 | ns | 8 | 0.895 | 22536 | 152 | 1 | 100 | 1.11E+01 | R | **1.47E-06** |
| 2 | ns | 8 | 0.084668 | 16276 | 152 | 1 | 100 | 7.55E-01 | R | **1.00E-07** |
| | | | | | | | 100 | 0.00E+00 | | |
| | | | | | | | 100 | 0.00E+00 | | |
| | | | | | | | 100 | 0.00E+00 | | |
| | | | | | | | 100 | 0.00E+00 | | |
| | | | | | | | 100 | 0.00E+00 | | |
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| | | | | | | | 100 | 0.00E+00 | | |
| | | | | | | | 100 | 0.00E+00 | | |
| | | | | | | | 100 | 0.00E+00 | | |
| | | | | | | | 100 | 0.00E+00 | | |
| | | | | | | | | | | |

# APPENDIX C

CENTRAL CALIFORNIA INFORMATION CENTER
*California Historical Resources Information System*
Department of Anthropology – California State University, Stanislaus
One University Circle, Turlock, California 95382
(209) 667-3307 - FAX (209) 667-3324

*Alpine, Calaveras, Mariposa, Merced, San Joaquin, Stanislaus & Tuolumne Counties*

**Date:** 11/7/2013

**CCIC File #:** 8767N
**Project:** North Washington Road Warehouse, Turlock; APN 023-039-017 and 023-039-018; 61.7 acres; Quad Knopf Project No. 130100

Randy Chafin, AICP, Principal Planner
Quad Knopf, Inc.
735 Sunrise Avenue, Suite 100
Roseville, CA 95661

Dear Mr. Chafin:

We have conducted a records search as per your request for the above-referenced project area located on the Ceres USGS 7.5-minute quadrangle map in Stanislaus County.

Search of our files includes review of our maps for the specific project area and the immediate vicinity of the project area, and review of the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), the *California Inventory of Historic Resources* (1976), the *California Historical Landmarks* (1990), and the California Points of Historical Interest listing (May 1992 and updates), the Directory of Properties in the Historic Property Data File (HPDF) and the Archaeological Determinations of Eligibility (ADOE) (Office of Historic Preservation current electronic files dated 04-05-2012), the CALTRANS State and Local Bridge Survey (1989 and updates), the *Survey of Surveys* (1989), GLO Plats, and other pertinent historic data available at the CCIC for each specific county.

The following details the results of the records search:

**Prehistoric or historic resources within the project area:**

(1) No formally recorded prehistoric or historic resources within the project area.

(2) The GLO Plat for T5S R10E (Sheet No. 44-323, dated 1854-1855) shows the NE ¼ of Section 18 divided into a 160-acre parcel.

(3) The *Official Map of the County of Stanislaus, California* (1906) shows the landowner in the eastern half of Section 18, T5S R10E, as D. T. Curtis. Mr. Curtis was an agent representing the "New and Improved Vaneless Wind-Mill" as referenced in *History of Stanislaus County, California with Illustrations* (1881:132).

(4) The 1953 edition of the Ceres USGS 7.5' quadrangle references four buildings within the project area that are 60 years in age (or older) and considered as possible historical resources.

**Prehistoric or historic resources within the vicinity of the project area:** None formally reported to the Information Center. The southern boundary of the project area is formed by TID Upper Lateral No. 4 (as referenced on the 1953 edition of the Ceres USGS 7.5' map). Historic water conveyance features similar to this one have been formally recorded elsewhere in Stanislaus County.

**Resources that are known to have value to local cultural groups:** None formally reported to the Information Center.

**Previous investigations within the project area:** None formally reported to the Information Center.

**Previous investigations within the immediate vicinity of the project area:** Three cultural resources investigations:

| CCIC Report # | Author/Date | Project |
|---|---|---|
| ST-03599 | Napton (1999) | TID West Turlock 69 kV Substation |
| 05354 | Windmiller & Napoli (2004) | Westside Industrial Specific Plan Overview |
| 07123 | Truman (2009) | Genzoli Microirrigation System |

**Recommendations/Comments:** Based on existing data in our files the project area has a sensitivity for the possible discovery of historical resources—the 1953 USGS map references four possible extant buildings that are 60 years in age or older.

Please be advised that a historical resource is defined as a building, structure, object, prehistoric or historic archaeological site, or district possessing physical evidence of human activities over

45 years old. There are possible historical features involved in your project that are 45 years or older and considered as historical resources requiring further study and evaluation by a qualified professional of the appropriate discipline. If demolition of any existing historic buildings or structures is part of the proposed project, then survey and evaluation by a qualified historical resources consultant is recommended prior to implementation of the project or issuance of any discretionary permit.

The Statewide Referral List for Historical Resources Consultants is posted for your use on the internet at http://chrisinfo.org

We advise you that in accordance with State law, if any historical resources are discovered during project-related activities, all work is to stop and the lead agency and a qualified professional are to be consulted to determine the importance and appropriate treatment of the find. If Native American remains are found the County Coroner and the Native American Heritage Commission, Sacramento (916-653-4082) are to be notified immediately for recommended procedures.

**We further advise you that in the event that you retain the services of a historical resources consultant, the firm or individual you retain is responsible for submitting any report of findings prepared for you to the Central California Information Center, including one copy of the narrative report and two copies of any records that document historical resources found as a result of field work. If the consultant wishes to obtain copies of materials not included with this records search reply, additional copy or records search fees may apply.**

We thank you for contacting this office regarding historical resource preservation. Please let us know when we can be of further service. Please sign and return the attached **Access Agreement Short Form**.

**Note:** Billing will be transmitted separately by our Financial Services office ($150.00), payable within 60 days of receipt of the invoice.

Sincerely,

EAGreathouse

E. A. Greathouse, Coordinator
Central California Information Center
California Historical Resources Information System

# APPENDIX D

# Phase I/Phase II Environmental Site Assessment

## Avila & Sons
## North Washington Road Warehouse Project
## Stanislaus County, California

December 2013

J House Environmental, Inc.
Site Assessment ✧ Remediation ✧ Safety Risk Analysis

December 9, 2013

Mr. Randy Chafin, Principal Planner
Quad Knopf, Inc.
735 Sunrise Avenue, Suite 100
Roseville, CA 95661

**PHASE I/PHASE II ENVIRONMENTAL SITE ASSESSMENT**
**AVILA & SONS NORTH WASHINGTON ROAD WAREHOUSE PROJECT**
**STANISLAUS COUNTY, CALIFORNIA**

Dear Mr. Chafin:

J House Environmental, Inc. is pleased to present this Phase I/Phase II Environmental Site Assessment (ESA) for the Avila & Sons North Washington Road warehouse project site. The approximately 61.7-acre project site (APN 023-039-017 and 023-039-018) is located on the west side of North Washington Road, south of Fulkerth Road, in an unincorporated portion of Stanislaus County just west of the City of Turlock.

The Phase I/Phase II ESA identifies and addresses several potential environmental concerns at the subject property. The items of potential concern and conclusions regarding each item are as follows:

- The project site has been used for agricultural production since at least 1946. Due to the lengthy period of site use as orchard land and for growing irrigated row crops, organochlorine pesticides (OCPs) and lead and arsenical-based pesticides may have been applied and chemical residues may be present. Phase II soil sampling has been conducted to evaluate whether chemical residues associated with orchard land and/or irrigated crop field production are present in soil in concentrations that could pose a health risk. Results of the Phase II soil sampling do not show the presence of OCPs, lead or arsenic in concentrations above human health screening levels established for commercial/industrial land use.

- Two areas in the eastern portion of the site have been used for agricultural support facilities, including dwellings, barns, outbuildings and equipment storage areas, since at least 1946. Support operations conducted during this period may have included farm equipment maintenance and fueling as well as agricultural chemical storage and mixing. Due to the lengthy period of use of this area for support activities, petroleum products, pesticides and other materials may have been released and chemical residues may be present. Phase II soil sampling has been conducted to evaluated whether chemical residues associated with agricultural support operations are present in soil in concentrations that could pose a health risk. Results of the Phase II soil sampling do not show the presence of OCPs, lead, arsenic or petroleum hydrocarbon residues in concentrations above human health screening levels established for commercial/industrial land use. However, as an added precaution, J House Environmental, Inc. recommends that the project proponent consider surfacing work areas and heavy foot traffic areas inside the eastern, unpaved portion of the barn/packing shed, where concentrations of 4,4'-DDT and 4,4'-DDD were detected in soil, to reduce worker exposure to dust and minimize any potential risk in this area.

- The northeastern portion of the project site is presently used for agricultural support operations, including agricultural chemical storage and mixing and farm equipment storage, maintenance, repair, fueling and washing. At the time of the site inspection, areas where chemicals were being stored and/or handled appeared generally clean and well maintained. With implementation of the warehouse project, storage and use of agricultural chemicals and petroleum products will continue. Activities involving the storage and/or use of agricultural chemicals and petroleum products will need to be conducted in accordance with any applicable Stanislaus County or State regulatory standards to ensure that operations do not pose a risk of release of hazardous materials. During project development and implementation, any required permits or notifications for agricultural chemical and petroleum product handling and use at the site should be obtained from the appropriate regulatory agencies.

- Due to the age of the structures at the project site, asbestos containing materials (ACMs) and surfaces painted with lead-based paint may be present. During project development and implementation and prior to any demolition or renovation activities that could disturb suspect ACMs and painted surfaces, material testing should be conducted to ensure worker safety and confirm proper disposal methods for any demolition debris.

If you have any questions regarding this report, please contact me at (530) 885-7801.

Sincerely,

Jackie House

Jackie House PG, CEG, CHG
Principal Geologist

REGISTERED GEOLOGIST
JACQUELYN HOUSE
No. 4221
EXP 3/14
STATE OF CALIFORNIA

# Phase I/Phase II Environmental Site Assessment

## Avila & Sons North Washington Road Warehouse Project
## Stanislaus County, California

## December 9, 2013

Prepared for:

Quad Knopf, Inc.
735 Sunrise Avenue, Suite 100
Roseville, CA 95661

Prepared by:

J House Environmental, Inc.
371 Nevada Street, #7366
Auburn, CA 95604

## TABLE OF CONTENTS



## FIGURES



## TABLES



## APPENDICES

**PHASE I/PHASE II ENVIRONMENTAL SITE ASSESSMENT**
**AVILA & SONS NORTH WASHINGTON ROAD WAREHOUSE PROJECT**
**STANISLAUS COUNTY, CALIFORNIA**

## 1.0 INTRODUCTION

This report presents a Phase I/Phase II Environmental Site Assessment (ESA) for the approximately 61.7-acre Avila & Sons warehouse project site (APN 023-039-017 and 023-039-018). The project site is located on the west side of North Washington Road, south of Fulkerth Road, in an unincorporated portion of Stanislaus County just west of the City of Turlock (Figure 1, Figure 2).

## 2.0 SITE DESCRIPTION

The subject property is an approximately 61.7-acre rectangular shaped site (APN 023-039-017 and 023-039-018) located within Section 18, Township 5 South, Range 10 East, Mount Diablo Base and Meridian (M.D.B.&M.). An assessor's parcel map that covers the subject property is included in Appendix A.

The site is currently used for agricultural purposes. Cultivated fields encompass the southern and northwestern portions of the site. The northeastern portion of the site is used for agricultural support operations. A number of structures, including two dwellings, a barn, a pole barn (frame structure), a storage structure and a few small outbuildings, are located in the eastern portion of the support operations area. A runoff basin is located in the northwestern portion of the site, at the boundary between the support operations area and the northwestern crop field. Potable water is provided by an onsite domestic well located adjacent to one of the dwellings in the eastern portion of the support operations area; irrigation water is provided by an onsite irrigation well located at the northeastern corner of the subject property. Two onsite septic systems located in the dwelling areas are utilized for sewage disposal.

The project site is located within an area primarily characterized by agricultural land and rural residences. North Washington Road is located adjacent to the eastern site boundary; an irrigation water canal is located adjacent to the southern site boundary. The area immediately east of the subject property, across North Washington Road, is developed with a Blue Diamond Growers processing facility.

## 3.0 PHYSICAL SETTING

The subject property is located at an elevation of approximately 85 feet above mean sea level. The topography in the project area is relatively flat, with a very slight southwestward slope.

The project site is located in the San Joaquin Valley, within the Great Valley Geomorphic Province. Regional geologic maps indicate that the project site and surrounding areas are underlain by the Quarternary Modesto Formation, which is characterized by arkosic alluvium (Wagner, D.L., et. al., 1991). The Modesto Formation is typically comprised of interbedded gravel, sand, silt and clay.

The predominant soil types at the project site are Dinuba sandy loam, 0 to 1 percent slopes; Dinuba sandy loam, deep, 0 to 1 percent slopes; and Hanford sandy loam, 8 to 15 percent slopes, as mapped by the U.S. Department of Agriculture, Natural Resources Conservation Service. The Dinuba sandy loams are moderately well drained soils formed in alluvial material derived from granitic rock sources. The Hanford sandy loam is a well drained soil derived from igneous rock sources.

The subject property is located within the San Joaquin Valley Groundwater Basin, Turlock Subbasin, as defined by the California Department of Water Resources (DWR). Historic groundwater levels recorded by DWR for wells in the project area indicate that depths to groundwater have fluctuated between approximately 10 and 23 feet below ground surface (bgs). The direction of groundwater flow in the project area, as mapped by DWR, is generally westward.

## 4.0 PHASE I ENVIRONMENTAL SITE ASSESSMENT

The Phase I ESA has been prepared in general conformance with the American Society for Testing and Materials (ASTM) "*Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*" (E1527-05). The purpose of the Phase I ESA is to identify if "recognized environmental conditions", as defined in ASTM E1527-05, or other potential environmental concerns exist at the subject property. The term "recognized environmental conditions" refers to the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater or surface water of the property. The term is not intended to include "de minimis conditions" that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

The scope of work for the Phase I ESA included the following:

- Obtain and review historic aerial photographs of the subject property and surrounding areas;
- Obtain and review historic maps of the subject property and surrounding areas;
- Conduct an environmental regulatory agency database search of the subject property and surrounding areas within ASTM-specified search radii;
- Perform a field inspection of the subject property and a reconnaissance of surrounding areas and photograph the inspected areas to document site conditions; and
- Interview the property owner and persons familiar with the site use history.

### 4.1 Site Use History

The historic use of the subject property and surrounding areas has been evaluated in this Phase I ESA through review of aerial photographs, review of historic maps, review of historic records and interviews with the property owner and persons familiar with the site use history. The information obtained is presented in the following subsections.

4.1.1 Aerial Photograph Review

Twelve aerial photographs with coverage of the subject property and surrounding areas have been obtained and reviewed. The photos are presented in Appendix B. A description of features observed on the photos follows.

*1946 photo; 1”=500’:* The majority of the project site appears to be in agricultural production with row crops. Two areas in the eastern portion of the site are developed with structures. What appears to be a dwelling and an outbuilding are visible in each of the two developed areas. Irrigation canals are visible along the northern and southern property boundaries. A lineation that appears to be an unpaved road is visible extending from the northern property boundary southward, toward the northernmost developed area. Areas immediately surrounding the site appear to be in agricultural production. Agricultural fields, irrigation ditches, roads and several small structures are visible in areas surrounding the subject property.

*1957 photo; 1”=500’:* The project site and surrounding areas appear similar to that depicted on the 1946 photo. The lineation visible on the 1946 photo in the area extending from the northern property line southward, is no longer visible. Additional outbuildings are visible within the developed areas noted on the 1946 photo. The developed areas have been expanded westward with cleared land.

*1967 photo; 1=500’:* The project site and surrounding areas appear similar to that shown on the 1957 photo. An unpaved road is visible extending between the two developed areas in the eastern portion of the site. Additional outbuildings are visible within the developed areas in the eastern portion of the subject property. Several additional structures are visible in surrounding areas south and southeast of the site.

*1984 photo; 1”=500’:* The southeastern portion of the site appears to be planted with orchard trees. Due to the poor resolution of the photo, it is difficult to determine if the remainder of the site is under production with row crops or if it has also been converted to orchard land. The two developed areas appear similar to that shown on the 1967 photo. Areas surrounding the subject property appear similar to that shown on the 1967 photo.

*1987 photo; 1”=500’:* The majority of the project site, as well as adjoining properties to the north and west, appear to have been converted to orchard land. However, due to the poor resolution of the photo, details are difficult to discern.

*1998 photos (2); 1”=500’:* The majority of the project site is planted with orchard trees. The two developed areas in the eastern portion of the site appear similar to that shown on the 1987 photo. The irrigation canal that was visible along the northern boundary of the project site on earlier photos is no longer visible. Adjacent properties to the south, west and north are in production as orchard land.

*2005 photo; 1”=500’:* The project site and surrounding areas appear similar to that shown on the 1998 photos.

*2006 photo; 1”=500’:* The northern portion of the subject property has been cleared of orchard trees. The developed areas in the eastern portion of the site appear similar to that shown on the 2005 photo. Areas surrounding the project site appear generally similar to that shown on earlier photos.

*2009 photo; 1”=500’:* The majority of the project site appears to be under cultivation with row crops. All of the orchard trees have been removed from the subject property. An outbuilding that was visible in the southernmost developed area on earlier photos appears to have been removed and replaced with a new outbuilding. Areas surrounding the project site appear similar to that shown on the 2006 photo.

*2010 photo; 1”=500’:* The project site and surrounding areas appear similar to that shown in the 2009 photo.

*2012 photo; 1”=500’:* The southern and northwestern portions of the project site are under cultivation with row crops. A large area in the northeastern portion of the site has been cleared. Parked vehicles and farm equipment are visible in the cleared area. The cleared area surrounds the two developed areas in the eastern portion of the site, visible on earlier photos. The two developed areas appear generally similar to that shown on the 2010 photo. One outbuilding visible in the northernmost developed area on earlier photos appears to have been removed. Additional outbuildings are visible in the southernmost developed area noted on earlier photos. A runoff basin is visible in the photo in the northwestern portion of the site, at the boundary between the support operations area and the northwestern crop field. Property located east of the site, across North Washington Road, appears to have been cleared and graded in preparation for development. Other surrounding properties appear generally similar to that shown in the 2010 photo.

### 4.1.2 Historic Map Review

Six historic topographic maps with coverage of the subject property and surrounding areas have been obtained and reviewed. The maps are presented in Appendix C. A description of features observed on the maps is presented below. A search for Sanborn Fire Insurance Maps was conducted; results indicate no coverage available in the project area. Documentation of the Sanborn Map search is included in Appendix C.

*1916 topo:* Two structures are shown in the eastern portion of the project site, along the current alignment of North Washington Road. The remainder of the site appears vacant. A water canal is depicted along the northeastern boundary of the site. An unpaved road and a water canal are depicted along the southern boundary of the site. Areas surrounding the subject property generally appear vacant. Several paved and unpaved roads, water canals, and widely spaced small structures are shown in the project area.

*1941 topo:* The project site and surrounding areas appear generally similar to that depicted on the 1916 map. Two additional structures are shown in the eastern portion of the project site, adjacent to the structures depicted on the 1916 map. Several additional structures and paved and unpaved roads are shown in areas surrounding the subject property.

*1953 topo:* The project site and surrounding areas appear generally similar to that shown on the 1941 map. The water canal depicted along the northeastern boundary of the site on the 1941 map is shown extending across the entire northern boundary of the subject property. The road depicted adjacent to the water canal along the southern boundary of the site on the 1941 map is no longer shown. Orchard land and farm land are shown in areas surrounding the site.

*1969 topo:* The project site and surrounding areas appear generally similar to that shown on the 1953 map. A water well is depicted in the northeast corner of the subject property. Additional areas surrounding the project site are depicted as orchard land and farm land.

*1976 topo:* The project site and surrounding areas appear similar to that shown on the 1969 map. A few additional structures are shown in surrounding areas.

*1987 topo:* The project site and surrounding areas appear similar to that shown on the 1976 topographic map. Several additional structures are shown in areas surrounding the site.

*Sanborn Maps:* A search for Sanborn Fire Insurance Maps was conducted; results indicate no coverage available in the project area.

### 4.1.3 Records Review

A City Directory search was conducted for the project site and surrounding areas. Directories for the years 1964 through 2013 were reviewed to identify recorded land use. The records show individual occupants at the subject property and nearby surrounding properties. Based on the listings, it does not appear that any industrial or manufacturing operations have been located on the project site or surrounding areas. The City Directory search results are presented in Appendix D.

The Stanislaus County Assessor's Office was contacted to obtain property information for the site. Records indicate that the dwelling located in the northern portion of the site (APN 023-039-017) is a 900 square foot, two bedroom, one bath structure that was constructed in 1920. The dwelling located in the southern portion of the site (APN 023-039-018) was reportedly constructed in 1908 and is a 1427 square foot, three bedroom, one bath structure.

### 4.1.4 Interviews

Mr. Dan Avila, the current property owner, was interviewed to obtain information regarding current and past use of the project site. Mr. Avila acquired the parcels that comprise the subject property in 2009 and 2010. Since the time of acquisition, Mr. Avila has used the property for agricultural production of sweet potatoes and watermelon. Support activities conducted on the site include farm equipment storage, maintenance, repair, fueling and washing, as well as agricultural chemical storage and mixing. Mr. Avila indicated that the crop fields on the subject property are routinely treated with agricultural chemicals, including miticides, worm insecticides and fungicides. The chemicals are applied to the fields using air boom sprayers. Pesticide storage and use at the site is conducted under permit from Stanislaus County and periodic pesticide use reports are submitted, as required. A domestic water supply well, an irrigation water supply well and two septic systems are in use on the subject property. During his period of ownership, Mr. Avila constructed a pole barn in the eastern portion of the site and removed a barn from the eastern portion of the site.

According to Mr. Avila, prior to his acquisition the subject property was used as an almond orchard. Small scale dairy operations were also conducted in the eastern portion of the site. Mr.

Avila indicated that a milking barn and a corral were formerly located behind (west of) the northernmost dwelling. Mr. Avila believes that this area was used for very limited dairy operations (fewer than 10 to 15 cows) from pre-1960 through the 1980s. Mr. Avila indicated that dairy feed stations were formerly located behind (west of) the southernmost dwelling and the barn located in this area was formerly used for milking operations. Mr. Avila believes that this area was used for very limited dairy operations in early years, and was expanded to accommodate approximately 100 dairy cows by approximately 2007-2008. According to Mr. Avila, cow manure was spread on the agricultural fields and no waste pits or waste ponds were associated with the former dairy operations.

Mr. Avila is not aware of any existing or former underground storage tanks or aboveground storage tanks, or any existing or former waste pits, waste sumps, waste disposal areas or waste burn areas at the site. According to Mr. Avila, no chemical spills or environmental cleanups have occurred at the site and no environmental liens or land use restrictions are associated with the subject property. Mr. Avila is not aware of any signs of contamination or other environmental concerns at the site and he indicates that no environmental assessments (e.g. Phase I environmental site assessment) have previously been conducted for the subject property.

## 4.2 Site Inspection Observations

A site inspection and area reconnaissance was conducted by Ms. Jackie House on November 18, 2013. Photographs taken during the site inspection are presented in Appendix E. Mr. Dan Avila accompanied Ms. House during part of the site inspection and provided information regarding site use practices. A summary of observations made during inspection of the site and surrounding areas is presented in the following subsections. Figure 3 shows features noted during the site inspection. The objective of the site inspection is to identify whether there are any visible indications of "recognized environmental conditions" at the site; the site inspection does not address regulatory compliance or permitting issues for current site operations.

### 4.2.1 Project Site

At the time of the site inspection, the crop fields in the southern and northwestern portions of the site were fallow. The runoff basin located at the edge of the northwestern crop field area contained water and runoff was observed entering the basin from a drainage pipe. The runoff basin area appeared clean; no trash or debris was noted in the area of the runoff basin and there was no sheen noted on the water surface.

The northeastern portion of the subject property was being used for agricultural support operations at the time of the site inspection. The irrigation well was observed at the northeastern corner of the site. An irrigation water lift station was observed at the southwestern corner of the operations area. Three pole-mounted transformers were observed along North Washington Road and one pole-mounted transformer was observed adjacent to the irrigation water lift station. No staining or signs of leakage were noted beneath the pole-mounted transformers.

The dwelling located in the northern portion of the operations area was not occupied at the time of the site inspection. Several pieces of office furniture (desks, tables, etc.) were observed stored inside the dwelling. The dwelling and surrounding areas appeared clean and well maintained. A recently installed truck scale was noted within the unpaved driveway south of the dwelling. A portable generator located adjacent to the domestic water supply well behind (west of) the dwelling was in operation at the time of the inspection; Mr. Avila indicated that the generator was being used to operate the well pump, since the electrical service had been temporarily shut off.

Three outbuildings were located west of the domestic supply well and unoccupied dwelling at the time of the site inspection. An approximately 500 square-foot wood-framed structure with a dirt floor was being used for agricultural chemical storage. Chemical containers were segregated by type and stored on wooden pallets within this structure. The storage area appeared clean and well maintained. No stains or signs of chemical release were noted on the dirt floor beneath the stored chemicals. A small wood-framed structure with a concrete slab floor, located adjacent to the agricultural chemical storage building, was being used to store various small domestic items and hardware (folding chairs, bolts, hoses, etc.) at the time of the site inspection. A small concrete block structure with a concrete slab floor, located approximately 100 feet southwest of the agricultural chemical storage building, was empty at the time of the site inspection. No signs of hazardous material release were noted in these outbuildings at the time of the site inspection. Mr. Avila indicated that these outbuildings had been present for a lengthy period of time and that a barn and corral structure, which he removed, had also been located in this area. Mr. Avila believes that the former barn and corral structure were used in association with very limited, small-scale dairy operations (fewer than 10 to 15 cows). No staining, soil discoloration or signs of chemical release were noted on the ground surface in the area of the former barn.

Two east-west trending breaks in slope in the graded ground surface were observed in the area west of the outbuildings and former barn. Mr. Avila indicated that this area was used for truck loading. Several metal loading platforms were observed along the breaks in slope. Irrigation pipes, packing crates, irrigation hoses and open slat truck trailers were stored south of the truck loading area at the time of the site inspection. No indications of hazardous material release were noted in these areas.

The dwelling located in the southern portion of the operations area was occupied by a tenant at the time of the site inspection. An asphalt-paved area surrounding the dwelling was being used for parking. The dwelling and surrounding asphalt-paved area appeared clean and well maintained. Only a few very minor oil stains were observed on the asphalt surface.

At the time of the site inspection, the unpaved area adjacent to the northwestern edge of the asphalt pavement was being used for farm equipment washing. A pressure washer was being used to rinse off a tractor, a plow and other equipment. No detergents were being used. Runoff from the wash area flowed toward the northwest, where it ponded beneath stored truck trailers. A very slight hydrocarbon sheen was observed on some of the runoff.

The unpaved area immediately west of the asphalt pavement was being used for storage of various items at the time of the site inspection. Irrigation pipe, spare parts, irrigation hoses and scrap wood were stored on the ground surface, on wooden pallets and in packing crates. Three propane tanks (approximately 300-gallon capacity each) and a large (approximately 10,000-gallon capacity) steel tank were being stored in this area. Mr. Avila indicated that the large steel tank had not been used at the subject property and was being temporarily stored for possible future use. Mr. Avila indicated that a feed station for dairy cows was formerly located west of this unpaved storage area. Mr. Avila believes that the former feed station area was initially used in association with very limited dairy operations (fewer than 10 to 15 cows) and that dairy operations in this area were expanded to accommodate approximately 100 cows by 2007-2008. No staining, soil discoloration or signs of chemical release were noted on the ground surface in the unpaved storage area and former feed station area located west of the asphalt pavement.

An approximately 8000 square foot barn/packing shed located at the southwestern edge of the asphalt paved area contained machinery used for produce packing and a variety of stored items at the time of the site inspection. The easternmost portion of this structure encompasses the wooden barn and outbuilding visible on historic aerial photographs dated 1946 and 1957. The westernmost portion of this structure is comprised of more recent wood-framed sheet metal additions that are visible on aerial photographs dated 2009 and later. The older, eastern portion of the structure has a dirt floor. At the time of the site inspection, this portion of the structure was vacant. There were no signs of staining or chemical release on the dirt floor. The newer, western portion of the structure has a concrete slab floor. At the time of the site inspection, a produce packing machine with a conveyor was set up on the concrete slab floor along the south wall of this portion of the building. Mr. Avila indicated that this packaging machinery was not currently in use. What appeared to be a small hydraulic oil leak was observed adjacent to a pump/reservoir mounted on the packing machine. An approximately 5' by 7' area of the concrete floor in this area appeared stained and wet with oil. Mr. Avila indicated that he had not been aware of this leak and stated that the concrete floor would be cleaned and the equipment would be repaired to prevent any further leakage. The staining and apparent leakage was confined to the concrete slab portion of the barn and did not extend onto unpaved surfaces. Items stored on the concrete floor in the northwestern portion of the barn/packing shed included cardboard produce packing boxes, used tires, PVC pipe segments, tools, metal fencing segments, used vehicle parts (engine and transmission stored on wooden pallets) and a grease drum stored on a wooden pallet. Only a few very small stains were visible on the concrete floor in the area of these stored items.

A small wooden shed with a dirt floor, located just west of the barn/packing shed, contained an air compressor at the time of inspection. This area appeared clean and well maintained. No staining, soil discoloration or signs of chemical release were noted on the ground surface in the unpaved air compressor shed.

An approximately 6,000 square foot pole barn, located west of the barn/packing shed and air compressor shed, was being used for farm equipment storage, repair and maintenance at the time of the site inspection. This structure is comprised of an aluminum roof supported by steel poles overlying unpaved ground. Mr. Avila indicated that this structure was only recently constructed. Equipment stored in this covered area at the time of the site inspection included approximately fifteen forklifts. Several large pieces of farm machinery (tractors, loaders, etc.) were being worked on by a mechanic in this area at the time of the site inspection. Several 55 gallon drums of oils and lubricants, a large plastic crate containing used oil filters and used containers and an approximately 400-gallon waste oil tank were observed stored on wooden pallets in the covered, unpaved pole barn area. According to the onsite farm mechanic, the waste oil tank is periodically emptied by a licensed contractor, American Valley Waste Oil. Minor staining was observed on some of the wooden pallet surfaces, however no stains or signs of leakage were observed on the underlying and surrounding unpaved ground surfaces.

The area south of the barn/packing shed and pole barn was being used as an equipment yard at the time of the site inspection. Mr. Avila indicated that this area had only recently been converted from a crop field area to an equipment yard. Equipment stored in this unpaved yard area included approximately 20 tractors, harvesting machinery, plows and disking machinery, empty trailer mounted mix tanks, wooden packing crates, trailer mounted portable toilets, used tires and wheels, scrap wood, metal storage containers and a variety of small parts and supplies. According to Mr. Avila, farm equipment fueling takes place in this yard; a trailer mounted fuel tank is brought onsite for fueling operations. At the time of the site inspection, the equipment yard appeared clean and well maintained. A few very small oil stains were visible on the unpaved ground surface beneath stored machinery.

#### 4.2.2 Surrounding Areas

The areas surrounding the project site are primarily characterized by agricultural land and rural residences. Agricultural fields and a residence are located immediately north of the subject property. Orchard land is located immediately west of the site. An irrigation water canal is located adjacent to the southern site boundary and orchard land is located further south, across the canal. North Washington Road is located adjacent to the eastern site boundary and a Blue Diamond Growers processing facility is located further east, across North Washington Road. At the time of the site inspection, there was no notable surface staining, stressed vegetation or other obvious evidence of hazardous material discharge or evidence of the presence of recognized environmental conditions in areas adjoining the project site.

### 4.3 Regulatory Research

A regulatory agency database search was conducted to identify if any hazardous material handling locations or known contamination sites are present in the project area, as determined based on search distances set forth in ASTM E1527-05. Environmental Data Resources, Inc. (EDR) conducted the search of federal, state and local regulatory agency databases. The EDR Report is presented in Appendix F.

The subject property and surrounding properties are not listed in any of the regulatory agency databases searched by EDR. No hazardous waste disposal sites or hazardous material release sites are identified in the project area in the EDR report.

The EDR report identifies several "orphan" sites that were not mapped due to inadequate address information. Based on each site's likely and relative location and the databases on which the properties were listed, none of the "orphan" sites are expected to pose a significant adverse impact to the project site. Therefore, this data gap is not considered significant.

### 4.4 Phase I Findings and Recommendations

Results of the Phase I ESA indicate several potential environmental concerns at the subject property. A description of the items of potential concern and recommended actions to address these items are presented in this section.

Phase II soil sampling is recommended to address two potential environmental concerns, as listed below. The recommended Phase II sampling will provide data to evaluate whether chemical residues associated with historic site operations are present in soil in concentrations that could pose a health risk.

- The project site has been used for agricultural production since at least 1946. Due to the lengthy period of site use as orchard land and for growing irrigated row crops, organochlorine pesticides and lead and arsenical-based pesticides may have been applied and chemical residues may be present.

- Two areas in the eastern portion of the site have been used for agricultural support facilities, including dwellings, barns, outbuildings and equipment storage areas, since at least 1946. Support operations conducted during this period may have included farm equipment maintenance and fueling as well as agricultural chemical storage and mixing. Due to the lengthy period of use of this area for support activities, petroleum products, pesticides and other materials may have been released and chemical residues may be present.

It is recommended that the following two additional potential environmental concerns be addressed during project development and implementation.

- The northeastern portion of the project site is presently used for agricultural support operations, including agricultural chemical storage and mixing and farm equipment storage, maintenance, repair, fueling and washing. At the time of the site inspection, the areas where chemicals were being stored and/or handled appeared generally clean and well maintained. With implementation of the warehouse project, storage and use of agricultural chemicals and petroleum products will continue. Activities involving the storage and/or use of agricultural chemicals and petroleum products will need to be conducted in accordance with any applicable Stanislaus County or State regulatory standards to ensure that operations do not pose a risk of release of hazardous materials.

- Due to the age of the structures at the project site, asbestos containing materials (ACMs) and surfaces painted with lead-based paint may be present. Prior to any demolition or renovation activities that could disturb suspect ACMs and painted surfaces, material testing should be conducted to ensure worker safety and confirm proper disposal methods for any demolition debris.

The Phase I ESA has been prepared in general accordance with ASTM E1527-05 "*Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*." The work performed for this Phase I ESA was conducted in a manner consistent with the standards of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. No other representation, expressed or implied, and no warranty or guarantee is included or intended in this report. This report does not warrant against: operations or conditions which were not in evidence from visual observations or historical information obtained; conditions that could only be determined by physical sampling or other intrusive investigation techniques; or locations other than the client-provided addresses and/or legal parcel description.

The investigations performed as part of this assessment should not be construed to be complete characterizations of overall environmental regulatory compliance, or of conditions above or below grade. J House Environmental, Inc. makes no guarantees as to the accuracy or completeness of information obtained from others. It is possible that information exists beyond the scope of this investigation or that was not provided to J House Environmental, Inc. Additional data subsequently provided, discovered or produced may alter findings or conclusions made in the Phase I ESA report. The findings presented in this report are based on the information reasonably available and observed conditions at the subject property at the time of preparation of this assessment. Any reliance on this document shall be consistent and in keeping with the limitations expressed in J House Environmental, Inc.'s proposal, and subject to project work scope limitations.

## 5.0 PHASE II ENVIRONMENTAL SITE ASSESSMENT

The Phase II ESA presents results of soil sampling conducted to address two potential environmental concerns identified based on the Phase I assessment:

- The project site has been used for agricultural production since at least 1946. Due to the lengthy period of site use as orchard land and for growing irrigated row crops, organochlorine pesticides and lead and arsenical-based pesticides may have been applied and chemical residues may be present.

- Two areas in the eastern portion of the site have been used for agricultural support facilities, including dwellings, barns, outbuildings and equipment storage areas, since at least 1946. Support operations conducted during this period may have included farm equipment maintenance and fueling as well as agricultural chemical storage and mixing. Due to the lengthy period of use of this area for support activities, petroleum products, pesticides and other materials may have been released and chemical residues may be present.

A description of the Phase II sampling activities and results and a discussion of Phase II findings and recommendations is presented in the following subsections.

### 5.1 Sampling Activities

The Phase II sampling was conducted by Ms. Jackie House, Professional Geologist (PG#4221), of J House Environmental, Inc. on November 26, 2013. Figure 4 shows the soil sampling locations. Soil sampling was conducted in accordance with standard procedures set forth by federal and state regulatory agencies. Each soil sample was collected using a pre-cleaned disposable plastic scoop. Samples were transferred from the sampling scoop directly into a glass sample container that was sealed, initialed, labeled with the time and date of collection and a unique sample identification number and then placed in an ice chest for delivery to the laboratory under chain-of-custody (COC) protocol. Since only pre-cleaned disposable sampling equipment was used, no field decontamination was required.

#### 5.1.1 Agricultural Production

The potential presence of chemical residues in soil associated with use of the subject property for agricultural production was evaluated by collecting samples from six representative locations (S1 through S6; see Figure 4), in areas that have been used for orchard land and irrigated crops. At each sampling location, a near-surface soil sample was collected at 0.5 feet below ground surface (bgs). The soil samples were submitted to California Laboratory Services (CLS) under COC documentation. Three composite samples were formed from the six discrete near-surface samples (two discrete samples from adjacent grid locations per composite), and the composite samples were analyzed by EPA Method 8081A for organochlorine pesticides (OCPs). Three discrete near-surface samples, one from each of the three composite groups, were analyzed for arsenic by EPA Method 6020 and for lead by EPA Method 6010B.

#### 5.1.2 Support Operations

The potential presence of chemical residues in soil associated with agricultural support operations at the site was evaluated by collecting samples from eight representative locations (S7 through S14, see Figure 4). The sampling locations were chosen to provide characterization of areas that appear to have been used for support operations for a lengthy period of time and where historic agricultural chemical and/or petroleum product handling would be expected to have been the greatest. The representative areas where sampling was conducted are: the former barn location in the northern portion of the operations area (S7 and S8); the outbuilding in the northern portion of the operations area that is currently used for agricultural chemical storage (S9 and S10); the outdoor storage area at the western edge of the asphalt pavement in the southern portion of the operations area (S11 and S12); and the eastern, unpaved portion of the barn/packing shed located in the southern portion of the operations area (S13 and S14).

At each sampling location, a near-surface soil sample was collected at 0.5 feet bgs. The soil samples were submitted to CLS under COC documentation. Four composite samples were formed from the eight discrete near-surface samples (two discrete samples from adjacent locations per composite), and the composite samples were analyzed by EPA Method 8081A for OCPs, by EPA Method 8015M for diesel range and motor oil range petroleum hydrocarbons (TPHd+mo) and by EPA Method 8260B for gasoline range petroleum hydrocarbons and benzene/toluene/ethylbenzene/xylene (TPHg+BTEX). Four discrete near-surface samples, one from each of the four composite groups, were analyzed for arsenic by EPA Method 6020 and for lead by EPA Method 6010B.

### 5.2 Sampling Results

Results of sampling completed to address two items of potential environmental concern at the subject property are presented in this section. Tables 1 through 3 present results of the laboratory analyses. Laboratory reports are presented in Appendix G.

#### 5.2.1 Agricultural Production

Laboratory analysis of composite soil samples from former orchard land and crop field areas at the site shows no detectable concentrations of OCPs. The reported concentrations of arsenic and lead in the discrete samples collected from former agricultural field areas are well below human health screening levels set forth for commercial/industrial land use by the California Environmental Protection Agency.

#### 5.2.2 Support Operations

OCPs were detected in samples collected from two locations within the support operations area at the site. The composite soil sample from the eastern, unpaved portion of the barn/packing shed located in the southern portion of the operations area (S13, S14 composite) shows the presence of

4,4'-DDT (2,600 micrograms per kilogram [ug/kg]) and 4,4'-DDD (240 ug/kg). The composite soil sample from the outbuilding in the northern portion of the operations area that is currently used for agricultural chemical storage (S9, S10 composite) shows the presence of 4,4'-DDT (890 ug/kg). The reported 4,4'-DDT and 4,4'-DDD concentrations are below the California Human Health Screening Levels (CHHSLs) established for commercial/industrial land use by the California Office of Environmental Health Hazard Assessment.

Motor oil range petroleum hydrocarbons (TPH-mo) were detected in soil samples collected in the support operations area, in concentrations ranging from 11 to 650 milligrams per kilogram (mg/kg). No other petroleum hydrocarbon residues were detected in the support operations area samples. The reported concentrations of motor oil range petroleum hydrocarbons are well below the human health screening level set forth for commercial/industrial land use by the California Regional Water Quality Control Board (RWQCB, 2008).

The reported concentrations of arsenic and lead in the discrete samples collected from the support operations area are below human health screening levels set forth for commercial/industrial land use by the California Environmental Protection Agency.

### 5.3 Phase II Findings and Recommendations

Results of the Phase II ESA sampling do not show the presence of chemical residues in soil at the site in concentrations that are considered to pose a significant health risk under the commercial/ industrial land use scenario. Samples collected to provide characterization of the former orchard land and crop field areas show no detectable concentrations of OCPs. Samples collected from the support operations area show the presence of two OCPs (4,4'-DDT and 4,4'-DDD) as well as motor oil range petroleum hydrocarbons; however reported concentrations are below human health screening levels for commercial/industrial land use. Reported arsenic and lead concentrations in samples collected from the site are below levels that would be considered to pose a significant adverse health risk to workers.

Although Phase II ESA sampling does not show the presence of chemical residues in soil in concentrations that are considered to pose a significant health risk under the commercial/industrial land use scenario, as an added precaution, J House Environmental, Inc. recommends that the project proponent consider implementing the following risk management measure:

- Work areas and areas with heavy foot traffic inside the eastern, unpaved portion of the barn/packing shed should be surfaced to reduce worker exposure to dust in this area, where concentrations of 4,4'-DDT and 4,4'-DDD were detected in soil.

## 6.0 SUMMARY AND CONCLUSIONS

The Phase I/Phase II ESA identifies and addresses several potential environmental concerns at the subject property. A description of the items of potential environmental concern and conclusions regarding each item are presented below:

- The project site has been used for agricultural production since at least 1946. Due to the lengthy period of site use as orchard land and for growing irrigated row crops, organochlorine pesticides and lead and arsenical-based pesticides may have been applied and chemical residues may be present. Phase II soil sampling has been conducted to evaluate whether chemical residues associated with orchard land and/or irrigated crop field production are present in soil in concentrations that could pose a health risk. Results of the Phase II soil sampling do not show the presence of OCPs, lead or arsenic in concentrations above human health screening levels established for commercial/industrial land use.

- Two areas in the eastern portion of the site have been used for agricultural support facilities, including dwellings, barns, outbuildings and equipment storage areas, since at least 1946. Support operations conducted during this period may have included farm equipment maintenance and fueling as well as agricultural chemical storage and mixing. Due to the lengthy period of use of this area for support activities, petroleum products, pesticides and other materials may have been released and chemical residues may be present. Phase II soil sampling has been conducted to evaluated whether chemical residues associated with agricultural support operations are present in soil in concentrations that could pose a health risk. Results of the Phase II soil sampling do not show the presence of OCPs, lead, arsenic or petroleum hydrocarbon residues in concentrations above human health screening levels established for commercial/industrial land use. However, as an added precaution, J House Environmental, Inc. recommends that the project proponent consider surfacing work areas and heavy foot traffic areas inside the eastern, unpaved portion of the barn/packing shed, where concentrations of 4,4'-DDT and 4,4'-DDD were detected in soil, to reduce worker exposure to dust and minimize any potential risk in this area.

- The northeastern portion of the project site is presently used for agricultural support operations, including agricultural chemical storage and mixing and farm equipment storage, maintenance, repair, fueling and washing. At the time of the site inspection, areas where chemicals were being stored and/or handled appeared generally clean and well maintained. With implementation of the warehouse project, storage and use of agricultural chemicals and petroleum products will continue. Activities involving the storage and/or use of agricultural chemicals and petroleum products will need to be conducted in accordance with any applicable Stanislaus County or State regulatory standards to ensure that operations do not pose a risk of release of hazardous materials. During project development and implementation, any required permits or notifications for agricultural chemical and petroleum product handling and use at the site should be obtained from the appropriate regulatory agencies.

- Due to the age of the structures at the project site, asbestos containing materials (ACMs) and surfaces painted with lead-based paint may be present. During project development and implementation and prior to any demolition or renovation activities that could disturb suspect ACMs and painted surfaces, material testing should be conducted to ensure worker safety and confirm proper disposal methods for any demolition debris.

Ms. Jackie House, Principal Geologist prepared this Phase I/II Environmental Site Assessment. Ms. House has over 30 years of experience in the environmental consulting field, focusing on hazardous waste site investigation and remediation. Ms. House is a California Professional Geologist and Certified Engineering Geologist and has conducted numerous Phase I and Phase II assessments over the past 25 years. Ms. House's declarations are set forth below.

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in 40 CFR Section 312.10 and in ASTM E1527-05.

I have the specific qualifications based on education, training, and experience to assess a property of the nature, history and setting of the subject property in accordance with the standards and practices set forth in 40 CFR Part 312 and in ASTM E1527-05.

Jackie House, PG, CEG, CHG


## 7.0 REFERENCES

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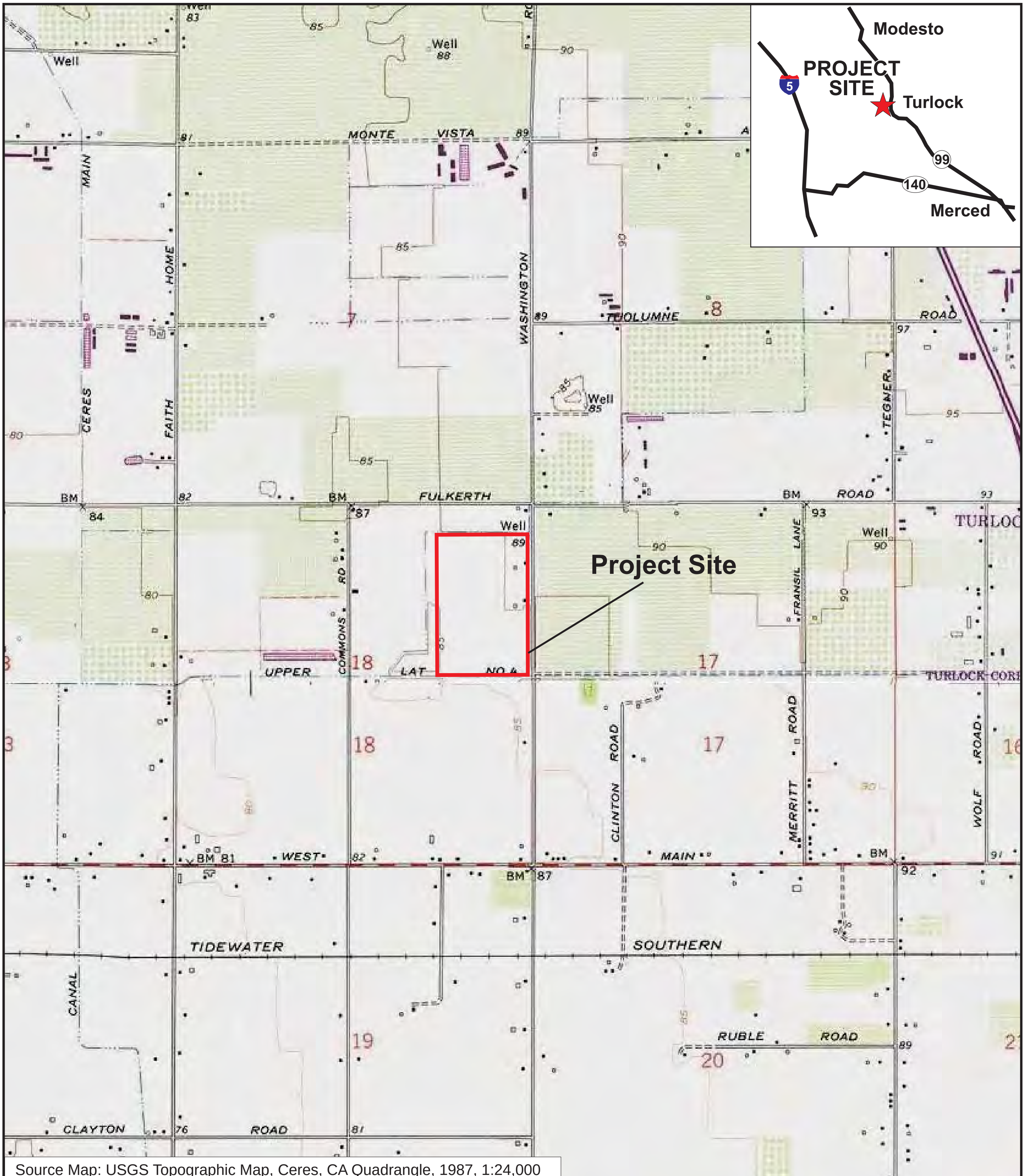
**FIGURES**




Source Map: USGS Topographic Map, Ceres, CA Quadrangle, 1987, 1:24,000

J House Environmental, Inc.
Site Assessment ✧ Remediation ✧ Safety Risk Analysis
(530) 885-7801 • Fax (530) 885-7895
371 Nevada Street #7366 • Auburn, CA 95604

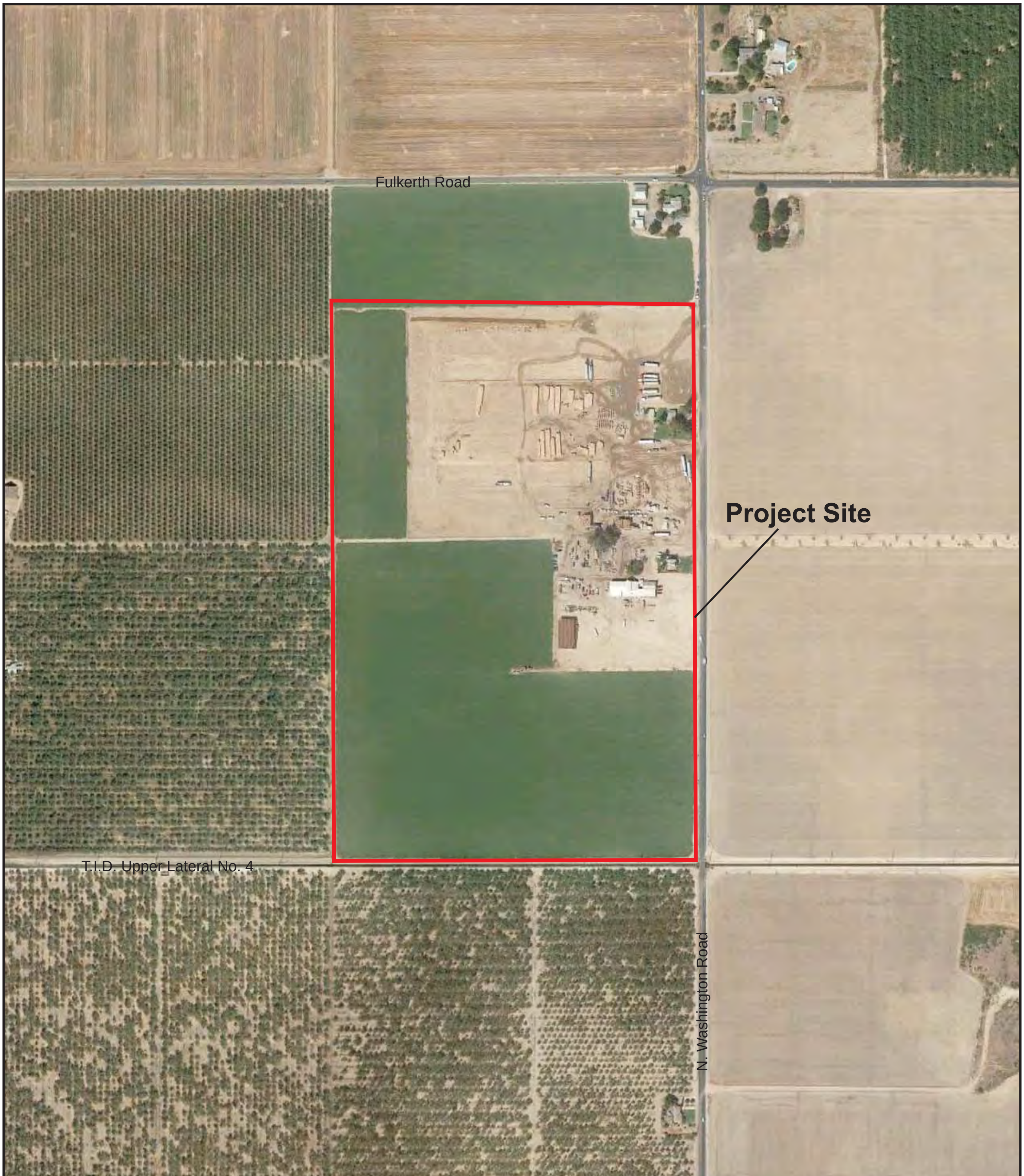
0 2000
Scale in Feet

Figure 1

# VICINITY MAP

*Avila & Sons North Washington Road Warehouse Project*
*Stanislaus County, California*

Map Date: 11-20-13

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0 500
Scale in Feet

**Figure 2**

# SITE MAP

*Avila & Sons North Washington Road Warehouse Project*
*Stanislaus County, California*

Map Date: 11-20-13



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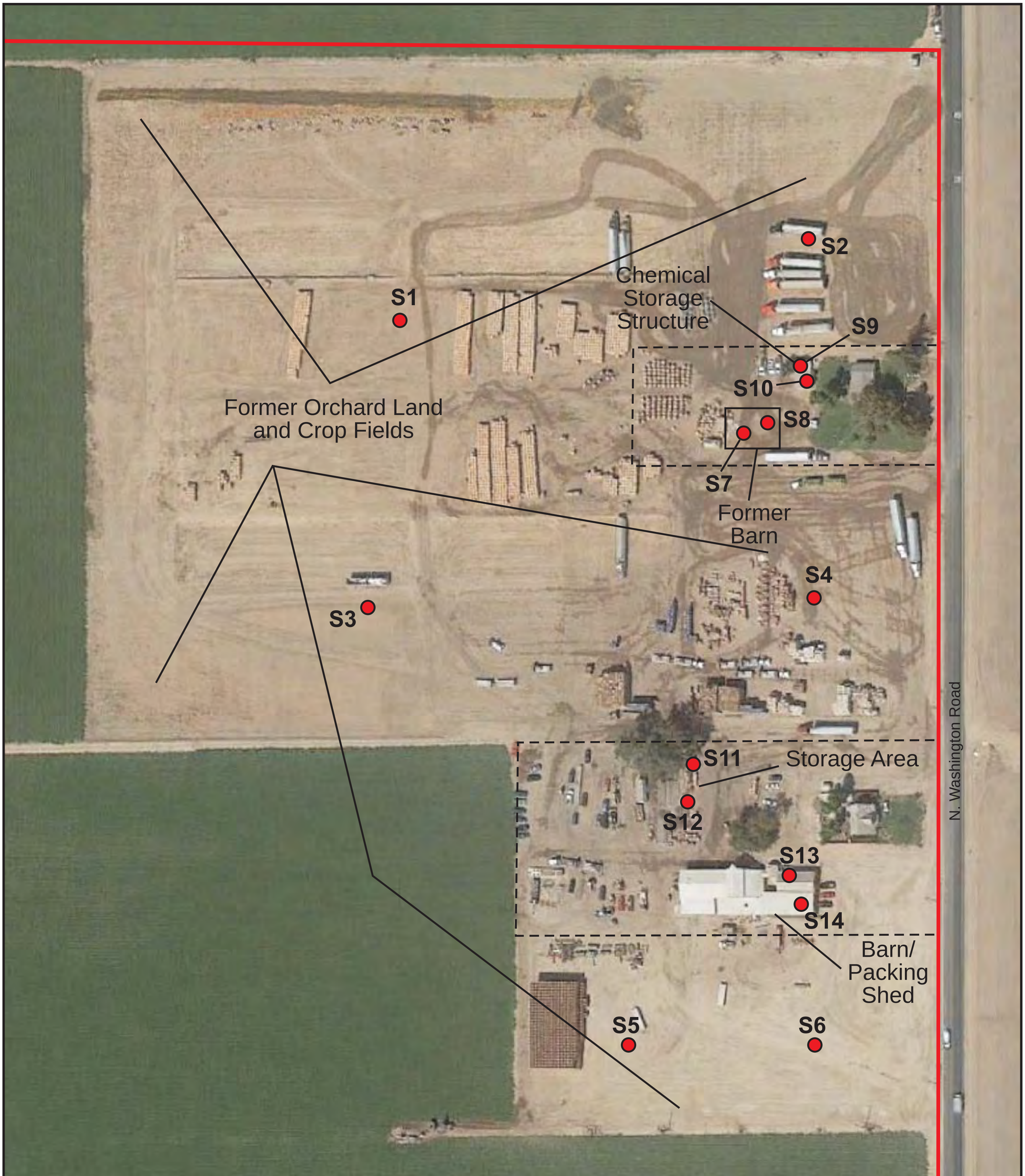
0 170
Scale in Feet

**Figure 3**

# OPERATIONS AREA MAP

*Avila & Sons North Washington Road Warehouse Project*
*Stanislaus County, California*

Map Date: 12-8-13





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0 170
Scale in Feet

**Figure 4**

# SOIL SAMPLING LOCATIONS

*Avila & Sons North Washington Road Warehouse Project*
*Stanislaus County, California*

Map Date: 12-8-13

# TABLES

**TABLE 1**

**RESULTS OF SOIL SAMPLE ANALYSIS FOR OCPs**

| **Results (ug/kg)** | ***Agricultural Production Areas*** | | | ***Support Operations Areas*** | | | | **CHHSL (ug/kg)** |
|---|---|---|---|---|---|---|---|---|
| | **S1, S2 Composite 0.5 feet, bgs** | **S3, S4 Composite 0.5 feet, bgs** | **S5, S6, Composite 0.5 feet, bgs** | **S7, S8 Composite 0.5 feet, bgs** | **S9, S10 Composite 0.5 feet, bgs** | **S11, S12 Composite 0.5 feet, bgs** | **S13, S14 Composite 0.5 feet, bgs** | |
| Aldrin | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | **130** |
| Alpha-BHC | <10 | <10 | <10 | <10 | <10 | <10 | <10 | |
| Beta-BHC | <50 | <50 | <50 | <50 | <50 | <50 | <50 | |
| Gamma-BHC (Lindane) | <50 | <50 | <50 | <50 | <50 | <50 | <50 | **2,000** |
| Delta-BHC | <50 | <50 | <50 | <50 | <50 | <50 | <50 | |
| Chlordane | <100 | <100 | <100 | <100 | <100 | <100 | <100 | **1,700** |
| 4,4'-DDD | <75 | <75 | <75 | <75 | <75 | <75 | **240** | **9,000** |
| 4,4'-DDE | <75 | <75 | <75 | <75 | <75 | <75 | <75 | **6,300** |
| 4,4'-DDT | <75 | <75 | <75 | <75 | **890** | <75 | **2,600** | **6,300** |
| Dieldrin | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | **130** |
| Endosulfan I | <75 | <75 | <75 | <75 | <75 | <75 | <75 | |
| Endosulfan II | <75 | <75 | <75 | <75 | <75 | <75 | <75 | |
| Endosulfan sulfate | <75 | <75 | <75 | <75 | <75 | <75 | <75 | |
| Endrin | <75 | <75 | <75 | <75 | <75 | <75 | <75 | **230,000** |
| Endrin aldehyde | <75 | <75 | <75 | <75 | <75 | <75 | <75 | |
| Heptachlor | <25 | <25 | <25 | <25 | <25 | <25 | <25 | **520** |
| Heptachlor epoxide | <10 | <10 | <10 | <10 | <10 | <10 | <10 | |
| Methoxychlor | <75 | <75 | <75 | <75 | <75 | <75 | <75 | **3,800,000** |
| Mirex | <50 | <50 | <50 | <50 | <50 | <50 | <50 | **120** |
| Toxaphene | <100 | <100 | <100 | <100 | <100 | <100 | <100 | **1,800** |

Notes:
OCPs – Organochlorine pesticide analysis by EPA Method 8081A.
Laboratory data sheets presented in Appendix G.
bgs – below ground surface
ug/kg – micrograms per kilogram
CHHSL – California Human Health Screening Level – Commercial/Industrial Land Use (California Office of Environmental Health Hazard Assessment, January 2005)

**TABLE 2**

**RESULTS OF SOIL SAMPLE ANALYSIS FOR ARSENIC AND LEAD**

| **Sample Location** | **Depth (feet, bgs)** | **Arsenic (mg/kg)** | **Lead (mg/kg)** |
|---|---|---|---|
| ***Agricultural Production Areas*** | | | |
| S1 | 0.5 | **1.4** | **4.0** |
| S3 | 0.5 | <1.0 | **2.9** |
| S5 | 0.5 | <1.0 | **3.8** |
| ***Support Operations Areas*** | | | |
| S7 | 0.5 | **5.9** | **18** |
| S9 | 0.5 | <1.0 | **130** |
| S11 | 0.5 | <1.0 | **19** |
| S13 | 0.5 | <1.0 | **42** |
| **Screening Level** | | **12** | **320** |

Notes:
Arsenic analysis by EPA Method 6020.
Lead analysis by EPA Method 6010B.
Laboratory data sheets are presented in Appendix G.
bgs – below ground surface
mg/kg – milligrams per kilogram
Screening level for arsenic based on the DTSC risk management level of 12 mg/kg.
Screening level for lead based on Commercial/Industrial Land Use CHHSL (California Office of Environmental Health Hazard Assessment, September 2009)

**TABLE 3**

**RESULTS OF SOIL SAMPLE ANALYSIS FOR PETROLEUM HYDROCARBON RESIDUES**

| Sample Location | Depth (feet, bgs) | TPHd (mg/kg) | TPHmo (mg/kg) | TPHg (mg/kg) | BTEX (ug/kg) |
|---|---|---|---|---|---|
| ***Support Operations Areas*** | | | | | |
| S7, S8 composite | 0.5 | <1.0 | **11** | <0.20 | ND |
| S9, S10 composite | 0.5 | <1.0 | **240** | <0.20 | ND |
| S11, S12 composite | 0.5 | <1.0 | **35** | <0.20 | ND |
| S13, S14 composite | 0.5 | <10 | **650** | <0.20 | ND |
| **Screening Level** | | **83** | **2500** | **83** | |

Notes:
TPHd, TPHmo – Diesel range and motor oil range petroleum hydrocarbon analysis by EPA Method 8015M.
TPHg - Gasoline range petroleum hydrocarbon analysis by EPA Method 8260M.
BTEX –Benzene, toluene, ethylbenzene, xylene analysis by EPA Method 8260B.
Laboratory data sheets are presented in Appendix G.
bgs – below ground surface
mg/kg – milligrams per kilogram
ug/kg – micrograms per kilogram
ND – not detected at the laboratory reporting limits shown on the data sheets in Appendix G; reporting limits range from 5.0 to 10.0 ug/kg, depending upon individual compound.
Screening levels for petroleum hydrocarbons based on Commercial/Industrial Land Use Environmental Screening Level for Shallow Soils (California Regional Water Quality Control Board, 2008, Table A)

## APPENDIX A

## ASSESSOR'S PARCEL MAP

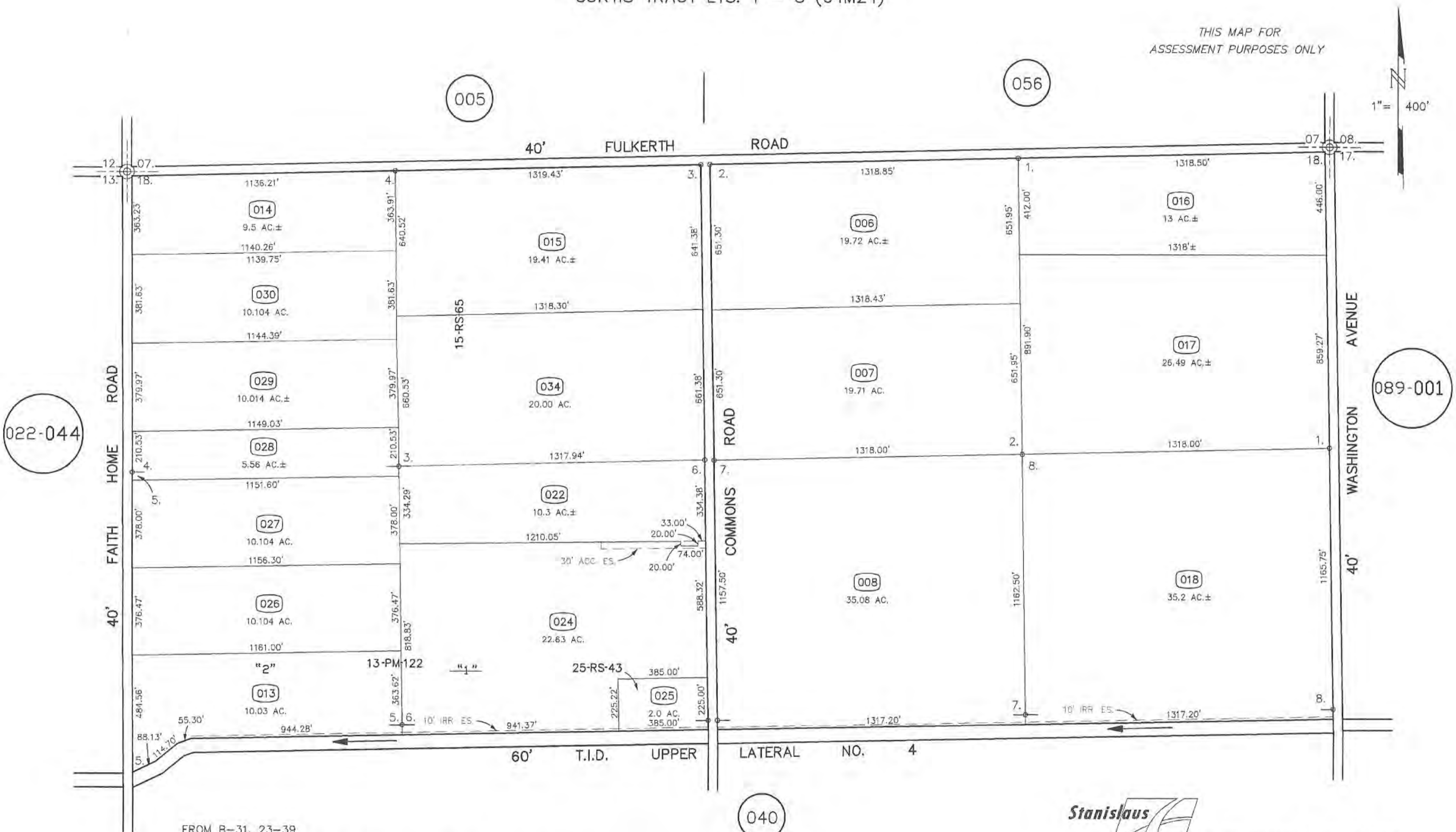
# N 1/2 SECTION 18 T.5S. R.10E. M.D.B.& M.

CURTIS TRACT LTS. 1 – 8 (04M24)

079 001



THIS MAP FOR ASSESSMENT PURPOSES ONLY




FROM B-31, 23-39
DRAWN 1-2-74
REVISED 4-7-83, 9-10-93 NC, 12-27-99 CS, 12-30-99,
6-5-00 DH, 3-18-02 DH, 6-10-02 DH, 11-13-06 DH, 01-15-08 MB, 11-10-11 MB

Stanislaus County Assessor

66,75,00,01,03,07,08,12

# APPENDIX B

# HISTORIC AERIAL PHOTOGRAPHS

**Avila & Sons North Washington Road Site**
1301 North Washington Road
Turlock, CA 95380

Inquiry Number: 3781724.5
November 14, 2013

# The EDR Aerial Photo Decade Package

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
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800.352.0050
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# EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

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***Thank you for your business.***
Please contact EDR at 1-800-352-0050
with any questions or comments.

## Date EDR Searched Historical Sources:

Aerial Photography November 14, 2013

## Target Property:

1301 North Washington Road

Turlock, CA 95380

| ***Year*** | ***Scale*** | ***Details*** | ***Source*** |
|---|---|---|---|
| 1946 | Aerial Photograph. Scale: 1"=500' | Flight Year: 1946 | USGS |
| 1957 | Aerial Photograph. Scale: 1"=500' | Flight Year: 1957 | Cartwright |
| 1967 | Aerial Photograph. Scale: 1"=500' | Flight Year: 1967 | USGS |
| 1984 | Aerial Photograph. Scale: 1"=500' | Flight Year: 1984 | WSA |
| 1987 | Aerial Photograph. Scale: 1"=500' | Flight Year: 1987 | USGS |
| 1998 | Aerial Photograph. Scale: 1"=500' | /DOQQ - acquisition dates: 1998 | EDR |
| 1998 | Aerial Photograph. Scale: 1"=500' | Flight Year: 1998 | USGS |
| 2005 | Aerial Photograph. Scale: 1"=500' | Flight Year: 2005 | EDR |
| 2006 | Aerial Photograph. Scale: 1"=500' | Flight Year: 2006 | EDR |
| 2009 | Aerial Photograph. Scale: 1"=500' | Flight Year: 2009 | EDR |
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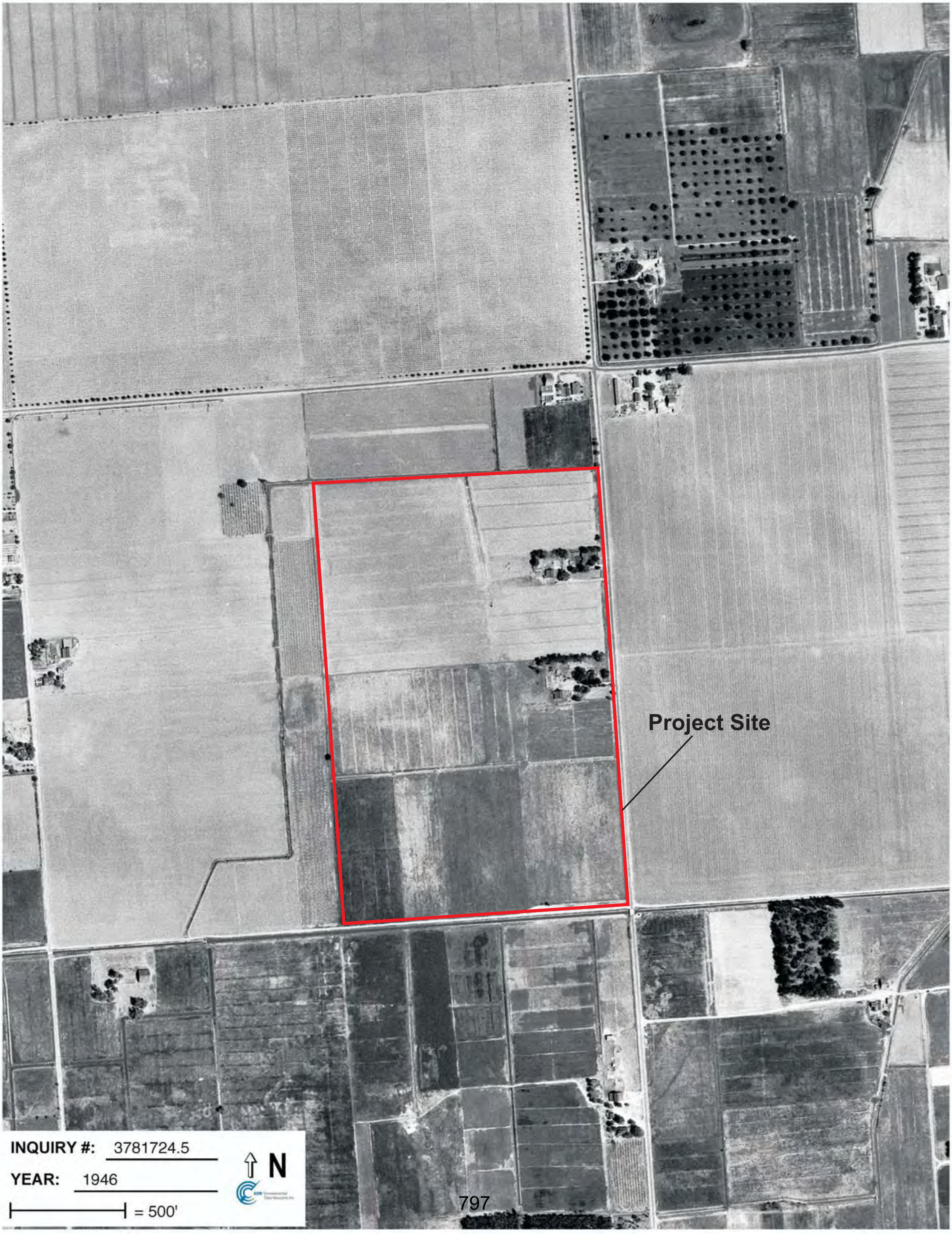
| 2012 | Aerial Photograph. Scale: 1"=500' | Flight Year: 2012 | EDR |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Project Site
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YEAR: 1984
N
= 500'

Project Site
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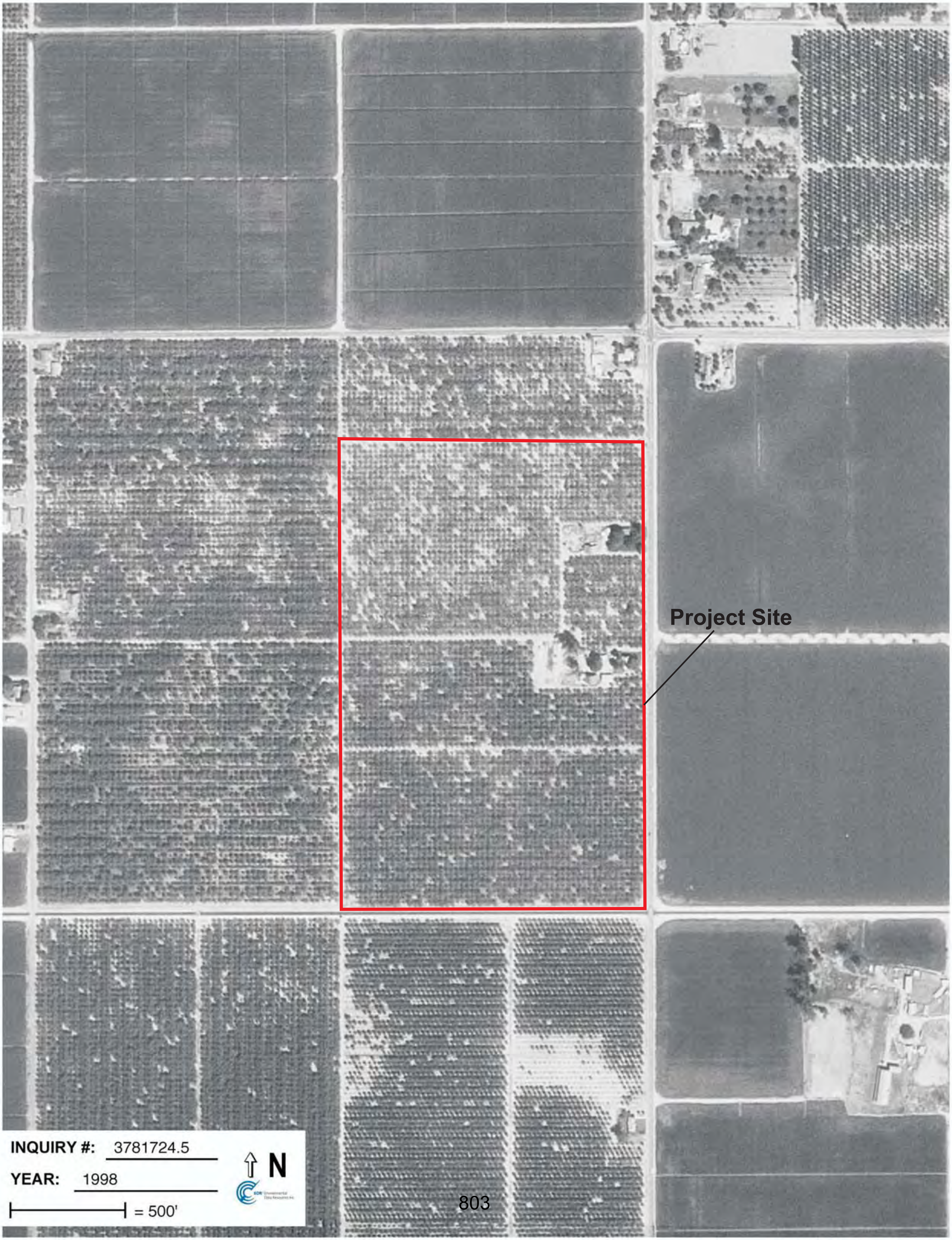

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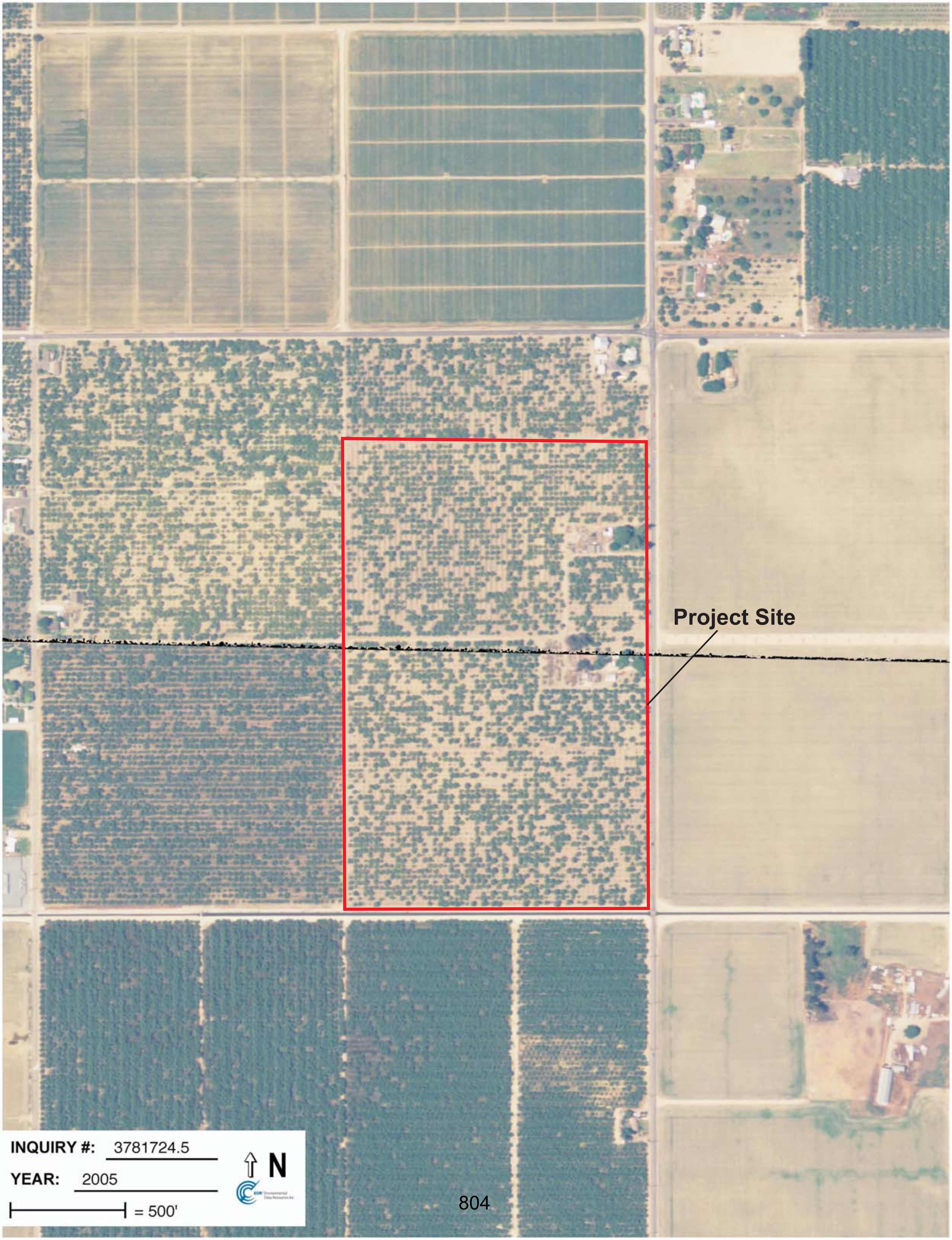
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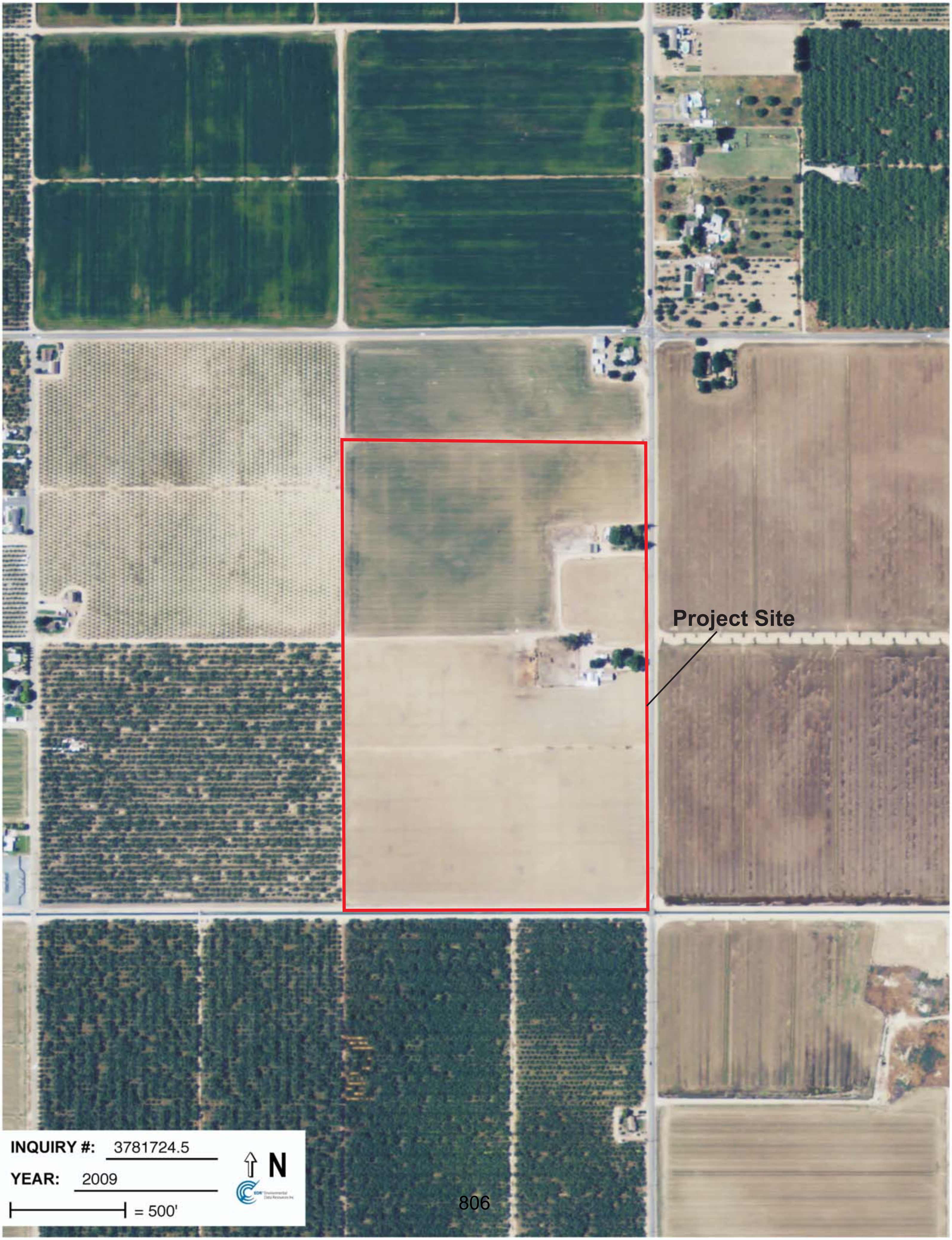
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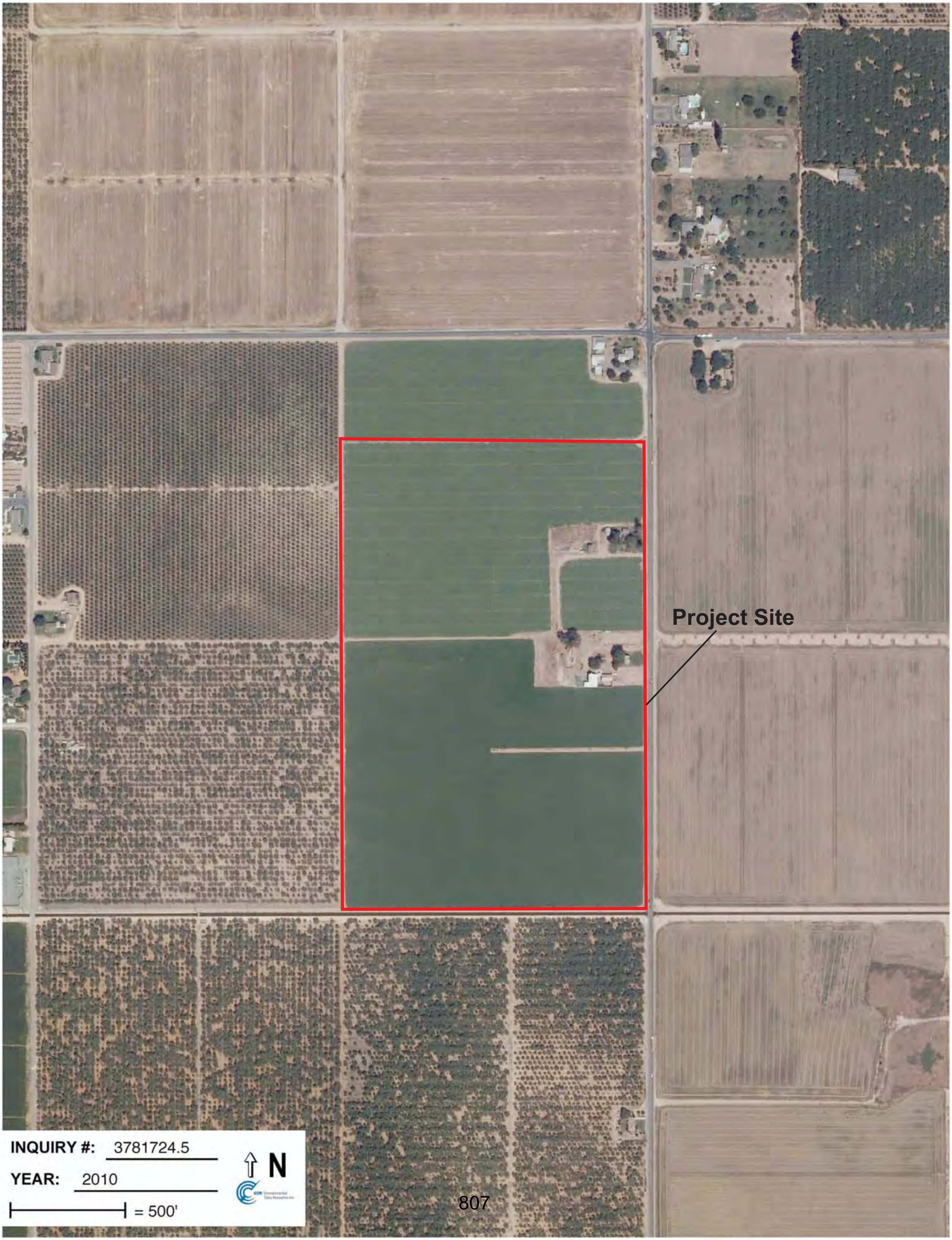
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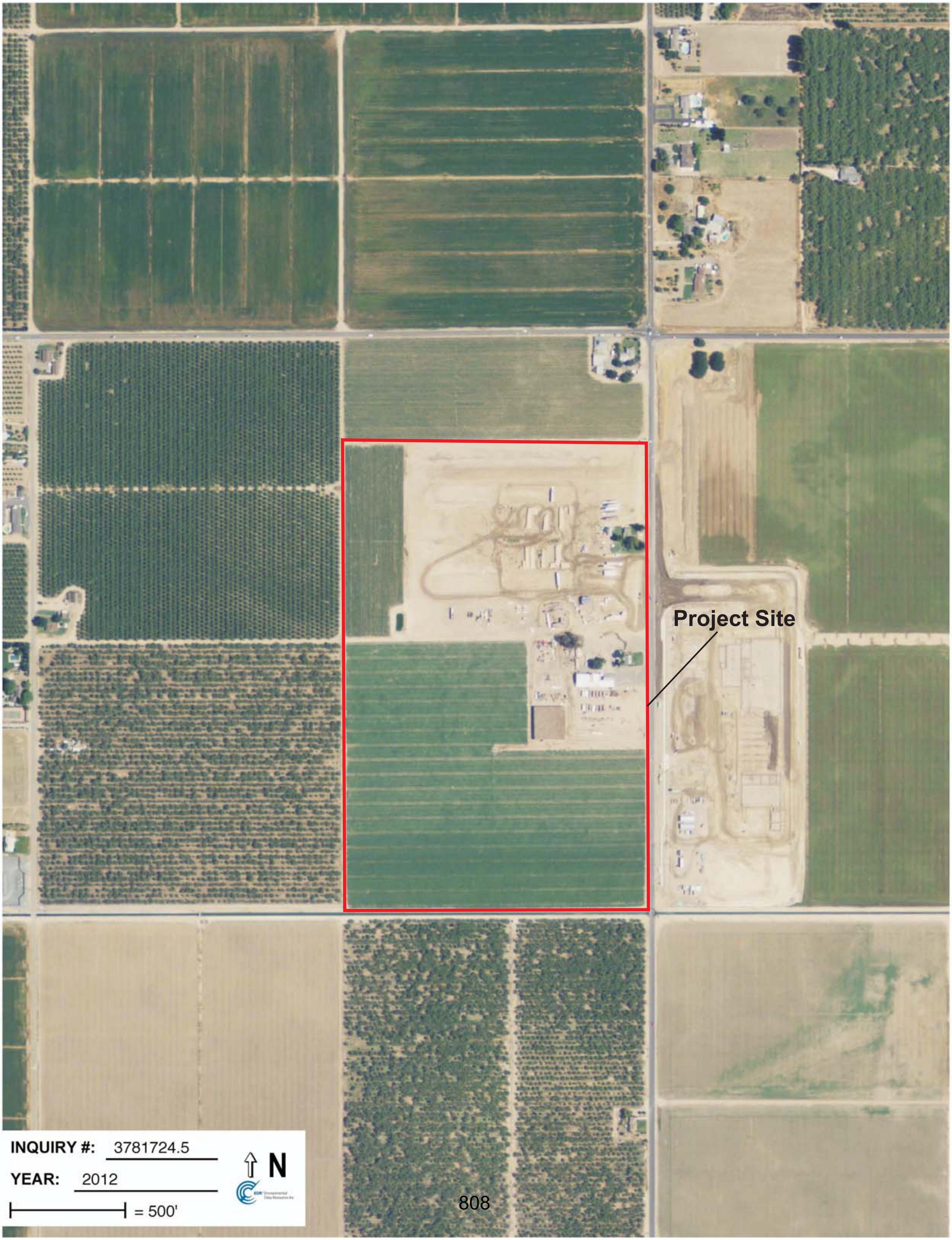
Project Site
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YEAR: 2012
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N

# APPENDIX C

# HISTORIC MAPS

**Avila & Sons North Washington Road Site**
1301 North Washington Road
Turlock, CA 95380

Inquiry Number: 3781724.4
November 11, 2013

# EDR Historical Topographic Map Report

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

# EDR Historical Topographic Map Report

Environmental Data Resources, Inc.s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topographic Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the early 1900s.

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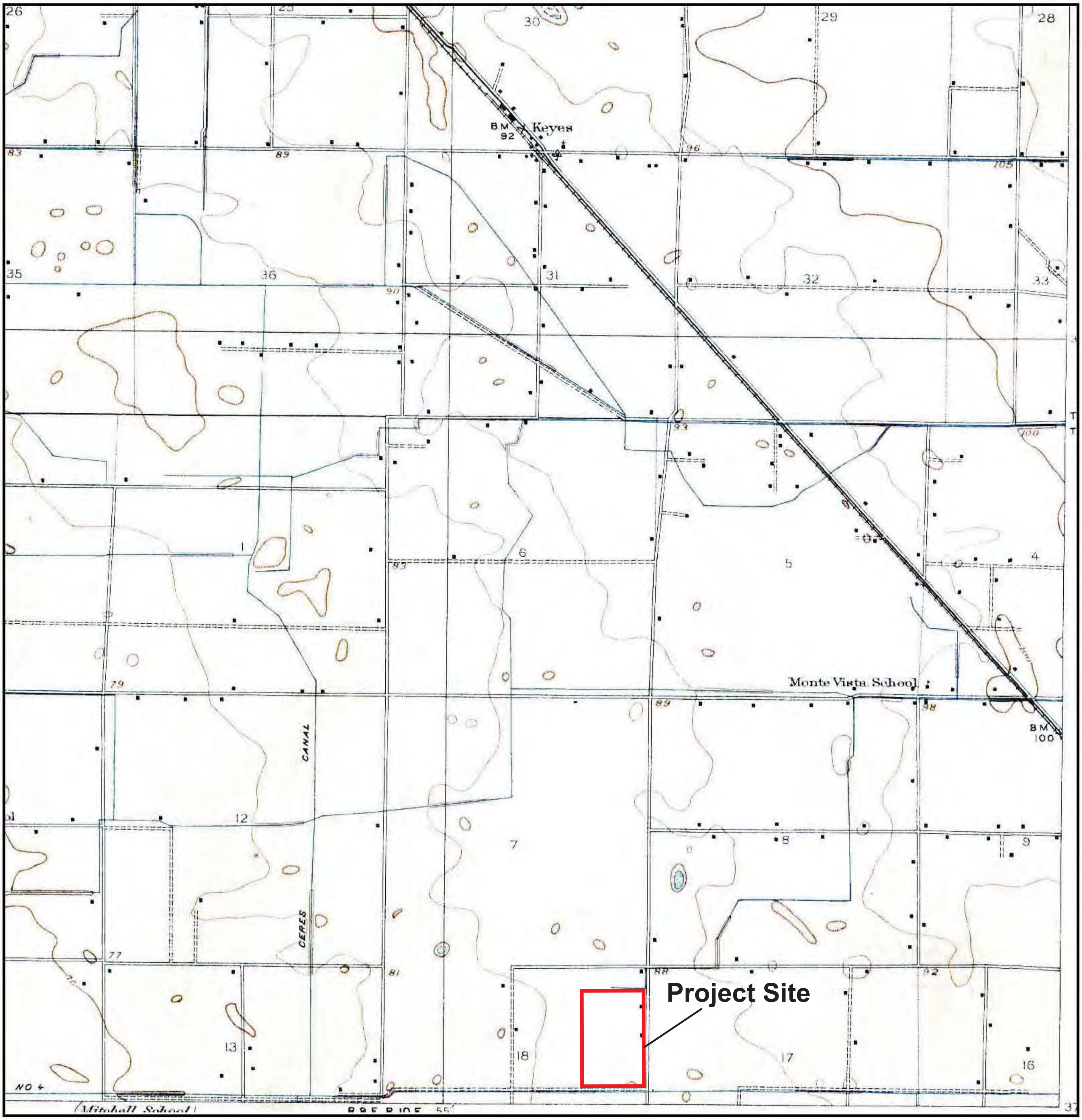
with any questions or comments.

## Historical Topographic Map

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|---|---|---|---|
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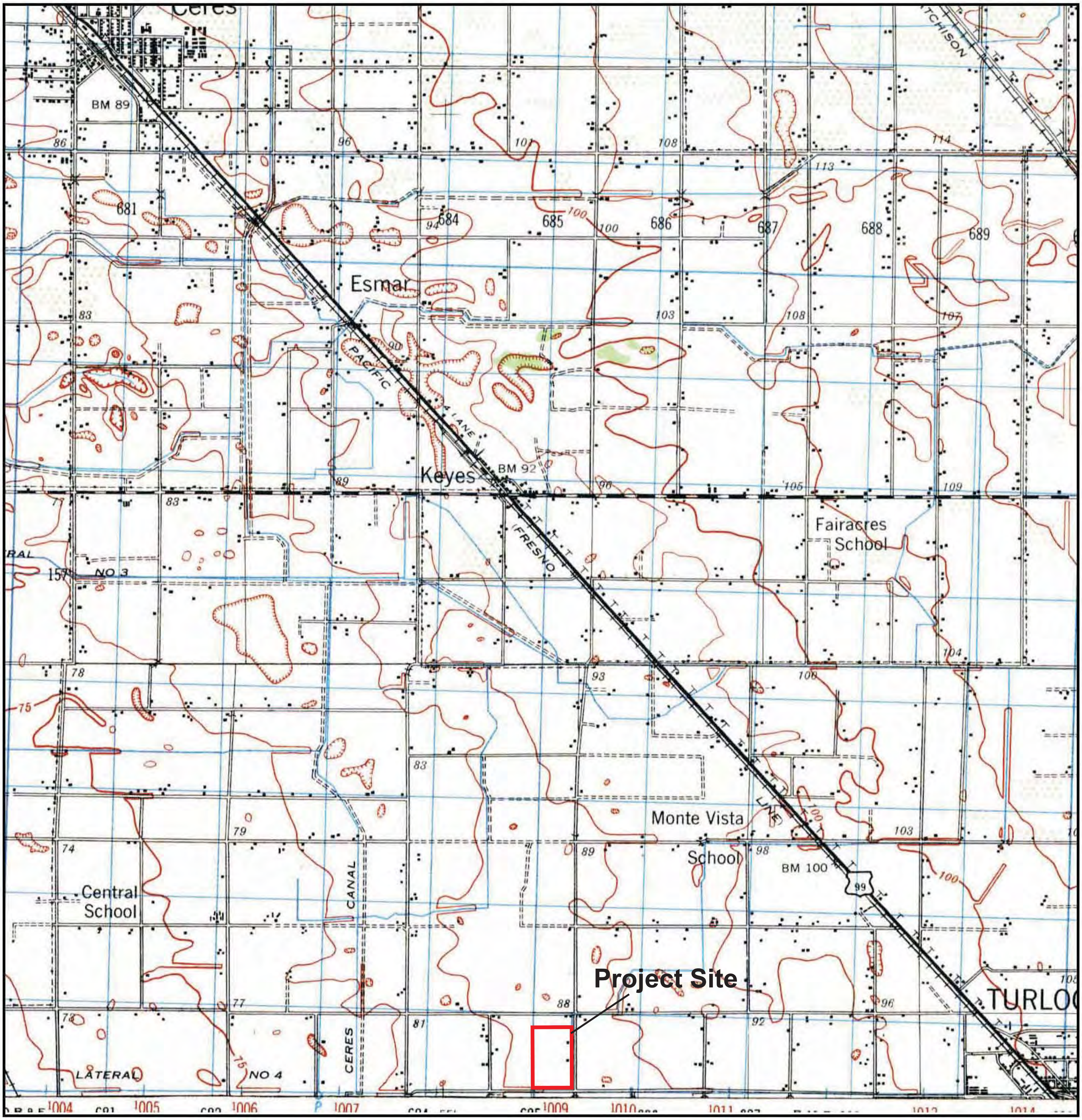
# Historical Topographic Map




| N ↑ | TARGET QUAD NAME: MODESTO EAST<br>MAP YEAR: 1941<br>SERIES: 15<br>SCALE: 1:50000 | SITE NAME: Avila & Sons North Washington Road Site<br>ADDRESS: 1301 North Washington Road Turlock, CA 95380<br>LAT/LONG: 37.5038 / -120.9062 | CLIENT: J House Environmental<br>CONTACT: Jackie House<br>INQUIRY#: 3781724.4<br>RESEARCH DATE: 11/11/2013 |
|---|---|---|---|

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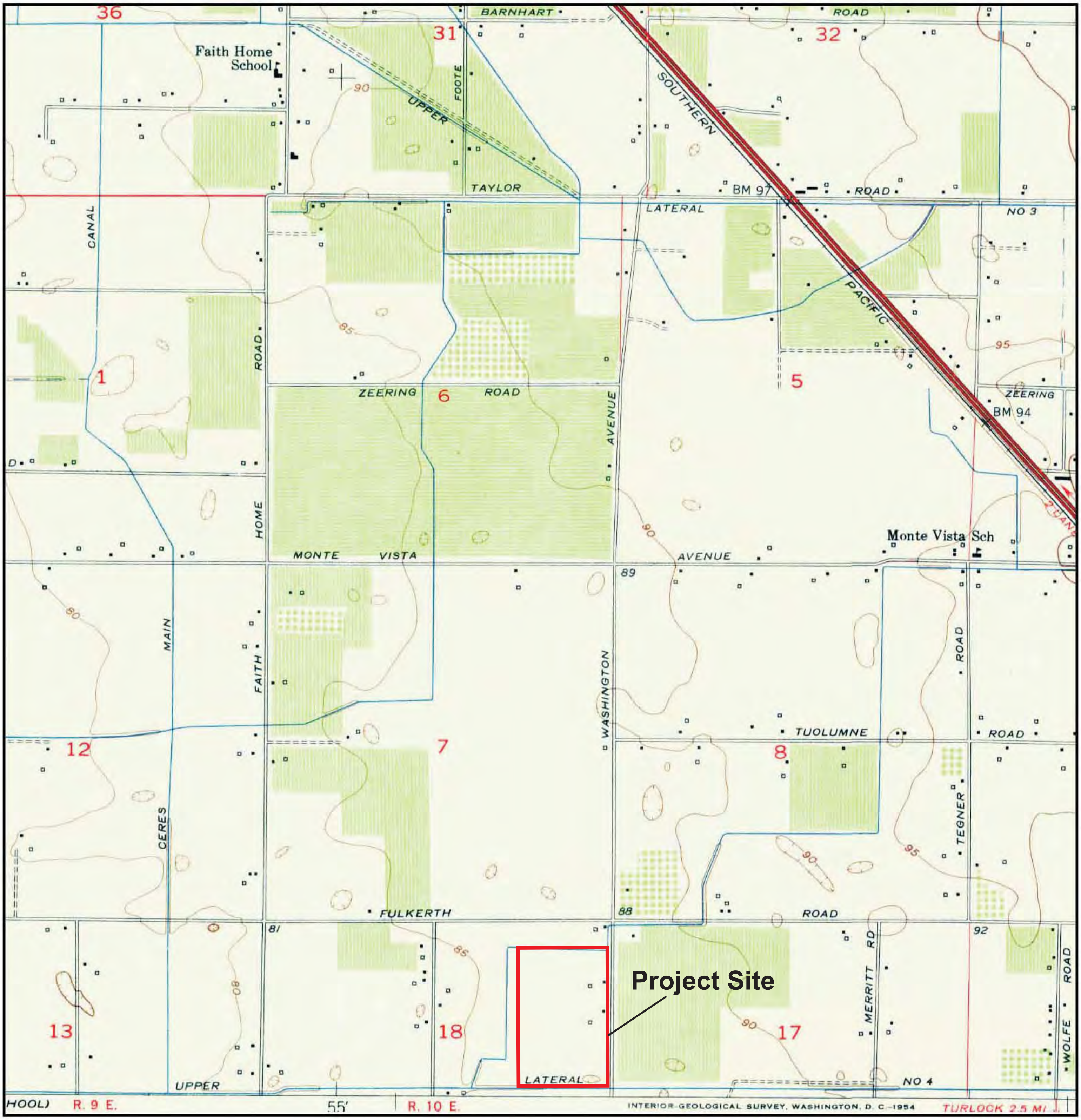


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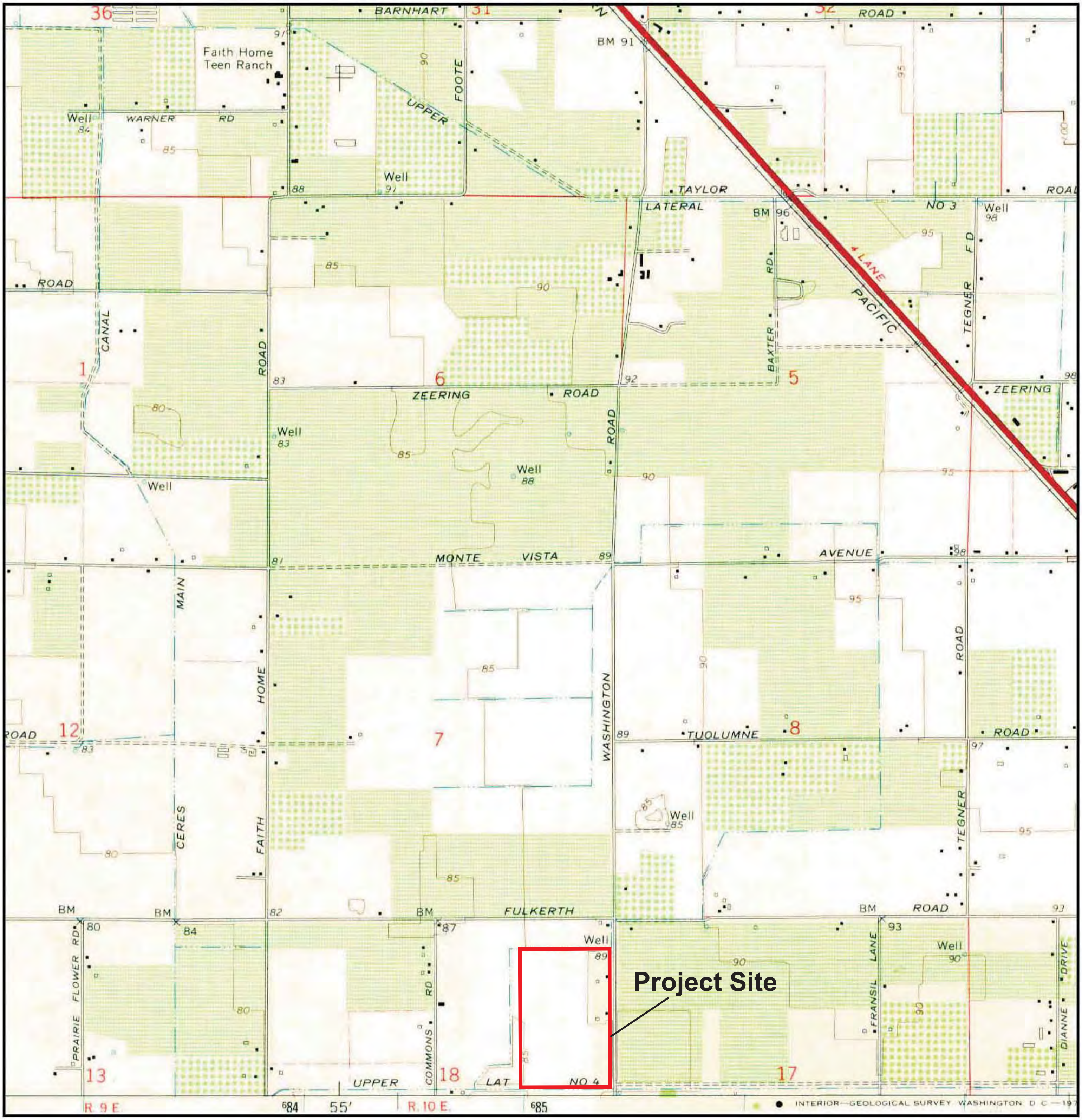
# Historical Topographic Map




| | | | |
|---|---|---|---|
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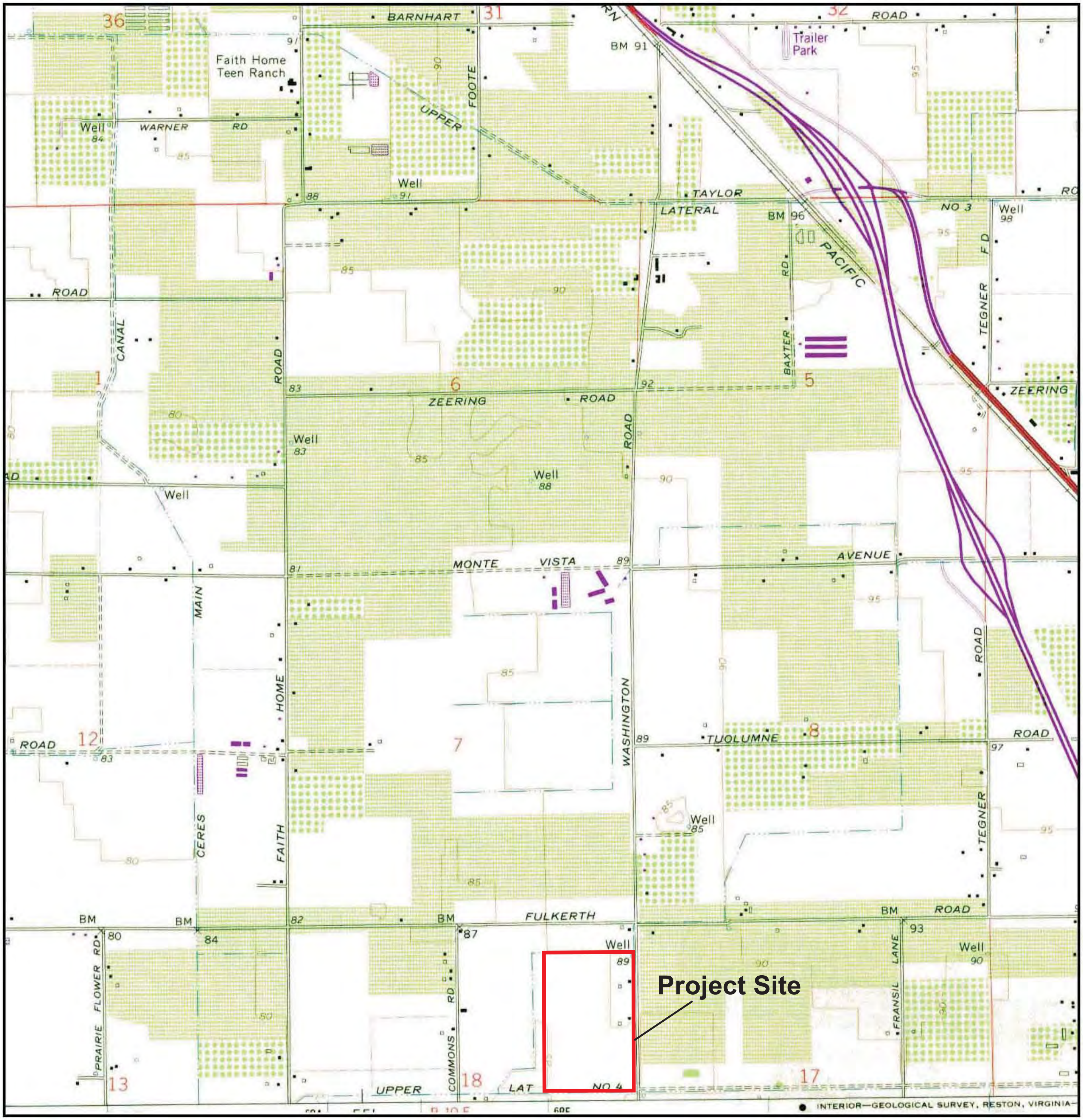
## Historical Topographic Map

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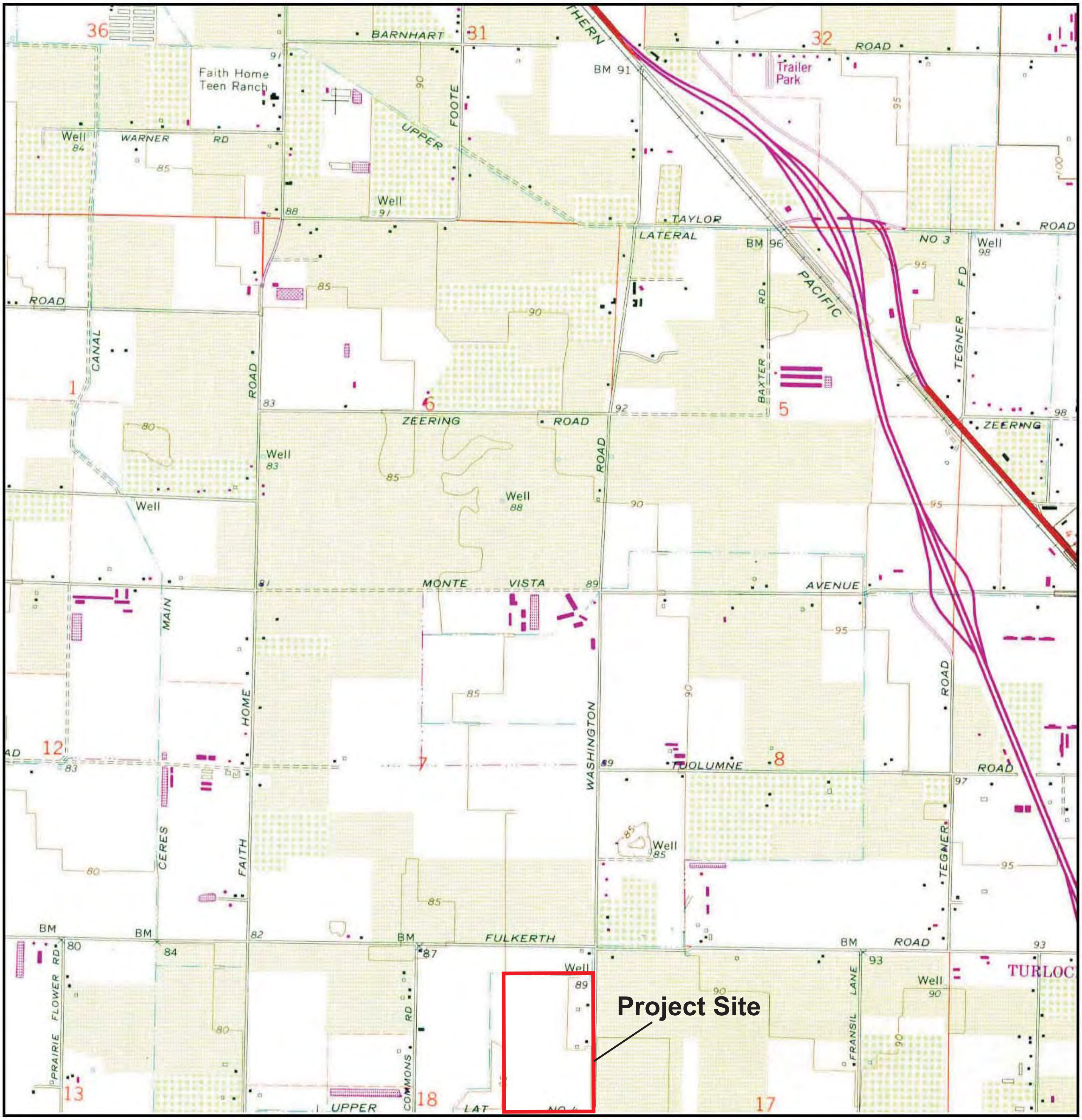
# Historical Topographic Map

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|---|---|---|---|
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**Avila & Sons North Washington Road Site**
1301 North Washington Road
Turlock, CA 95380

Inquiry Number: 3781724.3
November 11, 2013

# Certified Sanborn® Map Report

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11/11/13

**Site Name:**
Avila & Sons North Washington
1301 North Washington Road
Turlock, CA 95380

EDR Inquiry # 3781724.3

**Client Name:**
J House Environmental
251 Auburn Ravine Road
Auburn, CA 95603

Contact: Jackie House

EDR® Environmental Data Resources Inc

The complete Sanborn Library collection has been searched by EDR, and fire insurance maps covering the target property location provided by J House Environmental were identified for the years listed below. The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by Sanborn Library LLC, the copyright holder for the collection.

## *Certified Sanborn Results:*

| | |
|---|---|
| **Site Name:** | Avila & Sons North Washington Road Site |
| **Address:** | 1301 North Washington Road |
| **City, State, Zip:** | Turlock, CA 95380 |
| **Cross Street:** | |
| **P.O. #** | 1150 |
| **Project:** | Avila & Sons |
| **Certification #** | 9FCD-4423-9EB2 |

Sanborn® Library search results
Certification # 9FCD-4423-9EB2

## UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

The Sanborn Library includes more than 1.2 million Sanborn fire insurance maps, which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ✔ Library of Congress
- ✔ University Publications of America
- ✔ EDR Private Collection

*The Sanborn Library LLC Since 1866™*

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# APPENDIX D

# CITY DIRECTORY ABSTRACT

**Avila & Sons North Washington Road Site**
1301 North Washington Road
Turlock, CA 95380

Inquiry Number: 3781724.6
November 15, 2013

# The EDR-City Directory Image Report

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

# TABLE OF CONTENTS

## SECTION



***Thank you for your business.***
Please contact EDR at 1-800-352-0050
with any questions or comments.

# EXECUTIVE SUMMARY

## DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

## RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

| *Year* | *Target Street* | *Cross Street* | *Source* |
|---|---|---|---|
| 2013 | ☑ | ☑ | Cole Information Services |
| 2008 | ☑ | ☑ | Cole Information Services |
| 2003 | ☑ | ☑ | Cole Information Services |
| 1999 | ☑ | ☑ | Cole Information Services |
| 1991 | ☑ | ☑ | Polk's City Directory |
| 1986 | ☑ | ☑ | Polk's City Directory |
| 1981 | ☑ | ☑ | Polk's City Directory |
| 1975 | ☑ | ☑ | Polk's City Directory |
| 1970 | ☑ | ☑ | Polk's City Directory |
| 1964 | ☐ | ☐ | Polk's City Directory |

## RECORD SOURCES

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# FINDINGS

## TARGET PROPERTY STREET

1301 North Washington Road
Turlock, CA 95380

| ***Year*** | ***CD Image*** | ***Source*** | |
|---|---|---|---|
| **N WASHINGTON RD** | | | |
| 2013 | pg A1 | Cole Information Services | |
| 2008 | pg A4 | Cole Information Services | |
| 2003 | pg A7 | Cole Information Services | |
| 1999 | pg A10 | Cole Information Services | |
| 1991 | pg A13 | Polk's City Directory | |
| 1986 | pg A17 | Polk's City Directory | |
| 1981 | pg A20 | Polk's City Directory | |
| 1975 | pg A23 | Polk's City Directory | |
| 1970 | pg A26 | Polk's City Directory | |
| 1964 | - | Polk's City Directory | Street not listed in Source |

# FINDINGS

## CROSS STREETS

| *Year* | *CD Image* | *Source* | |
|---|---|---|---|

### FULKERTH RD

| | | | |
|---|---|---|---|
| 2013 | pg. A2 | Cole Information Services | |
| 2008 | pg. A5 | Cole Information Services | |
| 2003 | pg. A8 | Cole Information Services | |
| 1999 | pg. A11 | Cole Information Services | |
| 1991 | pg. A14 | Polk's City Directory | |
| 1986 | pg. A18 | Polk's City Directory | |
| 1981 | pg. A21 | Polk's City Directory | |
| 1975 | pg. A24 | Polk's City Directory | |
| 1970 | pg. A27 | Polk's City Directory | |
| 1964 | - | Polk's City Directory | Street not listed in Source |

### N COMMONS RD

| | | | |
|---|---|---|---|
| 2013 | pg. A3 | Cole Information Services | |
| 2008 | pg. A6 | Cole Information Services | |
| 2003 | pg. A9 | Cole Information Services | |
| 1999 | pg. A12 | Cole Information Services | |
| 1991 | pg. A15 | Polk's City Directory | |
| 1991 | pg. A16 | Polk's City Directory | |
| 1986 | pg. A19 | Polk's City Directory | |
| 1981 | pg. A22 | Polk's City Directory | |
| 1975 | pg. A25 | Polk's City Directory | |
| 1970 | pg. A28 | Polk's City Directory | |
| 1964 | - | Polk's City Directory | Street not listed in Source |

**City Directory Images**

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | Cole Information Services |

# N WASHINGTON RD 2013

| | |
|---|---|
| 125 | MARIA WIGGAN |
| 431 | OCCUPANT UNKNOWN |
| 607 | LEONARD HANSEN |
| 1113 | OCCUPANT UNKNOWN |
| 1301 | ANDREW AVILA |
| 1600 | KAREN ACCURSO |
| 1706 | OSCAR AVILA |
| 1720 | JACQUELINE MOYAR |
| 1800 | JOSEPH MICHELENA |
| 1830 | ALBERT ALLEN |
| 1930 | NORMAN TEEPLE |
| 2030 | BROOKS RUSHING |

# FULKERTH RD 2013

| | |
| --- | --- |
| 4313 | DEREK ALVERNAZ |
| 4315 | OCCUPANT UNKNOWN |
| 4591 | TIM RUSHING |
| 4706 | OCCUPANT UNKNOWN |
| 4800 | TALIAH LEWALLEN |
| 5825 | JEREMY KIRKPATRICK |
| 6000 | BEN ZAMARONI |

# N COMMONS RD 2013

| | |
| --- | --- |
| 106 | OCCUPANT UNKNOWN |
| 825 | JUSTIN TRAMEL |
| 1001 | NANCY SANTOS |
| 1018 | OCCUPANT UNKNOWN |
| 1101 | OCCUPANT UNKNOWN |
| 1130 | BEN HAGER |
| 1307 | OCCUPANT UNKNOWN |
| 1325 | OCCUPANT UNKNOWN |
| 1419 | GEORGE SOLKAH |
| 1518 | GILBERT OLIVEIRA |

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | Cole Information Services |

# N WASHINGTON RD 2008

| | |
|---|---|
| 125 | ROXANE ESTRADA |
| 431 | ADAM CROWELL |
| 607 | MICHELLE HANSEN |
| 1000 | GERALD LOPES |
| 1113 | DEANNE RUSHING |
| 1301 | JEAN JONES |
| 1519 | OCCUPANT UNKNOWN |
| 1600 | ACCURSO J AUGUSTUS |
| | JAMES ACCURSO |
| 1706 | OSCAR AVILA |
| 1720 | JACQUELINE MOYAR |
| 1800 | JOSEPH MICHELENA |
| 1830 | ALBERT ALLEN |
| 1930 | NORMAN TEEPLE |
| 2030 | BROOKS RUSHING |

# FULKERTH RD 2008

| | |
|---|---|
| 4313 | OCCUPANT UNKNOWN |
| 4315 | OCCUPANT UNKNOWN |
| 4591 | TIM RUSHING |
| 4706 | JOSE PEREZ |
| 4800 | MICHAEL MCCAULEY |
| 6000 | MICHAEL PAYAN |

# N COMMONS RD 2008

| | |
|---|---|
| 106 | OCCUPANT UNKNOWN |
| 825 | SIDNEY HAYS |
| 1001 | NANCY SANTOS |
| 1018 | STEVEN MARSHALL |
| 1101 | OCCUPANT UNKNOWN |
| 1130 | BEN HAGER |
| 1307 | ALEX SANTIAGO |
| 1325 | RAUL GOIS |
| 1419 | GEORGE SOLKAH |
| | GEORGE SOLKAH |
| 1518 | GILBERT OLIVEIRA |

# N WASHINGTON RD 2003

| | |
|---|---|
| 125 | ROXANE ESTRADA |
| 431 | MICHAEL CROWELL |
| 1113 | KENNETH RUSHING |
| 1519 | OCCUPANT UNKNOWN |
| 1600 | J ACCURSO |
| 1706 | OSCAR AVILA |
| 1720 | J MOYAR |
| 1800 | GERALD LOPES |
| | GERALD LOPES |
| 1830 | ALBERT ALLEN |
| 1930 | NORMAN TEEPLE |
| 2030 | BROOKS RUSHING |

# FULKERTH RD 2003

| | |
| --- | --- |
| 4313 | MIKE ALVERNAZ |
| 4315 | FLORENCIO GERALDES |
| 4591 | OCCUPANT UNKNOWN |
| 4706 | JOSE PEREZ |
| 4800 | WILLIAM MCCAULEY |
| 5825 | DAVID KIRKPATRICK |
| 6000 | MICHAEL PAYAN |

# N COMMONS RD 2003

| | |
|---|---|
| 106 | CARLOS OCHOA |
| 825 | BEATRIZ TORRES |
| 1001 | MELVIN SANTOS |
| 1018 | STEVEN MARSHALL |
| 1101 | LONE OAK NURSERY |
| | OCCUPANT UNKNOWN |
| 1130 | BEN HAGER |
| 1307 | ALEX SILVEIRA |
| 1325 | OCCUPANT UNKNOWN |
| 1419 | GEORGE SOLKAH |
| | GEORGE SOLKAH |
| 1518 | GILBERT OLIVEIRA |

# N WASHINGTON RD 1999

| | |
|---|---|
| 125 | ROXANNE ESTRADA |
| 1000 | GERALD LOPES |
| 1113 | ROSENDO MEDINA |
| 1201 | OCCUPANT UNKNOWN |
| 1301 | JEAN JONES |
| 1344 | OCCUPANT UNKNOWN |
| 1400 | OCCUPANT UNKNOWN |
| 1600 | JAMES ACCURSO |
| 1706 | OCCUPANT UNKNOWN |
| | OSCAR AVILA |
| 1800 | JOSEPH MICHELENA |
| | OCCUPANT UNKNOWN |
| 1830 | ALBERT ALLEN |
| 1930 | NORMAN TEEPLE |
| 2030 | BROOKS RUSHING |

# FULKERTH RD 1999

| | |
|---|---|
| 4591 | TIM RUSHING |
| 4800 | JOSE PEREZ |
| 6000 | MIKE PAYAN |

# N COMMONS RD 1999

| | |
|---|---|
| 224 | OCCUPANT UNKNOWN |
| 401 | OCCUPANT UNKNOWN |
| 543 | OCCUPANT UNKNOWN |
| 649 | OCCUPANT UNKNOWN |
| 1018 | STEVEN MARSHALL |
| 1101 | OCCUPANT UNKNOWN |
| 1325 | OCCUPANT UNKNOWN |
| 1518 | GILBERT OLIVEIRA |

# N WASHINGTON RD 1991

9730 Miranda Tony C 632-3000

600

## WASHINGTON RD N –FROM 4800 W MAIN ST NORTH

ZIP CODE 95380
431 Swanson Richd E ◉ 667-0285
601 No Return
Rear Hansen Leonard 634-8725
607★Berbereia David F 634-0563
1301 Wilkins Norma E ◉ 632-7120
1113 Rushing Kenneth W 634-5919
1600-1706 No Return (2 Hses)
1800 Lopes Harry ◉ 632-8566
1830 Allen Albert L 632-3519
1930 Teeple Norman E ◉ 634-4406
2030★Brooks Rush
2400 De Bruyn J W 632-9413
3031 Bar-Vee Dairy 632-4308
3101 No Return
3131★Solsa Manuel ◉

## FULKERTH RD 1991

2100 Arnold Laura Mrs 632-5638
2140★Fairbairn Greg 668-0185
2160 Kids Kount day care 634-0705
Root Richard L ◎ 634-0705
2190-2260 No Return (2 Hses)
2290★Shook Cal B

**600**

2618 Martins Carlos S Jr
3130 Johnson Allen elec contr ◎ 667-5623
4313 Alvernaz Mike M 632-3562
4315 Rouge
4706 Gonzales Jose 668-7909
4800 Mc Cauley Wm M ◎ 632-5650
5825 No Return
6000★Galas Chris A 632-6222
8130 Rose Anthony T ◎ 634-5075
8612 Peterson Danny 668-4296
8812-10003 No Return (3 Hses)
10007 Bettencourt Clement ◎ 634-0361
10100 No Return
10218 Jemdale Holstein dairies 632-0610
Matney Dale D ◎ 632-0610
10230 Vacant
10542-10007 No Return (2 Hses)

## N COMMONS RD 1991

aluminum foil mfrs 634-0088
3200 Atlas Bolt & Screw Co 668-4211

600

### COMMONS RD N –FROM W MAIN ST NORTH 1 EAST OF FAITH HOME RD

ZIP CODE 95380
106-1101 No Return (5 Hses)
1130 Hager Ben
1307 Silveira Alex J ◉ 634-7962
1325 Hartigan Adeline C 634-3579

| Target Street | Cross Street | Source |
|---|---|---|
| - | ✓ | Polk's City Directory |

# N COMMONS RD 1991



1419-1518 No Return (2 Hses)

600

**COMMONS RD S –FROM W MAIN ST SOUTH 1 EAST OF FAITH HOME RD**

ZIP CODE 95380

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | Polk's City Directory |

# N WASHINGTON RD 1986



N WARING RD (DEN)—Contd
70 Collier L M 632-6287
73 Janzen Paul F 634-8235
77 Henkins Henry 632-9435
78 Deffenbaugh Howard E 668-1326
80 Sappenfield Ruby V
83 No Return
84 Reed Erma M Mrs 632-5060
85 London Virgil 667-1271
86 Dearinger Jim 632-6883
89 Ellerd Early 668-8246
90★Streng Jerry 632-8218
91 Noble John W ◎
92 Wingett Dorothy M Mrs ◎ 634-5135
93 Noble Danl M 632-9707
94 Panter Evelyn M Mrs ◎ 634-0703
95 Braswell Ora ◎ 632-1202
96 Vacant
97 Robinson Clarence Y ◎ 667-7300
98★Lawrence Wm E 634-2524
99 Mc Laury Leroy 632-0468
100 Randell Ann ◎ 668-8354
101 Serrian Peter A ◎ 634-1012
102 Surber Lawrence ◎ 634-4249
3601 No Return
3931 Perry Francis ◎ 634-4785
ZEERING RD INTERSECTS
4007 Ruether Bob C ◎ 632-1473
4101 Wade Cray ◎ 634-5119
4125 Lawrence Desma ◎ 632-7068
4319 Streeter Michl M ◎
4532 Baptista James D ◎ 668-2188

400

WARING RD S (DENAIR)—FROM WHITMORE AV SOUTH 1 WEST OF LESTER RD

ZIP CODE 95316
SERVICE RD INTERSECTS
GRAYSON RD INTERSECTS
3015 No Return
3119 No Return
3225 Filippi Bruno E ◎
3330 Reynolds
3431 Carlton Hal S
3607 Evans Elvin E 883-4646
3612 Rampone G V
3636 Trogdon Livia
3818 Rampone Randy C 883-2264
3825 Ringer Opal G ◎ 883-2159
3919 Castro Ernest P ◎ 883-2142
5201 Hamilton Jay S ◎ 883-2688
5419 Ownby Tim ◎ 883-2237
5506 Walton Laura ◎ 634-6722
5607★Swain James W 668-2202
5649★Harris Chas M 634-3865
5731 Sevick Ken 634-7852
5819 No Return
5843 No Return
5955★Nixon Michl L ◎ 667-9209

600

WARNER RD E —FROM GEER RD EAST 2 SOUTH OF KEYES RD

ZIP CODE 95380
412 Casey John Jr 667-6506

600

WASHINGTON RD N —FROM 4800 W MAIN ST NORTH

ZIP CODE 95380
431 Swanson Richd E ◎ 667-0285
601★Silviera Manuel 632-5606
607 No Return
1301★Wesley G L 667-7039
1113★Rushing Kennith 634-2190
1600 No Return
1706 No Return
1800 Lopes Harry ◎ 632-8566
1830★Allen Albert 632-3519
1930 Teeple Norman E ◎ 634-4406
2400 De Bruyn J W 632-9413
3031 Bar-Vee Dairy 632-4308
3131 Borges Tony 632-3685
3625 No Return
4113 Bratton Douglas ◎ 632-3570
4218 Mollard Brian 667-5924
4412 Turlock Mosquito Abatement District 634-1234
4501 Binford Paul ◎ 668-7799
4637 Malik Norman R ◎ 634-7051

500

WASHINGTON RD N (HILMAR)—FROM W RIVERSIDE AV NORTH 2 WEST OF N COLUMBUS RD

ZIP CODE 95324
4901 Ingels Robt A ◎ 667-1177
5271 Brown Richd C ◎ 634-1065
TURNER RD INTERSECTS
5930 Danbom Luther ◎ 632-3384
5936 No Return
CRANE RD INTERSECTS
6725★Barcelos Joe
6743 Barker Albert M ◎ 632-7084
6816 Diniz Maria S 632-4208
6825 Rodriguez A 634-6543
WILLIAMS AV INTERSECTS
7265 Danbom Paul R ◎ 632-1985
7286 Youngborg Donald A ◎ 634-7000
GEER RD INTERSECTS
7689 Fanelli Phil ◎ 668-1174
7738 Danbom Philip ◎ 632-3431
7960 Oates Herbert C Jr ◎
BLOSS AV INTERSECTS
8175 Zimmerman Frank ◎
8344 Faragosa Joe ◎ 634-2156
8463 Pearson Art ◎ 632-0504
8549 Erlandson Wesley M ◎ 634-5033
8601 Hanson Olga 667-9117
8608 Minturn Saml ◎ 634-7182
8658 Erlandson Brothers cattle buyers 632-6470
8827 Seward Ralph ◎ 667-1335
AUGUST AV INTERSECTS
9133 No Return
9257 Vacant
9375 Sherman Robt 634-5385
9433 Sherman Donald ◎ 667-0582
SHORT ST INTERSECTS
9735 Miranda Tony C ◎ 632-3566

600

WASHINGTON RD S —FROM 4800 W MAIN ST SOUTH

ZIP CODE 95380
543 No Return
719 Ackerman Otto ◎ 634-4892
806 No Return
807 No Return
1201 Damas Mary C Mrs ◎ 632-3406
1318 Nunes John L 667-6584
1500 Nunes Joe 668-0875
1624 Erb Wm L 632-7128
2312 No Return
3206 Bates Betty E ◎ 667-6066
3431 Silva Manuel B 632-7913
3701 Strickler Edw A ◎ 632-4992
3825★Andre Joe ◎
4007 Andre Joaquin ◎ 634-0988
4201 Vacant
4312 Adney Clarence ◎ 668-9091
4400 Hickman Terry ◎ 668-8500

| Target Street | Cross Street | Source |
|---|---|---|
| - | ✓ | Polk's City Directory |

## FULKERTH RD 1986

2030 Vacant
2040★Torres Dorothy 667-1376
2050 Gorman Kevin 632-6905
2060★Dereira Manual
2070★Dereira John Jr 634-3730

600

2618 Martins Carlos S Jr
3130 Johnson Allen elec contr ◎ 667-5623
3718 Hosseini Zia
4313 Alvernaz Mike 632-3562
4315★Branco Pete G
4706 Gonzales Jose 668-7909
4800 Mc Cauley Wm M ◎ 632-5650
5825 Brommer Michl 667-3499
8130 Rose Anthony T ◎ 634-5075
8612 Peterson Danny 668-4296
8812★Aguiniga Henry 632-8947
10001 No Return
10003 Costa Francisco R 634-3961
10007 Bettencourt Clement ◎ 634-0361

| Target Street | Cross Street | Source |
|---|---|---|
| - | ✓ | Polk's City Directory |

## N COMMONS RD 1986

3001 Premium West Coast Products Co Inc
aluminum foil mfrs 634-0088
3200 Atlas Bolt & Screw Co 668-4211

600

### COMMONS RD N —FROM W MAIN ST NORTH 1 EAST OF FAITH HOME RD

ZIP CODE 95380
748 Estes Geo L ◎ 632-9441
825 Santos Rick 632-9617
1101 No Return
1130 Hager Ben ◎ 634-7851
1307 Silveira Alex J ◎ 634-7962
1325 Hartigan Adeline Mrs
1419★Dallas Chris ◎
1518 Oliveira Gilbert ◎ 632-4675

600

### COMMONS RD S —FROM W MAIN ST SOUTH 1 EAST OF FAITH HOME RD

ZIP CODE 95380
224 No Return
230 Gross Larry D ◎ 632-3618

Denair, CA. (95316)

# N WASHINGTON RD 1981

412 Casey John J 632-3011

600

## WASHINGTON RD N —FROM 4800 W MAIN ST NORTH

ZIP CODE 95380

431 Swanson Richd E ◎ 667-0285
607 Mattos Jack R ◎ 634-7119
1301 French Wm A 634-5916
1600 No Return
1706 Vacant
1830 Allen Al L 632-3519
3031 Bar-Vee Dairy 632-4308
3625 Alvis Richd W 632-1848
4113 Bratton Douglas ◎ 632-3570
4218 Millard Brian 632-4765
4412 Turlock Mosquito Abatement District 634-1234
4501 Koshara Nathaniel 667-0665
4637 Malik Norman R ◎ 634-7051
5624 No Return
5836 No Return

500

## WASHINGTON RD N (HILMAR)—FROM W RIVERSIDE AV NORTH 2 WEST OF N COLUMBUS RD

# FULKERTH RD 1981





300
**FRONTAGE RD (KEYES)—FROM FAITH HOME RD SOUTHEAST 1 SOUTH OF ESMAIL AV**

ZIP CODE 95328
5380 Trailer Court
Spaces
1 De Witt Charles 634-2711
2 Fortner Nancy
3★Barnes Jessie
4 Owens R E ◎ 632-4943
5 Burkett Bill ◎ 634-7519
5424 Vacant
LIZZIE AV INTERSECTS
5454 Reed Cecil
CHRISTINE AV INTERSECTS
5520 No Return
MARTHA AV INTERSECTS
JENNIE AV INTERSECTS
5625 No Return
5626 Keyes Launderette
5658 Nunes Beacon Service gas sta 529-2298

204
**FULKERTH RD —FROM 128 HIGHWAY 99 WEST**

ZIP CODE 95380
1101 Mid-Cal Metals & Scrap buy & sell metals 634-0491
1301 B & C Shop Rentals contrs equip 634-4931
Turlock Concrete Pipe Inc 634-4931
Turlock Irrigation Constn 634-4931
Turlock Ready Mix Inc 634-4931
Turlock Rock Co Inc 634-4931
1319 Genseal Frank 634-8771
1712 Vacant
1800 No Return
1870 No Return
1880 No Return
1890 No Return
1900★Wood Danl
1910★Reyes Mike 632-5635
1920★Meyers Alford L 632-9265
1960 Strickland Riley
1970 Vacant
1980 Wade Martin
1990★Canelmilla Robt 667-5179
2000 Mc Kibbin Debbi
2010 No Return
2020 Harrill Mike
2030 Vulyak Donald A 632-4025
2040 Vacant
2060★Vaughn Linda 667-6434
2070 No Return

600
2618 Bettencourt David A
3718 Lewis L L
4313 Alvernay Mike 632-3562
4800 Mc Cauley Wm M ◎ 632-5650
5825 Brommer Alvin C ◎ 632-0355
7531 Wente Douglas G
8130 Rose Anthony T ◎ 634-5075
8612★Peterson Danny
8812 Perez
10001 Diaz Joe 537-2392
10003★Pacheco
10007 Gioletti Ronald ◎ 537-1257
10100 Ashley Bruce 634-5712
10218★Matney Dale ◎
10542 Gioletti Jenny Mrs ◎ 634-3863
10907 Alves Steve Jr 634-7132
11204 Lucas Norman E ◎ 634-5725
11207★Vernez D
11313 Alvernaz Geo ◎ 537-0636
11506★Pacheco
11606 Pacheco Larry 632-9388

212
**FULLERTON DR —FROM 3700 FOSSBERG EAST TO N OLIVE AV**

ZIP CODE 95380
405 Vacant
440 Pay Jeffery
480 No Return
500 Grvarigis Abrahan
540 No Return
555 Ismaily John
580 Babakhni Mani ◎ 667-5455
600 Youhan Edw
620 Vasconcellos David
635 Pirabou Vayodia
640 Anderson Robt
660★Baker Clay ◎
66s No Return
680 Gilbert Tom
695 Domingo
700 Vacant
705 No Return
725 Adams Jess
745 No Return
760 Vacant
765 Vieira Tim
785 Huntington Bill

209
**G ST —FROM 800 S 1ST ST SOUTHWEST**

ZIP CODE 95380
110 Lopes Francisco 632-7352
112 Vacant
115 Olson Ted 632-7842
121 Mirand Alberta
123★Roberts Betty
123½★Roberts Dennis
124 Goularte John ◎ 632-8103
125 Silvera Anival ◎
131 Furtado Angelina Mrs
132 Domingues M E
132½ No Return
134 Mendez Isabell 634-2294

# N COMMONS RD 1981

3200 Atlas Bolt & Screw Co 668-4211
2901 Middleton Packaging 632-2384

600

## COMMONS RD N —FROM W MAIN ST NORTH 1 EAST OF FAITH HOME RD

ZIP CODE 95380
748 Estes Geo L 632-9441
825 Scritchfield O Kenneth ◎ 634-5776
1101 Enos Arth F ◎
1130 Hager Ben 634-7851
1307 Silveira Alex J ◎ 634-7962
1325 Coleman
1419 Crowder Gary ◎ 537-1397
1518 Oliveira Gilbert ◎ 632-4675

600

## COMMONS RD S —FROM W MAIN ST SOUTH 1 EAST OF FAITH HOME RD

ZIP CODE 95380
224 Toste John ◎

Real Estate Brokerage

## N WASHINGTON RD 1975

ZIP CODE 95380
412 Vacant

600

WASHINGTON RD N —FROM 4800 W MAIN ST NORTH

ZIP CODE 95380
431 ★ Swanson Richd E ◎ 634-3376
607 Mattos Jack ◎ 634-7119
1301 French Wm A 634-5916
1600 Accurso Cecelia R Mrs 634-3634
1706 Vacant
1830 ★ Allen Albert 632-3519
3625 Alvis Richd W 632-1848
4113 Bratton Douglas 632-3570
4218 Mollard Hope E Mrs ◎ 632-4765
4412 Turlock Mosquito Abatement District 634-1234
4501 Warda Luther M ◎ 632-0291
Binford Paul ◎ 634-1303
4637 Malik Norman R ◎ 634-7051
5624 Vacant
5836 Reeves James R 537-3078
5900 Dowdy Kenneth ◎ 537-4843

| Target Street | Cross Street | Source |
|---|---|---|
| - | ✓ | Polk's City Directory |

## FULKERTH RD 1975

Turlock, California (95380)

1419 Lucky Drive-In Theatre 634-1766
1701 Fenton Ellery E ◎ 632-0073
1712 Gregg Glenn H ◎ 632-3215

600

2618 Bettencourt David A 634-4102
3718 Lewis L L 634-6774
4313 Vacant
4800 Mc Cauley Wm M ◎ 632-5650
5825 Brommer Alvin C ◎ 632-0355
7531 Vacant
8130 Rose Anthony T ◎ 634-5075
8612 ★ Peterson Danny 632-1289
8812 ★ Bradley Scott 632-0226
10003 Vacant
10007 Gioletti Ronald ◎ 634-5901

## N COMMONS RD 1975

9880 Langille Jack
JOHNSON AV INTERSECTS

---

600
COMMONS RD N —FROM W MAIN ST NORTH 1 EAST OF FAITH HOME RD

ZIP CODE 95380
748 Vacant
1101 Enos Arth F ◎ 632-0941
1130 Vacant
1307 Silveira Alex J ◎ 634-7962
1325 Weeden Darwin J 632-0506
1419 ★ Crocder Gary ◎
1518 Oliveira Gilbert ◎ 632-4675

---

600
COMMONS RD S —FROM W MAIN ST SOUTH 1 EAST OF FAITH HOME RD

ZIP CODE 95380
425 Vacant

634-5019
9257 Burns Virgil D ◎ 634-7620
9375 Ottman John R ◎ 634-7769

600

WASHINGTON RD N —FROM 4800 W MAIN ST NORTH

ZIP CODE 95380
431 Osborne John W ◎ 634-5324
607 Mattos Jack ◎ 634-7119
Vacant
1113 Peterson Danny 634-7778
1301 No Return
1706 Vacant
3625 Alves Richd W 632-1848
4113 Bratton Douglas 632-3570
4218 Mollard Fred ◎ 632-4765
4412 Turlock Mosquito Abatement District 634-1234
4501 B & W Transport & Sales Inc trucking 634-7350
Warda Luther ◎ 632-0291
Binford Paul ◎ 634-1303

**FULKERTH RD—Contd**

1713 Longo W C ◎ 632-0655

600

2400 No Return
2618 Vacant
3718 Lewis L L 634-6774
4313 Azevedo Adrian V 632-5686
Azevedo Victor 632-5686
4706 Marshall Rose ◎ 634-6485
4800 Mc Cauley Wm M ◎ 632-5650
5825 Brommer Alvin C ◎ 632-0355
7531 No Return
8130 Vacant
10003 Aguiar Tony 634-5051
10007 Gioletti Ronald ◎ 634-5901
10100 Morrow Joseph W ◎ 634-3911
10542 Gioletti Tony 634-3863
10907 Carvalho A J 634-5741

## N COMMONS RD 1970

9558 Ahlem Clarence N ◎ 632-3474
9597 Rohn Raymond ◎ 632-1924
9866 Vacant

600

### COMMONS RD N —FROM W MAIN ST NORTH 1 EAST OF FAITH HOME RD

ZIP CODE 95380

748 Hayes Vernon E 632-0920
1101 Enos Arth F ◎ 632-0941
1130 Commons Darry O ◎ 634-7031
1307 Wianand Clarence W ◎ 632-3297
1325 Vacant
1419 Marshall Thos ◎ 632-3290
1518 Oliveira Gilbert ◎ 632-4675

600

### COMMONS RD S —FROM W MAIN ST SOUTH 1 EAST OF FAITH HOME RD

ZIP CODE 95380

425 Hodapp Gordon V ◎

**APPENDIX E**

**SITE INSPECTION PHOTOS**

Photo 1: View northeast across fallow agricultural fields toward operations area.

Photo 2: Runoff basin at edge of northwestern crop field.

Photo 3: Dwelling and outbuildings in northern portion of operations area.

Photo Date: 11-18-13

Photo 4: Agricultural chemicals stored inside structure in northern portion of operations area.

Photo 5: Truck loading area.

Photo 6: View west across southern portion of operations area.

Photo Date: 11-18-13

Photo 7: Farm equipment wash area.

Photo 8: Storage area west of asphalt pavement in southern portion of operations area.

Photo 9: Eastern portion of barn/ packing shed with dirt floor.

Photo Date: 11-18-13

Photo 10: Produce packing machinery along south wall inside western portion of barn/packing shed.

Photo 11: Hydraulic oil leak at packing machinery.

Photo 12: Stored items inside northwestern portion of barn/packing shed.

Photo Date: 11-18-13

Photo 13: Equipment stored in eastern portion of pole barn.

Photo 14: Stored oils and lubricants in western portion of pole barn.

Photo 15: Waste oil tank in pole barn.

Photo Date: 11-18-13

Photo 16: Equipment yard in southern portion of operations area.

Photo 17: Harvesting machinery stored in southeastern portion of equipment yard.

Photo 18: Tractors stored in southwestern portion of equipment yard.

Photo Date: 11-18-13

# APPENDIX F

# EDR REPORT

**Avila & Sons North Washington Road Site**
1301 North Washington Road
Turlock, CA 95380

Inquiry Number: 3781724.2s
November 11, 2013

# The EDR Radius Map™ Report with GeoCheck®

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
Toll Free: 800.352.0050
www.edrnet.com

# TABLE OF CONTENTS



***Thank you for your business.***
Please contact EDR at 1-800-352-0050
with any questions or comments.

# EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

**TARGET PROPERTY INFORMATION**

**ADDRESS**

1301 NORTH WASHINGTON ROAD
TURLOCK, CA 95380

**COORDINATES**

| | |
|---|---|
| Latitude (North): | 37.5038000 - 37˚ 30' 13.68'' |
| Longitude (West): | 120.9062000 - 120˚ 54' 22.32'' |
| Universal Tranverse Mercator: | Zone 10 |
| UTM X (Meters): | 685077.1 |
| UTM Y (Meters): | 4152617.8 |
| Elevation: | 87 ft. above sea level |

**USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY**

| | |
|---|---|
| Target Property Map: | 37120-E8 CERES, CA |
| Most Recent Revision: | 1987 |
| South Map: | 37120-D8 HATCH, CA |
| Most Recent Revision: | 1973 |

**AERIAL PHOTOGRAPHY IN THIS REPORT**

| | |
|---|---|
| Photo Year: | 2012 |
| Source: | USDA |

**TARGET PROPERTY SEARCH RESULTS**

The target property was not listed in any of the databases searched by EDR.

**DATABASES WITH NO MAPPED SITES**

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

**STANDARD ENVIRONMENTAL RECORDS**

***Federal NPL site list***

NPL.......................... National Priority List

# EXECUTIVE SUMMARY

Proposed NPL - - - - - - - - Proposed National Priority List Sites
NPL LIENS - - - - - - - - Federal Superfund Liens

***Federal Delisted NPL site list***

Delisted NPL - - - - - - - - National Priority List Deletions

***Federal CERCLIS list***

CERCLIS - - - - - - - - Comprehensive Environmental Response, Compensation, and Liability Information System
FEDERAL FACILITY - - - - - - - - Federal Facility Site Information listing

***Federal CERCLIS NFRAP site List***

CERC-NFRAP - - - - - - - - CERCLIS No Further Remedial Action Planned

***Federal RCRA CORRACTS facilities list***

CORRACTS - - - - - - - - Corrective Action Report

***Federal RCRA non-CORRACTS TSD facilities list***

RCRA-TSDF - - - - - - - - RCRA - Treatment, Storage and Disposal

***Federal RCRA generators list***

RCRA-LQG - - - - - - - - RCRA - Large Quantity Generators
RCRA-SQG - - - - - - - - RCRA - Small Quantity Generators
RCRA-CESQG - - - - - - - - RCRA - Conditionally Exempt Small Quantity Generator

***Federal institutional controls / engineering controls registries***

US ENG CONTROLS - - - - - - - - Engineering Controls Sites List
US INST CONTROL - - - - - - - - Sites with Institutional Controls
LUCIS - - - - - - - - Land Use Control Information System

***Federal ERNS list***

ERNS - - - - - - - - Emergency Response Notification System

***State- and tribal - equivalent NPL***

RESPONSE - - - - - - - - State Response Sites

***State- and tribal - equivalent CERCLIS***

ENVIROSTOR - - - - - - - - EnviroStor Database

***State and tribal landfill and/or solid waste disposal site lists***

SWF/LF - - - - - - - - Solid Waste Information System

***State and tribal leaking storage tank lists***

LUST - - - - - - - - Geotracker's Leaking Underground Fuel Tank Report

SLIC - Statewide SLIC Cases
INDIAN LUST - Leaking Underground Storage Tanks on Indian Land

***State and tribal registered storage tank lists***

UST - Active UST Facilities
AST - Aboveground Petroleum Storage Tank Facilities
INDIAN UST - Underground Storage Tanks on Indian Land
FEMA UST - Underground Storage Tank Listing

***State and tribal voluntary cleanup sites***

VCP - Voluntary Cleanup Program Properties
INDIAN VCP - Voluntary Cleanup Priority Listing

**ADDITIONAL ENVIRONMENTAL RECORDS**

***Local Brownfield lists***

US BROWNFIELDS - A Listing of Brownfields Sites

***Local Lists of Landfill / Solid Waste Disposal Sites***

ODI - Open Dump Inventory
DEBRIS REGION 9 - Torres Martinez Reservation Illegal Dump Site Locations
WMUDS/SWAT - Waste Management Unit Database
SWRCY - Recycler Database
HAULERS - Registered Waste Tire Haulers Listing
INDIAN ODI - Report on the Status of Open Dumps on Indian Lands

***Local Lists of Hazardous waste / Contaminated Sites***

US CDL - Clandestine Drug Labs
HIST Cal-Sites - Historical Calsites Database
SCH - School Property Evaluation Program
Toxic Pits - Toxic Pits Cleanup Act Sites
CDL - Clandestine Drug Labs
US HIST CDL - National Clandestine Laboratory Register

***Local Lists of Registered Storage Tanks***

CA FID UST - Facility Inventory Database
HIST UST - Hazardous Substance Storage Container Database
SWEEPS UST - SWEEPS UST Listing

***Local Land Records***

LIENS 2 - CERCLA Lien Information
LIENS - Environmental Liens Listing
DEED - Deed Restriction Listing

***Records of Emergency Release Reports***

HMIRS - Hazardous Materials Information Reporting System

CHMIRS - California Hazardous Material Incident Report System
LDS - Land Disposal Sites Listing
MCS - Military Cleanup Sites Listing
SPILLS 90 - SPILLS 90 data from FirstSearch

***Other Ascertainable Records***

RCRA NonGen / NLR - RCRA - Non Generators
DOT OPS - Incident and Accident Data
DOD - Department of Defense Sites
FUDS - Formerly Used Defense Sites
CONSENT - Superfund (CERCLA) Consent Decrees
ROD - Records Of Decision
UMTRA - Uranium Mill Tailings Sites
US MINES - Mines Master Index File
TRIS - Toxic Chemical Release Inventory System
TSCA - Toxic Substances Control Act
FTTS - FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS - FIFRA/TSCA Tracking System Administrative Case Listing
SSTS - Section 7 Tracking Systems
ICIS - Integrated Compliance Information System
PADS - PCB Activity Database System
MLTS - Material Licensing Tracking System
RADINFO - Radiation Information Database
FINDS - Facility Index System/Facility Registry System
RAATS - RCRA Administrative Action Tracking System
RMP - Risk Management Plans
CA BOND EXP. PLAN - Bond Expenditure Plan
UIC - UIC Listing
NPDES - NPDES Permits Listing
Cortese - "Cortese" Hazardous Waste & Substances Sites List
HIST CORTESE - Hazardous Waste & Substance Site List
CUPA Listings - CUPA Resources List
Notify 65 - Proposition 65 Records
DRYCLEANERS - Cleaner Facilities
WIP - Well Investigation Program Case List
ENF - Enforcement Action Listing
HAZNET - Facility and Manifest Data
EMI - Emissions Inventory Data
INDIAN RESERV - Indian Reservations
SCRD DRYCLEANERS - State Coalition for Remediation of Drycleaners Listing
COAL ASH DOE - Steam-Electric Plant Operation Data
COAL ASH EPA - Coal Combustion Residues Surface Impoundments List
HWT - Registered Hazardous Waste Transporter Database
HWP - EnviroStor Permitted Facilities Listing
Financial Assurance - Financial Assurance Information Listing
LEAD SMELTERS - Lead Smelter Sites
2020 COR ACTION - 2020 Corrective Action Program List
US AIRS - Aerometric Information Retrieval System Facility Subsystem
PRP - Potentially Responsible Parties
WDS - Waste Discharge System
EPA WATCH LIST - EPA WATCH LIST
US FIN ASSUR - Financial Assurance Information
PCB TRANSFORMER - PCB Transformer Registration Database

PROC - Certified Processors Database
MWMP - Medical Waste Management Program Listing

**EDR HIGH RISK HISTORICAL RECORDS**

***EDR Exclusive Records***

EDR MGP - EDR Proprietary Manufactured Gas Plants
EDR US Hist Auto Stat - EDR Exclusive Historic Gas Stations
EDR US Hist Cleaners - EDR Exclusive Historic Dry Cleaners

**SURROUNDING SITES: SEARCH RESULTS**

Surrounding sites were not identified.

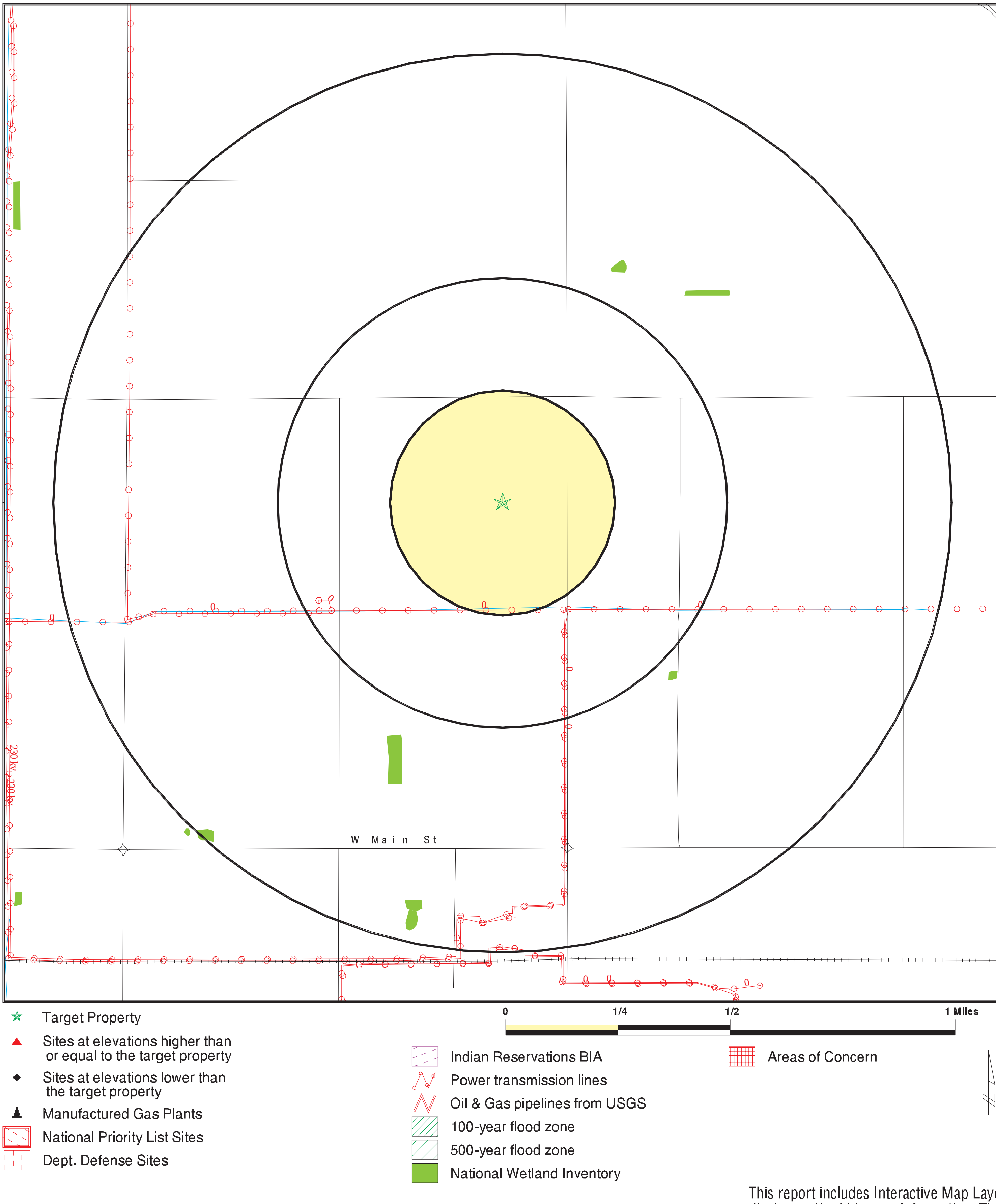
Unmappable (orphan) sites are not considered in the foregoing analysis.

# EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 8 records.

| Site Name | Database(s) |
|---|---|
| SILVA, G.J. & SONS INC #2 | HIST CORTESE |
| COUNTRY SIDE SHELL | UST |
| ERNEST PROUTY & SONS INC | AST |
| 10 MINUTE LUBE AND OIL | AST |
| NORTH TURLOCK #2 LLC | HAZNET |
| TARGET NO 1304 | RCRA-SQG, FINDS |
| VALLEY WOOD PRESERVING, INCORPORAT | SLIC |
| 460 MOFFET ROAD | US CDL |

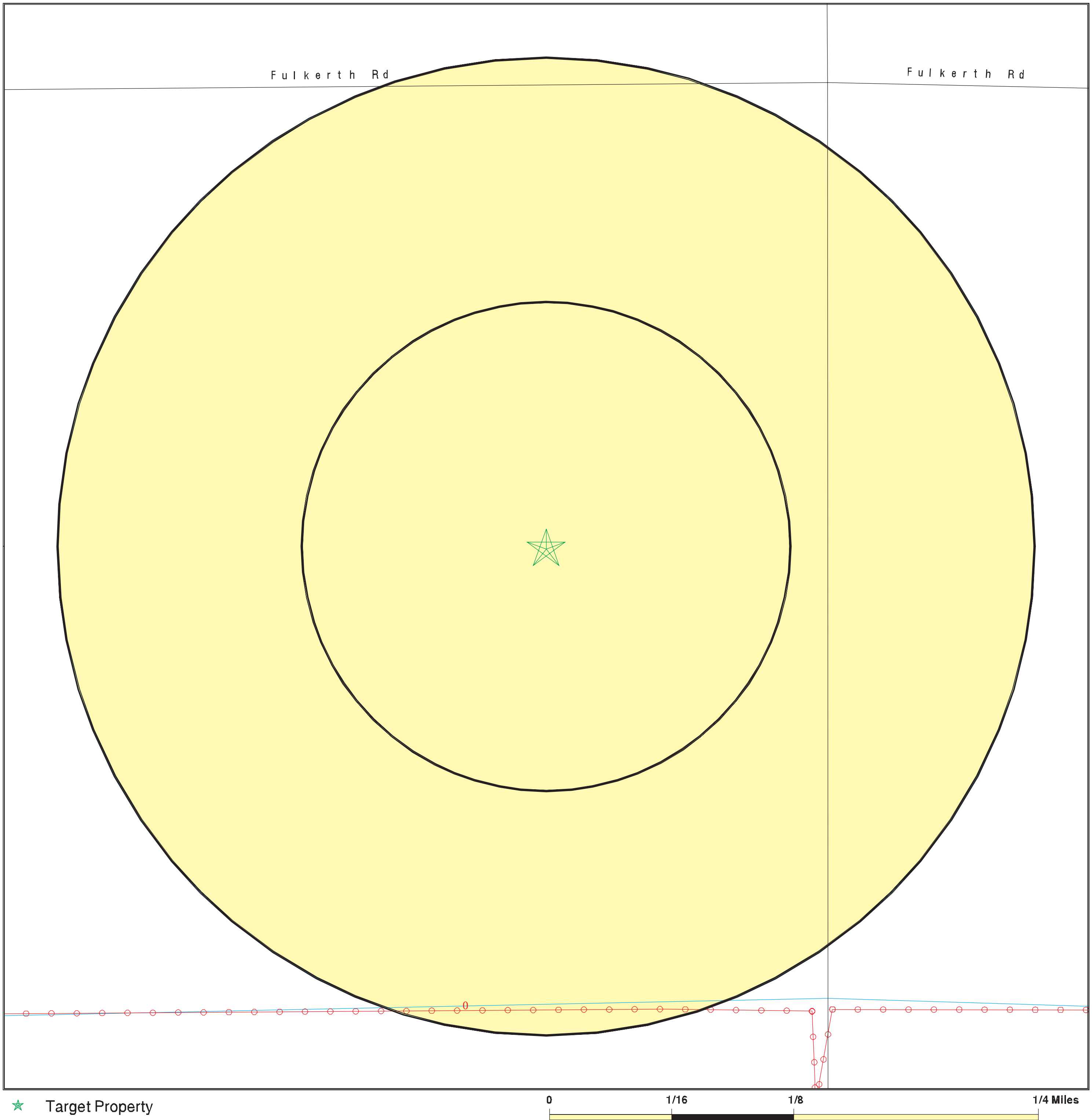
# OVERVIEW MAP - 3781724.2s




This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

| | |
|---|---|
| SITE NAME: Avila & Sons North Washington Road Site<br>ADDRESS: 1301 North Washington Road<br>Turlock CA 95380<br>LAT/LONG: 37.5038 / 120.9062 | CLIENT: J House Environmental<br>CONTACT: Jackie House<br>INQUIRY #: 3781724.2s<br>DATE: November 11, 2013 5:32 pm |

# DETAIL MAP - 3781724.2s




- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

| | |
|---|---|
| SITE NAME: Avila & Sons North Washington Road Site<br>ADDRESS: 1301 North Washington Road<br>Turlock CA 95380<br>LAT/LONG: 37.5038 / 120.9062 | CLIENT: J House Environmental<br>CONTACT: Jackie House<br>INQUIRY #: 3781724.2s<br>DATE: November 11, 2013 5:33 pm |

# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| **STANDARD ENVIRONMENTAL RECORDS** | | | | | | | | |
| ***Federal NPL site list*** | | | | | | | | |
| NPL | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| Proposed NPL | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| NPL LIENS | TP | | NR | NR | NR | NR | NR | 0 |
| ***Federal Delisted NPL site list*** | | | | | | | | |
| Delisted NPL | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ***Federal CERCLIS list*** | | | | | | | | |
| CERCLIS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| FEDERAL FACILITY | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal CERCLIS NFRAP site List*** | | | | | | | | |
| CERC-NFRAP | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal RCRA CORRACTS facilities list*** | | | | | | | | |
| CORRACTS | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ***Federal RCRA non-CORRACTS TSD facilities list*** | | | | | | | | |
| RCRA-TSDF | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal RCRA generators list*** | | | | | | | | |
| RCRA-LQG | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| RCRA-SQG | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| RCRA-CESQG | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| ***Federal institutional controls / engineering controls registries*** | | | | | | | | |
| US ENG CONTROLS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| US INST CONTROL | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| LUCIS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal ERNS list*** | | | | | | | | |
| ERNS | TP | | NR | NR | NR | NR | NR | 0 |
| ***State- and tribal - equivalent NPL*** | | | | | | | | |
| RESPONSE | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ***State- and tribal - equivalent CERCLIS*** | | | | | | | | |
| ENVIROSTOR | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ***State and tribal landfill and/or solid waste disposal site lists*** | | | | | | | | |
| SWF/LF | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***State and tribal leaking storage tank lists*** | | | | | | | | |
| LUST | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |

# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| SLIC | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| INDIAN LUST | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***State and tribal registered storage tank lists*** | | | | | | | | |
| UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| AST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| INDIAN UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| FEMA UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| ***State and tribal voluntary cleanup sites*** | | | | | | | | |
| VCP | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| INDIAN VCP | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| **ADDITIONAL ENVIRONMENTAL RECORDS** | | | | | | | | |
| ***Local Brownfield lists*** | | | | | | | | |
| US BROWNFIELDS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Local Lists of Landfill / Solid Waste Disposal Sites*** | | | | | | | | |
| ODI | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| DEBRIS REGION 9 | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| WMUDS/SWAT | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| SWRCY | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| HAULERS | TP | | NR | NR | NR | NR | NR | 0 |
| INDIAN ODI | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Local Lists of Hazardous waste / Contaminated Sites*** | | | | | | | | |
| US CDL | TP | | NR | NR | NR | NR | NR | 0 |
| HIST Cal-Sites | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| SCH | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| Toxic Pits | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| CDL | TP | | NR | NR | NR | NR | NR | 0 |
| US HIST CDL | TP | | NR | NR | NR | NR | NR | 0 |
| ***Local Lists of Registered Storage Tanks*** | | | | | | | | |
| CA FID UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| HIST UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| SWEEPS UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| ***Local Land Records*** | | | | | | | | |
| LIENS 2 | TP | | NR | NR | NR | NR | NR | 0 |
| LIENS | TP | | NR | NR | NR | NR | NR | 0 |
| DEED | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Records of Emergency Release Reports*** | | | | | | | | |
| HMIRS | TP | | NR | NR | NR | NR | NR | 0 |
| CHMIRS | TP | | NR | NR | NR | NR | NR | 0 |
| LDS | TP | | NR | NR | NR | NR | NR | 0 |

# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| MCS | TP | | NR | NR | NR | NR | NR | 0 |
| SPILLS 90 | TP | | NR | NR | NR | NR | NR | 0 |
| ***Other Ascertainable Records*** | | | | | | | | |
| RCRA NonGen / NLR | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| DOT OPS | TP | | NR | NR | NR | NR | NR | 0 |
| DOD | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| FUDS | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| CONSENT | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ROD | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| UMTRA | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| US MINES | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| TRIS | TP | | NR | NR | NR | NR | NR | 0 |
| TSCA | TP | | NR | NR | NR | NR | NR | 0 |
| FTTS | TP | | NR | NR | NR | NR | NR | 0 |
| HIST FTTS | TP | | NR | NR | NR | NR | NR | 0 |
| SSTS | TP | | NR | NR | NR | NR | NR | 0 |
| ICIS | TP | | NR | NR | NR | NR | NR | 0 |
| PADS | TP | | NR | NR | NR | NR | NR | 0 |
| MLTS | TP | | NR | NR | NR | NR | NR | 0 |
| RADINFO | TP | | NR | NR | NR | NR | NR | 0 |
| FINDS | TP | | NR | NR | NR | NR | NR | 0 |
| RAATS | TP | | NR | NR | NR | NR | NR | 0 |
| RMP | TP | | NR | NR | NR | NR | NR | 0 |
| CA BOND EXP. PLAN | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| UIC | TP | | NR | NR | NR | NR | NR | 0 |
| NPDES | TP | | NR | NR | NR | NR | NR | 0 |
| Cortese | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| HIST CORTESE | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| CUPA Listings | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| Notify 65 | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| DRYCLEANERS | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| WIP | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| ENF | TP | | NR | NR | NR | NR | NR | 0 |
| HAZNET | TP | | NR | NR | NR | NR | NR | 0 |
| EMI | TP | | NR | NR | NR | NR | NR | 0 |
| INDIAN RESERV | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| SCRD DRYCLEANERS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| COAL ASH DOE | TP | | NR | NR | NR | NR | NR | 0 |
| COAL ASH EPA | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| HWT | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| HWP | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| Financial Assurance | TP | | NR | NR | NR | NR | NR | 0 |
| LEAD SMELTERS | TP | | NR | NR | NR | NR | NR | 0 |
| 2020 COR ACTION | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| US AIRS | TP | | NR | NR | NR | NR | NR | 0 |
| PRP | TP | | NR | NR | NR | NR | NR | 0 |
| WDS | TP | | NR | NR | NR | NR | NR | 0 |
| EPA WATCH LIST | TP | | NR | NR | NR | NR | NR | 0 |
| US FIN ASSUR | TP | | NR | NR | NR | NR | NR | 0 |
| PCB TRANSFORMER | TP | | NR | NR | NR | NR | NR | 0 |

# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| PROC | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| MWMP | 0.250 | | 0 | 0 | NR | NR | NR | 0 |

**EDR HIGH RISK HISTORICAL RECORDS**

***EDR Exclusive Records***

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| EDR MGP | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| EDR US Hist Auto Stat | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| EDR US Hist Cleaners | 0.250 | | 0 | 0 | NR | NR | NR | 0 |

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

| Map ID<br>Direction<br>Distance<br>Elevation | Site | Database(s) | EDR ID Number<br>EPA ID Number |
|---|---|---|---|

NO SITES FOUND

Count: 8 records.

ORPHAN SUMMARY

| City | EDR ID | Site Name | Site Address | Zip | Database(s) |
|---|---|---|---|---|---|
| TURLOCK | U003783199 | COUNTRY SIDE SHELL | 23001 FULKERTH RD. | 95380 | UST |
| TURLOCK | A100345725 | ERNEST PROUTY & SONS INC | 6219 N GEER RD | | AST |
| TURLOCK | S106230531 | VALLEY WOOD PRESERVING, INCORPORAT | 2013, 2031 GOLDEN STATE BLVD S | | SLIC |
| TURLOCK | A100345494 | 10 MINUTE LUBE AND OIL | 437 GOLDEN STATE BLVD | 95380 | AST |
| TURLOCK | 1012197813 | 460 MOFFET ROAD | 460 MOFFET ROAD | | US CDL |
| TURLOCK | S112935536 | NORTH TURLOCK #2 LLC | 2313 MONTE VISTA AVE | 95380 | HAZNET |
| TURLOCK | 1004676264 | TARGET NO 1304 | MONTE VISTA AVE AND HWY 99 | | RCRA-SQG, FINDS |
| TURLOCK | S105027131 | SILVA, G.J. & SONS INC #2 | 3107 PRAIRIA FLOWER | | HIST CORTESE |

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

**Number of Days to Update:** Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

**STANDARD ENVIRONMENTAL RECORDS**

***Federal NPL site list***

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/26/2013
Date Data Arrived at EDR: 05/09/2013
Date Made Active in Reports: 07/10/2013
Number of Days to Update: 62

Source: EPA
Telephone: N/A
Last EDR Contact: 11/11/2013
Next Scheduled EDR Contact: 01/20/2014
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 5
Telephone 312-886-6686

EPA Region 10
Telephone 206-553-8665

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6774

EPA Region 9
Telephone: 415-947-4246

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 04/26/2013
Date Data Arrived at EDR: 05/09/2013
Date Made Active in Reports: 07/10/2013
Number of Days to Update: 62

Source: EPA
Telephone: N/A
Last EDR Contact: 11/11/2013
Next Scheduled EDR Contact: 01/20/2014
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

***Federal Delisted NPL site list***

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/26/2013
Date Data Arrived at EDR: 05/09/2013
Date Made Active in Reports: 07/10/2013
Number of Days to Update: 62

Source: EPA
Telephone: N/A
Last EDR Contact: 11/11/2013
Next Scheduled EDR Contact: 01/20/2014
Data Release Frequency: Quarterly

***Federal CERCLIS list***

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 04/26/2013
Date Data Arrived at EDR: 05/29/2013
Date Made Active in Reports: 08/09/2013
Number of Days to Update: 72

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 11/11/2013
Next Scheduled EDR Contact: 12/09/2013
Data Release Frequency: Quarterly

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 10/09/2012
Date Made Active in Reports: 12/20/2012
Number of Days to Update: 72

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 10/11/2013
Next Scheduled EDR Contact: 01/20/2014
Data Release Frequency: Varies

***Federal CERCLIS NFRAP site List***

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 04/26/2013
Date Data Arrived at EDR: 05/29/2013
Date Made Active in Reports: 08/09/2013
Number of Days to Update: 72

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 11/11/2013
Next Scheduled EDR Contact: 12/09/2013
Data Release Frequency: Quarterly

***Federal RCRA CORRACTS facilities list***

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

| | |
|---|---|
| Date of Government Version: 07/11/2013 | Source: EPA |
| Date Data Arrived at EDR: 08/08/2013 | Telephone: 800-424-9346 |
| Date Made Active in Reports: 09/13/2013 | Last EDR Contact: 10/02/2013 |
| Number of Days to Update: 36 | Next Scheduled EDR Contact: 01/13/2014 |
| | Data Release Frequency: Quarterly |

***Federal RCRA non-CORRACTS TSD facilities list***

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

| | |
|---|---|
| Date of Government Version: 07/11/2013 | Source: Environmental Protection Agency |
| Date Data Arrived at EDR: 08/08/2013 | Telephone: (415) 495-8895 |
| Date Made Active in Reports: 09/13/2013 | Last EDR Contact: 10/02/2013 |
| Number of Days to Update: 36 | Next Scheduled EDR Contact: 01/13/2014 |
| | Data Release Frequency: Quarterly |

***Federal RCRA generators list***

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

| | |
|---|---|
| Date of Government Version: 07/11/2013 | Source: Environmental Protection Agency |
| Date Data Arrived at EDR: 08/08/2013 | Telephone: (415) 495-8895 |
| Date Made Active in Reports: 09/13/2013 | Last EDR Contact: 10/02/2013 |
| Number of Days to Update: 36 | Next Scheduled EDR Contact: 01/13/2014 |
| | Data Release Frequency: Quarterly |

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

| | |
|---|---|
| Date of Government Version: 07/11/2013 | Source: Environmental Protection Agency |
| Date Data Arrived at EDR: 08/08/2013 | Telephone: (415) 495-8895 |
| Date Made Active in Reports: 09/13/2013 | Last EDR Contact: 10/02/2013 |
| Number of Days to Update: 36 | Next Scheduled EDR Contact: 01/13/2014 |
| | Data Release Frequency: Quarterly |

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

| | |
|---|---|
| Date of Government Version: 07/11/2013 | Source: Environmental Protection Agency |
| Date Data Arrived at EDR: 08/08/2013 | Telephone: (415) 495-8895 |
| Date Made Active in Reports: 09/13/2013 | Last EDR Contact: 10/02/2013 |
| Number of Days to Update: 36 | Next Scheduled EDR Contact: 01/13/2014 |
| | Data Release Frequency: Varies |

***Federal institutional controls / engineering controls registries***

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 06/17/2013
Date Data Arrived at EDR: 06/21/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 104

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 09/10/2013
Next Scheduled EDR Contact: 12/23/2013
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 06/17/2013
Date Data Arrived at EDR: 06/21/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 104

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 09/10/2013
Next Scheduled EDR Contact: 12/23/2013
Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 08/20/2013
Date Data Arrived at EDR: 08/23/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 70

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 08/15/2013
Next Scheduled EDR Contact: 09/02/2013
Data Release Frequency: Varies

***Federal ERNS list***

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/17/2013
Date Made Active in Reports: 02/15/2013
Number of Days to Update: 29

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 10/01/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Annually

***State- and tribal - equivalent NPL***

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 09/05/2013
Date Data Arrived at EDR: 09/05/2013
Date Made Active in Reports: 10/10/2013
Number of Days to Update: 35

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/06/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Quarterly

***State- and tribal - equivalent CERCLIS***

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 09/05/2013
Date Data Arrived at EDR: 09/05/2013
Date Made Active in Reports: 10/10/2013
Number of Days to Update: 35

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/06/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Quarterly

***State and tribal landfill and/or solid waste disposal site lists***

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 08/19/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/08/2013
Number of Days to Update: 50

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 08/19/2013
Next Scheduled EDR Contact: 12/02/2013
Data Release Frequency: Quarterly

***State and tribal leaking storage tank lists***

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST: Geotracker's Leaking Underground Fuel Tank Report
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 09/16/2013
Date Data Arrived at EDR: 09/17/2013
Date Made Active in Reports: 10/16/2013
Number of Days to Update: 29

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 10/17/2013
Next Scheduled EDR Contact: 12/30/2013
Data Release Frequency: Quarterly

LUST REG 9: Leaking Underground Storage Tank Report
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC: Statewide SLIC Cases
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/16/2013
Date Data Arrived at EDR: 09/17/2013
Date Made Active in Reports: 10/17/2013
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 10/17/2013
Next Scheduled EDR Contact: 12/30/2013
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 08/27/2013
Date Data Arrived at EDR: 08/27/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 66

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 08/20/2013
Date Data Arrived at EDR: 08/23/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 70

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 07/29/2013
Date Data Arrived at EDR: 07/30/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 94

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 03/01/2013
Date Data Arrived at EDR: 03/01/2013
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 42

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Quarterly

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 08/27/2012
Date Data Arrived at EDR: 08/28/2012
Date Made Active in Reports: 10/16/2012
Number of Days to Update: 49

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Quarterly

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 09/12/2011
Date Data Arrived at EDR: 09/13/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 59

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 08/01/2013
Date Data Arrived at EDR: 08/02/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 91

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Semi-Annually

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 02/01/2013
Date Data Arrived at EDR: 05/01/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 184

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 11/01/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

***State and tribal registered storage tank lists***

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 09/16/2013
Date Data Arrived at EDR: 09/17/2013
Date Made Active in Reports: 10/16/2013
Number of Days to Update: 29

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 10/17/2013
Next Scheduled EDR Contact: 12/30/2013
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 08/01/2009
Date Data Arrived at EDR: 09/10/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 21

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 10/07/2013
Next Scheduled EDR Contact: 01/20/2014
Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 02/05/2013
Date Data Arrived at EDR: 02/06/2013
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 65

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 02/21/2013
Date Data Arrived at EDR: 02/26/2013
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 45

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Quarterly

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 07/29/2013
Date Data Arrived at EDR: 08/01/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 92

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Quarterly

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 02/28/2013
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 43

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/10/2011
Date Data Arrived at EDR: 05/11/2011
Date Made Active in Reports: 06/14/2011
Number of Days to Update: 34

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 08/20/2013
Date Data Arrived at EDR: 08/23/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 70

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 08/01/2013
Date Data Arrived at EDR: 08/02/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 91

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Semi-Annually

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 09/28/2012
Date Data Arrived at EDR: 11/07/2012
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 156

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 11/01/2014
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 10/17/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Varies

***State and tribal voluntary cleanup sites***

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 09/05/2013
Date Data Arrived at EDR: 09/05/2013
Date Made Active in Reports: 10/10/2013
Number of Days to Update: 35

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/06/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Quarterly

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 09/28/2012
Date Data Arrived at EDR: 10/02/2012
Date Made Active in Reports: 10/16/2012
Number of Days to Update: 14

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 10/01/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Varies

**ADDITIONAL ENVIRONMENTAL RECORDS**

***Local Brownfield lists***

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/24/2013
Date Data Arrived at EDR: 06/25/2013
Date Made Active in Reports: 08/09/2013
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/24/2013
Next Scheduled EDR Contact: 01/08/2014
Data Release Frequency: Semi-Annually

***Local Lists of Landfill / Solid Waste Disposal Sites***

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: No Update Planned

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: No Update Planned

SWRCY: Recycler Database

A listing of recycling facilities in California.

Date of Government Version: 09/16/2013
Date Data Arrived at EDR: 09/19/2013
Date Made Active in Reports: 10/17/2013
Number of Days to Update: 28

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/16/2013
Next Scheduled EDR Contact: 12/30/2013
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing

A listing of registered waste tire haulers.

Date of Government Version: 04/26/2013
Date Data Arrived at EDR: 04/26/2013
Date Made Active in Reports: 05/16/2013
Number of Days to Update: 20

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 10/01/2013
Next Scheduled EDR Contact: 12/02/2013
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 11/04/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Varies

***Local Lists of Hazardous waste / Contaminated Sites***

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 08/06/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 22

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 09/04/2013
Next Scheduled EDR Contact: 12/16/2013
Data Release Frequency: Quarterly

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 09/05/2013
Date Data Arrived at EDR: 09/05/2013
Date Made Active in Reports: 10/10/2013
Number of Days to Update: 35

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/06/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 06/30/2013
Date Data Arrived at EDR: 09/03/2013
Date Made Active in Reports: 10/10/2013
Number of Days to Update: 37

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 09/03/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/01/2007
Date Data Arrived at EDR: 11/19/2008
Date Made Active in Reports: 03/30/2009
Number of Days to Update: 131

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

***Local Lists of Registered Storage Tanks***

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/23/2009
Date Data Arrived at EDR: 09/23/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 8

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 09/03/2013
Next Scheduled EDR Contact: 12/16/2013
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

***Local Land Records***

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

| | |
|---|---|
| Date of Government Version: 02/06/2013 | Source: Environmental Protection Agency |
| Date Data Arrived at EDR: 04/25/2013 | Telephone: 202-564-6023 |
| Date Made Active in Reports: 05/10/2013 | Last EDR Contact: 11/01/2013 |
| Number of Days to Update: 15 | Next Scheduled EDR Contact: 02/11/2014 |
| | Data Release Frequency: Varies |

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

| | |
|---|---|
| Date of Government Version: 06/14/2013 | Source: Department of Toxic Substances Control |
| Date Data Arrived at EDR: 06/17/2013 | Telephone: 916-323-3400 |
| Date Made Active in Reports: 08/21/2013 | Last EDR Contact: 09/23/2013 |
| Number of Days to Update: 65 | Next Scheduled EDR Contact: 12/23/2013 |
| | Data Release Frequency: Varies |

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

| | |
|---|---|
| Date of Government Version: 09/11/2013 | Source: Department of Toxic Substances Control |
| Date Data Arrived at EDR: 09/11/2013 | Telephone: 916-323-3400 |
| Date Made Active in Reports: 10/14/2013 | Last EDR Contact: 09/11/2013 |
| Number of Days to Update: 33 | Next Scheduled EDR Contact: 12/23/2013 |
| | Data Release Frequency: Semi-Annually |

***Records of Emergency Release Reports***

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

| | |
|---|---|
| Date of Government Version: 12/31/2012 | Source: U.S. Department of Transportation |
| Date Data Arrived at EDR: 01/03/2013 | Telephone: 202-366-4555 |
| Date Made Active in Reports: 02/27/2013 | Last EDR Contact: 10/01/2013 |
| Number of Days to Update: 55 | Next Scheduled EDR Contact: 01/13/2014 |
| | Data Release Frequency: Annually |

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

| | |
|---|---|
| Date of Government Version: 03/12/2013 | Source: Office of Emergency Services |
| Date Data Arrived at EDR: 05/01/2013 | Telephone: 916-845-8400 |
| Date Made Active in Reports: 06/25/2013 | Last EDR Contact: 10/30/2013 |
| Number of Days to Update: 55 | Next Scheduled EDR Contact: 02/11/2014 |
| | Data Release Frequency: Varies |

LDS: Land Disposal Sites Listing

The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

| | |
|---|---|
| Date of Government Version: 09/16/2013 | Source: State Water Qualilty Control Board |
| Date Data Arrived at EDR: 09/17/2013 | Telephone: 866-480-1028 |
| Date Made Active in Reports: 10/16/2013 | Last EDR Contact: 10/17/2013 |
| Number of Days to Update: 29 | Next Scheduled EDR Contact: 12/30/2013 |
| | Data Release Frequency: Quarterly |

MCS: Military Cleanup Sites Listing

The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 09/16/2013
Date Data Arrived at EDR: 09/17/2013
Date Made Active in Reports: 10/16/2013
Number of Days to Update: 29

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 10/17/2013
Next Scheduled EDR Contact: 12/30/2013
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

***Other Ascertainable Records***

RCRA NonGen / NLR: RCRA - Non Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 07/11/2013
Date Data Arrived at EDR: 08/08/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 36

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 10/02/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 11/06/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 10/18/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 02/26/2013
Date Made Active in Reports: 03/13/2013
Number of Days to Update: 15

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 09/10/2013
Next Scheduled EDR Contact: 12/23/2013
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 06/30/2013
Date Data Arrived at EDR: 08/07/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 57

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 09/30/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 04/26/2013
Date Data Arrived at EDR: 06/11/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 143

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 09/13/2013
Next Scheduled EDR Contact: 12/23/2013
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 05/28/2013
Next Scheduled EDR Contact: 09/09/2013
Data Release Frequency: Varies

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/01/2013
Date Data Arrived at EDR: 09/05/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 28

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 09/05/2013
Next Scheduled EDR Contact: 12/16/2013
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/31/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 44

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 08/30/2013
Next Scheduled EDR Contact: 12/09/2013
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 09/29/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 64

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 09/24/2013
Next Scheduled EDR Contact: 01/08/2014
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/22/2013
Next Scheduled EDR Contact: 12/09/2013
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/22/2013
Next Scheduled EDR Contact: 12/09/2013
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems
Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 07/20/2011
Date Data Arrived at EDR: 11/10/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 61

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 10/09/2014
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 06/01/2013
Date Data Arrived at EDR: 07/17/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 107

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 10/18/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/22/2013
Date Data Arrived at EDR: 08/02/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 91

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 09/10/2013
Next Scheduled EDR Contact: 12/23/2013
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 09/30/2013
Date Data Arrived at EDR: 10/09/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 23

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 10/09/2013
Next Scheduled EDR Contact: 01/20/2014
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 03/08/2013
Date Data Arrived at EDR: 03/21/2013
Date Made Active in Reports: 07/10/2013
Number of Days to Update: 111

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 09/11/2013
Next Scheduled EDR Contact: 12/23/2013
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 05/08/2012
Date Data Arrived at EDR: 05/25/2012
Date Made Active in Reports: 07/10/2012
Number of Days to Update: 46

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 02/26/2013
Date Made Active in Reports: 04/19/2013
Number of Days to Update: 52

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 08/26/2013
Next Scheduled EDR Contact: 12/09/2013
Data Release Frequency: Biennially

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 08/19/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/08/2013
Number of Days to Update: 50

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 08/19/2013
Next Scheduled EDR Contact: 12/02/2013
Data Release Frequency: Quarterly

UIC: UIC Listing

A listing of underground control injection wells.

Date of Government Version: 08/21/2013
Date Data Arrived at EDR: 09/17/2013
Date Made Active in Reports: 10/17/2013
Number of Days to Update: 30

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 09/17/2013
Next Scheduled EDR Contact: 12/30/2013
Data Release Frequency: Varies

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 07/05/2013
Date Data Arrived at EDR: 07/05/2013
Date Made Active in Reports: 08/26/2013
Number of Days to Update: 52

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 10/01/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

NOTIFY 65: Proposition 65 Records

Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 10/21/1993
Date Data Arrived at EDR: 11/01/1993
Date Made Active in Reports: 11/19/1993
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 09/23/2013
Next Scheduled EDR Contact: 01/08/2014
Data Release Frequency: No Update Planned

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner’s agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/16/2013
Number of Days to Update: 35

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 09/10/2013
Next Scheduled EDR Contact: 12/24/2012
Data Release Frequency: Annually

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 09/30/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 08/09/2013
Date Data Arrived at EDR: 08/13/2013
Date Made Active in Reports: 10/08/2013
Number of Days to Update: 56

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 07/16/2013
Date Made Active in Reports: 08/26/2013
Number of Days to Update: 41

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 10/15/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Annually

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 06/25/2013
Date Made Active in Reports: 08/22/2013
Number of Days to Update: 58

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 09/27/2013
Next Scheduled EDR Contact: 01/08/2014
Data Release Frequency: Varies

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 10/18/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Semi-Annually

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 10/21/2013
Next Scheduled EDR Contact: 02/03/2014
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 03/04/2013
Date Data Arrived at EDR: 03/15/2013
Date Made Active in Reports: 05/10/2013
Number of Days to Update: 56

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 09/27/2013
Next Scheduled EDR Contact: 12/02/2013
Data Release Frequency: Quarterly

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 11/01/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 09/16/2013
Date Data Arrived at EDR: 09/19/2013
Date Made Active in Reports: 10/17/2013
Number of Days to Update: 28

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/16/2013
Next Scheduled EDR Contact: 12/30/2013
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 08/29/2013
Date Data Arrived at EDR: 09/13/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 31

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 09/11/2013
Next Scheduled EDR Contact: 12/23/2013
Data Release Frequency: Varies

COAL ASH DOE: Sleam-Electric Plan Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 10/15/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 08/17/2010
Date Data Arrived at EDR: 01/03/2011
Date Made Active in Reports: 03/21/2011
Number of Days to Update: 77

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 09/13/2013
Next Scheduled EDR Contact: 12/23/2013
Data Release Frequency: Varies

HWT: Registered Hazardous Waste Transporter Database
A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 07/15/2013
Date Data Arrived at EDR: 07/16/2013
Date Made Active in Reports: 08/12/2013
Number of Days to Update: 27

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 10/15/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Quarterly

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 08/28/2013
Date Data Arrived at EDR: 08/27/2013
Date Made Active in Reports: 10/10/2013
Number of Days to Update: 44

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/27/2013
Next Scheduled EDR Contact: 12/09/2013
Data Release Frequency: Quarterly

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 08/12/2013
Date Data Arrived at EDR: 08/20/2013
Date Made Active in Reports: 10/08/2013
Number of Days to Update: 49

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 08/15/2013
Next Scheduled EDR Contact: 12/02/2013
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 06/30/2013
Date Data Arrived at EDR: 08/08/2013
Date Made Active in Reports: 08/27/2013
Number of Days to Update: 19

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 10/25/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 01/29/2013
Date Data Arrived at EDR: 02/14/2013
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 09/24/2013
Next Scheduled EDR Contact: 01/20/2014
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 11/11/2011
Date Data Arrived at EDR: 05/18/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 08/16/2013
Next Scheduled EDR Contact: 11/25/2013
Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 10/18/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: N/A

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 04/15/2013
Date Data Arrived at EDR: 07/03/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 72

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 10/04/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Quarterly

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 08/22/2013
Next Scheduled EDR Contact: 12/09/2013
Data Release Frequency: Quarterly

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)
The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 01/23/2013
Date Data Arrived at EDR: 01/30/2013
Date Made Active in Reports: 05/10/2013
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-5962
Last EDR Contact: 09/30/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 01/23/2013
Date Data Arrived at EDR: 01/30/2013
Date Made Active in Reports: 05/10/2013
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-5962
Last EDR Contact: 09/30/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Annually

EPA WATCH LIST: EPA WATCH LIST
EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 06/30/2013
Date Data Arrived at EDR: 08/13/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 08/07/2013
Next Scheduled EDR Contact: 11/25/2013
Data Release Frequency: Quarterly

**EDR HIGH RISK HISTORICAL RECORDS**

***EDR Exclusive Records***

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR US Hist Auto Stat: EDR Exclusive Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Cleaners: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Cleaners: EDR Proprietary Historic Dry Cleaners - Cole

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: N/A
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Auto Stat: EDR Proprietary Historic Gas Stations - Cole

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: N/A
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

**COUNTY RECORDS**

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 07/25/2013
Date Data Arrived at EDR: 07/26/2013
Date Made Active in Reports: 08/09/2013
Number of Days to Update: 14

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 09/30/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 07/25/2013
Date Data Arrived at EDR: 07/26/2013
Date Made Active in Reports: 08/20/2013
Number of Days to Update: 25

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 09/30/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA Facility List

Cupa Facility List

Date of Government Version: 06/20/2013
Date Data Arrived at EDR: 06/21/2013
Date Made Active in Reports: 08/21/2013
Number of Days to Update: 61

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 09/10/2013
Next Scheduled EDR Contact: 12/23/2013
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA Facility Listing

Cupa facility list.

Date of Government Version: 08/01/2013
Date Data Arrived at EDR: 08/02/2013
Date Made Active in Reports: 08/22/2013
Number of Days to Update: 20

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 10/09/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA Facility Listing

Cupa Facility Listing

| | |
|---|---|
| Date of Government Version: 06/30/2013 | Source: Calveras County Environmental Health |
| Date Data Arrived at EDR: 07/24/2013 | Telephone: 209-754-6399 |
| Date Made Active in Reports: 08/09/2013 | Last EDR Contact: 09/30/2013 |
| Number of Days to Update: 16 | Next Scheduled EDR Contact: 01/13/2014 |
| | Data Release Frequency: Quarterly |

COLUSA COUNTY:

CUPA Facility List

Cupa facility list.

| | |
|---|---|
| Date of Government Version: 06/20/2013 | Source: Health & Human Services |
| Date Data Arrived at EDR: 07/01/2013 | Telephone: 530-458-0396 |
| Date Made Active in Reports: 08/09/2013 | Last EDR Contact: 10/04/2013 |
| Number of Days to Update: 39 | Next Scheduled EDR Contact: 11/25/2013 |
| | Data Release Frequency: Varies |

CONTRA COSTA COUNTY:

Site List

List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

| | |
|---|---|
| Date of Government Version: 08/20/2013 | Source: Contra Costa Health Services Department |
| Date Data Arrived at EDR: 08/23/2013 | Telephone: 925-646-2286 |
| Date Made Active in Reports: 10/08/2013 | Last EDR Contact: 11/04/2013 |
| Number of Days to Update: 46 | Next Scheduled EDR Contact: 02/17/2014 |
| | Data Release Frequency: Semi-Annually |

DEL NORTE COUNTY:

CUPA Facility List

Cupa Facility list

| | |
|---|---|
| Date of Government Version: 01/09/2013 | Source: Del Norte County Environmental Health Division |
| Date Data Arrived at EDR: 01/10/2013 | Telephone: 707-465-0426 |
| Date Made Active in Reports: 02/25/2013 | Last EDR Contact: 11/04/2013 |
| Number of Days to Update: 46 | Next Scheduled EDR Contact: 02/17/2014 |
| | Data Release Frequency: Varies |

EL DORADO COUNTY:

CUPA Facility List

CUPA facility list.

| | |
|---|---|
| Date of Government Version: 08/20/2013 | Source: El Dorado County Environmental Management Department |
| Date Data Arrived at EDR: 08/23/2013 | Telephone: 530-621-6623 |
| Date Made Active in Reports: 10/08/2013 | Last EDR Contact: 11/04/2013 |
| Number of Days to Update: 46 | Next Scheduled EDR Contact: 02/17/2014 |
| | Data Release Frequency: Varies |

FRESNO COUNTY:

CUPA Resources List

Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 06/30/2013
Date Data Arrived at EDR: 07/16/2013
Date Made Active in Reports: 07/24/2013
Number of Days to Update: 8

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 10/09/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Semi-Annually

HUMBOLDT COUNTY:

CUPA Facility List

CUPA facility list.

Date of Government Version: 08/09/2013
Date Data Arrived at EDR: 08/09/2013
Date Made Active in Reports: 08/22/2013
Number of Days to Update: 13

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 08/09/2013
Next Scheduled EDR Contact: 12/09/2013
Data Release Frequency: Varies

IMPERIAL COUNTY:

CUPA Facility List

Cupa facility list.

Date of Government Version: 07/26/2013
Date Data Arrived at EDR: 08/09/2013
Date Made Active in Reports: 08/22/2013
Number of Days to Update: 13

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List

Cupa facility list.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 33

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 09/10/2013
Next Scheduled EDR Contact: 12/09/2013
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing

Kern County Sites and Tanks Listing.

Date of Government Version: 08/31/2010
Date Data Arrived at EDR: 09/01/2010
Date Made Active in Reports: 09/30/2010
Number of Days to Update: 29

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA Facility List
A listing of sites included in the county’s Certified Unified Program Agency database. California’s Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 08/22/2013
Date Data Arrived at EDR: 08/27/2013
Date Made Active in Reports: 10/08/2013
Number of Days to Update: 42

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 08/22/2013
Next Scheduled EDR Contact: 12/09/2013
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 01/23/2013
Date Data Arrived at EDR: 01/25/2013
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 33

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 10/21/2013
Next Scheduled EDR Contact: 02/03/2014
Data Release Frequency: Varies

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 09/23/2013
Next Scheduled EDR Contact: 01/08/2014
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 03/28/2013
Date Data Arrived at EDR: 06/17/2013
Date Made Active in Reports: 08/21/2013
Number of Days to Update: 65

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 10/09/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 07/22/2013
Date Data Arrived at EDR: 07/22/2013
Date Made Active in Reports: 08/26/2013
Number of Days to Update: 35

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 10/22/2013
Next Scheduled EDR Contact: 02/03/2014
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/05/2009
Date Data Arrived at EDR: 03/10/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 29

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 07/17/2013
Next Scheduled EDR Contact: 11/04/2013
Data Release Frequency: Varies

Site Mitigation List

Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/30/2013
Date Data Arrived at EDR: 02/21/2013
Date Made Active in Reports: 03/25/2013
Number of Days to Update: 32

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 10/21/2013
Next Scheduled EDR Contact: 02/03/2014
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank

Underground storage tank sites located in El Segundo city.

Date of Government Version: 07/31/2013
Date Data Arrived at EDR: 08/01/2013
Date Made Active in Reports: 08/27/2013
Number of Days to Update: 26

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 10/21/2013
Next Scheduled EDR Contact: 02/03/2014
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank

Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/28/2003
Date Data Arrived at EDR: 10/23/2003
Date Made Active in Reports: 11/26/2003
Number of Days to Update: 34

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Annually

City of Torrance Underground Storage Tank

Underground storage tank sites located in the city of Torrance.

Date of Government Version: 07/15/2013
Date Data Arrived at EDR: 07/18/2013
Date Made Active in Reports: 08/20/2013
Number of Days to Update: 33

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 10/09/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA Facility List

A listing of sites included in the county’s Certified Unified Program Agency database. California’s Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 09/20/2013
Date Data Arrived at EDR: 09/24/2013
Date Made Active in Reports: 10/18/2013
Number of Days to Update: 24

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 08/22/2013
Next Scheduled EDR Contact: 12/09/2013
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites

Currently permitted USTs in Marin County.

Date of Government Version: 11/26/2012
Date Data Arrived at EDR: 11/28/2012
Date Made Active in Reports: 01/21/2013
Number of Days to Update: 54

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 10/07/2013
Next Scheduled EDR Contact: 01/20/2014
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 08/23/2013
Date Data Arrived at EDR: 08/27/2013
Date Made Active in Reports: 10/08/2013
Number of Days to Update: 42

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 08/22/2013
Next Scheduled EDR Contact: 12/09/2013
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List
CUPA Facility List

Date of Government Version: 09/04/2013
Date Data Arrived at EDR: 09/05/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 39

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 09/03/2013
Next Scheduled EDR Contact: 12/16/2013
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 09/11/2013
Date Data Arrived at EDR: 09/12/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 32

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 08/22/2013
Next Scheduled EDR Contact: 12/09/2013
Data Release Frequency: Varies

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 12/05/2011
Date Data Arrived at EDR: 12/06/2011
Date Made Active in Reports: 02/07/2012
Number of Days to Update: 63

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 09/03/2013
Next Scheduled EDR Contact: 12/16/2013
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 09/03/2013
Next Scheduled EDR Contact: 12/16/2013
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 05/29/2013
Date Data Arrived at EDR: 05/30/2013
Date Made Active in Reports: 07/15/2013
Number of Days to Update: 46

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 11/04/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 08/01/2013
Date Data Arrived at EDR: 08/13/2013
Date Made Active in Reports: 10/08/2013
Number of Days to Update: 56

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 08/01/2013
Date Data Arrived at EDR: 08/13/2013
Date Made Active in Reports: 10/08/2013
Number of Days to Update: 56

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 08/01/2013
Date Data Arrived at EDR: 08/13/2013
Date Made Active in Reports: 10/08/2013
Number of Days to Update: 56

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 08/22/2013
Date Data Arrived at EDR: 08/22/2013
Date Made Active in Reports: 10/10/2013
Number of Days to Update: 49

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 08/20/2013
Next Scheduled EDR Contact: 12/23/2013
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 07/18/2013
Date Data Arrived at EDR: 07/18/2013
Date Made Active in Reports: 07/24/2013
Number of Days to Update: 6

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/23/2013
Next Scheduled EDR Contact: 01/08/2014
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 07/18/2013
Date Data Arrived at EDR: 07/18/2013
Date Made Active in Reports: 08/20/2013
Number of Days to Update: 33

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/23/2013
Next Scheduled EDR Contact: 01/08/2014
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 05/03/2013
Date Data Arrived at EDR: 07/08/2013
Date Made Active in Reports: 07/24/2013
Number of Days to Update: 16

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/07/2013
Next Scheduled EDR Contact: 01/20/2014
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 05/03/2013
Date Data Arrived at EDR: 07/08/2013
Date Made Active in Reports: 08/23/2013
Number of Days to Update: 46

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/07/2013
Next Scheduled EDR Contact: 01/20/2014
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 09/03/2013
Date Data Arrived at EDR: 09/03/2013
Date Made Active in Reports: 10/10/2013
Number of Days to Update: 37

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database
The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 09/23/2013
Date Data Arrived at EDR: 09/24/2013
Date Made Active in Reports: 10/17/2013
Number of Days to Update: 23

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 09/23/2013
Next Scheduled EDR Contact: 12/23/2013
Data Release Frequency: Quarterly

Solid Waste Facilities
San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2012
Date Data Arrived at EDR: 11/06/2012
Date Made Active in Reports: 11/30/2012
Number of Days to Update: 24

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

Environmental Case Listing
The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 09/10/2013
Next Scheduled EDR Contact: 12/23/2013
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities
A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Quarterly

Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/29/2010
Date Data Arrived at EDR: 03/10/2011
Date Made Active in Reports: 03/15/2011
Number of Days to Update: 5

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 09/25/2013
Date Data Arrived at EDR: 09/27/2013
Date Made Active in Reports: 10/18/2013
Number of Days to Update: 21

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 09/23/2013
Next Scheduled EDR Contact: 01/08/2014
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 08/26/2013
Date Data Arrived at EDR: 08/27/2013
Date Made Active in Reports: 10/10/2013
Number of Days to Update: 44

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 08/22/2013
Next Scheduled EDR Contact: 12/09/2013
Data Release Frequency: Varies

SAN MATEO COUNTY:

Business Inventory

List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

| | |
|---|---|
| Date of Government Version: 07/02/2013 | Source: San Mateo County Environmental Health Services Division |
| Date Data Arrived at EDR: 07/05/2013 | Telephone: 650-363-1921 |
| Date Made Active in Reports: 08/23/2013 | Last EDR Contact: 06/13/2013 |
| Number of Days to Update: 49 | Next Scheduled EDR Contact: 09/30/2013 |
| | Data Release Frequency: Annually |

Fuel Leak List

A listing of leaking underground storage tank sites located in San Mateo county.

| | |
|---|---|
| Date of Government Version: 09/16/2013 | Source: San Mateo County Environmental Health Services Division |
| Date Data Arrived at EDR: 09/17/2013 | Telephone: 650-363-1921 |
| Date Made Active in Reports: 10/16/2013 | Last EDR Contact: 09/16/2013 |
| Number of Days to Update: 29 | Next Scheduled EDR Contact: 12/30/2013 |
| | Data Release Frequency: Semi-Annually |

SANTA BARBARA COUNTY:

CUPA Facility Listing

CUPA Program Listing from the Environmental Health Services division.

| | |
|---|---|
| Date of Government Version: 09/08/2011 | Source: Santa Barbara County Public Health Department |
| Date Data Arrived at EDR: 09/09/2011 | Telephone: 805-686-8167 |
| Date Made Active in Reports: 10/07/2011 | Last EDR Contact: 09/23/2013 |
| Number of Days to Update: 28 | Next Scheduled EDR Contact: 12/09/2013 |
| | Data Release Frequency: Varies |

SANTA CLARA COUNTY:

Cupa Facility List

Cupa facility list

| | |
|---|---|
| Date of Government Version: 09/03/2013 | Source: Department of Environmental Health |
| Date Data Arrived at EDR: 09/04/2013 | Telephone: 408-918-1973 |
| Date Made Active in Reports: 10/10/2013 | Last EDR Contact: 09/03/2013 |
| Number of Days to Update: 36 | Next Scheduled EDR Contact: 12/16/2013 |
| | Data Release Frequency: Varies |

HIST LUST - Fuel Leak Site Activity Report

A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

| | |
|---|---|
| Date of Government Version: 03/29/2005 | Source: Santa Clara Valley Water District |
| Date Data Arrived at EDR: 03/30/2005 | Telephone: 408-265-2600 |
| Date Made Active in Reports: 04/21/2005 | Last EDR Contact: 03/23/2009 |
| Number of Days to Update: 22 | Next Scheduled EDR Contact: 06/22/2009 |
| | Data Release Frequency: No Update Planned |

LOP Listing

A listing of leaking underground storage tanks located in Santa Clara county.

| | |
|---|---|
| Date of Government Version: 09/03/2013 | Source: Department of Environmental Health |
| Date Data Arrived at EDR: 09/06/2013 | Telephone: 408-918-3417 |
| Date Made Active in Reports: 10/14/2013 | Last EDR Contact: 09/03/2013 |
| Number of Days to Update: 38 | Next Scheduled EDR Contact: 12/16/2013 |
| | Data Release Frequency: Annually |

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 08/14/2013
Date Data Arrived at EDR: 08/16/2013
Date Made Active in Reports: 10/08/2013
Number of Days to Update: 53

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List
CUPA facility listing.

Date of Government Version: 08/22/2013
Date Data Arrived at EDR: 08/27/2013
Date Made Active in Reports: 10/10/2013
Number of Days to Update: 44

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 08/22/2013
Next Scheduled EDR Contact: 12/09/2013
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 09/09/2013
Date Data Arrived at EDR: 09/10/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 34

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 08/22/2013
Next Scheduled EDR Contact: 12/09/2013
Data Release Frequency: Varies

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 09/18/2013
Date Data Arrived at EDR: 09/20/2013
Date Made Active in Reports: 10/17/2013
Number of Days to Update: 27

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 09/16/2013
Next Scheduled EDR Contact: 12/30/2013
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 09/18/2013
Date Data Arrived at EDR: 09/24/2013
Date Made Active in Reports: 10/18/2013
Number of Days to Update: 24

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 09/16/2013
Next Scheduled EDR Contact: 12/30/2013
Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List
Cupa Facility list

Date of Government Version: 07/05/2013
Date Data Arrived at EDR: 07/05/2013
Date Made Active in Reports: 08/21/2013
Number of Days to Update: 47

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 09/30/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Varies

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 07/02/2013
Date Data Arrived at EDR: 07/05/2013
Date Made Active in Reports: 08/12/2013
Number of Days to Update: 38

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 09/30/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 33

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 09/10/2013
Next Scheduled EDR Contact: 12/23/2013
Data Release Frequency: Semi-Annually

TUOLUMNE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 01/14/2013
Date Data Arrived at EDR: 01/16/2013
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 42

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 08/19/2013
Date Data Arrived at EDR: 08/27/2013
Date Made Active in Reports: 10/10/2013
Number of Days to Update: 44

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 08/19/2013
Next Scheduled EDR Contact: 12/02/2013
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 10/07/2013
Next Scheduled EDR Contact: 01/20/2014
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 08/19/2013
Next Scheduled EDR Contact: 12/02/2013
Data Release Frequency: Quarterly

Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 05/28/2013
Date Data Arrived at EDR: 06/24/2013
Date Made Active in Reports: 08/12/2013
Number of Days to Update: 49

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Quarterly

Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 08/29/2013
Date Data Arrived at EDR: 09/18/2013
Date Made Active in Reports: 10/16/2013
Number of Days to Update: 28

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/16/2013
Next Scheduled EDR Contact: 12/30/2013
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 06/24/2013
Date Data Arrived at EDR: 06/26/2013
Date Made Active in Reports: 08/20/2013
Number of Days to Update: 55

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 09/23/2013
Next Scheduled EDR Contact: 01/08/2014
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 08/01/2013
Date Data Arrived at EDR: 08/05/2013
Date Made Active in Reports: 08/22/2013
Number of Days to Update: 17

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 11/04/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Varies

**OTHER DATABASE(S)**

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 07/30/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 08/19/2013
Next Scheduled EDR Contact: 12/02/2013
Data Release Frequency: Annually

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/19/2012
Date Made Active in Reports: 08/28/2012
Number of Days to Update: 40

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 10/18/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 08/01/2013
Date Data Arrived at EDR: 08/07/2013
Date Made Active in Reports: 09/10/2013
Number of Days to Update: 34

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 11/07/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 07/24/2013
Date Made Active in Reports: 08/19/2013
Number of Days to Update: 26

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 10/21/2013
Next Scheduled EDR Contact: 02/03/2014
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 06/21/2013
Date Made Active in Reports: 08/05/2013
Number of Days to Update: 45

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 08/23/2013
Next Scheduled EDR Contact: 12/09/2013
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 08/09/2013
Date Made Active in Reports: 09/27/2013
Number of Days to Update: 49

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 09/16/2013
Next Scheduled EDR Contact: 12/30/2013
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: Rextag Strategies Corp.
Telephone: (281) 769-2247
U.S. Electric Transmission and Power Plants Systems Digital GIS Data

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

**STREET AND ADDRESS INFORMATION**

# GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

**TARGET PROPERTY ADDRESS**

AVILA & SONS NORTH WASHINGTON ROAD SITE
1301 NORTH WASHINGTON ROAD
TURLOCK, CA 95380

**TARGET PROPERTY COORDINATES**

| | |
|---|---|
| Latitude (North): | 37.5038 - 37˚ 30’ 13.68’’ |
| Longitude (West): | 120.9062 - 120˚ 54’ 22.32’’ |
| Universal Tranverse Mercator: | Zone 10 |
| UTM X (Meters): | 685077.1 |
| UTM Y (Meters): | 4152617.8 |
| Elevation: | 87 ft. above sea level |

**USGS TOPOGRAPHIC MAP**

| | |
|---|---|
| Target Property Map: | 37120-E8 CERES, CA |
| Most Recent Revision: | 1987 |
| South Map: | 37120-D8 HATCH, CA |
| Most Recent Revision: | 1973 |

EDR’s GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**GROUNDWATER FLOW DIRECTION INFORMATION**

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

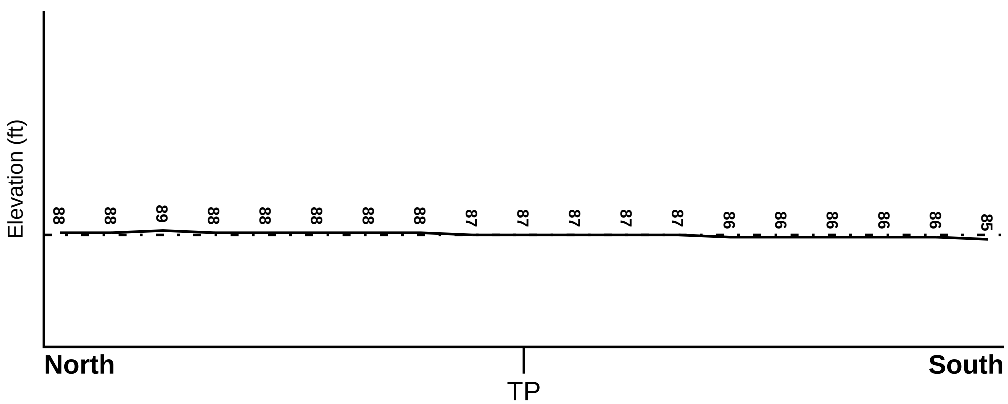
**TOPOGRAPHIC INFORMATION**

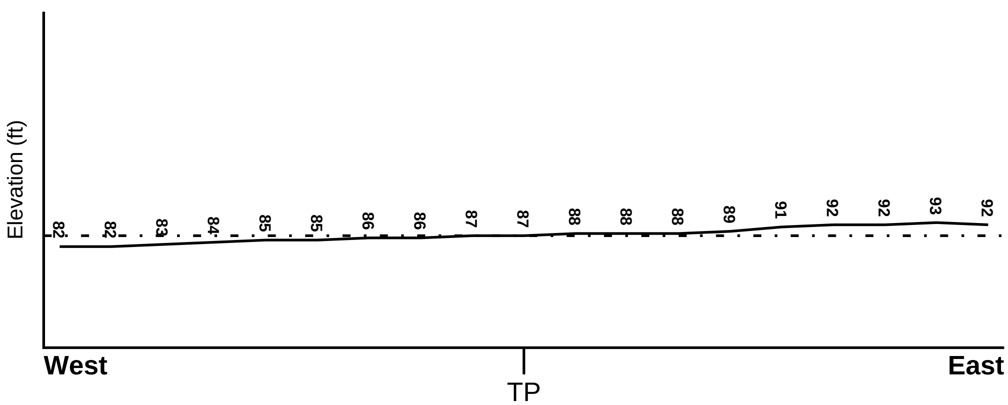
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

**TARGET PROPERTY TOPOGRAPHY**

General Topographic Gradient: General WSW

**SURROUNDING TOPOGRAPHY: ELEVATION PROFILES**




**Target Property Elevation: 87 ft.**

0 1/2 1 Miles

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**HYDROLOGIC INFORMATION**

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

**FEMA FLOOD ZONE**

| Target Property County | FEMA Flood Electronic Data |
|---|---|
| STANISLAUS, CA | YES - refer to the Overview Map and Detail Map |

Flood Plain Panel at Target Property: 06099C - FEMA DFIRM Flood data

Additional Panels in search area: Not Reported

**NATIONAL WETLAND INVENTORY**

| NWI Quad at Target Property | NWI Electronic Data Coverage |
|---|---|
| CERES | YES - refer to the Overview Map and Detail Map |

**HYDROGEOLOGIC INFORMATION**

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

***Site-Specific Hydrogeological Data*:***

Search Radius: 1.25 miles
Status: Not found

**AQUIFLOW®**

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

| MAP ID | LOCATION FROM TP | GENERAL DIRECTION GROUNDWATER FLOW |
|---|---|---|
| Not Reported | | |

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

### GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

**ROCK STRATIGRAPHIC UNIT**

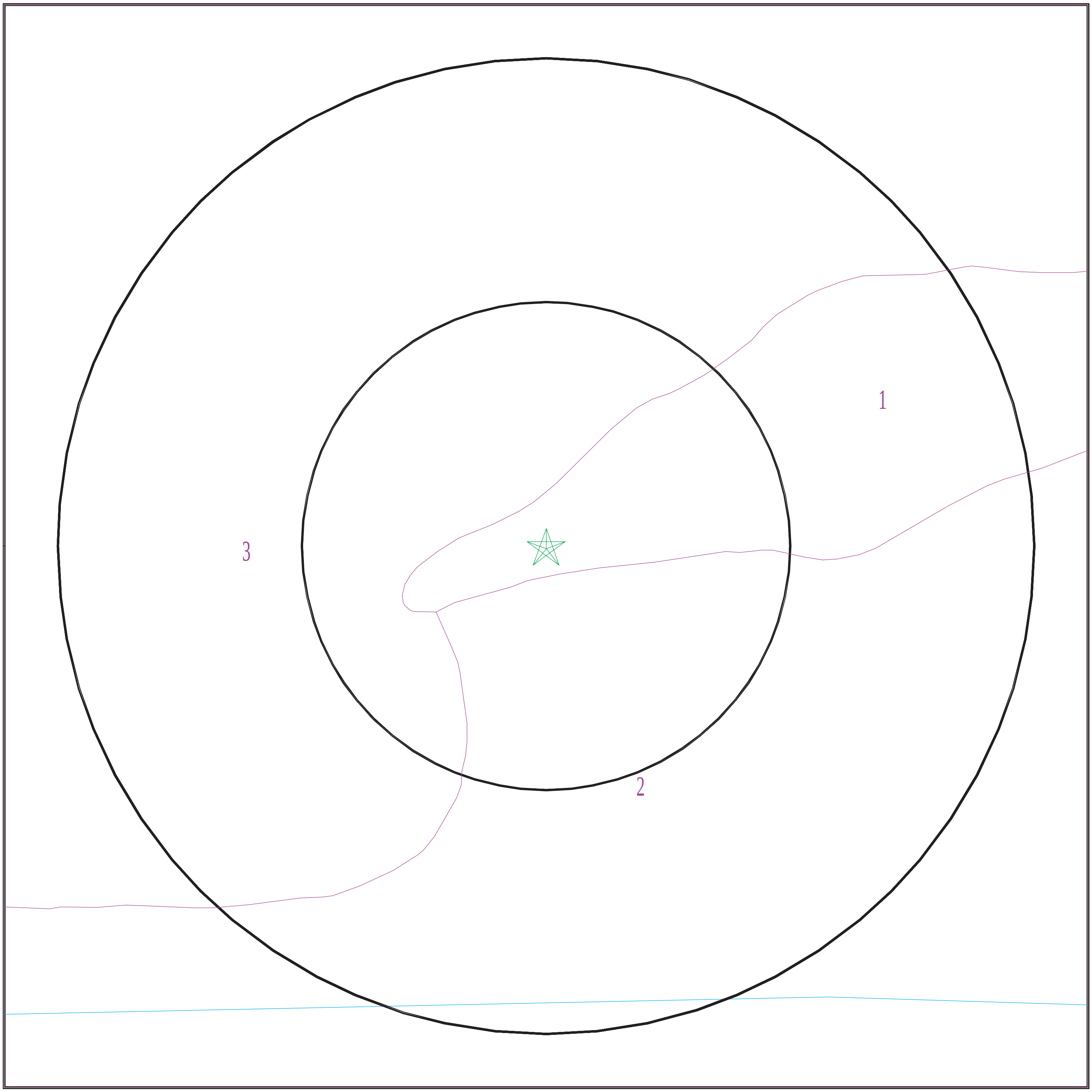
| | |
|---|---|
| Era: | Cenozoic |
| System: | Quaternary |
| Series: | Quaternary |
| Code: | Q *(decoded above as Era, System & Series)* |

**GEOLOGIC AGE IDENTIFICATION**

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

# SSURGO SOIL MAP - 3781724.2s




Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

| | |
|---|---|
| SITE NAME: Avila & Sons North Washington Road Site<br>ADDRESS: 1301 North Washington Road<br>Turlock CA 95380<br>LAT/LONG: 37.5038 / 120.9062 | CLIENT: J House Environmental<br>CONTACT: Jackie House<br>INQUIRY #: 3781724.2s<br>DATE: November 11, 2013 5:34 pm |

#### DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

---

**Soil Map ID: 1**

Soil Component Name: Hanford

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

| Soil Layer Information | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Boundary | | | Classification | | Saturated hydraulic conductivity micro m/sec | |
| Layer | Upper | Lower | Soil Texture Class | AASHTO Group | Unified Soil | | Soil Reaction (pH) |
| 1 | 0 inches | 11 inches | sandy loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand. | Max: 42 Min: 14 | Max: 7.8 Min: 6.1 |
| 2 | 11 inches | 59 inches | sandy loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand. | Max: 42 Min: 14 | Max: 7.8 Min: 6.1 |

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**Soil Map ID: 2**

Soil Component Name: Dinuba

Soil Surface Texture: sandy loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Moderately well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

| Soil Layer Information | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Boundary | | | Classification | | Saturated hydraulic conductivity micro m/sec | Soil Reaction (pH) |
| Layer | Upper | Lower | Soil Texture Class | AASHTO Group | Unified Soil | | |
| 1 | 0 inches | 9 inches | sandy loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand. | Max: 42 Min: 14 | Max: 7.8 Min: 6.6 |
| 2 | 9 inches | 40 inches | sandy loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand. | Max: 42 Min: 14 | Max: 7.8 Min: 6.6 |
| 3 | 40 inches | 59 inches | stratified very fine sand to silt loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt. | Max: 1.4 Min: 0.42 | Max: 8.4 Min: 7.9 |

**Soil Map ID: 3**

Soil Component Name: Dinuba

Soil Surface Texture: sandy loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Moderately well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

| Soil Layer Information | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Boundary | | | Classification | | Saturated hydraulic conductivity micro m/sec | |
| Layer | Upper | Lower | Soil Texture Class | AASHTO Group | Unified Soil | | Soil Reaction (pH) |
| 1 | 0 inches | 9 inches | sandy loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand. | Max: 42<br>Min: 14 | Max: 7.8<br>Min: 6.6 |
| 2 | 9 inches | 29 inches | sandy loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand. | Max: 42<br>Min: 14 | Max: 7.8<br>Min: 6.6 |
| 3 | 29 inches | 59 inches | stratified very fine sand to silt loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt. | Max: 1.4<br>Min: 0.42 | Max: 8.4<br>Min: 7.9 |

## LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

## WELL SEARCH DISTANCE INFORMATION

| DATABASE | SEARCH DISTANCE (miles) |
|---|---|
| Federal USGS | 1.000 |
| Federal FRDS PWS | Nearest PWS within 1 mile |
| State Database | 1.000 |

### FEDERAL USGS WELL INFORMATION

| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|
| A5 | USGS40000183522 | 1/2 - 1 Mile NE |

### FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION**

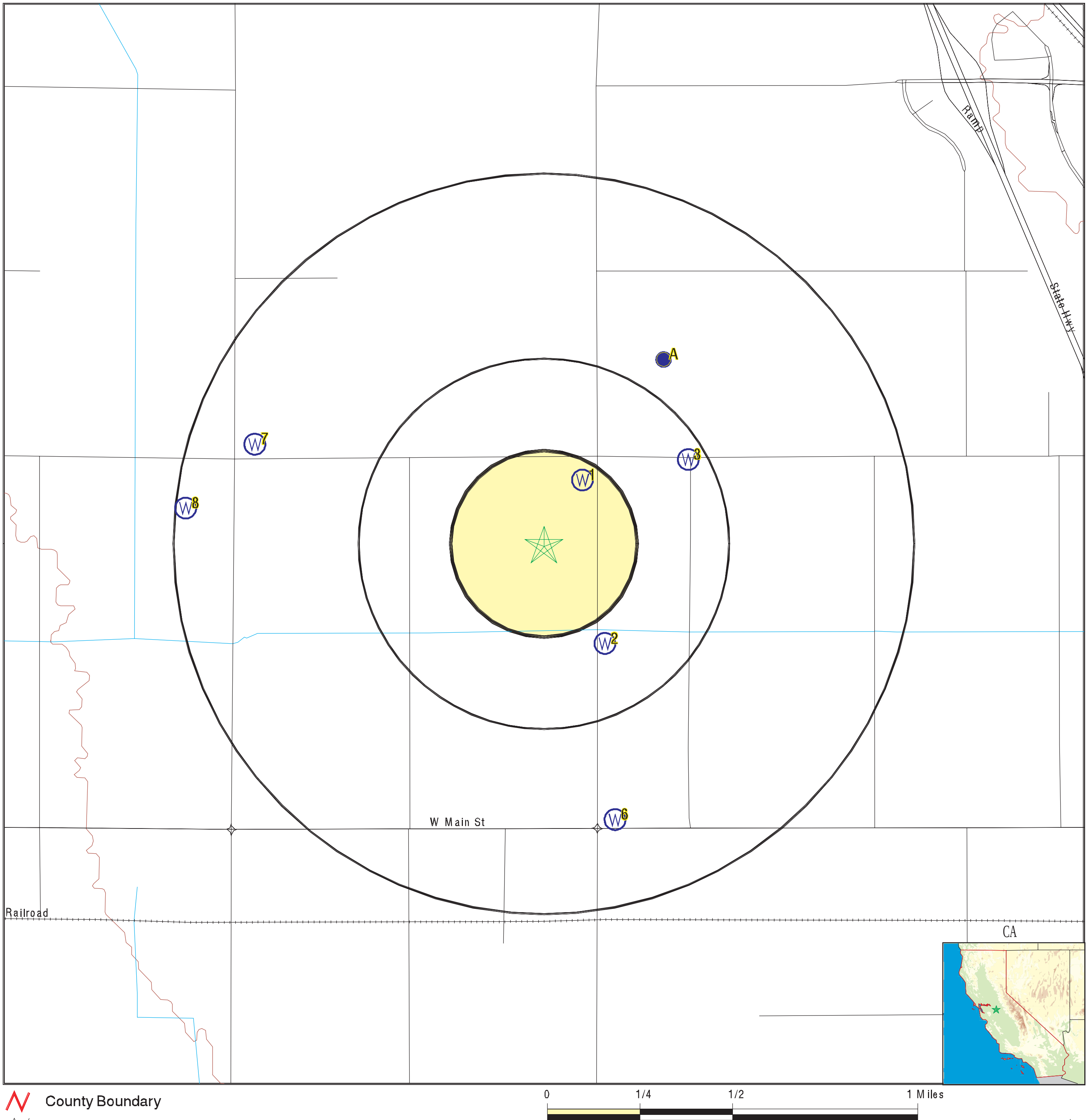
| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|
| No PWS System Found | | |

Note: PWS System location is not always the same as well location.

**STATE DATABASE WELL INFORMATION**

| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|
| 1 | CADW50000029142 | 1/8 - 1/4 Mile NNE |
| 2 | CADW50000029116 | 1/4 - 1/2 Mile SSE |
| 3 | CADW50000029152 | 1/4 - 1/2 Mile ENE |
| A4 | CADW50000029178 | 1/2 - 1 Mile NNE |
| 6 | CADW50000029081 | 1/2 - 1 Mile SSE |
| 7 | CADW50000029159 | 1/2 - 1 Mile WNW |
| 8 | CADW50000029139 | 1/2 - 1 Mile West |

# PHYSICAL SETTING SOURCE MAP - 3781724.2s




County Boundary
Major Roads
Contour Lines
Earthquake Fault Lines
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

Groundwater Flow Direction
G I Indeterminate Groundwater Flow at Location
G V Groundwater Flow Varies at Location
H D Closest Hydrogeological Data
Oil, gas or related wells

| | | | |
|---|---|---|---|
| SITE NAME: | Avila & Sons North Washington Road Site | CLIENT: | J House Environmental |
| ADDRESS: | 1301 North Washington Road | CONTACT: | Jackie House |
| | Turlock CA 95380 | INQUIRY #: | 3781724.2s |
| LAT/LONG: | 37.5038 / 120.9062 | DATE: | November 11, 2013 5:34 pm |

| Map ID<br>Direction<br>Distance<br>Elevation | | | | Database | EDR ID Number |
|---|---|---|---|---|---|
| **1**<br>**NNE**<br>**1/8 - 1/4 Mile**<br>**Higher** | | | | **CA WELLS** | **CADW50000029142** |

| | | | |
|---|---|---|---|
| Latitude : | 37.5063 | | |
| Longitude : | 120.9043 | | |
| Site code: | 375063N1209043W001 | Casgem sta: | 05S10E18A001M |
| Local well: | Not Reported | Casgem s 1: | Unknown |
| County id: | 50 | | |
| Basin cd: | 5-22.03 | Basin desc: | Turlock |
| Org unit n: | South Central Region Office | Site id: | CADW50000029142 |

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| | | | | | |
|---|---|---|---|---|---|
| **2**<br>**SSE**<br>**1/4 - 1/2 Mile**<br>**Higher** | | | | **CA WELLS** | **CADW50000029116** |

| | | | |
|---|---|---|---|
| Latitude : | 37.4999 | | |
| Longitude : | 120.9032 | | |
| Site code: | 374999N1209032W001 | Casgem sta: | 05S10E17M001M |
| Local well: | 12 | Casgem s 1: | Other |
| County id: | 50 | | |
| Basin cd: | 5-22.03 | Basin desc: | Turlock |
| Org unit n: | South Central Region Office | Site id: | CADW50000029116 |

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| | | | | | |
|---|---|---|---|---|---|
| **3**<br>**ENE**<br>**1/4 - 1/2 Mile**<br>**Higher** | | | | **CA WELLS** | **CADW50000029152** |

| | | | |
|---|---|---|---|
| Latitude : | 37.5071 | | |
| Longitude : | 120.8991 | | |
| Site code: | 375071N1208991W001 | Casgem sta: | 05S10E17C001M |
| Local well: | Priv | Casgem s 1: | Unknown |
| County id: | 50 | | |
| Basin cd: | 5-22.03 | Basin desc: | Turlock |
| Org unit n: | South Central Region Office | Site id: | CADW50000029152 |

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| | | | | | |
|---|---|---|---|---|---|
| **A4**<br>**NNE**<br>**1/2 - 1 Mile**<br>**Higher** | | | | **CA WELLS** | **CADW50000029178** |

| | | | |
|---|---|---|---|
| Latitude : | 37.511 | | |
| Longitude : | 120.9007 | | |
| Site code: | 375110N1209007W001 | Casgem sta: | 05S10E08M001M |
| Local well: | 36 | Casgem s 1: | Unknown |
| County id: | 50 | | |
| Basin cd: | 5-22.03 | Basin desc: | Turlock |
| Org unit n: | South Central Region Office | Site id: | CADW50000029178 |

| Map ID<br>Direction<br>Distance<br>Elevation | | Database | EDR ID Number |
|---|---|---|---|
| **A5**<br>**NE**<br>**1/2 - 1 Mile**<br>**Higher** | | **FED USGS** | **USGS40000183522** |

| | | | |
|---|---|---|---|
| Org. Identifier: | USGS-CA | | |
| Formal name: | USGS California Water Science Center | | |
| Monloc Identifier: | USGS-373040120535601 | | |
| Monloc name: | 005S010E08M001M | | |
| Monloc type: | Well | | |
| Monloc desc: | Not Reported | | |
| Huc code: | 18040005 | Drainagearea value: | Not Reported |
| Drainagearea Units: | Not Reported | Contrib drainagearea: | Not Reported |
| Contrib drainagearea units: | Not Reported | Latitude: | 37.511045 |
| Longitude: | -120.899929 | Sourcemap scale: | Not Reported |
| Horiz Acc measure: | 1 | Horiz Acc measure units: | seconds |
| Horiz Collection method: | Interpolated from map | | |
| Horiz coord refsys: | NAD83 | Vert measure val: | 90.00 |
| Vert measure units: | feet | Vertacc measure val: | 5. |
| Vert accmeasure units: | feet | | |
| Vertcollection method: | Interpolated from topographic map | | |
| Vert coord refsys: | NGVD29 | Countrycode: | US |
| Aquifername: | Central Valley aquifer system | | |
| Formation type: | Not Reported | | |
| Aquifer type: | Not Reported | | |
| Construction date: | 19240101 | Welldepth: | 45 |
| Welldepth units: | ft | Wellholedepth: | Not Reported |
| Wellholedepth units: | Not Reported | | |

Ground-water levels, Number of Measurements: 0

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| | | | |
|---|---|---|---|
| **6**<br>**SSE**<br>**1/2 - 1 Mile**<br>**Higher** | | **CA WELLS** | **CADW50000029081** |

| | | | |
|---|---|---|---|
| Latitude : | 37.493 | | |
| Longitude : | 120.9027 | | |
| Site code: | 374930N1209027W001 | Casgem sta: | 05S10E17N001M |
| Local well: | Not Reported | Casgem s 1: | Unknown |
| County id: | 50 | | |
| Basin cd: | 5-22.03 | Basin desc: | Turlock |
| Org unit n: | South Central Region Office | Site id: | CADW50000029081 |

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| | | | |
|---|---|---|---|
| **7**<br>**WNW**<br>**1/2 - 1 Mile**<br>**Lower** | | **CA WELLS** | **CADW50000029159** |

| | | | |
|---|---|---|---|
| Latitude : | 37.5077 | | |
| Longitude : | 120.9204 | | |
| Site code: | 375077N1209204W001 | Casgem sta: | 05S10E07N001M |
| Local well: | Not Reported | Casgem s 1: | Unknown |
| County id: | 50 | | |
| Basin cd: | 5-22.03 | Basin desc: | Turlock |
| Org unit n: | South Central Region Office | Site id: | CADW50000029159 |

| Map ID<br>Direction<br>Distance<br>Elevation | Database | EDR ID Number |
|---|---|---|
| **8**<br>**West**<br>**1/2 - 1 Mile**<br>**Lower** | **CA WELLS** | **CADW50000029139** |

| | | | |
|---|---|---|---|
| Latitude : | 37.5052 | | |
| Longitude : | 120.9238 | | |
| Site code: | 375052N1209238W001 | Casgem sta: | 05S09E13A001M |
| Local well: | Priv | Casgem s 1: | Unknown |
| County id: | 50 | | |
| Basin cd: | 5-22.03 | Basin desc: | Turlock |
| Org unit n: | South Central Region Office | Site id: | CADW50000029139 |

**AREA RADON INFORMATION**

State Database: CA Radon

Radon Test Results

| Zipcode | Num Tests | > 4 pCi/L |
|---|---|---|
| 95380 | 8 | 0 |

Federal EPA Radon Zone for STANISLAUS County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

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Federal Area Radon Information for Zip Code: 95380

Number of sites tested: 1

| Area | Average Activity | % <4 pCi/L | % 4-20 pCi/L | % >20 pCi/L |
|---|---|---|---|---|
| Living Area - 1st Floor | 1.100 pCi/L | 100% | 0% | 0% |
| Living Area - 2nd Floor | Not Reported | Not Reported | Not Reported | Not Reported |
| Basement | Not Reported | Not Reported | Not Reported | Not Reported |

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

## HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

## HYDROGEOLOGIC INFORMATION

AQUIFLOW$^R$ Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

## GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Health Services
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

## OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

**STREET AND ADDRESS INFORMATION**

# APPENDIX G

# LABORATORY REPORTS

# CALIFORNIA LABORATORY SERVICES

3249 Fitzgerald Road Rancho Cordova, CA 95742

December 05, 2013

**CLS Work Order #: CWK1124**
**COC #: 105701,02**

Jackie House
J House Environmental, Inc.
371 Nevada Street, # 7366
Auburn, CA 95604

**Project Name: Avila & Sons**

Enclosed are the results of analyses for samples received by the laboratory on 11/26/13 15:41. Samples were analyzed pursuant to client request utilizing EPA or other ELAP approved methodologies. I certify that the results are in compliance both technically and for completeness.

Analytical results are attached to this letter. Please call if we can provide additional assistance.

Sincerely,

James Liang, Ph.D.
Laboratory Director

CA DOHS ELAP Accreditation/Registration number 1233

# CALIFORNIA LABORATORY SERVICES



12/05/13 14:46

| | | |
|---|---|---|
| J House Environmental, Inc. | Project: Avila & Sons | |
| 371 Nevada Street, # 7366 | Project Number: 1150 | **CLS Work Order #: CWK1124** |
| Auburn, CA 95604 | Project Manager: Jackie House | COC #: 105701,02 |

**CLS - Labs** CHAIN OF CUSTODY CLS ID No.: CWK1124 1 of 2 LOG NO. 105701

**REPORT TO:**
NAME AND ADDRESS: J HOUSE ENVIRONMENTAL, 371 NEVADA ST #7366, AUBURN, CA 95604
PROJECT MANAGER: JACKIE HOUSE PHONE#: 530-885-7801
PROJECT NAME: AVILA + SONS
SAMPLED BY: JACKIE HOUSE
JOB DESCRIPTION:
SITE LOCATION:

CLIENT JOB NUMBER: 1150
DESTINATION LABORATORY: ☒ CLS (916) 638-7301, 3249 FITZGERALD RD. RANCHO CORDOVA, CA. 95742 ☐ OTHER

GEOTRACKER:
EDF REPORT ☐ YES ☐ NO
GLOBAL ID:
COMPOSITE: COMPOSITE AS INDICATED BELOW. PLEASE RETAIN ALL SOIL
FIELD CONDITIONS: SAMPLES FOR POSSIBLE ADDITIONAL ANALYSES

ANALYSIS REQUESTED: OCPs 8081A; Total Lead 6010B; Total Arsenic 7060A; TPH d/MO 8015M; TPH g/BTEX 8260B

TURN AROUND TIME: 1 DAY, 2 DAY, 5 DAY, 10 DAY

| DATE | TIME | SAMPLE IDENTIFICATION | MATRIX | CONTAINER NO. | CONTAINER TYPE | PRESERVATIVES | OCPs 8081A | Total Lead 6010B | Total Arsenic 7060A | TPH d/MO 8015M | TPH g/BTEX 8260B | 5 DAY | SPECIAL INSTRUCTIONS OR ALT. ID: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11-26-13 | 1316 | S1 0.5' | SOIL | 1 | GLASS JAR | 3 | X | X | X | | | X | Composite S1+S2 |
| | 1300 | S2 0.5' | | | | | X | | | | | | for OCPs |
| | 1207 | S3 0.5' | | | | | X | X | X | | | | Composite S3+S4 |
| | 1155 | S4 0.5' | | | | | X | | | | | | for OCPs |
| | 1109 | S5 0.5' | | | | | X | X | X | | | | Composite S5+S6 |
| | 1057 | S6 0.5' | | | | | X | | | | | | for OCPs |
| | 1242 | S7 0.5' | | | | | X | X | X | X | X | | Composite S7+S8 |
| | 1246 | S8 0.5' | | | | | X | | | X | X | | for OCPs, TPHd,mo,g+BTEX |
| | 1225 | S9 0.5' | | | | | X | X | X | X | X | | Composite S9+S10 |
| | 1222 | S10 0.5' | | | | | X | | | X | X | | for OCPs, TPH d, mo, g+BTEX |
| | 1132 | S11 0.5' | | | | | X | X | X | X | X | | Composite S11+S12 |
| | 1138 | S12 0.5' | | | | | X | | | X | X | | for OCPs, TPHd,mo,g+BTEX |

SUSPECTED CONSTITUENTS

PRESERVATIVES: (1) HCL (2) $HNO_3$ (3) = COLD (4) = NaOH (5) = $H_2SO_4$ (6) = $Na_2S_2O_3$ (7) =

INVOICE TO: QUOTE #

| RELINQUISHED BY (SIGN) | PRINT NAME / COMPANY | DATE / TIME | RECEIVED BY (SIGN) | PRINT NAME / COMPANY |
|---|---|---|---|---|
| Jackie House | JACKIE HOUSE | 11/26/13 1541 | | |
| | | | | |

REC'D AT LAB BY: [signature] DATE / TIME: 11/26/13 1541 CONDITIONS / COMMENTS: 8.0°C

SHIPPED BY: ☐ FED X ☐ UPS ☐ OTHER ______ AIR BILL #

LAB

# CALIFORNIA LABORATORY SERVICES

 12/05/13 14:46

| | | |
|---|---|---|
| J House Environmental, Inc. | Project: Avila & Sons | |
| 371 Nevada Street, # 7366 | Project Number: 1150 | **CLS Work Order #: CWK1124** |
| Auburn, CA 95604 | Project Manager: Jackie House | COC #: 105701,02 |

**CLS - Labs** CHAIN OF CUSTODY CLS ID No.: CWK1124 2 of 2 LOG NO. 105702

**REPORT TO:**

NAME AND ADDRESS: J HOUSE ENVIRONMENTAL, 371 NEVADA ST #7366, AUBURN, CA 95604

PROJECT MANAGER: JACKIE HOUSE PHONE# 530-885-7801

PROJECT NAME: AVILA + SONS

SAMPLED BY: JACKIE HOUSE

JOB DESCRIPTION:

SITE LOCATION:

CLIENT JOB NUMBER: 1150

DESTINATION LABORATORY: ☒ CLS (916) 638-7301, 3249 FITZGERALD RD. RANCHO CORDOVA, CA. 95742 ☐ OTHER

GEOTRACKER: EDF REPORT ☐ YES ☐ NO

GLOBAL ID:

COMPOSITE: COMPOSITE AS INDICATED BELOW. PLEASE RETAIN ALL SOIL

FIELD CONDITIONS: SAMPLES FOR POSSIBLE ADDITONAL ANALYSES

ANALYSIS REQUESTED: OCPs 8081A; Total Lead 6010B; Total Arsenic 7060A; TPH-d/MO 8015M; TPHg/BTEX 8260B

| DATE | TIME | SAMPLE IDENTIFICATION | MATRIX | CONTAINER NO. | CONTAINER TYPE | PRESERVATIVES | OCPs 8081A | Total Lead 6010B | Total Arsenic 7060A | TPH-d/MO 8015M | TPHg/BTEX 8260B | TURN AROUND TIME 1 DAY | 2 DAY | 5 DAY | 10 DAY | SPECIAL INSTRUCTIONS OR ALT. ID: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11-26-13 | 1042 | S13 0.5' | SOIL | 1 | GLASS JAR | 3 | X | X | X | X | X | | | X | | Composite S13+S14 |
| ↓ | 1036 | S14 0.5' | ↓ | ↓ | ↓ | ↓ | X | | | X | X | | | X | | for OCPs, TPHd, mo, g, BTEX |

INVOICE TO:

P.O. #

QUOTE #

SUSPECTED CONSTITUENTS

PRESERVATIVES: (1) HCL (2) $HNO_3$ (3) = COLD (4) = NaOH (5) = $H_2SO_4$ (6) = $Na_2S_2O_3$ (7) =

| RELINQUISHED BY (SIGN) | PRINT NAME / COMPANY | DATE / TIME | RECEIVED BY (SIGN) | PRINT NAME / COMPANY |
|---|---|---|---|---|
| Jackie House | JACKIE HOUSE | 11/26/13 1541 | | |

RECEIVED AT LAB BY: [signature] DATE/TIME: 11/26/13 1541 CONDITIONS / COMMENTS: 2.6°C

SHIPPED BY: ☐ FED X ☐ UPS ☐ OTHER ______ AIR BILL #

LAB

# CALIFORNIA LABORATORY SERVICES



12/05/13 14:46

J House Environmental, Inc.
371 Nevada Street, # 7366
Auburn, CA 95604

Project: Avila & Sons
Project Number: 1150
Project Manager: Jackie House

**CLS Work Order #: CWK1124**
COC #: 105701,02

## Extractable Petroleum Hydrocarbons by EPA Method 8015M

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **Composite S7 & S8 @ 0.5' (CWK1124-12) Soil Sampled: 11/26/13 12:42 Received: 11/26/13 15:41** | | | | | | | | | |
| Diesel | ND | 1.0 | mg/kg | 1 | CW07857 | 11/27/13 | 11/27/13 | EPA 8015M | |
| **Motor Oil** | **11** | 1.0 | " | " | " | " | " | " | |
| *Surrogate: o-Terphenyl* | | *101 %* | *65-135* | | " | " | " | " | |
| **Composite S9 & S10 @ 0.5' (CWK1124-15) Soil Sampled: 11/26/13 12:22 Received: 11/26/13 15:41** | | | | | | | | | |
| Diesel | ND | 5.0 | mg/kg | 5 | CW07857 | 11/27/13 | 11/27/13 | EPA 8015M | |
| **Motor Oil** | **240** | 5.0 | " | " | " | " | " | " | |
| *Surrogate: o-Terphenyl* | | *101 %* | *65-135* | | " | " | " | " | |
| **Composite S11 & S12 @ 0.5' (CWK1124-18) Soil Sampled: 11/26/13 11:32 Received: 11/26/13 15:41** | | | | | | | | | |
| Diesel | ND | 1.0 | mg/kg | 1 | CW07857 | 11/27/13 | 11/27/13 | EPA 8015M | |
| **Motor Oil** | **35** | 1.0 | " | " | " | " | " | " | |
| *Surrogate: o-Terphenyl* | | *87 %* | *65-135* | | " | " | " | " | |
| **Composite S13 & S14 @ 0.5' (CWK1124-21) Soil Sampled: 11/26/13 10:36 Received: 11/26/13 15:41** | | | | | | | | | |
| Diesel | ND | 10 | mg/kg | 10 | CW07857 | 11/27/13 | 11/27/13 | EPA 8015M | |
| **Motor Oil** | **650** | 10 | " | " | " | " | " | " | |
| *Surrogate: o-Terphenyl* | | *75 %* | *65-135* | | " | " | " | " | |

# CALIFORNIA LABORATORY SERVICES



12/05/13 14:46

J House Environmental, Inc.
371 Nevada Street, # 7366
Auburn, CA 95604

Project: Avila & Sons
Project Number: 1150
Project Manager: Jackie House

**CLS Work Order #: CWK1124**
COC #: 105701,02

## Metals by EPA 6000/7000 Series Methods

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **S1 @ 0.5' (CWK1124-01) Soil Sampled: 11/26/13 13:16 Received: 11/26/13 15:41** | | | | | | | | | |
| **Arsenic** | **1.4** | 1.0 | mg/kg | 10 | CW07885 | 11/27/13 | 11/27/13 | EPA 6020 | |
| **Lead** | **4.0** | 2.5 | " | " | " | " | " | EPA 6010B | A-COM |
| **S3 @ 0.5' (CWK1124-04) Soil Sampled: 11/26/13 12:07 Received: 11/26/13 15:41** | | | | | | | | | |
| Arsenic | ND | 1.0 | mg/kg | 10 | CW07885 | 11/27/13 | 11/27/13 | EPA 6020 | |
| **Lead** | **2.9** | 2.5 | " | " | " | " | " | EPA 6010B | A-COM |
| **S5 @ 0.5' (CWK1124-07) Soil Sampled: 11/26/13 11:09 Received: 11/26/13 15:41** | | | | | | | | | |
| Arsenic | ND | 1.0 | mg/kg | 10 | CW07885 | 11/27/13 | 11/27/13 | EPA 6020 | |
| **Lead** | **3.8** | 2.5 | " | " | " | " | " | EPA 6010B | A-COM |
| **S7 @ 0.5' (CWK1124-10) Soil Sampled: 11/26/13 12:42 Received: 11/26/13 15:41** | | | | | | | | | |
| **Arsenic** | **5.9** | 1.0 | mg/kg | 10 | CW07885 | 11/27/13 | 11/27/13 | EPA 6020 | |
| **Lead** | **18** | 2.5 | " | " | " | " | " | EPA 6010B | A-COM |
| **S9 @ 0.5' (CWK1124-13) Soil Sampled: 11/26/13 12:25 Received: 11/26/13 15:41** | | | | | | | | | |
| Arsenic | ND | 1.0 | mg/kg | 10 | CW07885 | 11/27/13 | 11/27/13 | EPA 6020 | |
| **Lead** | **130** | 2.5 | " | " | " | " | " | EPA 6010B | A-COM |
| **S11 @ 0.5' (CWK1124-16) Soil Sampled: 11/26/13 11:32 Received: 11/26/13 15:41** | | | | | | | | | |
| Arsenic | ND | 1.0 | mg/kg | 10 | CW07885 | 11/27/13 | 11/27/13 | EPA 6020 | |
| **Lead** | **19** | 2.5 | " | " | " | " | " | EPA 6010B | A-COM |
| **S13 @ 0.5' (CWK1124-19) Soil Sampled: 11/26/13 10:42 Received: 11/26/13 15:41** | | | | | | | | | |
| Arsenic | ND | 1.0 | mg/kg | 10 | CW07885 | 11/27/13 | 11/27/13 | EPA 6020 | |
| **Lead** | **42** | 2.5 | " | " | " | " | " | EPA 6010B | A-COM |

# CALIFORNIA LABORATORY SERVICES

 12/05/13 14:46

| | | |
|---|---|---|
| J House Environmental, Inc.<br>371 Nevada Street, # 7366<br>Auburn, CA 95604 | Project: Avila & Sons<br>Project Number: 1150<br>Project Manager: Jackie House | **CLS Work Order #: CWK1124**<br>COC #: 105701,02 |

## Organochlorine Pesticides by EPA Method 8081A

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **Composite S1 & S2 @ 0.5' (CWK1124-03) Soil** | **Sampled: 11/26/13 13:00** | **Received: 11/26/13 15:41** | | | | | | | **PestD** |
| Aldrin | ND | 5.0 | µg/kg | 5 | CW07909 | 12/02/13 | 12/03/13 | EPA 8081A | |
| alpha-BHC | ND | 10 | " | " | " | " | " | " | |
| beta-BHC | ND | 50 | " | " | " | " | " | " | |
| delta-BHC | ND | 50 | " | " | " | " | " | " | |
| gamma-BHC (Lindane) | ND | 50 | " | " | " | " | " | " | |
| Chlordane-technical | ND | 100 | " | " | " | " | " | " | |
| 4,4´-DDD | ND | 75 | " | " | " | " | " | " | |
| 4,4´-DDE | ND | 75 | " | " | " | " | " | " | |
| 4,4´-DDT | ND | 75 | " | " | " | " | " | " | |
| Dieldrin | ND | 5.0 | " | " | " | " | " | " | |
| Endosulfan I | ND | 75 | " | " | " | " | " | " | |
| Endosulfan II | ND | 75 | " | " | " | " | " | " | |
| Endosulfan sulfate | ND | 75 | " | " | " | " | " | " | |
| Endrin | ND | 75 | " | " | " | " | " | " | |
| Endrin aldehyde | ND | 75 | " | " | " | " | " | " | |
| Heptachlor | ND | 25 | " | " | " | " | " | " | |
| Heptachlor epoxide | ND | 10 | " | " | " | " | " | " | |
| Methoxychlor | ND | 75 | " | " | " | " | " | " | |
| Mirex | ND | 50 | " | " | " | " | " | " | |
| Toxaphene | ND | 100 | " | " | " | " | " | " | |
| *Surrogate: Tetrachloro-meta-xylene* | | *73 %* | *46-139* | | " | " | " | " | |
| *Surrogate: Decachlorobiphenyl* | | *92 %* | *52-141* | | " | " | " | " | |
| **Composite S3 & S4 @ 0.5' (CWK1124-06) Soil** | **Sampled: 11/26/13 11:55** | **Received: 11/26/13 15:41** | | | | | | | **PestD** |
| Aldrin | ND | 5.0 | µg/kg | 5 | CW07909 | 12/02/13 | 12/03/13 | EPA 8081A | |
| alpha-BHC | ND | 10 | " | " | " | " | " | " | |
| beta-BHC | ND | 50 | " | " | " | " | " | " | |
| delta-BHC | ND | 50 | " | " | " | " | " | " | |
| gamma-BHC (Lindane) | ND | 50 | " | " | " | " | " | " | |
| Chlordane-technical | ND | 100 | " | " | " | " | " | " | |

| | | |
|---|---|---|
| J House Environmental, Inc.<br>371 Nevada Street, # 7366<br>Auburn, CA 95604 | Project: Avila & Sons<br>Project Number: 1150<br>Project Manager: Jackie House | **CLS Work Order #: CWK1124**<br>COC #: 105701,02 |

## Organochlorine Pesticides by EPA Method 8081A

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **Composite S3 & S4 @ 0.5' (CWK1124-06) Soil** | **Sampled: 11/26/13 11:55** | **Received: 11/26/13 15:41** | | | | | | | **PestD** |
| 4,4´-DDD | ND | 75 | µg/kg | 5 | CW07909 | " | 12/03/13 | EPA 8081A | |
| 4,4´-DDE | ND | 75 | " | " | " | " | " | " | |
| 4,4´-DDT | ND | 75 | " | " | " | " | " | " | |
| Dieldrin | ND | 5.0 | " | " | " | " | " | " | |
| Endosulfan I | ND | 75 | " | " | " | " | " | " | |
| Endosulfan II | ND | 75 | " | " | " | " | " | " | |
| Endosulfan sulfate | ND | 75 | " | " | " | " | " | " | |
| Endrin | ND | 75 | " | " | " | " | " | " | |
| Endrin aldehyde | ND | 75 | " | " | " | " | " | " | |
| Heptachlor | ND | 25 | " | " | " | " | " | " | |
| Heptachlor epoxide | ND | 10 | " | " | " | " | " | " | |
| Methoxychlor | ND | 75 | " | " | " | " | " | " | |
| Mirex | ND | 50 | " | " | " | " | " | " | |
| Toxaphene | ND | 100 | " | " | " | " | " | " | |
| *Surrogate: Tetrachloro-meta-xylene* | | *92 %* | *46-139* | | *"* | " | *"* | *"* | |
| *Surrogate: Decachlorobiphenyl* | | *90 %* | *52-141* | | *"* | " | *"* | *"* | |
| **Composite S5 & S6 @ 0.5' (CWK1124-09) Soil** | **Sampled: 11/26/13 11:55** | **Received: 11/26/13 15:41** | | | | | | | **PestD** |
| Aldrin | ND | 5.0 | µg/kg | 5 | CW07909 | 12/02/13 | 12/03/13 | EPA 8081A | |
| alpha-BHC | ND | 10 | " | " | " | " | " | " | |
| beta-BHC | ND | 50 | " | " | " | " | " | " | |
| delta-BHC | ND | 50 | " | " | " | " | " | " | |
| gamma-BHC (Lindane) | ND | 50 | " | " | " | " | " | " | |
| Chlordane-technical | ND | 100 | " | " | " | " | " | " | |
| 4,4´-DDD | ND | 75 | " | " | " | " | " | " | |
| 4,4´-DDE | ND | 75 | " | " | " | " | " | " | |
| 4,4´-DDT | ND | 75 | " | " | " | " | " | " | |
| Dieldrin | ND | 5.0 | " | " | " | " | " | " | |
| Endosulfan I | ND | 75 | " | " | " | " | " | " | |
| Endosulfan II | ND | 75 | " | " | " | " | " | " | |

# CALIFORNIA LABORATORY SERVICES

 12/05/13 14:46

J House Environmental, Inc.
371 Nevada Street, # 7366
Auburn, CA 95604

Project: Avila & Sons
Project Number: 1150
Project Manager: Jackie House

**CLS Work Order #: CWK1124**
COC #: 105701,02

## Organochlorine Pesticides by EPA Method 8081A

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **Composite S5 & S6 @ 0.5' (CWK1124-09) Soil** | **Sampled: 11/26/13 11:55** | **Received: 11/26/13 15:41** | | | | | | | **PestD** |
| Endosulfan sulfate | ND | 75 | µg/kg | 5 | CW07909 | " | 12/03/13 | EPA 8081A | |
| Endrin | ND | 75 | " | " | " | " | " | " | |
| Endrin aldehyde | ND | 75 | " | " | " | " | " | " | |
| Heptachlor | ND | 25 | " | " | " | " | " | " | |
| Heptachlor epoxide | ND | 10 | " | " | " | " | " | " | |
| Methoxychlor | ND | 75 | " | " | " | " | " | " | |
| Mirex | ND | 50 | " | " | " | " | " | " | |
| Toxaphene | ND | 100 | " | " | " | " | " | " | |
| *Surrogate: Tetrachloro-meta-xylene* | | *88 %* | *46-139* | | " | " | " | " | |
| *Surrogate: Decachlorobiphenyl* | | *97 %* | *52-141* | | " | " | " | " | |
| **Composite S7 & S8 @ 0.5' (CWK1124-12) Soil** | **Sampled: 11/26/13 12:42** | **Received: 11/26/13 15:41** | | | | | | | |
| Aldrin | ND | 5.0 | µg/kg | 5 | CW07909 | 12/02/13 | 12/03/13 | EPA 8081A | |
| alpha-BHC | ND | 10 | " | " | " | " | " | " | |
| beta-BHC | ND | 50 | " | " | " | " | " | " | |
| delta-BHC | ND | 50 | " | " | " | " | " | " | |
| gamma-BHC (Lindane) | ND | 50 | " | " | " | " | " | " | |
| Chlordane-technical | ND | 100 | " | " | " | " | " | " | |
| 4,4´-DDD | ND | 75 | " | " | " | " | " | " | |
| 4,4´-DDE | ND | 75 | " | " | " | " | " | " | |
| 4,4´-DDT | ND | 75 | " | " | " | " | " | " | |
| Dieldrin | ND | 5.0 | " | " | " | " | " | " | |
| Endosulfan I | ND | 75 | " | " | " | " | " | " | |
| Endosulfan II | ND | 75 | " | " | " | " | " | " | |
| Endosulfan sulfate | ND | 75 | " | " | " | " | " | " | |
| Endrin | ND | 75 | " | " | " | " | " | " | |
| Endrin aldehyde | ND | 75 | " | " | " | " | " | " | |
| Heptachlor | ND | 25 | " | " | " | " | " | " | |
| Heptachlor epoxide | ND | 10 | " | " | " | " | " | " | |
| Methoxychlor | ND | 75 | " | " | " | " | " | " | |

# CALIFORNIA LABORATORY SERVICES



12/05/13 14:46

| | | |
|---|---|---|
| J House Environmental, Inc. | Project: Avila & Sons | |
| 371 Nevada Street, # 7366 | Project Number: 1150 | **CLS Work Order #: CWK1124** |
| Auburn, CA 95604 | Project Manager: Jackie House | COC #: 105701,02 |

## Organochlorine Pesticides by EPA Method 8081A

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **Composite S7 & S8 @ 0.5' (CWK1124-12) Soil** | **Sampled: 11/26/13 12:42** | **Received: 11/26/13 15:41** | | | | | | | |
| Mirex | ND | 50 | µg/kg | 5 | CW07909 | " | 12/03/13 | EPA 8081A | |
| Toxaphene | ND | 100 | " | " | " | " | " | " | |
| *Surrogate: Tetrachloro-meta-xylene* | | *96 %* | *46-139* | | " | " | " | " | |
| *Surrogate: Decachlorobiphenyl* | | *107 %* | *52-141* | | " | " | " | " | |
| **Composite S9 & S10 @ 0.5' (CWK1124-15) Soil** | **Sampled: 11/26/13 12:22** | **Received: 11/26/13 15:41** | | | | | | | |
| Aldrin | ND | 5.0 | µg/kg | 5 | CW07909 | 12/02/13 | 12/03/13 | EPA 8081A | |
| alpha-BHC | ND | 10 | " | " | " | " | " | " | |
| beta-BHC | ND | 50 | " | " | " | " | " | " | |
| delta-BHC | ND | 50 | " | " | " | " | " | " | |
| gamma-BHC (Lindane) | ND | 50 | " | " | " | " | " | " | |
| Chlordane-technical | ND | 100 | " | " | " | " | " | " | |
| 4,4´-DDD | ND | 75 | " | " | " | " | " | " | |
| 4,4´-DDE | ND | 75 | " | " | " | " | " | " | |
| **4,4´-DDT** | **890** | 750 | " | 50 | " | " | " | " | |
| Dieldrin | ND | 5.0 | " | 5 | " | " | " | " | |
| Endosulfan I | ND | 75 | " | " | " | " | " | " | |
| Endosulfan II | ND | 75 | " | " | " | " | " | " | |
| Endosulfan sulfate | ND | 75 | " | " | " | " | " | " | |
| Endrin | ND | 75 | " | " | " | " | " | " | |
| Endrin aldehyde | ND | 75 | " | " | " | " | " | " | |
| Heptachlor | ND | 25 | " | " | " | " | " | " | |
| Heptachlor epoxide | ND | 10 | " | " | " | " | " | " | |
| Methoxychlor | ND | 75 | " | " | " | " | " | " | |
| Mirex | ND | 50 | " | " | " | " | " | " | |
| Toxaphene | ND | 100 | " | " | " | " | " | " | |
| *Surrogate: Tetrachloro-meta-xylene* | | *104 %* | *46-139* | | " | " | " | " | |
| *Surrogate: Decachlorobiphenyl* | | *111 %* | *52-141* | | " | " | " | " | |

# CALIFORNIA LABORATORY SERVICES

 12/05/13 14:46

J House Environmental, Inc.
371 Nevada Street, # 7366
Auburn, CA 95604

Project: Avila & Sons
Project Number: 1150
Project Manager: Jackie House

**CLS Work Order #: CWK1124**
COC #: 105701,02

## Organochlorine Pesticides by EPA Method 8081A

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **Composite S11 & S12 @ 0.5' (CWK1124-18) Soil** | **Sampled: 11/26/13 11:32** | | **Received: 11/26/13 15:41** | | | | | | **PestD** |
| Aldrin | ND | 5.0 | µg/kg | 5 | CW07909 | 12/02/13 | 12/03/13 | EPA 8081A | |
| alpha-BHC | ND | 10 | " | " | " | " | " | " | |
| beta-BHC | ND | 50 | " | " | " | " | " | " | |
| delta-BHC | ND | 50 | " | " | " | " | " | " | |
| gamma-BHC (Lindane) | ND | 50 | " | " | " | " | " | " | |
| Chlordane-technical | ND | 100 | " | " | " | " | " | " | |
| 4,4´-DDD | ND | 75 | " | " | " | " | " | " | |
| 4,4´-DDE | ND | 75 | " | " | " | " | " | " | |
| 4,4´-DDT | ND | 750 | " | 50 | " | " | " | " | |
| Dieldrin | ND | 5.0 | " | 5 | " | " | " | " | |
| Endosulfan I | ND | 75 | " | " | " | " | " | " | |
| Endosulfan II | ND | 75 | " | " | " | " | " | " | |
| Endosulfan sulfate | ND | 75 | " | " | " | " | " | " | |
| Endrin | ND | 75 | " | " | " | " | " | " | |
| Endrin aldehyde | ND | 75 | " | " | " | " | " | " | |
| Heptachlor | ND | 25 | " | " | " | " | " | " | |
| Heptachlor epoxide | ND | 10 | " | " | " | " | " | " | |
| Methoxychlor | ND | 75 | " | " | " | " | " | " | |
| Mirex | ND | 50 | " | " | " | " | " | " | |
| Toxaphene | ND | 100 | " | " | " | " | " | " | |
| *Surrogate: Tetrachloro-meta-xylene* | | *138 %* | *46-139* | | " | " | " | " | |
| *Surrogate: Decachlorobiphenyl* | | *122 %* | *52-141* | | " | " | " | " | |
| **Composite S13 & S14 @ 0.5' (CWK1124-21) Soil** | **Sampled: 11/26/13 10:36** | | **Received: 11/26/13 15:41** | | | | | | |
| Aldrin | ND | 5.0 | µg/kg | 5 | CW07909 | 12/02/13 | 12/03/13 | EPA 8081A | |
| alpha-BHC | ND | 10 | " | " | " | " | " | " | |
| beta-BHC | ND | 50 | " | " | " | " | " | " | |
| delta-BHC | ND | 50 | " | " | " | " | " | " | |
| gamma-BHC (Lindane) | ND | 50 | " | " | " | " | " | " | |
| Chlordane-technical | ND | 100 | " | " | " | " | " | " | |

# CALIFORNIA LABORATORY SERVICES



12/05/13 14:46

| | | |
|---|---|---|
| J House Environmental, Inc.<br>371 Nevada Street, # 7366<br>Auburn, CA 95604 | Project: Avila & Sons<br>Project Number: 1150<br>Project Manager: Jackie House | **CLS Work Order #: CWK1124**<br>COC #: 105701,02 |

## Organochlorine Pesticides by EPA Method 8081A

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **Composite S13 & S14 @ 0.5' (CWK1124-21) Soil** | **Sampled: 11/26/13 10:36** | | **Received: 11/26/13 15:41** | | | | | | |
| **4,4´-DDD** | **240** | 150 | µg/kg | 10 | CW07909 | " | 12/03/13 | EPA 8081A | |
| 4,4´-DDE | ND | 75 | " | 5 | " | " | " | " | |
| **4,4´-DDT** | **2600** | 1500 | " | 100 | " | " | " | " | |
| Dieldrin | ND | 5.0 | " | 5 | " | " | " | " | |
| Endosulfan I | ND | 75 | " | " | " | " | " | " | |
| Endosulfan II | ND | 75 | " | " | " | " | " | " | |
| Endosulfan sulfate | ND | 75 | " | " | " | " | " | " | |
| Endrin | ND | 75 | " | " | " | " | " | " | |
| Endrin aldehyde | ND | 75 | " | " | " | " | " | " | |
| Heptachlor | ND | 25 | " | " | " | " | " | " | |
| Heptachlor epoxide | ND | 10 | " | " | " | " | " | " | |
| Methoxychlor | ND | 75 | " | " | " | " | " | " | |
| Mirex | ND | 50 | " | " | " | " | " | " | |
| Toxaphene | ND | 100 | " | " | " | " | " | " | |
| *Surrogate: Tetrachloro-meta-xylene* | | *93 %* | | *46-139* | " | " | " | " | |
| *Surrogate: Decachlorobiphenyl* | | *127 %* | | *52-141* | " | " | " | " | |

# CALIFORNIA LABORATORY SERVICES



12/05/13 14:46

| | | |
|---|---|---|
| J House Environmental, Inc. | Project: Avila & Sons | |
| 371 Nevada Street, # 7366 | Project Number: 1150 | **CLS Work Order #: CWK1124** |
| Auburn, CA 95604 | Project Manager: Jackie House | COC #: 105701,02 |

## TPH-Gasoline by GC/MS

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **Composite S7 & S8 @ 0.5' (CWK1124-12) Soil Sampled: 11/26/13 12:42 Received: 11/26/13 15:41** | | | | | | | | | |
| Gasoline | ND | 0.20 | mg/kg | 1 | CW07894 | 11/27/13 | 11/27/13 | EPA 8260M | |
| *Surrogate: Toluene-d8* | | *90 %* | *65-135* | | " | " | " | " | |
| **Composite S9 & S10 @ 0.5' (CWK1124-15) Soil Sampled: 11/26/13 12:22 Received: 11/26/13 15:41** | | | | | | | | | |
| Gasoline | ND | 0.20 | mg/kg | 1 | CW07894 | 11/27/13 | 11/27/13 | EPA 8260M | |
| *Surrogate: Toluene-d8* | | *92 %* | *65-135* | | " | " | " | " | |
| **Composite S11 & S12 @ 0.5' (CWK1124-18) Soil Sampled: 11/26/13 11:32 Received: 11/26/13 15:41** | | | | | | | | | |
| Gasoline | ND | 0.20 | mg/kg | 1 | CW07894 | 11/27/13 | 11/27/13 | EPA 8260M | |
| *Surrogate: Toluene-d8* | | *89 %* | *65-135* | | " | " | " | " | |
| **Composite S13 & S14 @ 0.5' (CWK1124-21) Soil Sampled: 11/26/13 10:36 Received: 11/26/13 15:41** | | | | | | | | | |
| Gasoline | ND | 0.20 | mg/kg | 1 | CW07894 | 11/27/13 | 11/27/13 | EPA 8260M | |
| *Surrogate: Toluene-d8* | | *92 %* | *65-135* | | " | " | " | " | |

# CALIFORNIA LABORATORY SERVICES



12/05/13 14:46

| | | |
|---|---|---|
| J House Environmental, Inc. | Project: Avila & Sons | |
| 371 Nevada Street, # 7366 | Project Number: 1150 | **CLS Work Order #: CWK1124** |
| Auburn, CA 95604 | Project Manager: Jackie House | COC #: 105701,02 |

## Volatile Organic Compounds by EPA Method 8260B

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **Composite S7 & S8 @ 0.5' (CWK1124-12) Soil** | **Sampled: 11/26/13 12:42** | **Received: 11/26/13 15:41** | | | | | | | |
| Benzene | ND | 5.0 | µg/kg | 1 | CW07894 | 11/27/13 | 11/27/13 | EPA 8260B | |
| Ethylbenzene | ND | 5.0 | " | " | " | " | " | " | |
| Toluene | ND | 5.0 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 10 | " | " | " | " | " | " | |
| *Surrogate: Toluene-d8* | | *90 %* | *60-140* | | " | " | " | " | |
| **Composite S9 & S10 @ 0.5' (CWK1124-15) Soil** | **Sampled: 11/26/13 12:22** | **Received: 11/26/13 15:41** | | | | | | | |
| Benzene | ND | 5.0 | µg/kg | 1 | CW07894 | 11/27/13 | 11/27/13 | EPA 8260B | |
| Ethylbenzene | ND | 5.0 | " | " | " | " | " | " | |
| Toluene | ND | 5.0 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 10 | " | " | " | " | " | " | |
| *Surrogate: Toluene-d8* | | *92 %* | *60-140* | | " | " | " | " | |
| **Composite S11 & S12 @ 0.5' (CWK1124-18) Soil** | **Sampled: 11/26/13 11:32** | **Received: 11/26/13 15:41** | | | | | | | |
| Benzene | ND | 5.0 | µg/kg | 1 | CW07894 | 11/27/13 | 11/27/13 | EPA 8260B | |
| Ethylbenzene | ND | 5.0 | " | " | " | " | " | " | |
| Toluene | ND | 5.0 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 10 | " | " | " | " | " | " | |
| *Surrogate: Toluene-d8* | | *89 %* | *60-140* | | " | " | " | " | |
| **Composite S13 & S14 @ 0.5' (CWK1124-21) Soil** | **Sampled: 11/26/13 10:36** | **Received: 11/26/13 15:41** | | | | | | | |
| Benzene | ND | 5.0 | µg/kg | 1 | CW07894 | 11/27/13 | 11/27/13 | EPA 8260B | |
| Ethylbenzene | ND | 5.0 | " | " | " | " | " | " | |
| Toluene | ND | 5.0 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 10 | " | " | " | " | " | " | |
| *Surrogate: Toluene-d8* | | *92 %* | *60-140* | | " | " | " | " | |

# CALIFORNIA LABORATORY SERVICES



12/05/13 14:46

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|---|---|---|
| J House Environmental, Inc. | Project: Avila & Sons | |
| 371 Nevada Street, # 7366 | Project Number: 1150 | **CLS Work Order #: CWK1124** |
| Auburn, CA 95604 | Project Manager: Jackie House | COC #: 105701,02 |

## Extractable Petroleum Hydrocarbons by EPA Method 8015M - Quality Control

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch CW07857 - CA LUFT - orb shaker** | | | | | | | | | | |
| **Blank (CW07857-BLK1)** | | | | Prepared: 11/26/13 Analyzed: 11/27/13 | | | | | | |
| Diesel | ND | 1.0 | mg/kg | | | | | | | |
| Motor Oil | ND | 1.0 | " | | | | | | | |
| *Surrogate: o-Terphenyl* | *0.478* | | *"* | *0.500* | | *96* | *65-135* | | | |
| **LCS (CW07857-BS1)** | | | | Prepared: 11/26/13 Analyzed: 11/27/13 | | | | | | |
| Diesel | 51.6 | 1.0 | mg/kg | 50.0 | | 103 | 65-135 | | | |
| *Surrogate: o-Terphenyl* | *0.570* | | *"* | *0.500* | | *114* | *65-135* | | | |
| **LCS Dup (CW07857-BSD1)** | | | | Prepared: 11/26/13 Analyzed: 11/27/13 | | | | | | |
| Diesel | 50.6 | 1.0 | mg/kg | 50.0 | | 101 | 65-135 | 2 | 30 | |
| *Surrogate: o-Terphenyl* | *0.554* | | *"* | *0.500* | | *111* | *65-135* | | | |
| **Matrix Spike (CW07857-MS1)** | | **Source: CWK1063-01** | | Prepared: 11/26/13 Analyzed: 11/27/13 | | | | | | |
| Diesel | 47.2 | 1.0 | mg/kg | 50.0 | ND | 94 | 59-138 | | | |
| *Surrogate: o-Terphenyl* | *0.579* | | *"* | *0.500* | | *116* | *65-135* | | | |
| **Matrix Spike Dup (CW07857-MSD1)** | | **Source: CWK1063-01** | | Prepared: 11/26/13 Analyzed: 11/27/13 | | | | | | |
| Diesel | 48.8 | 1.0 | mg/kg | 50.0 | ND | 98 | 59-138 | 3 | 37 | |
| *Surrogate: o-Terphenyl* | *0.611* | | *"* | *0.500* | | *122* | *65-135* | | | |

# CALIFORNIA LABORATORY SERVICES



12/05/13 14:46

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|---|---|---|
| J House Environmental, Inc. | Project: Avila & Sons | |
| 371 Nevada Street, # 7366 | Project Number: 1150 | **CLS Work Order #: CWK1124** |
| Auburn, CA 95604 | Project Manager: Jackie House | COC #: 105701,02 |

## Metals by EPA 6000/7000 Series Methods - Quality Control

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch CW07885 - EPA 3050B** | | | | | | | | | | |
| **Blank (CW07885-BLK1)** | | | | Prepared & Analyzed: 11/27/13 | | | | | | |
| Lead | ND | 0.25 | mg/kg | | | | | | | |
| Arsenic | ND | 0.10 | " | | | | | | | |
| **LCS (CW07885-BS1)** | | | | Prepared & Analyzed: 11/27/13 | | | | | | |
| Lead | 5.04 | 0.25 | mg/kg | 5.00 | | 101 | 75-125 | | | |
| Arsenic | 4.73 | 0.10 | " | 5.00 | | 95 | 75-125 | | | |
| **Matrix Spike (CW07885-MS1)** | **Source: CWK1135-01** | | | Prepared & Analyzed: 11/27/13 | | | | | | |
| Lead | 10.6 | 2.5 | mg/kg | 5.00 | 5.30 | 107 | 75-125 | | | |
| Arsenic | 7.78 | 1.0 | " | 5.00 | 2.47 | 106 | 75-125 | | | |
| **Matrix Spike Dup (CW07885-MSD1)** | **Source: CWK1135-01** | | | Prepared & Analyzed: 11/27/13 | | | | | | |
| Lead | 16.2 | 2.5 | mg/kg | 5.00 | 5.30 | 218 | 75-125 | 41 | 30 | QM-5 |
| Arsenic | 7.60 | 1.0 | " | 5.00 | 2.47 | 103 | 75-125 | 2 | 30 | |

# CALIFORNIA LABORATORY SERVICES

 12/05/13 14:46

| | | |
|---|---|---|
| J House Environmental, Inc. | Project: Avila & Sons | |
| 371 Nevada Street, # 7366 | Project Number: 1150 | **CLS Work Order #: CWK1124** |
| Auburn, CA 95604 | Project Manager: Jackie House | COC #: 105701,02 |

## Organochlorine Pesticides by EPA Method 8081A - Quality Control

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch CW07909 - LUFT-DHS GCNV** | | | | | | | | | | |
| **Blank (CW07909-BLK1)** | | | | Prepared: 12/02/13 Analyzed: 12/03/13 | | | | | | |
| Aldrin | ND | 1.0 | µg/kg | | | | | | | |
| alpha-BHC | ND | 2.0 | " | | | | | | | |
| beta-BHC | ND | 10 | " | | | | | | | |
| delta-BHC | ND | 10 | " | | | | | | | |
| gamma-BHC (Lindane) | ND | 10 | " | | | | | | | |
| Chlordane-technical | ND | 20 | " | | | | | | | |
| 4,4´-DDD | ND | 15 | " | | | | | | | |
| 4,4´-DDE | ND | 15 | " | | | | | | | |
| 4,4´-DDT | ND | 15 | " | | | | | | | |
| Dieldrin | ND | 1.0 | " | | | | | | | |
| Endosulfan I | ND | 15 | " | | | | | | | |
| Endosulfan II | ND | 15 | " | | | | | | | |
| Endosulfan sulfate | ND | 15 | " | | | | | | | |
| Endrin | ND | 15 | " | | | | | | | |
| Endrin aldehyde | ND | 15 | " | | | | | | | |
| Heptachlor | ND | 5.0 | " | | | | | | | |
| Heptachlor epoxide | ND | 2.0 | " | | | | | | | |
| Methoxychlor | ND | 15 | " | | | | | | | |
| Mirex | ND | 10 | " | | | | | | | |
| Toxaphene | ND | 20 | " | | | | | | | |
| *Surrogate: Tetrachloro-meta-xylene* | *7.32* | | *"* | *8.33* | | *88* | *46-139* | | | |
| *Surrogate: Decachlorobiphenyl* | *8.48* | | *"* | *8.33* | | *102* | *52-141* | | | |
| **LCS (CW07909-BS1)** | | | | Prepared: 12/02/13 Analyzed: 12/03/13 | | | | | | |
| Aldrin | 13.0 | 1.0 | µg/kg | 16.7 | | 78 | 47-132 | | | |
| gamma-BHC (Lindane) | 12.9 | 10 | " | 16.7 | | 78 | 56-133 | | | |
| 4,4´-DDT | 14.4 | 15 | " | 16.7 | | 87 | 46-137 | | | |
| Dieldrin | 14.0 | 1.0 | " | 16.7 | | 84 | 44-143 | | | |
| Endrin | 11.4 | 15 | " | 16.7 | | 68 | 30-147 | | | |
| Heptachlor | 14.2 | 5.0 | " | 16.7 | | 85 | 33-148 | | | |
| *Surrogate: Tetrachloro-meta-xylene* | *6.71* | | *"* | *8.33* | | *81* | *46-139* | | | |

# CALIFORNIA LABORATORY SERVICES



| | | |
|---|---|---|
| J House Environmental, Inc. | Project: Avila & Sons | |
| 371 Nevada Street, # 7366 | Project Number: 1150 | **CLS Work Order #: CWK1124** |
| Auburn, CA 95604 | Project Manager: Jackie House | COC #: 105701,02 |

## Organochlorine Pesticides by EPA Method 8081A - Quality Control

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch CW07909 - LUFT-DHS GCNV** | | | | | | | | | | |
| **LCS (CW07909-BS1)** | | | | Prepared: 12/02/13 Analyzed: 12/03/13 | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *8.07* | | *µg/kg* | *8.33* | | *97* | *52-141* | | | |
| **LCS Dup (CW07909-BSD1)** | | | | Prepared: 12/02/13 Analyzed: 12/03/13 | | | | | | |
| Aldrin | 13.9 | 1.0 | µg/kg | 16.7 | | 83 | 47-132 | 7 | 30 | |
| gamma-BHC (Lindane) | 14.0 | 10 | " | 16.7 | | 84 | 56-133 | 8 | 30 | |
| 4,4´-DDT | 14.7 | 15 | " | 16.7 | | 88 | 46-137 | 2 | 30 | |
| Dieldrin | 14.5 | 1.0 | " | 16.7 | | 87 | 44-143 | 4 | 30 | |
| Endrin | 12.5 | 15 | " | 16.7 | | 75 | 30-147 | 10 | 30 | |
| Heptachlor | 14.6 | 5.0 | " | 16.7 | | 88 | 33-148 | 3 | 30 | |
| *Surrogate: Tetrachloro-meta-xylene* | *7.04* | | *"* | *8.33* | | *84* | *46-139* | | | |
| *Surrogate: Decachlorobiphenyl* | *8.00* | | *"* | *8.33* | | *96* | *52-141* | | | |
| **Matrix Spike (CW07909-MS1)** | **Source: CWK1124-15** | | | Prepared: 12/02/13 Analyzed: 12/03/13 | | | | | | |
| Aldrin | 14.9 | 5.0 | µg/kg | 16.7 | ND | 89 | 47-138 | | | |
| gamma-BHC (Lindane) | 15.9 | 50 | " | 16.7 | ND | 95 | 38-144 | | | |
| 4,4´-DDT | 1060 | 75 | " | 16.7 | 885 | NR | 41-157 | | | QM-4X |
| Dieldrin | 22.9 | 5.0 | " | 16.7 | ND | 137 | 46-155 | | | |
| Endrin | ND | 75 | " | 16.7 | ND | | 34-149 | | | A-COMa |
| Heptachlor | 16.3 | 25 | " | 16.7 | ND | 98 | 36-155 | | | |
| *Surrogate: Tetrachloro-meta-xylene* | *18.1* | | *"* | *20.8* | | *87* | *46-139* | | | |
| *Surrogate: Decachlorobiphenyl* | *21.5* | | *"* | *20.8* | | *103* | *52-141* | | | |
| **Matrix Spike Dup (CW07909-MSD1)** | **Source: CWK1124-15** | | | Prepared: 12/02/13 Analyzed: 12/03/13 | | | | | | |
| Aldrin | 13.3 | 5.0 | µg/kg | 16.7 | ND | 80 | 47-138 | 11 | 35 | |
| gamma-BHC (Lindane) | 13.9 | 50 | " | 16.7 | ND | 84 | 38-144 | 13 | 35 | |
| 4,4´-DDT | 912 | 75 | " | 16.7 | 885 | 160 | 41-157 | 15 | 35 | QM-4X |
| Dieldrin | 20.8 | 5.0 | " | 16.7 | ND | 125 | 46-155 | 10 | 35 | |
| Endrin | ND | 75 | " | 16.7 | ND | | 34-149 | | 35 | A-COMa |
| Heptachlor | 14.7 | 25 | " | 16.7 | ND | 88 | 36-155 | 10 | 35 | |
| *Surrogate: Tetrachloro-meta-xylene* | *16.0* | | *"* | *20.8* | | *77* | *46-139* | | | |
| *Surrogate: Decachlorobiphenyl* | *20.3* | | *"* | *20.8* | | *98* | *52-141* | | | |

J House Environmental, Inc.
371 Nevada Street, # 7366
Auburn, CA 95604

Project: Avila & Sons
Project Number: 1150
Project Manager: Jackie House

**CLS Work Order #: CWK1124**
COC #: 105701,02

## TPH-Gasoline by GC/MS - Quality Control

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch CW07894 - EPA 5030 Soil MS** | | | | | | | | | | |
| **Blank (CW07894-BLK1)** | | | | Prepared & Analyzed: 11/27/13 | | | | | | |
| Gasoline | ND | 0.20 | mg/kg | | | | | | | |
| *Surrogate: Toluene-d8* | *0.0281* | | *"* | *0.0300* | | *94* | *65-135* | | | |
| **LCS (CW07894-BS1)** | | | | Prepared & Analyzed: 11/27/13 | | | | | | |
| Gasoline | 4.38 | 0.20 | mg/kg | 4.00 | | 109 | 65-135 | | | |
| *Surrogate: Toluene-d8* | *0.0279* | | *"* | *0.0300* | | *93* | *65-135* | | | |
| **LCS Dup (CW07894-BSD1)** | | | | Prepared & Analyzed: 11/27/13 | | | | | | |
| Gasoline | 4.37 | 0.20 | mg/kg | 4.00 | | 109 | 65-135 | 0.1 | 30 | |
| *Surrogate: Toluene-d8* | *0.0282* | | *"* | *0.0300* | | *94* | *65-135* | | | |

| | | |
|---|---|---|
| J House Environmental, Inc. | Project: Avila & Sons | |
| 371 Nevada Street, # 7366 | Project Number: 1150 | **CLS Work Order #: CWK1124** |
| Auburn, CA 95604 | Project Manager: Jackie House | COC #: 105701,02 |

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch CW07894 - EPA 5030 Soil MS** | | | | | | | | | | |
| **Blank (CW07894-BLK1)** | | | | Prepared & Analyzed: 11/27/13 | | | | | | |
| Benzene | ND | 5.0 | µg/kg | | | | | | | |
| Ethylbenzene | ND | 5.0 | " | | | | | | | |
| Toluene | ND | 5.0 | " | | | | | | | |
| Xylenes (total) | ND | 10 | " | | | | | | | |
| *Surrogate: Toluene-d8* | *28.1* | | *"* | *30.0* | | *94* | *60-140* | | | |
| **LCS (CW07894-BS1)** | | | | Prepared & Analyzed: 11/27/13 | | | | | | |
| Methyl tert-butyl ether | 20.5 | 5.0 | µg/kg | 20.0 | | 103 | 60-140 | | | |
| Benzene | 20.6 | 5.0 | " | 20.0 | | 103 | 60-140 | | | |
| *Surrogate: Toluene-d8* | *27.9* | | *"* | *30.0* | | *93* | *60-140* | | | |
| **LCS Dup (CW07894-BSD1)** | | | | Prepared & Analyzed: 11/27/13 | | | | | | |
| Methyl tert-butyl ether | 19.5 | 5.0 | µg/kg | 20.0 | | 98 | 60-140 | 5 | 30 | |
| Benzene | 20.9 | 5.0 | " | 20.0 | | 104 | 60-140 | 1 | 30 | |
| *Surrogate: Toluene-d8* | *28.2* | | *"* | *30.0* | | *94* | *60-140* | | | |
| **Matrix Spike (CW07894-MS1)** | **Source: CWK1124-12** | | | Prepared & Analyzed: 11/27/13 | | | | | | |
| Methyl tert-butyl ether | 18.8 | 5.0 | µg/kg | 20.0 | ND | 94 | 60-140 | | | |
| Benzene | 18.9 | 5.0 | " | 20.0 | ND | 94 | 60-140 | | | |
| *Surrogate: Toluene-d8* | *27.5* | | *"* | *30.0* | | *92* | *60-140* | | | |
| **Matrix Spike Dup (CW07894-MSD1)** | **Source: CWK1124-12** | | | Prepared & Analyzed: 11/27/13 | | | | | | |
| Methyl tert-butyl ether | 17.2 | 5.0 | µg/kg | 20.0 | ND | 86 | 60-140 | 9 | 30 | |
| Benzene | 15.9 | 5.0 | " | 20.0 | ND | 79 | 60-140 | 17 | 30 | |
| *Surrogate: Toluene-d8* | *28.1* | | *"* | *30.0* | | *94* | *60-140* | | | |

# CALIFORNIA LABORATORY SERVICES

 12/05/13 14:46

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|---|---|---|
| J House Environmental, Inc. | Project: Avila & Sons | |
| 371 Nevada Street, # 7366 | Project Number: 1150 | **CLS Work Order #: CWK1124** |
| Auburn, CA 95604 | Project Manager: Jackie House | COC #: 105701,02 |

## Notes and Definitions

| | |
|---|---|
| QM-5 | The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable. |
| QM-4X | The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits. |
| PestD | The percent breakdown of DDT in the ending QC standard was outside the method criteria, which implies that the DDT result could be biased low and DDE/DDD results biased high. |
| A-COMa | The spike recovery was not available for the MS and/or MSD due to matrix interference. The LCS and LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.. |
| A-COM | Run by ICP-MS (EPA6020) |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the reporting limit (or method detection limit when specified) |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |

# APPENDIX E

Environmental Noise Analysis

# Dan Avila & Sons (Washington Road) Warehouse EIR

Stanislaus County, California

BAC Job # 2013-055

Prepared For:

**Quad Knopf**

Attn: Mr. Randy Chafin
735 Sunrise Road, Suite 100
Roseville, CA.   95661

Prepared By:

**Bollard Acoustical Consultants, Inc.**

Paul Bollard, President

April 14, 2014

BOLLARD
Acoustical Consultants



3551 Bankhead Road < Loomis, CA 95650 < Phone: (916) 663-0500 < Fax: (916) 663-0501 < BACNOISE.COM

# Introduction

Dan Avila & Sons, proposes constructing a 180,000 square foot warehouse (in three phases) and utilizing an existing 5,500 square foot pole barn and associated facilities for receiving, handling, packaging, and shipping harvested crops (watermelons, sweet potatoes, beans, wheat, pumpkins, and squash) on two parcels totaling 61.7± acres in the Turlock area in unincorporated Stanislaus County. The physical address is 1301 Washington Road, on the southwest corner of Fulkerth Road and North Washington Road, east of North Commons Road. A maximum of approximately 75 employees would be on the site at any time. The facilities are planned to be operational 24 hours per day throughout the year. The site location is shown on Figure 1.

# Environmental Setting

## Noise Fundamentals and Terminology

Noise is often described as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard, and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz). Definitions of acoustical terminology used in this report are presented in Appendix A.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals of pressure) as a point of reference defined as 0 dB. Other sound pressures are then compared to the reference pressure and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB. Another useful aspect of the decibel scale is that changes in decibel levels correspond closely to human perception of relative loudness. Table 1 illustrates common noise levels associated with various sources.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable and can be approximated by weighting the frequency response of a sound level meter by means of the standardized A-weighting network. There is a strong correlation between A-weighted sound levels (expressed as dBA) and community response to noise. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels.

Community noise is commonly described in terms of the Aambient@ noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to describe the ambient noise level is the average, or equivalent, sound level ($L_{eq}$). The $L_{eq}$ is the foundation of the day/night average noise level ($L_{dn}$) and shows very good correlation with community response to noise.

**Figure 1 – Project Site Vicinity and Ambient Noise Monitoring Location**


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Existing acoustical literature and application of accepted noise prediction and sound propagation algorithms were used to predict project related noise levels. Specific noise sources evaluated in this section were onsite noise sources associated with the commercial development. Average Sound Exposure Level (SEL) estimates were used to predict noise levels due to truck circulation on the project site. The SEL noise descriptor is the equivalent sound energy of an acoustical event normalized to a one second duration.

**Table 1**
**Typical A-Weighted Sound Levels of Common Noise Sources**

| Loudness Ratio | dBA | Description |
|---|---|---|
| 128 | 130 | Threshold of pain |
| 64 | 120 | Jet aircraft take-off at 100 feet |
| 32 | 110 | Riveting machine at operators position |
| 16 | 100 | Shotgun at 200 feet |
| 8 | 90 | Bulldozer at 50 feet |
| 4 | 80 | Diesel locomotive at 300 feet |
| 2 | 70 | Commercial jet aircraft interior during flight |
| 1 | 60 | Normal conversation speech at 5-10 feet |
| 1/2 | 50 | Open office background level |
| 1/4 | 40 | Background level within a residence |
| 1/8 | 30 | Soft whisper at 2 feet |
| 1/16 | 20 | Interior of recording studio |

## Existing Land Uses in the Project Vicinity

The project site is bordered by a variety of different land uses. The site is bordered to the west by North Commons Road and agricultural uses (walnut orchards). The project site is bordered to the south by West Main Street and agricultural uses (walnut orchards). The project site is bordered to the east by West Washington Road and agricultural uses including a Blue Diamond almond processing facility. The project site is bordered to the north by agricultural uses (planted row crops) and six single family homes.

## Existing General Ambient Noise Environment in the Project Vicinity

The ambient noise environment in the immediate project vicinity is primarily defined by traffic on North Washington Road and to a lesser extent, Fulkerth Road, as well as by operations at the new Blue Diamond facility on the east side of North Washington Road.

To generally quantify the existing ambient noise environment in the immediate project vicinity, continuous hourly noise level measurements were conducted at the project site on October 5-7, 2013. The noise measurement location is shown on Figure 1.A Larson-Davis Laboratories (LDL) Model 820 precision integrating sound level meter was used to complete the noise level measurement survey. The meter was calibrated before use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy off the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

The noise level measurement survey results are summarized below in Table 2. The detailed results of the ambient noise surveys are contained in Appendix B in tabular format and graphically in Appendix C.

**Table 2**
**Summary of Ambient Noise Measurement Results**
**Dan Avila & Son's Warehouse Project, Stanislaus County – October 5-7, 2013**

| | | Daytime (7 am - 10 pm) | | Nighttime (10 pm - 7 am) | |
|---|---|---|---|---|---|
| **Date** | $L_{dn}$ | $L_{eq}$ | $L_{max}$ | $L_{eq}$ | $L_{max}$ |
| October 5 | 58 | 55 | 73 | 51 | 70 |
| October 6 | 59 | 56 | 73 | 51 | 69 |
| October 7 | 60 | 58 | 75 | 52 | 69 |

Source: Bollard Acoustical Consultants, Inc.

## Existing Traffic Noise Environment

To predict existing noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD 77 108) was used. The Model uses the Calveno reference noise factors for automobiles, medium trucks, and heavy trucks. The Model considers vehicle volume and speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the sound propagation path.

Table 3 summarizes the calculated existing traffic noise levels in terms of Ldn at a reference distance of 100 feet from the centerlines of existing project-area roadways. The table also includes the distances to existing traffic noise contours. Appendices D, E & F contain the detailed FHWA Model inputs, predicted traffic noise levels, and distances to noise contours.

**Table 3**
**Baseline Traffic Noise Levels**
**Dan Avila & Son's Warehouse Project Area Roadways**

| Seg. | Intersection | Direction | Ldn @ 100 ft. | Distance to Traffic Noise Contours 75 | 70 | 65 | 60 |
|---|---|---|---|---|---|---|---|
| 1 | Washington & Fulkerth Rds. | North | 61 | 12 | 26 | 57 | 122 |
| 2 | | South | 63 | 16 | 34 | 73 | 157 |
| 3 | | East | 63 | 16 | 34 | 73 | 158 |
| 4 | | West | 62 | 14 | 30 | 64 | 138 |
| 5 | Washington & Main Rds | North | 63 | 16 | 35 | 76 | 164 |
| 6 | | South | 59 | 8 | 18 | 39 | 85 |
| 7 | | East | 66 | 24 | 52 | 112 | 241 |
| 8 | | West | 66 | 23 | 50 | 108 | 234 |

Source: FHWA-RD-77-108 with Calveno vehicle emission curves and inputs from KdAnderson, Caltrans, and BAC.

# Regulatory Setting

In California, cities and counties are required to adopt a noise element as part of their general plan. The Project site is located in Stanislaus County, which has a Noise Element. Applicable noise-level criteria for Fresno County are discussed below.

It should be noted that many of the land uses located in the immediate project vicinity are agriculturally zoned, and agricultural uses are not considered to be noise sensitive. However, for the purposes of assessing noise impacts for this project, and to be conservative, residences located on agriculturally-designated properties are considered to be noise-sensitive. Even though a given residence is considered to be noise sensitive, the agriculturally zoned property is not, so noise impacts are evaluated in this study at the residences themselves where the noise sensitivity exists rather than at the property line of the agriculturally designated parcel which, by virtue of both its zoning and expected use, is not considered to be noise sensitive.

## Stanislaus County General Plan Noise Element

The Stanislaus County General Plan Noise Element establishes acceptable noise level limits for both transportation and non-transportation noise sources. The primary objective of the Noise Element is to prescribe policies that lead to the preservation and enhancement of the quality of life for the residents of Stanislaus County by securing and maintaining an environment free from excessive noise.

For residential uses affected by transportation noise sources (off-site traffic in this case), the Noise Element identifies 60 dB $L_{dn}$ (or CNEL) shown in Table 4. This is consistent with State of California standards recommended for transportation noise sources. Agricultural uses are not considered to be noise sensitive, but for the purposes of this assessment, residential dwellings located on agriculturally designated properties were considered to be sensitive, and the 60 dB $L_{dn}$ criterion was assumed to be applicable.

Noise analyses in environmental assessments typically identify a threshold of significance and then compare the project impact to that threshold. For Astationary@ noise sources such as aggregate extraction and processing operations, Stanislaus County regulates the level of noise that may impact adjacent noise-sensitive uses. For this project, the evaluation period is considered to be the worst-case hour during which on-site equipment would be operating. If the proposed project has the potential to exceed the County's noise exposure limits at the closest noise-sensitive uses, such an impact would likely be considered environmentally significant. The noise exposure limits applicable to this project are summarized in Table 5.

**Table 4**
**Maximum Allowable Noise Exposure for Transportation Noise Sources**
**Stanislaus County Noise Element of the General Plan**

| | Exterior Noise Exposure $L_{dn}$ or CNEL, dBA | |
|---|---|---|
| Land Use Category | Normally Acceptable | Conditionally Acceptable |
| Residential- Low Density | 60 | 70 |
| Multi Family Residential | 65 | 70 |
| Hotels and Motels | 65 | 70 |

Source: Stanislaus County Noise Element of the General Plan

**Table 5**
**Maximum Allowable Noise Exposure for Stationary Noise Sources**
**Stanislaus County Noise Element of the General Plan**

| | Daytime Standard (7 a.m.-10 p.m.) | Nighttime Standard (10 p.m.-7 a.m.) |
|---|---|---|
| Hourly $L_{eq}$, dB | 55 | 45 |
| Maximum Level ($L_{max}$), dB | 75 | 65 |

Source: Stanislaus County Noise Element of the General Plan

### Project-Related Traffic Noise Level Increase Criteria

The following table was developed by the Federal Interagency Committee on Noise (FICON) as a means of developing thresholds for identifying project-related noise level increases. The rationale for the graduated scales is that test subject's reactions to increases in noise levels varied depending on the starting level of noise. Specifically, with lower ambient noise environments, such as those below 60 dB Ldn, a larger increase in noise levels was required to achieve a negative reaction than was necessary in environments where noise levels were already elevated. Therefore, because the County does not have defined thresholds for what would be considered a substantial increase in noise levels, information from Table 6 is used.

**Table 6**
**Significance of Changes in Cumulative Noise Exposure**

| Ambient Noise Level Without Project, $L_{dn}$ | Increase Required for Significant Impact |
|---|---|
| <60 dB | +5.0 dB or more |
| 60-65 dB | +3.0 dB or more |
| >65 dB | +1.5 dB or more |

Source: Federal Interagency Committee on Noise (FICON).

# Impacts and Mitigation Measures

## Thresholds of Significance

For this project, noise impacts are considered significant if any of the following conditions are met:

- Off-site traffic noise level increases over traffic noise levels present without the project exceed the Table 6 criteria.

- Noise generated by on-site mechanical equipment exceeds the noise standards contained in Table 4 or cause a significant increase in ambient noise levels as defined by the Table 5 criteria.

- Noise generated by project construction activities causes a significant increase in ambient noise levels as defined by the Table 5 criteria.

## Methods of Analysis

This analysis of project noise impacts focuses on noise generated by project construction, on-site activities (truck movements & mechanical equipment), and off-site increase in traffic noise levels resulting from the project. This analysis of noise impacts focuses on the noise-sensitive residential uses to the north.

### Off-Site Traffic Noise Impact Assessment Methodology

To assess noise impacts due to project-related traffic increases on the local roadway network, traffic noise levels are predicted at a representative distance of 100 feet for both existing and future, with project and no-project conditions. Noise impacts are identified at existing noise-sensitive areas if the noise level increases that result from project development exceed the FICON Standards included in Table 6.

To describe existing and projected noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD 77 108) was used. The model is based upon the Calveno reference noise factors for automobiles, medium trucks and heavy trucks, 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 Leq values for free flowing traffic conditions. To predict traffic noise levels in terms of Ldn, it is necessary to adjust the input volume to account for the day/night distribution of traffic.

Traffic volumes for existing and future (cumulative) conditions, with and without the project scenarios, were obtained from KD Anderson, transportation consultants. Table 7 shows the estimated Ldn at a standard distance of 100 feet from the centerlines of project area roadways for existing and future, project and no-project conditions, as well as the increases in traffic noise levels which would result from the proposed project.

The Table 7 data indicate that the project-related increase in traffic noise levels along the nearest roadways to the project site would range from 0 to 2 dB for both existing and cumulative conditions.

**Table 7**
**Predicted Traffic Noise Levels and Project-Related Traffic Noise Level Increases (Ldn, dB @ 100 feet from C/L)**
**Dan Avila & Son's Warehouse Project EIR**

| Seg. | Intersection | Segment Direction | Existing | Existing + Project | Change | Cumulative | Cumulative + Project | Change |
|---|---|---|---|---|---|---|---|---|
| 1 | Washington & Fulkerth | North | 61 | 49 | 1 | 60 | 49 | 0 |
| 2 | | South | 63 | 57 | 1 | 63 | 57 | 1 |
| 3 | | East | 63 | 56 | 1 | 63 | 56 | 1 |
| 4 | | West | 62 | n/a | 0 | 61 | n/a | 0 |
| 5 | Washington & Main | North | 63 | 61 | 2 | 64 | 61 | 2 |
| 6 | | South | 59 | 57 | 2 | 62 | 57 | 1 |
| 7 | | East | 66 | 58 | 0 | 65 | 58 | 1 |
| 8 | | West | 66 | 54 | 0 | 65 | 54 | 0 |

Source: FHWA-RD-77-108 with inputs shown in Appendix D.

## Construction Noise Impact Assessment Methodology

During the construction phases of the proposed project, noise from construction activities would add to the noise environment in the immediate project vicinity. Activities involved in typical construction would generate maximum noise levels, as indicated in Table 8, ranging from 85 to 90 dB at a distance of 50 feet. Construction activities are proposed to occur during normal daytime working hours and would be short-term in nature.

**Table 8**
**Construction Equipment Noise**

| Type of Equipment | Maximum Level, dB at 50 feet |
|---|---|
| Bulldozers | 87 |
| Heavy Trucks | 88 |
| Backhoe | 85 |
| Pneumatic Tools | 85 |
| Portable Crushing Plant | 90 |

Source: Environmental Noise Pollution, Patrick R. Cunniff, 1977. Bollard Acoustical Consultants file data for portable crushing plants, 2008.

The nearest existing noise-sensitive land uses are located approximately 1,000 feet north of the main construction area on the project site. At that distance, the construction noise levels shown in Table 8 would be reduced by approximately 26 dB based on distance alone (assuming 6 dB decrease per doubling of distance from the reference noise source). The resulting noise levels would range from 59-64 dB Lmax at the nearest residences. This range of levels is both below the County's exterior noise level standards shown in Table 5 as well as below measured existing maximum noise levels shown in Table 2.

## On-Site Truck Circulation Noise Impact Assessment Methodology

According to the traffic study prepared for the project, approximately 114 peak hour trips would be generated during the am peak hour. For purposes of this analysis, it was assumed that approximately 75% of those trips would be trucks and 25% employee vehicles, resulting in approximately 85 heavy truck movements during the peak hour.

To quantify the noise generation of on-site parking lot noise emissions, Bollard Acoustical Consultants, Inc. utilized BAC noise measurement data for slow-moving heavy trucks. The mean sound exposure level (SEL) resulting from these tests was 75 dB SEL at a distance of 50 feet from the effective noise center of the passby area. The peak hour parking lot average noise level (Leq) can be determined using the following formula:

Peak Hour Leq = 75 + 10 * (log Neq) - 36, dB where:

75 is the assumed sound exposure level (SEL) for a typical truck movements, Neq is the number of truck movements during the peak hour, and 36 is 10 times the logarithm of the number seconds in an hour.

Based upon the equation above, the predicted peak hour truck movement noise level at 50 feet would be 58 dB $L_{eq}$ at a distance of 50 feet. At the nearest residences to the on-site truck movement areas, located approximately 500+ feet to the north (the existing residence at the southwest corner of Fulkerth and North Washington), the computed Leq for peak hour truck movements would be approximately 35-40 dB Leq. This level is well within compliance with the County noise standards shown in Table 5 and well below measured existing average noise levels shown in Table 2.

### Mechanical Equipment Noise Impact Assessment Methodology

The proposed warehouse includes a 5 horsepower evaporative cooler capable of moving 35-50K cubic feet per minute. BAC file data for evaporative coolers of this size indicate that a sound power level of approximately 105 dB can be expected. After consideration of distance to the nearest residences and shielding provided by the proposed warehouse building, the predicted noise level at the nearest residences would be approximately 45 dB Leq or less. This level complies with the County's exterior noise standards shown in Table 5 and well below measured existing average noise levels shown in Table 2. It should be noted that the heat exchange requirements decrease during cooler nighttime hours, so the nighttime noise generation of this equipment at the nearest residences is expected to be even lower.

## Specific Impact and Mitigation Statements

**Impact 1** ***The proposed project would increase existing traffic noise levels at existing noise-sensitive land uses in the project vicinity.***

Development of the project would generally result in increased traffic noise along roadways used by project-generated traffic. Comparison of the Table 7 data against the Table 6 criteria for a significant noise increase indicates that project-related increases in traffic noise levels on the local roadway network would be less-than-significant.

It should be noted, however, that the project truck trip generation estimates were based on the ITE trip generation factors for warehouse facilities. Using those figures, a total daily project trip generation of 817 daily trips were computed. Relative to estimates of project-generated traffic provided by the project applicant, the 817 daily trips computed using the ITE factors are believed to be conservative. As a result, the actual increases in off-site traffic noise are expected to be lower than indicated in Table 7, and also below the threshold of significance. Nonetheless, relative to either analysis methodology, ***this impact is considered less than significant.***

**Mitigation for Impact 1:** None Required

**Impact 2** ***The proposed project construction would result in a temporary increase in ambient noise levels in the immediate project vicinity.***

As noted in the methodology section of this report, activities associated with construction of the project would be temporary in nature, limited to daytime hours, and would generate noise levels below County noise standards and below measured existing ambient noise levels. As a result, ***this impact is considered less than significant.***

**Mitigation for Impact 2:** None Required

**Impact 3** ***On-site activities, including truck circulation and mechanical equipment operation (HVAC), would cause increases in ambient noise levels in the immediate project vicinity.***

As noted in the methodology section of this report, activities associated with on-site truck circulation and operation of the proposed evaporative cooler are predicted to be in compliance with both daytime and nighttime noise level standards of Stanislaus County (See Table 5), as well as below measured existing ambient noise levels, at the nearest potentially affected noise-sensitive land uses. As a result, ***this impact is considered less than significant***.

## Cumulative Setting, Impacts and Mitigation Measures

Future development within Stanislaus County and neighboring counties, including the proposed project, would incrementally affect the future (cumulative) ambient noise environment. While it is difficult to project exactly how the ambient noise conditions within the area would change, it is known that traffic noise levels would increase slightly due to cumulative development within the region, both with and without the proposed project. Table7 shows the projected traffic noise levels at a reference distance of 100 feet from the various roadway centerlines for Cumulative plus Project conditions, and the increases associated with those levels over cumulative conditions without the proposed project.

As noted in the Standards of Significance, a substantial increase in traffic noise levels is defined as 1.5 to 5 dB Ldn, depending on the baseline noise environment without the proposed project. Because the cumulative increase in project-generated traffic would not cause traffic noise levels to increase in excess of the standards shown in Table 6, the project's contribution to the cumulative noise environment is not considerable, resulting in a finding of ***less than significant impact.***

Appendix A

## Acoustical Terminology

| | |
|---|---|
| **Acoustics** | The science of sound. |
| **Ambient Noise** | The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study. |
| **Attenuation** | The reduction of an acoustic signal. |
| **A-Weighting** | A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response. |
| **Decibel or dB** | Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell. |
| **CNEL** | Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging. |
| **Frequency** | The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz. |
| **Ldn** | Day/Night Average Sound Level. Similar to CNEL but with no evening weighting. |
| **Leq** | Equivalent or energy-averaged sound level. |
| **Lmax** | The highest root-mean-square (RMS) sound level measured over a given period of time. |
| **Loudness** | A subjective term for the sensation of the magnitude of sound. |
| **Masking** | The amount (or the process) by which the threshold of audibility is for one sound is raised by the presence of another (masking) sound. |
| **Noise** | Unwanted sound. |
| **Peak Noise** | The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the Maximum level, which is the highest RMS level. |
| **$RT_{60}$** | The time it takes reverberant sound to decay by 60 dB once the source has been removed. |
| **Sabin** | The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 sabin. |
| **SEL** | A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy of the event into a 1-s time period. |
| **Threshold of Hearing** | The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing. |
| **Threshold of Pain** | Approximately 120 dB above the threshold of hearing. |

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Appendix B-1

**Washington Road Warehouse**

**24hr Continuous Noise Monitoring at Site A**

**Saturday, October 05, 2013**

| Hour | Leq | Lmax | L50 | L90 |
|---|---|---|---|---|
| 0:00 | 53 | 74 | 44 | 41 |
| 1:00 | 48 | 71 | 43 | 40 |
| 2:00 | 49 | 67 | 43 | 42 |
| 3:00 | 50 | 69 | 43 | 41 |
| 4:00 | 48 | 70 | 41 | 39 |
| 5:00 | 52 | 75 | 45 | 40 |
| 6:00 | 54 | 72 | 46 | 42 |
| 7:00 | 59 | 78 | 51 | 47 |
| 8:00 | 54 | 72 | 50 | 47 |
| 9:00 | 54 | 71 | 48 | 45 |
| 10:00 | 53 | 71 | 47 | 42 |
| 11:00 | 55 | 78 | 46 | 41 |
| 12:00 | 52 | 67 | 45 | 40 |
| 13:00 | 55 | 79 | 47 | 40 |
| 14:00 | 54 | 76 | 46 | 40 |
| 15:00 | 53 | 71 | 47 | 40 |
| 16:00 | 53 | 72 | 45 | 38 |
| 17:00 | 54 | 73 | 47 | 40 |
| 18:00 | 56 | 75 | 50 | 44 |
| 19:00 | 55 | 72 | 50 | 45 |
| 20:00 | 55 | 74 | 48 | 42 |
| 21:00 | 53 | 71 | 48 | 43 |
| 22:00 | 53 | 70 | 48 | 44 |
| 23:00 | 51 | 66 | 45 | 43 |

| | **Statistical Summary** | | | | | |
|---|---|---|---|---|---|---|
| | Daytime (7 a.m. - 10 p.m.) | | | Nighttime (10 p.m. - 7 a.m.) | | |
| | High | Low | Average | High | Low | Average |
| Leq (Average) | 58.7 | 52.2 | 54.6 | 53.6 | 47.6 | 51.3 |
| Lmax (Maximum) | 79.0 | 66.8 | 73.3 | 74.7 | 66.2 | 70.3 |
| L50 (Median) | 51.3 | 45.0 | 47.7 | 48.1 | 41.2 | 44.2 |
| L90 (Background) | 47.4 | 38.1 | 42.4 | 43.6 | 39.1 | 41.3 |

| | |
|---|---|
| Computed Ldn, dB | 58.3 |
| % Daytime Energy | 78% |
| % Nighttime Energy | 22% |

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Appendix B-2

**Washington Road Warehouse**
**24hr Continuous Noise Monitoring at Site A**
**Sunday, October 06, 2013**

| Hour | Leq | Lmax | L50 | L90 |
|---|---|---|---|---|
| 0:00 | 52 | 69 | 44 | 42 |
| 1:00 | 50 | 67 | 43 | 41 |
| 2:00 | 49 | 70 | 44 | 43 |
| 3:00 | 50 | 68 | 44 | 43 |
| 4:00 | 48 | 69 | 45 | 43 |
| 5:00 | 49 | 65 | 44 | 43 |
| 6:00 | 55 | 71 | 50 | 46 |
| 7:00 | 57 | 71 | 56 | 54 |
| 8:00 | 57 | 69 | 55 | 54 |
| 9:00 | 57 | 81 | 54 | 52 |
| 10:00 | 56 | 69 | 53 | 52 |
| 11:00 | 59 | 83 | 53 | 52 |
| 12:00 | 56 | 74 | 53 | 52 |
| 13:00 | 56 | 73 | 53 | 52 |
| 14:00 | 56 | 71 | 53 | 51 |
| 15:00 | 57 | 76 | 53 | 52 |
| 16:00 | 56 | 73 | 53 | 51 |
| 17:00 | 53 | 70 | 46 | 41 |
| 18:00 | 54 | 71 | 48 | 43 |
| 19:00 | 55 | 81 | 49 | 43 |
| 20:00 | 53 | 73 | 46 | 41 |
| 21:00 | 51 | 65 | 45 | 39 |
| 22:00 | 51 | 72 | 43 | 40 |
| 23:00 | 52 | 70 | 44 | 41 |

| | Statistical Summary | | | | | |
|---|---|---|---|---|---|---|
| | Daytime (7 a.m. - 10 p.m.) | | | Nighttime (10 p.m. - 7 a.m.) | | |
| | High | Low | Average | High | Low | Average |
| Leq (Average) | 58.8 | 50.9 | 55.9 | 55.5 | 48.3 | 51.2 |
| Lmax (Maximum) | 83.1 | 65.3 | 73.4 | 72.0 | 65.4 | 69.1 |
| L50 (Median) | 56.0 | 44.6 | 51.4 | 49.8 | 42.8 | 44.6 |
| L90 (Background) | 53.8 | 39.2 | 48.6 | 45.6 | 39.5 | 42.1 |

| | |
|---|---|
| Computed Ldn, dB | 58.7 |
| % Daytime Energy | 83% |
| % Nighttime Energy | 17% |

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Appendix B-3

## Washington Road Warehouse
## 24hr Continuous Noise Monitoring at Site A
## Monday, October 07, 2013

| Hour | Leq | Lmax | L50 | L90 |
|---|---|---|---|---|
| 0:00 | 46 | 62 | 43 | 42 |
| 1:00 | 46 | 61 | 45 | 43 |
| 2:00 | 49 | 70 | 46 | 44 |
| 3:00 | 48 | 65 | 46 | 44 |
| 4:00 | 51 | 73 | 47 | 44 |
| 5:00 | 55 | 75 | 50 | 47 |
| 6:00 | 58 | 73 | 54 | 48 |
| 7:00 | 61 | 75 | 59 | 55 |
| 8:00 | 59 | 77 | 56 | 52 |
| 9:00 | 55 | 70 | 49 | 45 |
| 10:00 | 57 | 76 | 55 | 47 |
| 11:00 | 57 | 69 | 55 | 54 |
| 12:00 | 58 | 81 | 55 | 54 |
| 13:00 | 58 | 74 | 56 | 54 |
| 14:00 | 59 | 85 | 54 | 52 |
| 15:00 | 56 | 70 | 53 | 52 |
| 16:00 | 57 | 83 | 50 | 43 |
| 17:00 | 60 | 88 | 50 | 44 |
| 18:00 | 56 | 72 | 52 | 45 |
| 19:00 | 55 | 70 | 50 | 44 |
| 20:00 | 54 | 68 | 48 | 43 |
| 21:00 | 52 | 66 | 46 | 41 |
| 22:00 | 51 | 72 | 43 | 38 |
| 23:00 | 50 | 72 | 43 | 41 |

| | Statistical Summary | | | | | |
|---|---|---|---|---|---|---|
| | Daytime (7 a.m. - 10 p.m.) | | | Nighttime (10 p.m. - 7 a.m.) | | |
| | High | Low | Average | High | Low | Average |
| Leq (Average) | 60.8 | 51.8 | 57.5 | 57.9 | 46.4 | 52.2 |
| Lmax (Maximum) | 87.9 | 66.3 | 74.8 | 75.1 | 60.8 | 69.0 |
| L50 (Median) | 59.3 | 46.5 | 52.7 | 53.9 | 42.7 | 46.2 |
| L90 (Background) | 54.7 | 40.5 | 48.3 | 48.3 | 38.4 | 43.6 |

| | |
|---|---|
| Computed Ldn, dB | 59.9 |
| % Daytime Energy | 85% |
| % Nighttime Energy | 15% |

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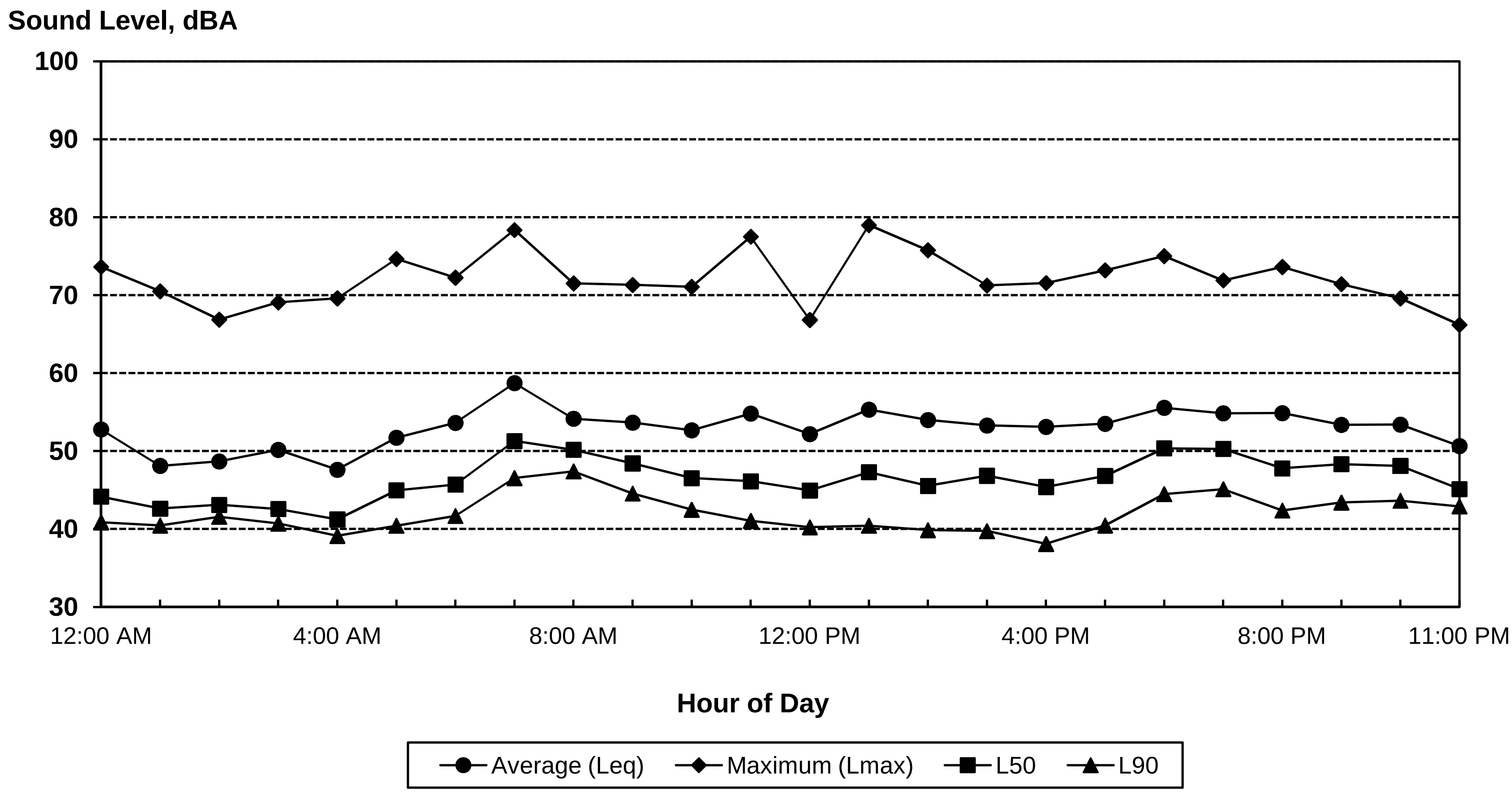
# Appendix C-1
# Washington Road Warehouse
# 24hr Continuous Noise Monitoring at Site A
# Saturday, October 05, 2013




**Ldn: 58 dB**

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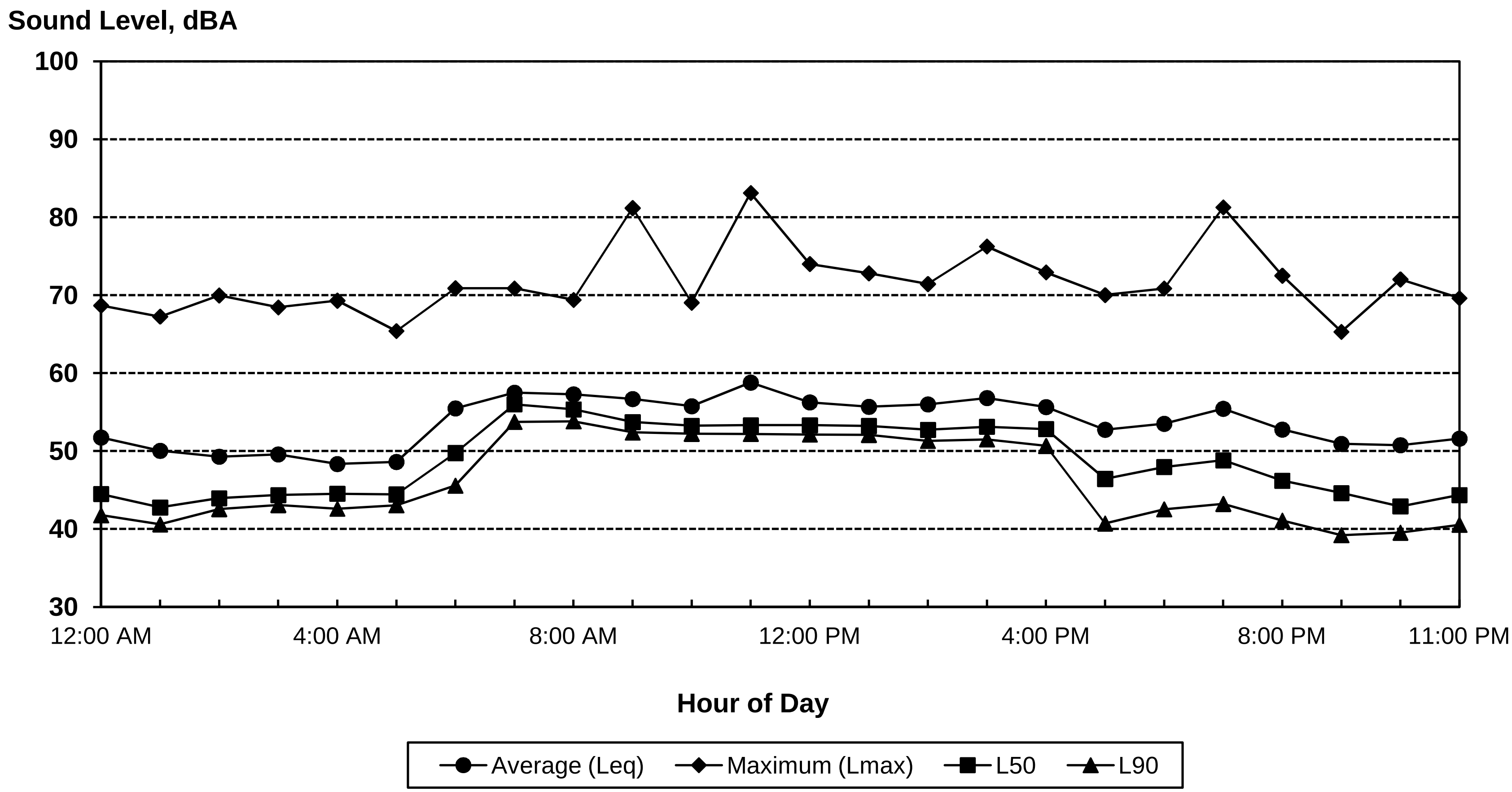
# Appendix C-2
# Washington Road Warehouse
# 24hr Continuous Noise Monitoring at Site A
# Sunday, October 06, 2013




**Ldn: 59 dB**

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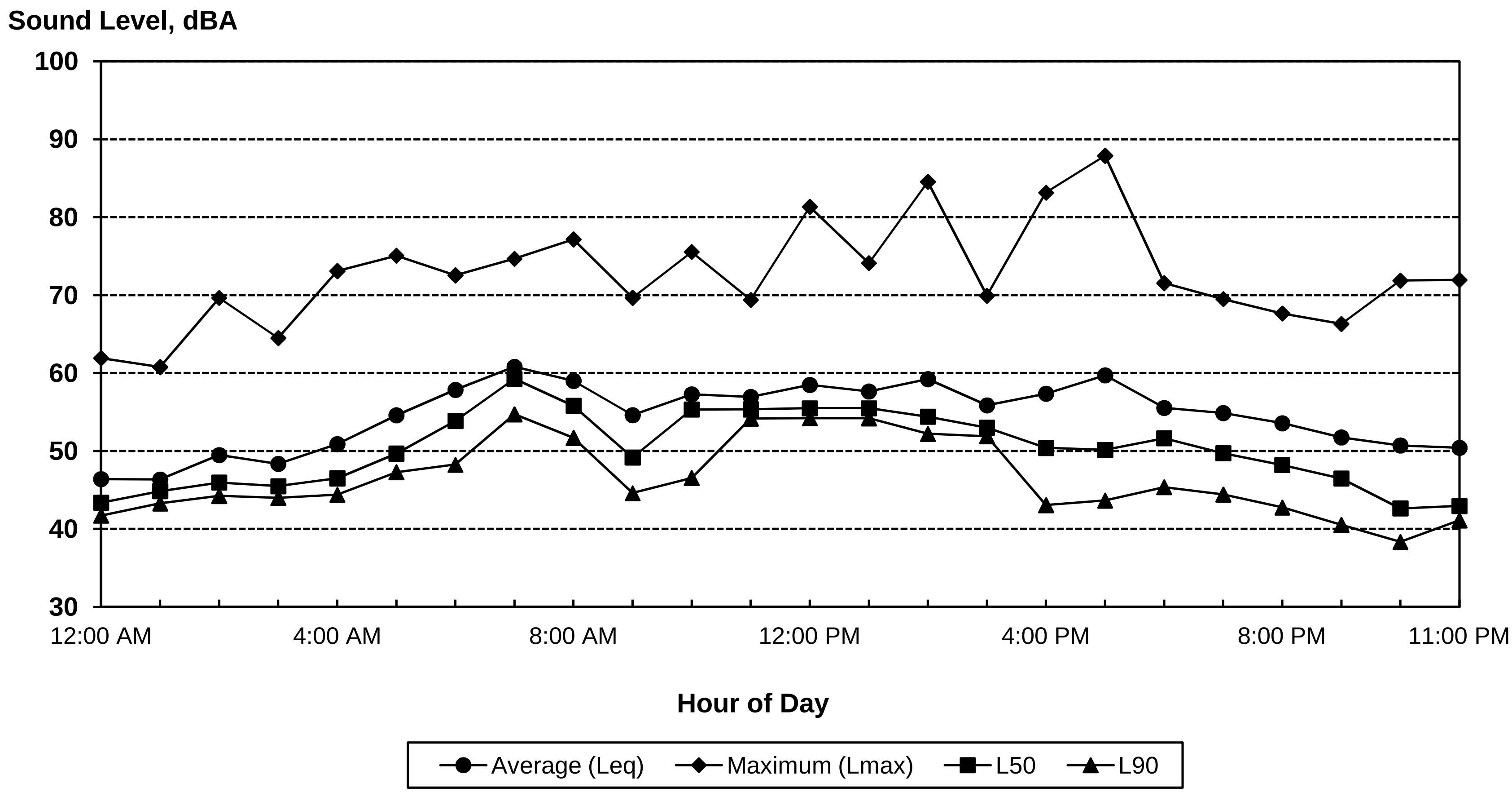
## Appendix C-3
## Washington Road Warehouse
## 24hr Continuous Noise Monitoring at Site A
## Monday, October 07, 2013




**Ldn: 60 dB**

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**Appendix D-1**

## FHWA-RD-77-108 Highway Traffic Noise Prediction Model
## Data Input Sheet

Project #: 2013-055 Washington Road Warehouse
Description: Baseline Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

| Segment | Intersection | Direction | ADT | Day % | Eve % | Night % | % Med. Trucks | % Hvy. Trucks | Speed | Distance | Offset (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Washington Road & Fulkerth Road | North | 2,770 | 85 | | 15 | 10 | 10 | 45 | 100 | |
| 2 | | South | 4,040 | 85 | | 15 | 10 | 10 | 45 | 100 | |
| 3 | | East | 4,100 | 85 | | 15 | 10 | 10 | 45 | 100 | |
| 4 | | West | 3,350 | 85 | | 15 | 10 | 10 | 45 | 100 | |
| 5 | Washington Road & Main Street | North | 4,310 | 85 | | 15 | 10 | 10 | 45 | 100 | |
| 6 | | South | 1,610 | 85 | | 15 | 10 | 10 | 45 | 100 | |
| 7 | | East | 7,710 | 85 | | 15 | 10 | 10 | 45 | 100 | |
| 8 | | West | 7,350 | 85 | | 15 | 10 | 10 | 45 | 100 | |

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**Appendix D-2**

## FHWA-RD-77-108 Highway Traffic Noise Prediction Model
## Data Input Sheet

Project #: 2013-055 Washington Road Warehouse
Description: Project Only Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

| Segment | Intersection | Direction | ADT | Day % | Eve % | Night % | % Med. Trucks | % Hvy. Trucks | Speed | Distance | Offset (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Washington Road & Fulkerth Road | North | 40 | 85 | | 15 | 0 | 75 | 45 | 100 | |
| 2 | | South | 240 | 85 | | 15 | 0 | 75 | 45 | 100 | |
| 3 | | East | 200 | 85 | | 15 | 0 | 75 | 45 | 100 | |
| 4 | | West | 0 | 85 | | 15 | 0 | 75 | 45 | 100 | |
| 5 | Washington Road & Main Street | North | 630 | 85 | | 15 | 0 | 75 | 45 | 100 | |
| 6 | | South | 220 | 85 | | 15 | 0 | 75 | 45 | 100 | |
| 7 | | East | 280 | 85 | | 15 | 0 | 75 | 45 | 100 | |
| 8 | | West | 130 | 85 | | 15 | 0 | 75 | 45 | 100 | |

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**Appendix D-3**

## FHWA-RD-77-108 Highway Traffic Noise Prediction Model
## Data Input Sheet

Project #: 2013-055 Washington Road Warehouse
Description: Cumulative Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

| Segment | Intersection | Direction | ADT | Day % | Eve % | Night % | % Med. Trucks | % Hvy. Trucks | Speed | Distance | Offset (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Washington Road & Fulkerth Road | North | 3,210 | 85 | | 15 | 10 | 2.5 | 45 | 100 | |
| 2 | | South | 7,250 | 85 | | 15 | 10 | 2.5 | 45 | 100 | |
| 3 | | East | 7,310 | 85 | | 15 | 10 | 2.5 | 45 | 100 | |
| 4 | | West | 4,430 | 85 | | 15 | 10 | 2.5 | 45 | 100 | |
| 5 | Washington Road & Main Street | North | 7,930 | 85 | | 15 | 10 | 2.5 | 45 | 100 | |
| 6 | | South | 5,410 | 85 | | 15 | 10 | 2.5 | 45 | 100 | |
| 7 | | East | 11,560 | 85 | | 15 | 10 | 2.5 | 45 | 100 | |
| 8 | | West | 10,900 | 85 | | 15 | 10 | 2.5 | 45 | 100 | |

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**Appendix E-1**

## FHWA-RD-77-108 Highway Traffic Noise Prediction Model
## Predicted Levels

Project #: 2013-055 Washington Road Warehouse
Description: Baseline Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

| Segment | Intersection | Direction | Autos | Medium Trucks | Heavy Trucks | Total |
|---|---|---|---|---|---|---|
| 1 | Washington Road & Fulkerth Road | North | 55.1 | 54.3 | 58.8 | 61 |
| 2 | | South | 56.7 | 55.9 | 60.4 | 63 |
| 3 | | East | 56.8 | 56.0 | 60.5 | 63 |
| 4 | | West | 55.9 | 55.1 | 59.6 | 62 |
| 5 | Washington Road & Main Street | North | 57.0 | 56.2 | 60.7 | 63 |
| 6 | | South | 52.7 | 51.9 | 56.4 | 59 |
| 7 | | East | 59.5 | 58.7 | 63.2 | 66 |
| 8 | | West | 59.3 | 58.5 | 63.0 | 66 |

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**Appendix E-2**

## FHWA-RD-77-108 Highway Traffic Noise Prediction Model
## Predicted Levels

Project #: 2013-055 Washington Road Warehouse
Description: Project Only Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

| Segment | Intersection | Direction | Autos | Medium Trucks | Heavy Trucks | Total |
|---|---|---|---|---|---|---|
| 1 | Washington Road & Fulkerth Road | North | 31.6 | 5.9 | 49.1 | 49 |
| 2 | | South | 39.4 | 13.7 | 56.9 | 57 |
| 3 | | East | 38.6 | 12.9 | 56.1 | 56 |
| 4 | | West | n/a | n/a | n/a | n/a |
| 5 | Washington Road & Main Street | North | 43.6 | 17.9 | 61.1 | 61 |
| 6 | | South | 39.0 | 13.3 | 56.5 | 57 |
| 7 | | East | 40.1 | 14.3 | 57.6 | 58 |
| 8 | | West | 36.7 | 11.0 | 54.2 | 54 |

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**Appendix E-3**

## FHWA-RD-77-108 Highway Traffic Noise Prediction Model
## Predicted Levels

Project #: 2013-055 Washington Road Warehouse
Description: Cumulative Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

| Segment | Intersection | Direction | Autos | Medium Trucks | Heavy Trucks | Total |
|---|---|---|---|---|---|---|
| 1 | Washington Road & Fulkerth Road | North | 56.1 | 54.9 | 53.4 | 60 |
| 2 | | South | 59.6 | 58.5 | 56.9 | 63 |
| 3 | | East | 59.7 | 58.5 | 57.0 | 63 |
| 4 | | West | 57.5 | 56.3 | 54.8 | 61 |
| 5 | Washington Road & Main Street | North | 60.0 | 58.9 | 57.3 | 64 |
| 6 | | South | 58.4 | 57.2 | 55.7 | 62 |
| 7 | | East | 61.7 | 60.5 | 59.0 | 65 |
| 8 | | West | 61.4 | 60.2 | 58.7 | 65 |

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**Appendix F-1**

## FHWA-RD-77-108 Highway Traffic Noise Prediction Model
## Noise Contour Output

Project #: 2013-055 Washington Road Warehouse
Description: Baseline Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

| | | | ------ Distances to Traffic Noise Contours ------ | | | | |
|---|---|---|---|---|---|---|---|
| Segment | Intersection | Direction | 75 | 70 | 65 | 60 | 55 |
| 1 | Washington Road & Fulkerth Road | North | 12 | 26 | 57 | 122 | 263 |
| 2 | | South | 16 | 34 | 73 | 157 | 338 |
| 3 | | East | 16 | 34 | 73 | 158 | 341 |
| 4 | | West | 14 | 30 | 64 | 138 | 298 |
| 5 | Washington Road & Main Street | North | 16 | 35 | 76 | 164 | 353 |
| 6 | | South | 8 | 18 | 39 | 85 | 183 |
| 7 | | East | 24 | 52 | 112 | 241 | 520 |
| 8 | | West | 23 | 50 | 108 | 234 | 503 |

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**Appendix F-2**

## FHWA-RD-77-108 Highway Traffic Noise Prediction Model
## Noise Contour Output

Project #: 2013-055 Washington Road Warehouse
Description: Project Only Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

| | | | ------ Distances to Traffic Noise Contours ------ | | | | |
|---|---|---|---|---|---|---|---|
| Segment | Intersection | Direction | 75 | 70 | 65 | 60 | 55 |
| 1 | Washington Road & Fulkerth Road | North | 2 | 4 | 9 | 19 | 41 |
| 2 | | South | 6 | 14 | 29 | 63 | 136 |
| 3 | | East | 6 | 12 | 26 | 56 | 120 |
| 4 | | West | n/a | n/a | n/a | n/a | n/a |
| 5 | Washington Road & Main Street | North | 12 | 26 | 56 | 120 | 258 |
| 6 | | South | 6 | 13 | 28 | 59 | 128 |
| 7 | | East | 7 | 15 | 32 | 70 | 150 |
| 8 | | West | 4 | 9 | 19 | 42 | 90 |

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**Appendix F-3**

## FHWA-RD-77-108 Highway Traffic Noise Prediction Model
## Noise Contour Output

Project #: 2013-055 Washington Road Warehouse
Description: Cumulative Conditions
Ldn/CNEL: Ldn
Hard/Soft: Soft

| | | | ------ Distances to Traffic Noise Contours ------ | | | | |
|---|---|---|---|---|---|---|---|
| Segment | Intersection | Direction | 75 | 70 | 65 | 60 | 55 |
| 1 | Washington Road & Fulkerth Road | North | 10 | 21 | 44 | 96 | 206 |
| 2 | | South | 16 | 36 | 77 | 165 | 355 |
| 3 | | East | 17 | 36 | 77 | 166 | 357 |
| 4 | | West | 12 | 26 | 55 | 119 | 256 |
| 5 | Washington Road & Main Street | North | 17 | 38 | 81 | 175 | 377 |
| 6 | | South | 14 | 29 | 63 | 136 | 292 |
| 7 | | East | 22 | 48 | 104 | 225 | 485 |
| 8 | | West | 22 | 47 | 100 | 216 | 466 |

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# APPENDIX F

# TRAFFIC IMPACT ANALYSIS

## FOR

## WASHINGTON ROAD WAREHOUSE

Stanislaus County, California

Prepared For:

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Prepared By:

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October 15, 2013

0620-02

*Washington Road Warehouse.rpt*

**TRAFFIC IMPACT ANALYSIS FOR**
**WASHINGTON ROAD WAREHOUSE**
Stanislaus County, California

## TABLE OF CONTENTS



October 15, 2013



KDA

**TRAFFIC IMPACT ANALYSIS FOR**
**WASHINGTON ROAD WAREHOUSE**
Stanislaus County, California

## EXECUTIVE SUMMARY

- **Project Description.** The Washington Road Warehouse project will construct an 180,000 square foot facility used to receive, store, pack and ship harvested crops including watermelons, sweet potatoes, beans, wheat, pumpkins and squash. The site includes two parcels totaling 61.7± acres. The warehouse will be constructed on a 26± acre portion of the site. Existing structures to remain on the site include a 1,200 square foot (sf) dwelling that will be converted to office space, an 8,424 sf barn that will be converted to a packing shed, a 6,000 sf pole barn used to store, repair and maintain farm equipment, a 64 sf produce stand for point of sale seasonal produce and a 144 sf milk barn used to store equipment parts. The remainder of the site will be used for growing fields. About 16 acres of the site will be impervious surface and includes parking areas and internal roadways.

  The site is bounded by Fulkerth Road to the north, the Turlock Irrigation District (TID) Lateral #4 to the south and Washington Road to the east. Washington Road is also the western boundary of the City of Turlock and the City's Westside Industrial Specific Plan (WISP).

  Growing fields for the produce warehouse are located generally north and south of the site as far south as Stevinson and Merced / Atwater and as far north as Ceres. The majority of the growing fields are located to the south. Produce will be shipped north and south with about half shipped to Los Angeles and the remainder shipped north between Sacramento, the Bay Area, Oregon and Washington. Using ITE *Trip Generation* to establish the projected trip rates for the site the project may generate approximately 817 daily trips, 114 a.m. peak hour trips and 87 p.m. peak hour trips.

- **Existing Setting.** The location of the project is in Stanislaus County west of the City of Turlock along Washington Road, about midway between Fulkerth Road and the TID Lateral #4. Full access will be provided along Washington Road. The proposed access will involve adding a fourth leg to the existing signalized intersection of Washington Road and the Blue Diamond access. Three intersections and one road segment were studied for this analysis. These included Washington Road at Fulkerth Road, Washington Road at Main Street, Washongton Road at Blue Diamond and Washington Road, between Fulkerth Road and Main Street.

  Stanislaus County employs Level of Service (LOS) C as the minimum standard in rural areas outside of community boundaries, while LOS D is acceptable in urban areas. The City of Turlock 2012 General Plan Update indicates that LOS D is the city's minimum standard. Since the study intersections and roadway segment are within the City's Sphere of Influence the most recently published City guidelines were used as the threshold levels.

Access to the site will be via a single driveway on Washington Road. The project driveway will be opposite the Blue Diamond Growers processing plant access road located on the east side of Washington Road. This intersection is currently a signalized tee intersection and will be modified to provide full access to and from the site. An existing single family residence on the property will retain access directly via Washington Road.

Each of the study intersections and the roadway segment currently operate above acceptable LOS threshold levels. No recommendations are made.

- **Existing plus Project Specific Impacts.** The addition of the proposed project will contribute to the traffic volumes along Washington Road. All intersections and road segments will continue to operate above the LOS thresholds. The following mitigation measures are identified under this planning horizon:

    1. **Pay County Traffic Impact Mitigation Fees.** The project should pay the Traffic Impact Fees as set forth by Stanislaus County.

    2. **Pay City of Turlock Capital Facility Development Fees.** The project is located outside of the City of Turlock Sphere of Influence, just west of Washington Road. Access to the site will be via Washington Road, which is part of the City. The project should pay the City of Turlock Capital Facility Development Fees which provides for the construction of Public Facilities and to purchase capital items to allow for city services. The City's fees change quarterly, therefore the amount will be determined with approval of the project.

    3. **Construct Half-Street Improvements.** The applicant should install half street improvements along the project frontage to meet the future lane configurations along Washington Road. This will also include addition of a northbound left turn lane at the Washington Road / Blue Diamond / Project Access intersection. These improvements should also include traffic signal modifications to the existing signal. A residential driveway should also be constructed on Washington Road to provide access for the single family residence that will remain. This resident is located about 350' south of the Blue Diamond / project driveway.

    No other mitigations are noted.

- **Existing Plus Approved Projects (EPAP) Setting.** The analysis of the near term condition is intended to consider the impact of this project within the context of growth occurring as a result of recently approved and pending projects that may occur over the next five years through 2018. The EPAP volumes were determined based upon the traffic generated by the approved and foreseeable pending projects in the project vicinity. Both Stanislaus County and City of Turlock Planning Departments were contacted to identify any projects in the vicinity that could add background traffic to the roadway system.

    Eighteen projects were identified by Stanislaus County and City of Turlock Planning staff that could add traffic to the study roadways. Of these projects four were considered to be in the vicinity that could potentially have an effect on the study roadways and intersections.

The traffic generated from these projects was added to the existing traffic to arrive at a EPAP baseline.

Lane configurations are projected to remain in their current configurations.

Each of the study intersections and the roadway segment will continue to operate above acceptable LOS threshold levels. No recommendations are made.

- **EPAP plus Project Specific Impacts.** The addition of the proposed project will contribute to the traffic volumes along the surrounding roadways. Each of the study intersections and the study roadway segment will continue to operate within accepted Stanislaus County and City of Turlock level of service standards.

  No other mitigations are needed.

- **Cumulative Setting.** The analysis of long term conditions is intended to consider the impact of this project within the context of growth through 2035. Year 2035 daily traffic volume forecasts generated by the City of Turlock regional travel demand forecasting model is the basis for future background traffic conditions as this project is located adjacent to the City limits. Traffic from the Blue Diamond facility was manually added to the background traffic conditions as the model presumed that Blue Diamond site would be accessed via Fulkerth Road and not Washington Road.

  Roads throughout the project vicinity are projected to be expanded by 2035 as part of the Westside Industrial Specific Plan (WISP). Washington Road will be widened to a four-lane divided arterial roadway. The Washington Road / Fulkerth Road intersection will be signalized and include left, through and right lanes along the northbound and southbound approaches while the eastbound and westbound approaches will include a left and a through-right lane. The Washington Road / Main Street intersection will also be signalized with one left, two through and 1 right lane available for eastbound and westbound approaches; the northbound and southbound approaches will include a left lane, a through lane and a through-right lane.

  The resulting Levels of Service at the study locations will remain within adopted level of service thresholds for both intersections and the roadway segment. No recommendations are made.

- **Cumulative plus Project Specific Impacts.** The addition of the proposed project will contribute to the traffic volumes along the surrounding roadways. Each of the study intersections and the study roadway segment will continue to operate within accepted Stanislaus County and City of Turlock level of service standards. The project access intersection will also continue to operate within accepted level of service thresholds.

  No additional mitigations are needed.

- **Queuing.** A queuing analysis was conducted at each of the intersections in the existing and 2035 scenarios. Specifically , left turn lanes were considered and side streets where left turn lanes are not present. A 95% confidence level was assumed, meaning that the forecast queue length should be exceeded only 5% of the time. Under Existing and Existing plus Project conditions the worst queue occurs at the Washington Road / Main Street intersection where four vehicles are queued along Main Street. Under EPAP conditions the worst queue occurs at the Washington Road / Main Street intersection and the Washington Road / Blue Diamond Access intersection where four vehicles will queue. Under EPAP plus Project conditions the queue along eastbound Main Street at Washington Road will increase to six vehicles. At Cumulative buildout the worst queue (eight vehicles) will occur in the westbound left lane at the Washington Road / Fulkerth Road intersection while the same queue will lengthen to nine vehicles under Cumulative plus Project conditions.

**TRAFFIC IMPACT ANALYSIS FOR**
**WASHINGTON ROAD WAREHOUSE**
Stanislaus County, California

## INTRODUCTION

This report summarizes KD Anderson & Associates analysis of the traffic impacts associated with the **Washington Road Warehouse Road** project located in Stanislaus County on the west side of Washington Road. The site is bounded by Fulkerth Road to the north, the Turlock Irrigation District (TID) Lateral #4 to the south and Washington Road to the east. Washington Road is also the western boundary of the City of Turlock and the City's Westside Industrial Specific Plan (WISP).

The proposed project will construct an 180,000 square foot warehouse building used to receive, store, pack and ship harvested crops including watermelons, sweet potatoes, beans, wheat, pumpkins and squash. The site includes two parcels totaling 61.7± acres. The warehouse will be constructed on a 26± acre portion of the site. Existing structures to remain on the site include a 1,200 square foot (sf) dwelling that will be converted to office space, an 8,424 sf barn that will be converted to a packing shed, a 6,000 sf pole barn used to store, repair and maintain farm equipment, a 64 sf produce stand for point of sale seasonal produce and a 144 sf milk barn used to store equipment parts. The remainder of the site will be used for growing fields. About 16 acres of the site will be impervious surface and includes parking areas and internal roadways.

Access to the site will be via a single driveway on Washington Road. The project driveway will be opposite the Blue Diamond Growers processing plant access road located on the east side of Washington Road. This intersection is currently a signalized tee intersection and will provide full access to and from the site. A single family residence exists on the south side of the site, about 350' from the Blue Diamond intersection. Access to this residence will remain along Washington Road. The project location is shown in Figure 1.

### Study Methodology

The methodology used to prepare this Traffic Impact Study follows an approach that is recognized by members of the traffic engineering profession, is consistent with CEQA guidelines and conforms to Stanislaus County and City of Turlock guidelines for traffic impact studies.

Phase 1 – This included the collection of traffic data and the analysis of that data to determine existing operating conditions. Manual traffic counts were taken during the a.m. and p.m. peak hours during the mid-week in June 2013. Three existing intersections and the roadway segment along Washington Road between Main Street and Fulkerth Road were studied for this analysis. This data was used to calculate current and future operating Levels of Service using procedures accepted by Stanislaus County and the City of Turlock.

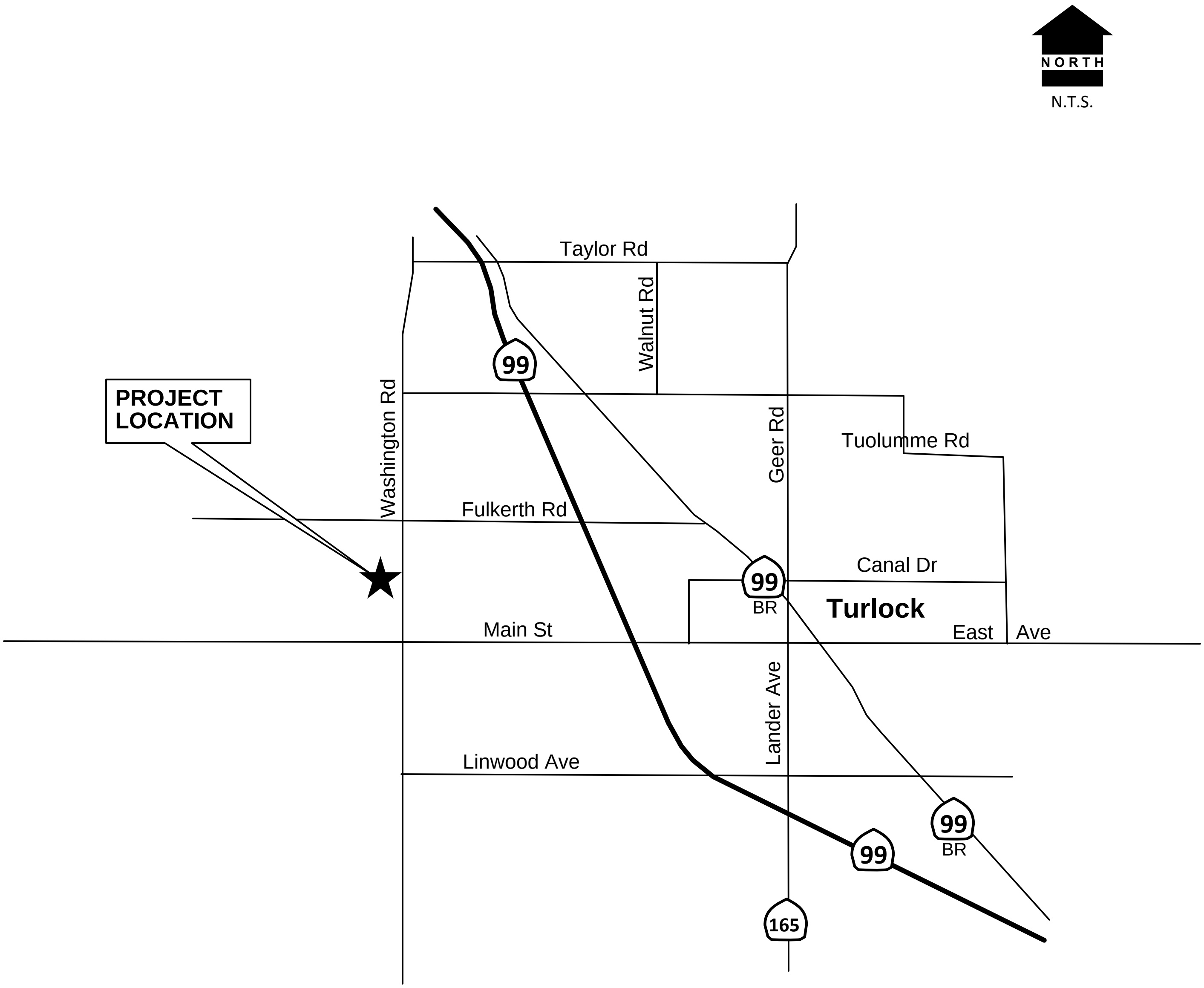
Phase 2 – This involved estimating trip generation for the planned project. The Institute of Transportation Engineers' publication *Trip Generation-Ninth Edition* was used as the basis for determining the number of trips to be generated by the warehouse project.

Phase 3 – This phase determined the distribution of trips into and out of the project and onto adjacent streets. The distribution of trips was based upon the location of the growing fields, the expected shipping destinations and employee residences.

Phase 4 – Phase four identified the background traffic conditions occurring in the short term future. This was based on approved and pending projects in the project vicinity. These projects have either been approved by the County or City or are foreseeable in the near future. These traffic projections were added to the 2013 baseline data with Levels of Service calculated under this scenario.

Phase 5 – This included development of 2035 background traffic volume forecasts to develop a baseline future scenario. The recently updated 2012 City of Turlock City General Plan Update (GPU) regional travel demand forecasting model was used as the basis for long term traffic volume estimates. Levels of Service were calculated under both 'no project' and 'plus project' conditions.

Phase 6 – The final phase determined fair share contributions for the City of Turlock transportation impact fees (TIF) and capital facility fees (CFF) in addition to mitigations necessary as a result of the impacts of this project.

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Transportation Engineers

VICINITY MAP

0620-01 LT Rev. 10/11/2013

figure 1

## Project Description

The proposed project will construct an 180,000 square foot warehouse facility with ancillary development including on-site parking for employee vehicles and truck parking along the north and south sides of the warehouse for inbound and outbound trucks. The entire site includes about 61.7± acres. About 26 acres will be used for the warehouse, impervious surface areas for parking and internal roadways and appurtenant structures. Five existing structures will remain on the site. These include the following:

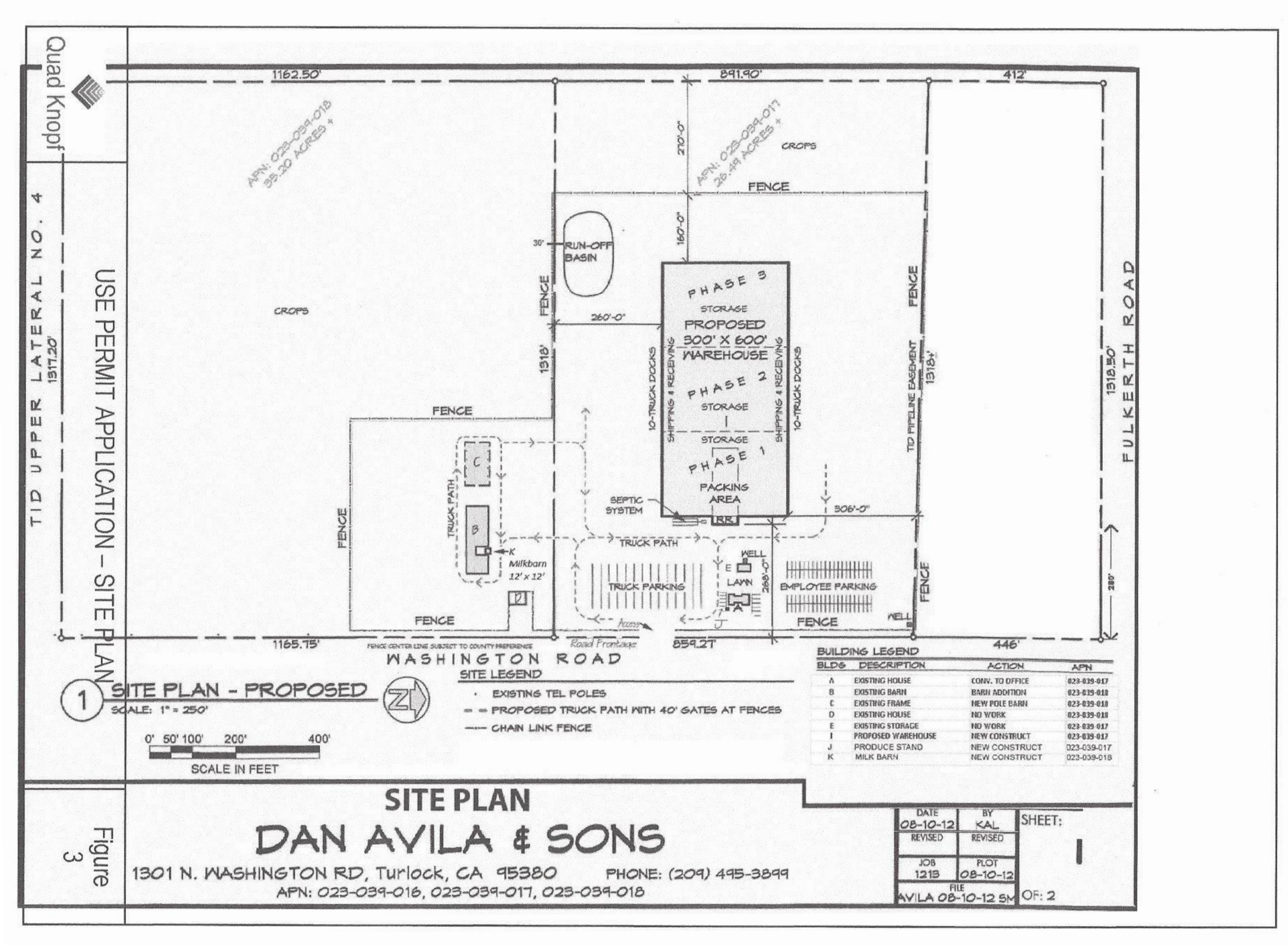
- a 1,200 square foot (sf) dwelling that will be converted to office space
- a 8,424 sf barn that will be converted to a packing shed
- a 6,000 sf pole barn used to store, repair and maintain farm equipment
- a 64 sf produce stand for point of sale seasonal produce
- a 144 sf milk barn used to store equipment parts.

The remainder of the site will be used as growing fields.

The warehouse will be used for receiving, storing, packing and shipping harvested crops including watermelons, sweet potatoes, beans, wheat, pumpkins and squash. The project is expected to have a maximum of 75 employees on site at any time. The facilities are planned to be operational 24 hours per day throughout the year.

Access to the site will be via a single driveway on Washington Road. The project driveway will be opposite the Blue Diamond Growers processing plant access road located on the east side of Washington Road. This intersection is currently a signalized tee intersection and will provide full access to and from the site. The preliminary project layout is shown in Figure 2.

Seasonal project trips generally begin about 6:00 a.m. with trucks leaving the site for the fields to pick up crops. Warehouse employees generally arrive between 7:00 a.m. and 8:00 a.m. as the first truck returning from the fields is projected to arrive at about 8:00 a.m. Truck traffic is spread out throughout the day with the last inbound truck expected to arrive about 4:00 p.m. Trucks transporting the packaged product to distribution centers will generally depart the warehouse between 1:00 p.m. and 6:00 p.m. For purposes of this analysis a worst case scenario was considered that created a.m. and p.m. peaks rather than continuous flow of vehicles throughout the day.




*KD Anderson & Associates, Inc.*
Transportation Engineers

SITE PLAN

## EXISTING SETTING

### Study Area

The limits of this analysis were identified based on input received from Stanislaus County and the City of Turlock. This included the Use Permit application, Early Consultation Referral, comment letters and the Notice of Preparation. The project analysis is focused on the major intersections north and south of the project site, including Washington Road at Main Street and Washington Road at Fulkerth Road. The traffic impact analysis also considered the operational characteristics along Washington Road between the two intersections.

The text that follows describes the characteristics of each facility.

### Study Area Roadways

**Washington Road** is a north south two lane roadway that traverses Stanislaus County on the west side of Turlock. The City of Turlock's Sphere of Influence extends to the west side of Washington Road. The road extends from Taylor Road in the north to Riverside Avenue southwest of Hilmar. In the project vicinity the roadway is generally a two-lane rural road with full access. Mid-week traffic counts conducted in June 2013 shows that Washington Road has an Average Daily Traffic (ADT) volume of about 2,880 vehicles per day. Based on counts conducted in May 2010 truck traffic along Washington Road is about 2.5% of the daily trips for 3+ axles and 10% of the daily trips for 2 axles. The City of Turlock 2012 General Plan Update identifies Washington Road as a four-lane Expressway with a turn median.

### Study Area Intersections

The quality of traffic flow is often governed by the operation of major intersections. Intersections selected for evaluation in consultation with Stanislaus County staff include:

1. Washington Road / Fulkerth Road (all-way stop)
2. Washington Road / Main Street (all-way stop)
3. Washington Road / Blue Diamond Growers (signal)

The **Washington Road / Fulkerth Road intersection** is a rural access intersection for motorists along Fulkerth Road traveling between farmland to the west and SR 99 and Turlock to the east. This intersection is all-way stop controlled. All approaches are single lanes; however, Fulkerth Road is offset by about 12' on either side of Washington Road; Fulkerth Road west of Washington Road is shifted north of the west leg.

**The Washington Road / Main Street intersection** provides access along a major east-west arterial (Main Street) through Stanislaus County extending from downtown Turlock east of SR 99 west to downtown Patterson. This intersection is within a rural area of the County and is all-way stop controlled. The Washington Road approaches are single lane while the Main Street approaches include a left turn lane and a through-right lane.

**The Washington Road / Blue Diamond Growers intersection** provides access to the Blue Diamond Growers processing plant located on the east side of the intersection. The intersection includes southbound left turn and through lanes, northbound right turn and through lanes and a westbound lane providing access to both northbound and southbound Washington Road. The intersection is signalized with a dedicated left turn phase for southbound to eastbound movements.

## Alternative Transportation Modes

**Transit Facilities.** Two transit providers are available in southern Stanislaus County.

***Stanislaus Regional Transit (StaRT)*** provides both fixed route service, shuttles and "roundabout" service that combines features of fixed route and dial a ride services. Route 45E operates between Veterans Memorial Park in Patterson and Central Park in Turlock east of SR 99. Route 45E includes a stop at the Washington Road / Fulkerth Road intersection. This route operates between 6:20 a.m. and 8:05 p.m. weekdays and 6:25 a.m. to 7:10 p.m. on Saturdays. During the midweek there are three a.m. and four p.m. trips while on Saturday there are two a.m. and three p.m. trips.

***DART*** - Most alternative transportation in the Turlock / Denair area are provided by the City of Turlock. The City's has two services, BLAST and DART. BLAST is the City's fixed route transit system; however, none of the four routes extend west beyond Walnut Road. DART provides dial-a-ride services for people over 65 and those with disabilities. Service on DART for all other passengers is limited to only those trips going or coming from outside the BLAST service area and to elementary students going to or from school.

## Pedestrian / Bicycle Circulation

Facilities that are dedicated to pedestrians and bicycles are limited in the rural areas of Stanislaus County outside of developed urban areas. This is the case in the vicinity of the Washington Road Warehouse site. Washington Road is a rural roadway without sidewalk or bike facilities along the roadway. Bicyclists currently ride with motor vehicular traffic along Washington Road while pedestrians can walk along the shoulder.

Although existing facilities are limited bicycle lanes are being installed on major streets as development occurs. Figure 5-3 of the City of Turlock General Plan Update indicates that Class II bike lanes are to be developed along Fulkerth Road west of Dianne Drive to Washington Road; bike lanes currently exist east of Dianne Drive. Bike lanes will also be provided along Washington Road, extending north and south of the study area and on West Main Street, from Washington Road east past SR 99.

## Measure of Significance / Level of Service

**Level of Service.** The quality of traffic flow through intersections and on individual roadway segments is described in terms of operating Level of Service.

"Level of Service (LOS)" is a qualitative measure of traffic operating conditions whereby a letter grade "A" through "F", corresponding to progressively worsening operating conditions, is assigned to an intersection or roadway segment. Table 1 presents the characteristics associated with each LOS grade.

**TABLE 1**
**LEVEL OF SERVICE DEFINITION**

| Level of Service | Signalized Intersection | Unsignalized Intersection | Roadway (Daily) |
|---|---|---|---|
| "A" | Uncongested operations, all queues clear in a single-signal cycle. Delay ≤ 10.0 sec | Little or no delay. Delay ≤ 10 sec/veh | Completely free flow. |
| "B" | Uncongested operations, all queues clear in a single cycle. Delay > 10.0 sec and ≤ 20.0 sec | Short traffic delays. Delay > 10 sec/veh and ≤ 15 sec/veh | Free flow, presence of other vehicles noticeable. |
| "C" | Light congestion, occasional backups on critical approaches. Delay > 20.0 sec and ≤ 35.0 sec | Average traffic delays. Delay > 15 sec/veh and ≤ 25 sec/veh | Ability to maneuver and select operating speed affected. |
| "D" | Significant congestions of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. Delay > 35.0 sec and ≤ 55.0 sec | Long traffic delays. Delay > 25 sec/veh and ≤ 35 sec/veh | Unstable flow, speeds and ability to maneuver restricted. |
| "E" | Severe congestion with some long standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). Delay > 55.0 sec and ≤ 80.0 sec | Very long traffic delays, failure, extreme congestion. Delay > 35 sec/veh and ≤ 50 sec/veh | At or near capacity, flow quite unstable. |
| "F" | Total breakdown, stop-and-go operation. Delay > 80.0 sec | Intersection blocked by external causes. Delay > 50 sec/veh | Forced flow, breakdown. |
| Sources: 2010 Highway Capacity Manual. | | | |

The *2010 Highway Capacity Manual* presents methodologies for calculating practical capacity and Level of Service at intersections. At signalized intersections and intersections controlled by all-way stop signs, traffic conditions are described in terms of the average length of the delays experienced by all motorists. Intersection configuration, traffic volumes and traffic signal timing are all factors that enter into determination of the length of average delay and the resulting Level of Service. One other factor that was considered in the HCM analysis was the increased percentage of truck traffic attributed to the projected along the study roadways. The 'Heavy Vehicle' percentage was increased to a minimum of 10% to account for this added truck traffic.

The delays experienced at intersections controlled by side street stop signs are different. Motorists waiting to turn must yield the right of way to through traffic, and the length of delays can vary on each approach to the intersection. For this analysis the length of delays experienced by motorists on each approach has been calculated.

A traffic impact is considered significant if it renders an unacceptable Level of Service on a street segment or at a signalized intersection, or if it worsens already unacceptable conditions on a street segment or at a signalized intersection. Local jurisdictions adopt minimum Level of Service standards for use in traffic studies and environmental impact reports. Stanislaus County employs LOS C as the minimum standard in rural areas outside of community boundaries, while LOS D is acceptable in urban areas. The City of Turlock 2012 General Plan Update indicates that LOS D is the city's minimum standard. Since the study intersections are within the City's Sphere of Influence the most recently published City guidelines were used as the threshold levels; however, level of service is shown for both agencies.

At unsignalized intersections, a traffic impact may be considered "adverse but not significant" if the agency LOS standard is exceeded but the projected traffic does not satisfy traffic signal warrants. Under these conditions, several methods are available to alleviate delays to stop controlled vehicles. These may include adding turn lanes, adding acceleration / two-way left turn lanes, or installation of a traffic signal. The unmet signal warrants would imply that installing a traffic signal may reduce the delay for the stop-controlled vehicles but may not justify the new delays that would be incurred by the major street traffic (which is currently not stopped). Under these circumstances, installation of a signal would not be recommended and the substandard LOS for stop-controlled vehicles would be considered an "adverse but not significant" impact.

**Roadway Segment Level of Service.** The quality of traffic flow can also be described in general terms based on the daily traffic volume occurring on individual roadway segments. Agencies typically make use of general Level of Service thresholds that equate daily traffic volume to peak hour Level of Service.

The Stanislaus County Congestion Management Plan (CMP) and Regional Transportation Plan (RTP) make use of Level of Service thresholds originally developed by the Florida Department of Transportation. These thresholds identify typical daily traffic volumes that would be expected to result in LOS B, C, D or E conditions at major intersections during the peak hour. Table 2 presents the facility classification guidelines for Stanislaus County and the City of Turlock.

**TABLE 2**
**ROADWAY SEGMENT LEVEL OF SERVICE DEFINITIONS**

| Street Classification | Lanes | Daily Traffic Volume at LOS: LOS A | LOS B (v/c < 0.45) | LOS C (v/c<0.60) | LOS D (v/c < 0.90) | LOS E (v/c <1.00) |
|---|---|---|---|---|---|---|
| Collector | 2 | ‡ (8,000) | 5,800 (9,000) | 7,700 (10,000) | 11,600 (11,000) | 12,900 (12,000) |
| Arterial | 2 | ‡ (10,000) | 7,000 (12,000) | 9,200 (13,000) | 13,700 (15,000) | 15,450 (16,000) |
| | 4 | ‡ (20,000) | 15,000 (23,000) | 20,100 (26,000) | 30,200 (29,000) | 33,200 (32,000) |
| Expressway | 4 | ‡ (23,000) | 16,200 (27,000) | 21,600 (31,000) | 32,400 (35,000) | 36,000 (38,000) |
| | 6 | ‡ (35,000) | 23,400 (40,000) | 31,200 (46,000) | 46,800 (52,000) | 52,000 (57,000) |

x – Stanislaus County (x) - City of Turlock criteria (2012 GPU)
‡ - no information available

**Existing Intersection Levels of Service.** Figure 3 presents the Existing traffic conditions while Table 3 summarizes the results of Level of Service for each study intersection. Level of Service calculations are provided in the Appendix. All study intersections currently operate at LOS B conditions or better and are within adopted standards at all study locations. Neither of the unsignalized intersections carries traffic volumes that satisfy peak hour traffic signal warrants.

**TABLE 3**
**EXISTING INTERSECTION LEVELS OF SERVICE**

| Intersection | Control | A.M. Peak Hour Average Delay (Seconds) | A.M. Peak Hour LOS | P.M. Peak Hour Average Delay (Seconds) | P.M. Peak Hour LOS | Meets Peak Hour Signal Warrants |
|---|---|---|---|---|---|---|
| 1. Washington Rd / Fulkerth Rd | All-Way | | | | | |
| Overall | Stop | 8.4 | A | 9.2 | A | No |
| NB | | 8.1 | A | 9.0 | A | |
| SB | | 8.1 | A | 8.9 | A | |
| EB | | 8.7 | A | 9.4 | A | |
| WB | | 8.4 | A | 9.3 | A | |
| 2. Washington Rd / Main St | All-Way | | | | | |
| Overall | Stop | 9.8 | A | 11.9 | B | No |
| NB | | 8.8 | A | 9.8 | A | |
| SB | | 8.6 | A | 9.9 | A | |
| EB | | 10.3 | B | 12.2 | B | |
| WB | | 9.7 | A | 12.7 | B | |
| 3. Washington Rd / Blue Diamond Access | Signal | 4.3 | A | 1.1 | A | N/A |

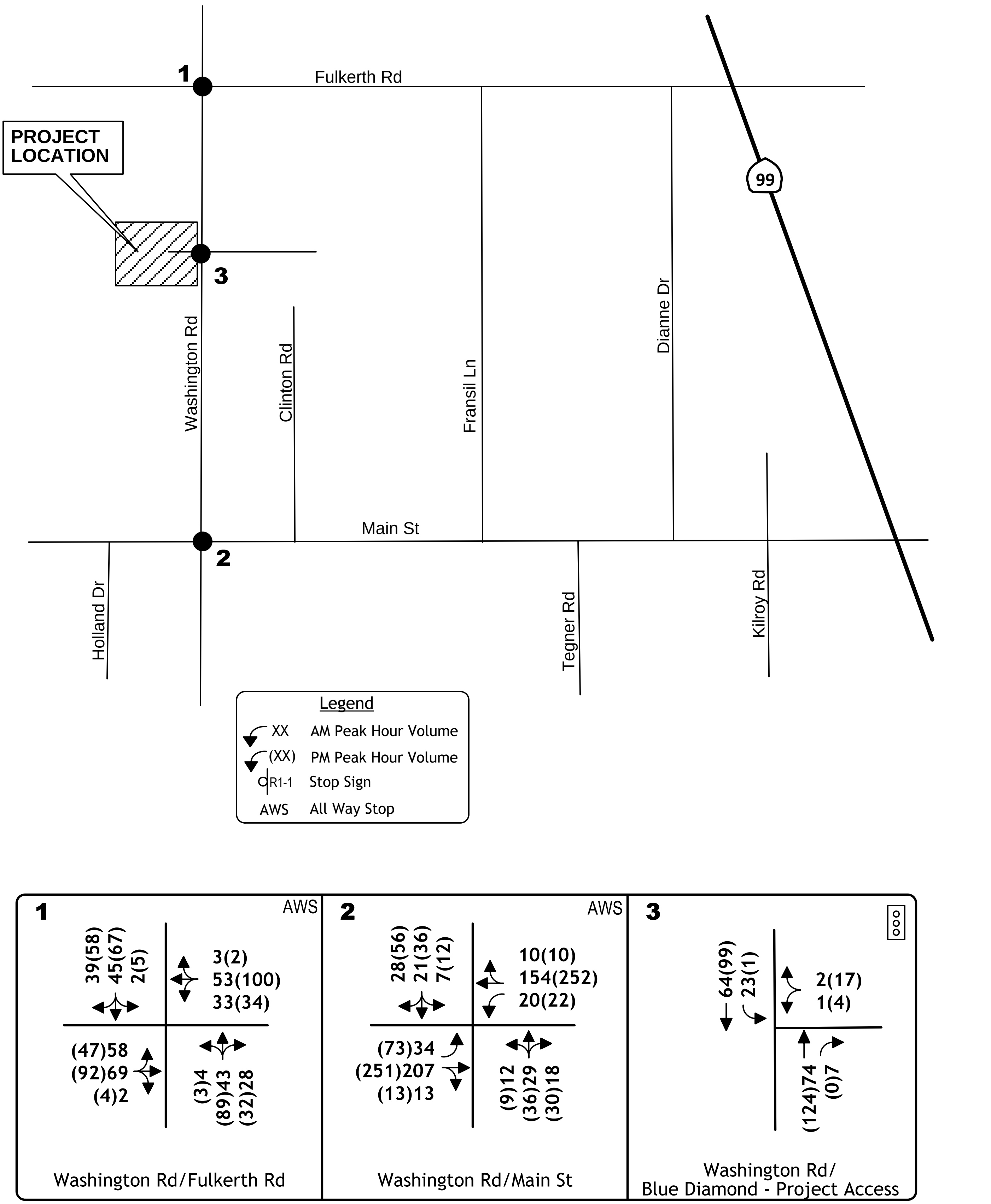
N/A – not applicable

**Existing Roadway Segment Levels of Service.** Table 4 summarizes the Level of Service for the Washington Road study segment. The segment currently operates at an acceptable Level of Service, at LOS B or better.

**TABLE 4**
**EXISTING LEVELS OF SERVICE BASED ON DAILY TRAFFIC VOLUMES**

| Street | Location From | Location To | Class | Lanes | Daily Volume | LOS |
|---|---|---|---|---|---|---|
| Washington Road | Main Street | Fulkerth Road | Arterial | 2 | 2,884 | B / A |

Sources: Stanislaus County Circulation Element / City of Turlock General Plan Update




# EXISTING TRAFFIC VOLUMES AND LANE CONFIGURATIONS

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figure 3

## PROJECT IMPACTS

To evaluate the impacts of the proposed project on traffic conditions in the project area it is necessary to identify the volume of traffic accompanying the project and to superimpose this traffic onto the current and projected background conditions.

The adequacy of site access is dependent on the physical characteristics of the adjoining street system, as well as the amount of traffic generated by the proposed project. The amount of additional traffic on a particular section of the street network is dependent upon two factors:

I. <u>Trip Generation</u>, the number of new trips generated by the project, and
II. <u>Trip Distribution and Assignment</u>, the specific routes that the new traffic takes.

Trip generation is determined by identifying the type and size of land use being developed. Recognized sources of trip generation data may then be used to calculate the total number of trip ends.

### <u>Project Characteristics</u>

**Trip Generation.** The proposed project will construct an 180,000 square foot warehouse to be used to store, package and ship produce to distribution centers in Los Angeles, northern California, Oregon and Washington. The Institute of Transportation Engineers (ITE) publishes trip generation rates for a variety of land uses including Warehouses.

The *ITE Trip Generation*, $9^{th}$ Edition was used to evaluate the project site. Evaluating the site using ITE rates provides a documented source to analyze a warehouse facility. The ITE Warehouse land use provides average rates for a compilation of warehouse types. Table 5 displays the daily, a.m. peak hour, and p.m. peak hour trip generation for the proposed project. Trip generation for the 180,000 square foot warehouse was calculated following the guidelines for estimating trip generation in Chapter 3 of the Trip Generation Handbook, $2^{nd}$ Edition. This included the use of fitted curve equations for daily and p.m. peak hour traffic. The a.m. rate was based upon the average rate as insufficient data is available to develop a fitted curve equation. Using these figures the project site would generate 817 daily trips with 114 a.m. peak hour trips and 87 p.m. peak hour trips.

**TABLE 5**
**PROJECT TRIP GENERATION**
**(ITE TRIP RATES)**

| | | Trip Rate | | | | | Trips | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Land Use** | **Amount** | **Daily** | **A.M. Peak Hour** | | **P.M. Peak Hour** | | **Daily** | **A.M. Peak Hour** | | **P.M. Peak Hour** | |
| Warehouse (LU 150) | 180 ksf | 4.54* | 0.63† | | 0.48‡ | | 817 | 114 | | 87 | |
| | | | **A.M. Peak Hour** | | **P.M. Peak Hour** | | | **A.M. Peak Hour** | | **P.M. Peak Hour** | |
| | | | **In** | **Out** | **In** | **Out** | | **In** | **Out** | **In** | **Out** |
| Warehouse (LU 150) | | | 0.79 | 0.21 | 0.25 | 0.75 | | 90 | 24 | 22 | 65 |
| | | | | | | Net New Trips | **817** | **90** | **24** | **22** | **65** |

ksf – thousand square feet

* - rate based on fitted curve equation - Ln(T) = 0.86Ln(X)+2.24

† - rate based on fitted curve equation - Ln(T) = 0.55Ln(X)+1.88

‡ - rate based on fitted curve equation - Ln(T) = 0.64Ln(X)+1.14

## Trip Distribution & Trip Assignment

The distribution of project traffic was determined based on information provided by the applicant with regard to projected operations. The location of the growing fields, the projected shipping directions and employee trips were all considered in developing the distribution. Figure 4 provides locations of each of the growing fields providing crops to the warehouse. The majority of the acreage is located south of the warehouse. Inbound crop delivery truck access is projected to occur along SR 99 and Washington Road. The remaining growing fields are located to the north with access provided along Washington Road. A majority of the growing fields are located near Stevinson with the shortest route along Washington Road. Outbound product distribution traffic is expected to use either SR 99 or I-5. About 50% of the product is projected to be shipped to Los Angeles with the remaining 50% split to distribution centers in Sacramento, the Bay Area, Oregon and Washington. Employee trips are expected to be spread north, south, east and west. While the site's trip distribution could change in the future based on a change in product storage and shipping there is nothing currently more valid that the trip distribution based on the applicant's projected use. Table 6 and Figure 4 present the projected trip distribution.

**TABLE 6**
**PROJECT TRIP DISTRIBUTION**

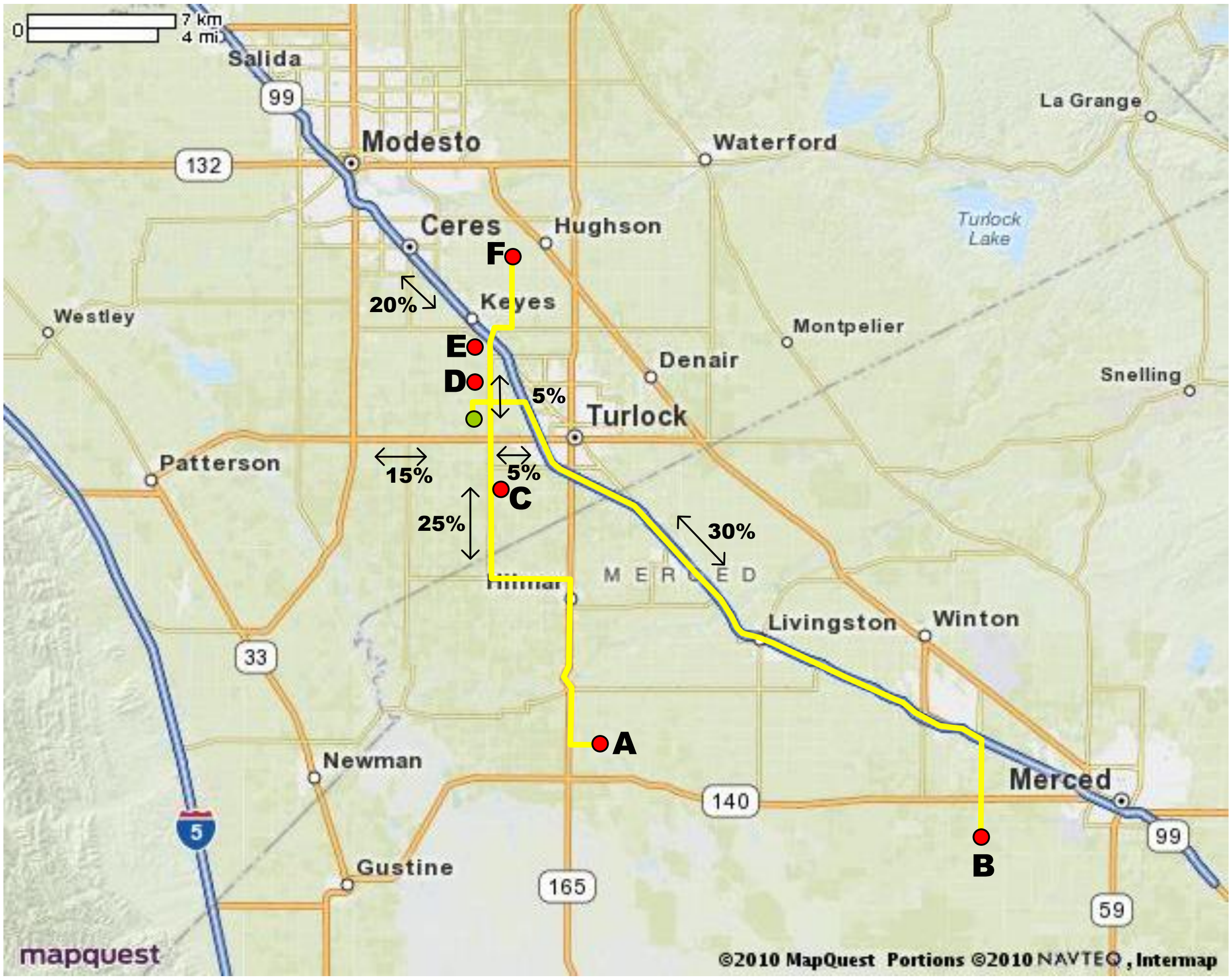
| Route | % Distribution |
|---|---|
| North to / from Grayson via Washington Road | 5% |
| North to / from SR 99 | 20% |
| South to / from SR 99 | 30% |
| South to / from Stevinson via Washington Road | 25% |
| East to / from Turlock via Main Street and Fulkerth Road | 5% |
| West to / from Patterson | 15% |
| Total | 100% |

**Trip Assignment.** Trips generated by the project were assigned to the local study area street system based on the location of site access and the trip distribution. Additionally, trip assignment also considered the relative path assignments specifically with regard to access to and from SR 99.

Using the information obtained from the applicant regarding the growing fields, the shipping directions and staffing, project trip distribution was developed for the site. Employee trips are projected to be oriented west to Patterson, east to Turlock via Main Street and Fulkerth Road, north on SR 99 and south along SR 99. Field trucks will be generally oriented north and south along Washington Road in the project vicinity with trucks also arriving via SR 99 and Main Street. Field trucks from the growing fields in the north are expected to use Washington Road and Fulkerth Road to arrive at the warehouse.

Shipping trucks are expected to arrive and depart via SR 99 and I-5. Most trucks are projected to arrive via the SR 99 / Fulkerth Road interchange. Trucks arriving from I-5 will use Main Street west of Washington Road. Outbound shipping trucks are expected to make a right turn upon exiting the warehouse site on their way to I-5 and head west via Main Street while SR 99 truck traffic is expected to use Fulkerth Road.

"Project Only" trip assignments under Existing and Existing plus Approved Projects conditions are presented in Figure 5.




## Legend

- Project Site
- Fields
- Projected Crop Truck Routes
- xx% Overall Trip Distribution (includes inbound crop trucks, outbound product trucks and employees)

A) 600 acres
B) 190 acres
C) 135 acres
D) 40 acres
E) 20 acres
F) 30 acres

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FIELD LOCATIONS AND
TRIP DISTRIBUTION

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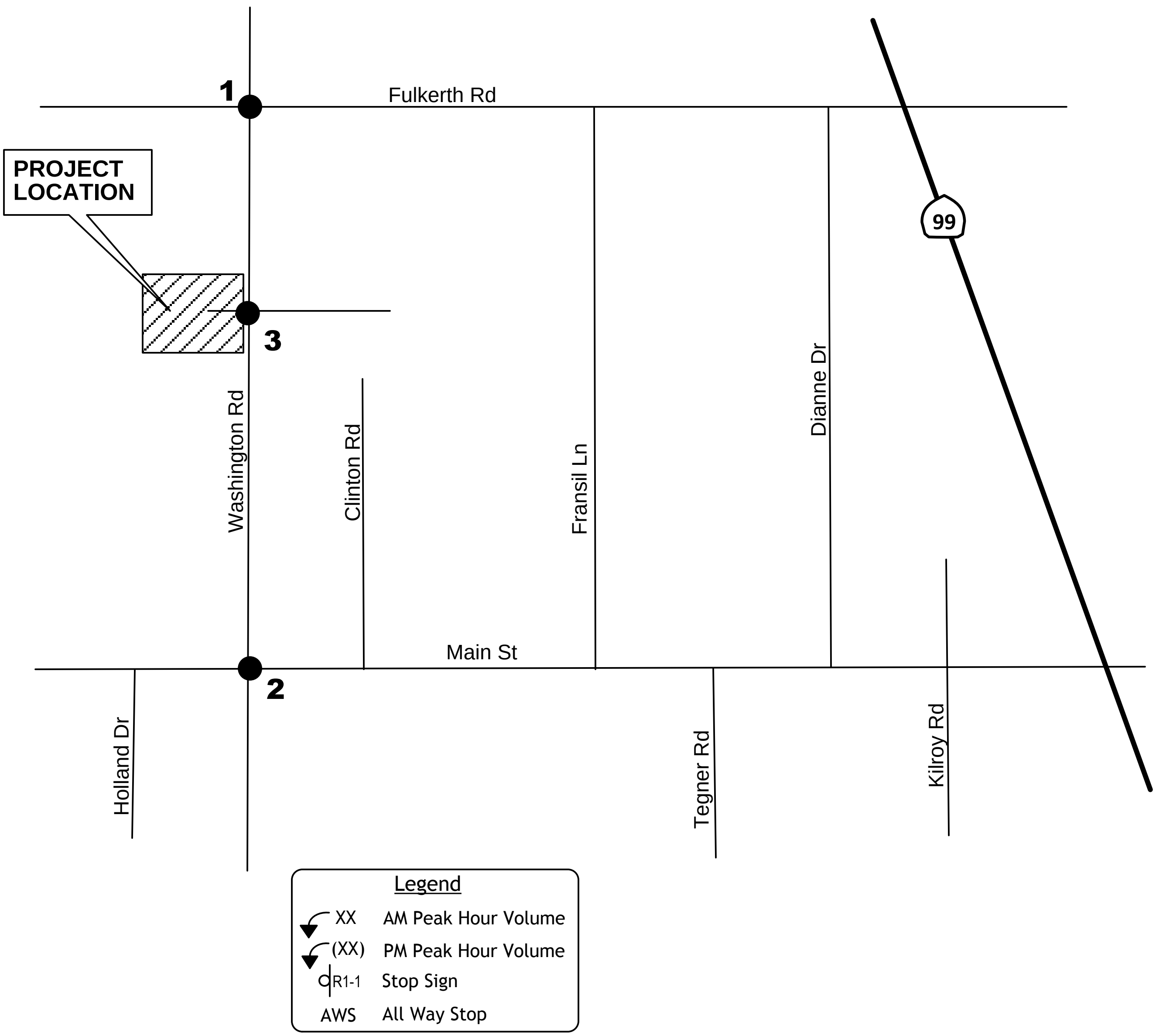
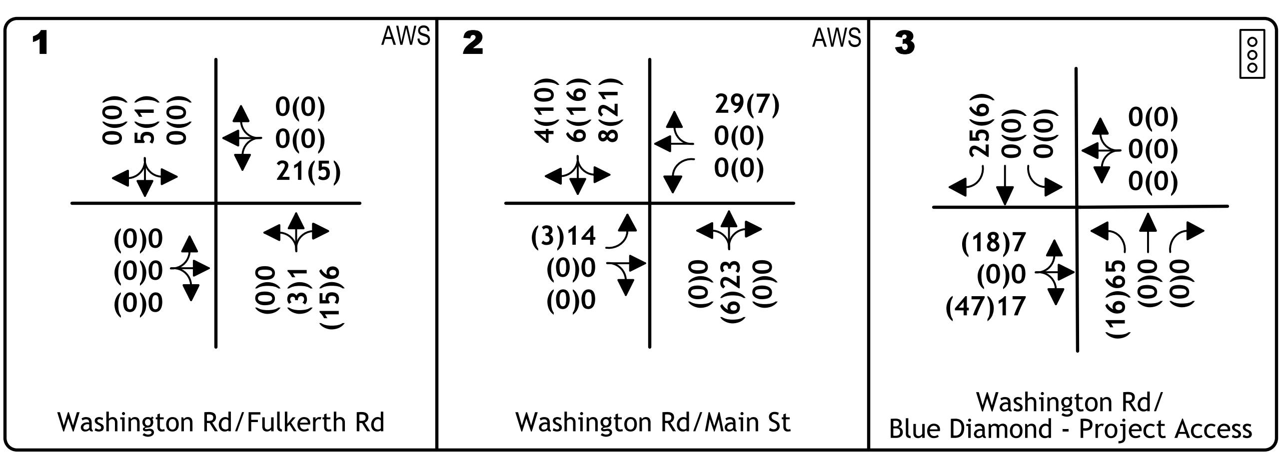
figure 4



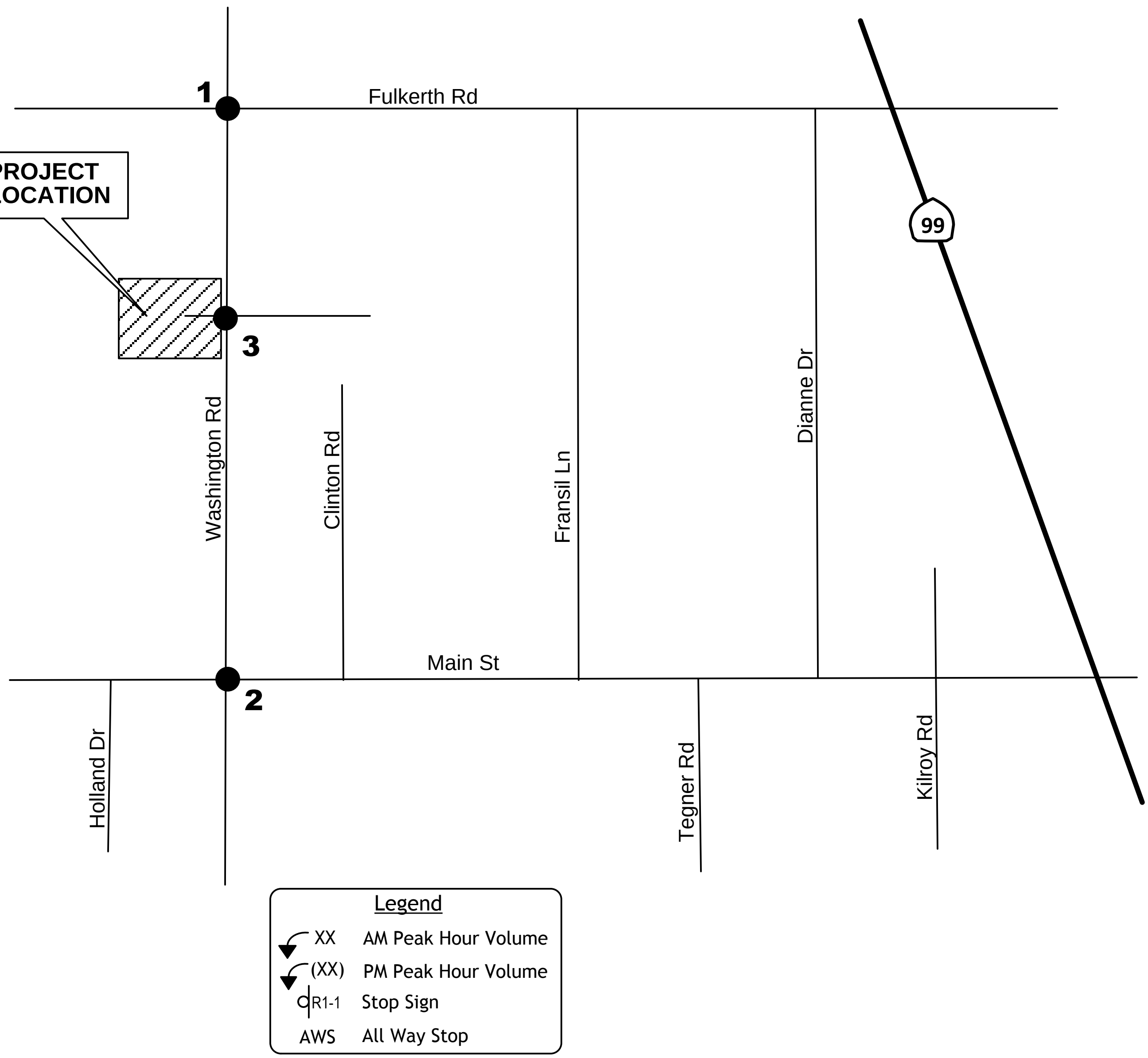



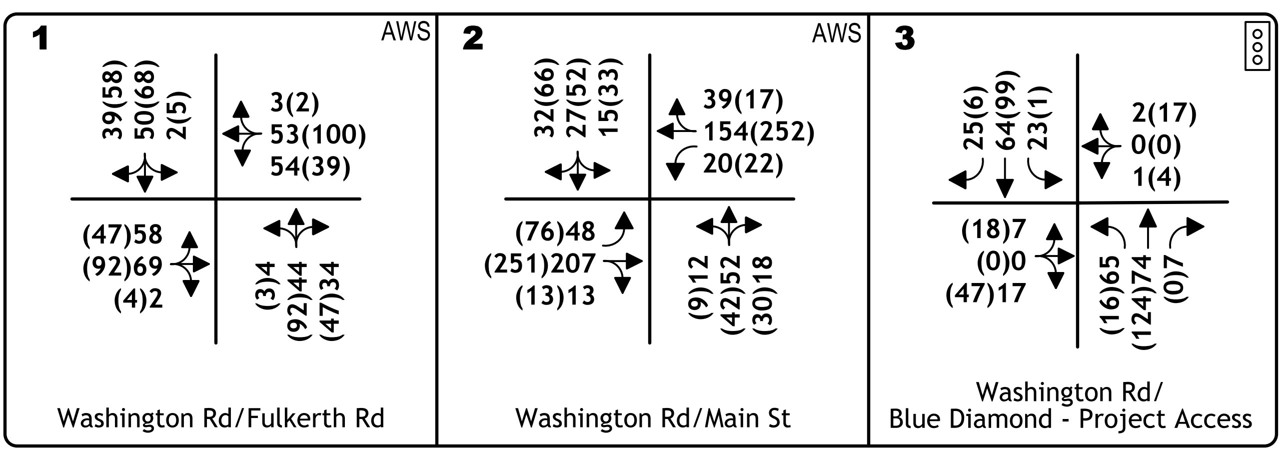

PROJECT ONLY TRAFFIC VOLUMES
AND LANE CONFIGURATIONS

## Existing Plus Project Traffic Volumes and Levels of Service

Figure 6 presents the "Existing plus Project" traffic with the project completed. Levels of Service under these conditions are presented in Table 7. All intersections will continue to operate at Levels of Service that are within the minimum standards adopted by the City of Turlock. The Washington Road / Main Street intersection will also meet the peak hour signal warrant using total volume criteria. This indicates that the traffic volumes may begin to experience short term delays during peak periods. Since the intersection operates at an overall LOS B condition, no mitigations are required to improve the intersection.

**Existing Plus Project Roadway Segment Levels of Service.** Table 8 summarizes the Level of Service for the Washington Road study segment. The segment is projected to operate at an LOS B or better condition with the project.




EXISTING PLUS PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

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figure 6

## TABLE 7
## EXISTING PLUS PROJECT PEAK HOUR INTERSECTION LEVELS OF SERVICE

| Intersection | Control | A.M. Peak Hour | | P.M. Peak Hour | | A.M. + Project Peak Hour | | P.M. + Project Peak Hour | | Meets Peak Hour Signal Warrants |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Average Delay (Seconds) | LOS | Average Delay (Seconds) | LOS | Average Delay (Seconds) | LOS | Average Delay (Seconds) | LOS | |
| 1. Washington Rd / Fulkerth Rd | All-Way | | | | | | | | | |
| Overall | Stop | 8.4 | A | 9.2 | A | 8.5 | A | 9.3 | A | No |
| NB | | 8.1 | A | 9.0 | A | 8.2 | A | 9.2 | A | |
| SB | | 8.1 | A | 8.9 | A | 8.2 | A | 9.0 | A | |
| EB | | 8.7 | A | 9.4 | A | 8.8 | A | 9.5 | A | |
| WB | | 8.4 | A | 9.3 | A | 8.7 | A | 9.5 | A | |
| 2. Washington Rd / Main St | All-Way | | | | | | | | | |
| Overall | Stop | 9.8 | A | 11.9 | B | 10.2 | B | 12.6 | B | Yes* |
| NB | | 8.8 | A | 9.8 | A | 9.3 | A | 10.2 | B | |
| SB | | 8.6 | A | 9.9 | A | 9.1 | A | 11.1 | B | |
| EB | | 10.3 | B | 12.2 | B | 10.7 | B | 12.8 | B | |
| WB | | 9.7 | A | 12.7 | B | 10.3 | B | 13.7 | B | |
| 3. Washington Rd / Blue Diamond Access | Signal | 12.7 | B | 1.1 | A | 32.5 | C | 11.1 | B | N/A |

* meets peak hour warrant for p.m. plus project condition

**TABLE 8**
**EXISTING PLUS PROJECT**
**ROADWAY SEGMENT LEVELS OF SERVICE**

| Roadway | Location | | Class | Lanes | Standard | | Existing Conditions | | Existing + Project Conditions | |
|---|---|---|---|---|---|---|---|---|---|---|
| | From | To | | | LOS | Daily Volume Threshold | LOS | Daily Volume | LOS | Daily Volume |
| Washington Road | Main Street | Fulkerth Road | Arterial | 2 | C/D | 9,200 / 15,000 | B / A | 2,884 | B / A | 3,470 |

Sources: Stanislaus County Circulation Element / City of Turlock General Plan Update

## EXISTING PLUS APPROVED PROJECTS (EPAP)

The analysis of the near term condition is intended to consider the impact of this project within the context of already approved and pending projects that adds traffic on the adjacent roadway network. The volumes were determined based upon a review of approved and foreseeable pending projects in the project vicinity that may occur through 2018. Both Stanislaus County and City of Turlock Planning Departments were contacted to identify any projects in the vicinity that could add background traffic to the roadway system.

County planning staff did not identify any near term projects while City of Turlock staff identified 18 approved and / or foreseeable projects. Of these 18 projects, four were determined to be in the vicinity to potentially have an effect on the study roadways and intersections. These included:

1) West Main Street Shopping Center;
2) Mi Pueblo;
3) Blue Diamond Growers; and
4) Dust Bowl.

These projects were added to existing traffic volumes to arrive at an Existing Plus Approved Projects (EPAP) baseline.

### Approved / Foreseeable Projects Descriptions

Kilroy West Main Commercial Shopping Center. This project is located in the southeast corner of the West Main Street / Kilroy Avenue intersection in west Turlock. The project includes 75,200 sf of retail uses and 17,500 sf of restaurant use.

Mi Pueblo. This project is located in the southwest quadrant of the West Main Street / South Soderquist Avenue intersection. The project includes tenant improvements to provide 75,300 sf of retail use and 28,500 sf of office use.

Blue Diamond Growers. This project is located along the east side of Washington Road south of Fulkerth Road. The project is a food processing facility and will total 451,637 sf when completed over three phases. This project is directly east of the Washington Road Warehouse. The first phase of the project opened in June, however, the EPAP condition assumes full buildout of the facility.

Dust Bowl. The Dust Bowl is a foreseeable local brewery with approximately 50,000 sf of brewing and warehousing space, with an approximately 5,000 sf tap room. The project is located in the southwest corner of Fulkerth Road and Dianne Road.

**EPAP Lane Configurations.** Lane configurations at the study intersections are projected to remain as they currently exist. No changes in roadway configurations are identified in the near term by either Stanislaus County or the City of Turlock. Figure 7 displays the EPAP traffic volumes with the lane configurations for each study intersection.

**EPAP Roadway Segment Levels of Service.** Table 9 summarizes the Level of Service under 2015 conditions for the Washington Road study segment. The segment will continue to operate at an LOS B or better condition.

**EPAP Intersection Levels of Service.** Table 10 displays the a.m. and p.m. peak hour Levels of Service at each study intersection in the EPAP 'No Project' conditions. Each of the three intersections is projected to operate within acceptable LOS thresholds, at LOS C or better.

The Washington Road / Main Street intersection will operate at an acceptable level of service, at an overall LOS C condition in the p.m. peak hour. This intersection will also meet the peak hour signal warrant using total volume criteria. This indicates that the traffic volumes may begin to experience short term delays during peak periods. Since the intersection operates at an overall LOS C condition, no recommendations are made to improve the intersection.

## EPAP Plus Project Traffic Volumes and Levels of Service

**EPAP plus Project Roadway Segment Levels of Service.** Table 9 summarizes the Level of Service along the Washington Road study segment under the EPAP plus Project condition. The segment will continue to operate within acceptable Level of Service thresholds, operating at an LOS B condition.

**EPAP plus Project Intersection Levels of Service.** Figure 8 displays the EPAP plus Project traffic volumes with the lane configurations for each study intersection. Table 10 displays the a.m. and p.m. peak hour Levels of Service at each study intersection in this time frame. Each of the three intersections is projected to operate within acceptable LOS thresholds, at LOS C or better.

The Washington Road / Main Street intersection will continue to operate at an acceptable level of service, at an overall LOS C condition in the p.m. peak hour. This intersection will also meet the peak hour signal warrant using total volume criteria. This indicates that the traffic volumes may begin to experience short term delays during peak periods. Since the intersection operates at an overall LOS C condition, no mitigations are required to improve the intersection.

**TABLE 9**
**EPAP AVERAGE DAILY TRAFFIC**
**ROADWAY SEGMENT LEVELS OF SERVICE**

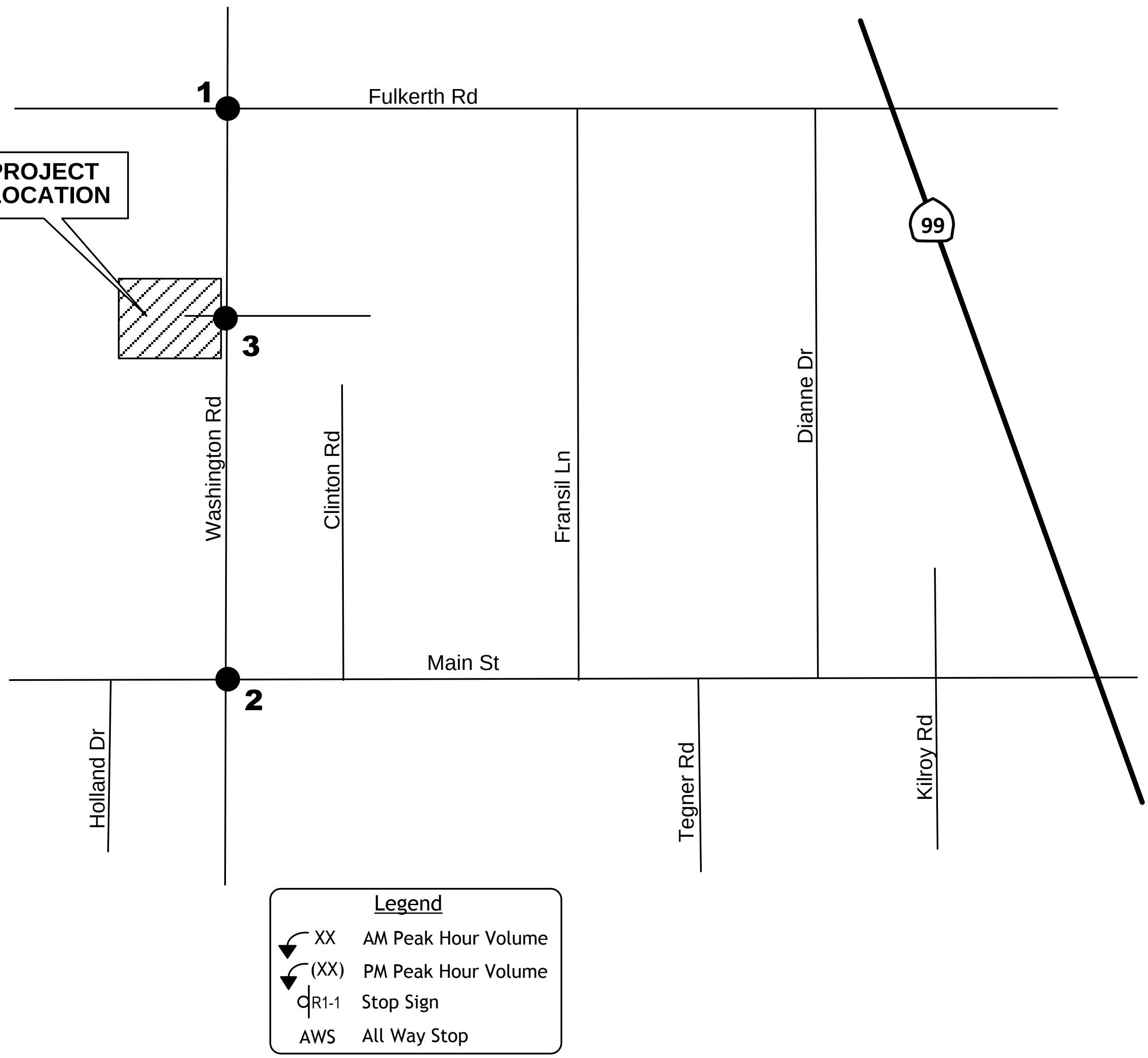
| Roadway | Location | | Class | Lanes | Standard | | EPAP Conditions | | EPAP + Project Conditions | |
|---|---|---|---|---|---|---|---|---|---|---|
| | From | To | | | LOS | Daily Volume Threshold | LOS | Daily Volume | LOS | Daily Volume |
| Washington Road | Main Street | Fulkerth Road | Arterial | 2 | C/D | 9,200 / 15,000 | B / A | 4,116 | B / A | 4,702 |

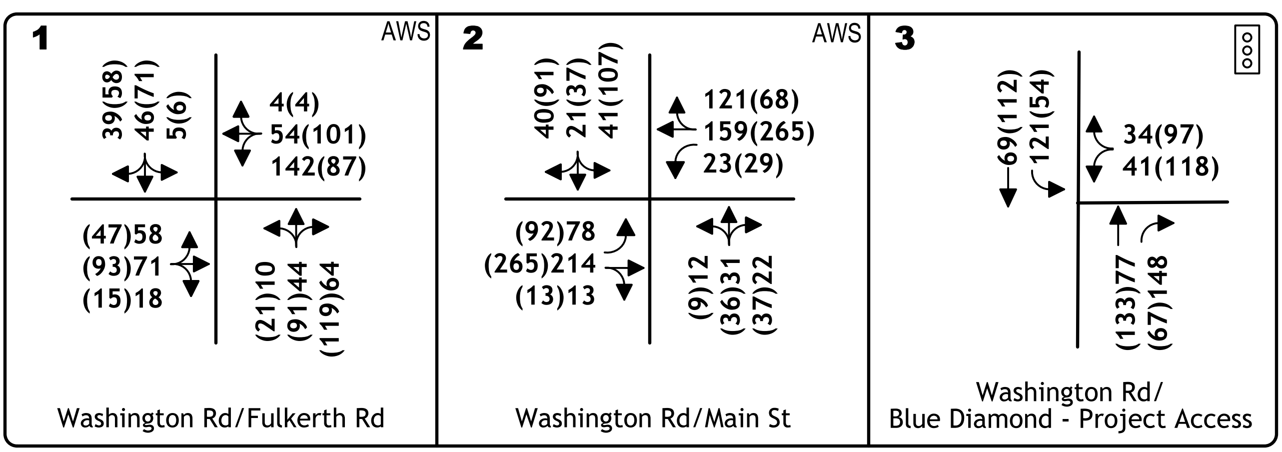
Sources: Stanislaus County Circulation Element / City of Turlock General Plan Update

**TABLE 10**
**AM / PM PEAK HOUR INTERSECTION LEVELS OF SERVICE**
**EPAP PLUS PROJECT CONDITIONS**

| Location | Control | EPAP A.M. Peak Hour Average Delay (Seconds) | EPAP A.M. Peak Hour LOS | EPAP P.M. Peak Hour Average Delay (Seconds) | EPAP P.M. Peak Hour LOS | EPAP + Project A.M. Peak Hour Average Delay (Seconds) | EPAP + Project A.M. Peak Hour LOS | EPAP + Project P.M. Peak Hour Average Delay (Seconds) | EPAP + Project P.M. Peak Hour LOS | Meets Peak Hour Signal Warrants |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. Washington Rd / Fulkerth Rd | All-Way | | | | | | | | | |
| Overall | Stop | 9.4 | A | 10.6 | B | 9.7 | A | 10.8 | B | No |
| NB | | 8.9 | A | 10.9 | B | 9.1 | A | 11.2 | B | |
| SB | | 8.7 | A | 9.7 | A | 8.9 | A | 9.9 | A | |
| EB | | 9.3 | A | 10.4 | B | 9.5 | A | 10.5 | B | |
| WB | | 10.1 | B | 11.1 | B | 10.6 | B | 11.3 | B | |
| 2. Washington Rd / Main St | All-Way | | | | | | | | | |
| Overall | Stop | 11.2 | B | 16.0 | C | 12.2 | B | 18.4 | C | Yes* |
| NB | | 9.5 | A | 11.2 | B | 10.3 | B | 11.9 | B | |
| SB | | 9.9 | A | 14.6 | B | 10.6 | B | 17.8 | C | |
| EB | | 11.1 | B | 15.2 | C | 11.8 | B | 16.8 | C | |
| WB | | 12.0 | B | 18.8 | C | 13.6 | B | 21.9 | C | |
| 3. Washington Rd / Blue Diamond Access | Signal | 7.3 | A | 3.8 | A | 14.5 | B | 23.7 | C | N/A |

* - meets warrant without and with project (p.m. only)




EXISTING PLUS APPROVED PROJECTS
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

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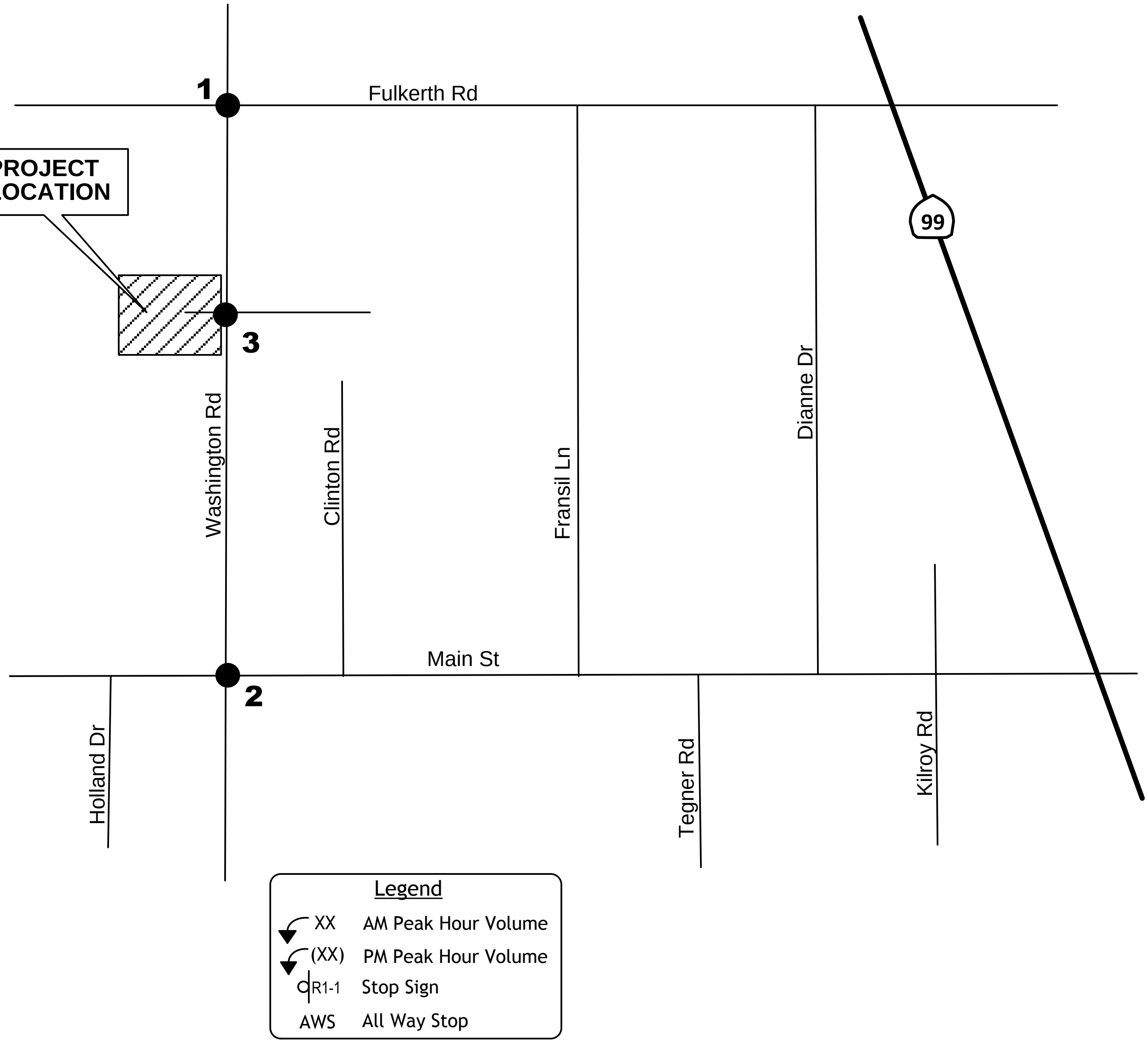
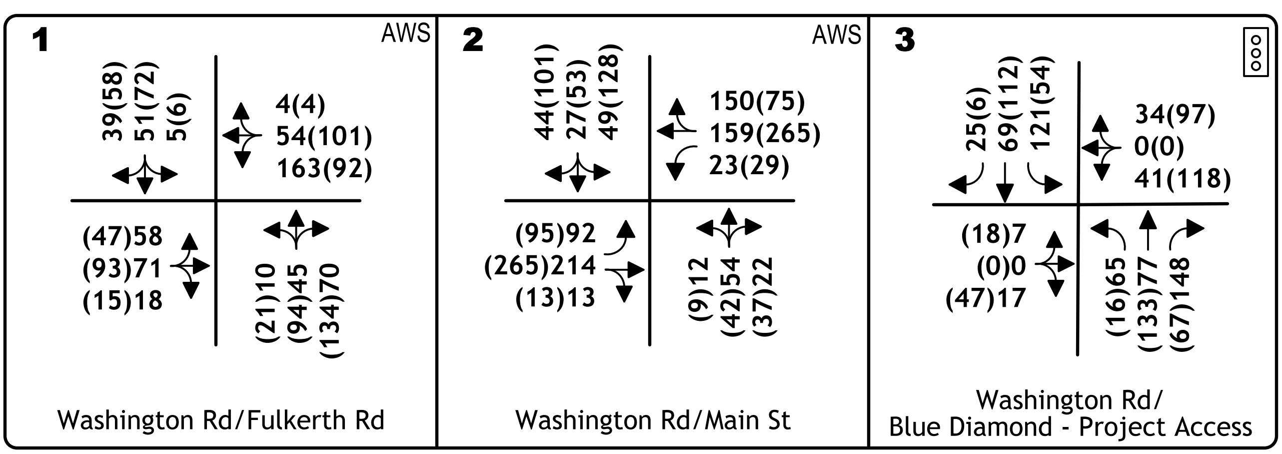
figure 7




EXISTING PLUS APPROVED PROJECTS
PLUS PROJECT TRAFFIC VOLUMES
AND LANE CONFIGURATIONS

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figure 8

## CUMULATIVE TRAFFIC IMPACTS

The traffic impacts associated with the Washington Road Warehouse project have also been evaluated within the context of future traffic conditions occurring in this area of Stanislaus County. Year 2035 daily traffic volume forecasts generated by the City of Turlock regional travel demand forecasting model is the basis for future background traffic conditions as this project is located adjacent to the City limits.

### Year 2035 Forecasts

The StanCOG regional traffic model is a macroscopic model considering the County as a whole. While it provides data on trips generated and traveling throughout the County it provides less precision than local models. This project is located at the west end of the City of Turlock, with the City limits along Washington Road. Consequently, since the City of Turlock model is local the projected forecasts on individual streets are likely to be more accurate than the County's regional model. Travel forecasts along the study roadways were based on the City of Turlock's 2035 General Plan Update (September 2012). The traffic model, part of the circulation element, was updated and is maintained by Omni Means, Ltd.

The development of future year intersection turning movement traffic volumes requires that the turning movements at each intersection "balance". To achieve the balance, inbound traffic volumes must equal the outbound traffic volumes, and the volumes must be distributed among the various left-turn, through, and right-turn movements at each intersection. The "balancing" of future year intersection turning movement traffic volumes was conducted using methods described in the Transportation Research Board's (TRB's) National Cooperative Highway Research Program (NCHRP) Report 255, *Highway Traffic Data for Urbanized Area Project Planning and Design*. The NCHRP 255 method applies the desired peak hour directional volumes to the intersection turning movement volumes, using an iterative process to balance and adjust the resulting forecasts to match the desired peak hour directional volumes. The traffic from the Blue Diamond site was manually added to the 2035 forecasts. The traffic model indicates all traffic from this area of the WISP is distributed onto Fulkerth Road, thereby understating traffic volumes along Washington Road. Figure 9 presents the projected turning movements during both a.m. and p.m. peak hours under the cumulative conditions.

**Road Conditions.** By 2035 Washington Road is projected to be widened to a four-lane divided arterial as part of the WISP buildout. In addition, the two study intersections will be widened and signalized. The lane configurations are detailed below:

Washington Road / Fulkerth Road (signalized)

Northbound – 1 Left, 1 Through, 1 Right
Southbound – 1 Left, 1 Through, 1 Right
Eastbound – 1 Left, 1 Through-Right
Westbound – 1 Left, 1 Through-Right

Washington Road / Main Street (signalized)

- Northbound – 1 Left, 2 Through, 1 Right
- Southbound – 1 Left, 2 Through, 1 Right
- Eastbound – 1 Left, 1 Through, 1 Through-Right
- Westbound – 1 Left, 1 Through, 1 Through-Right

Washington Road / Blue Diamond (signalized)

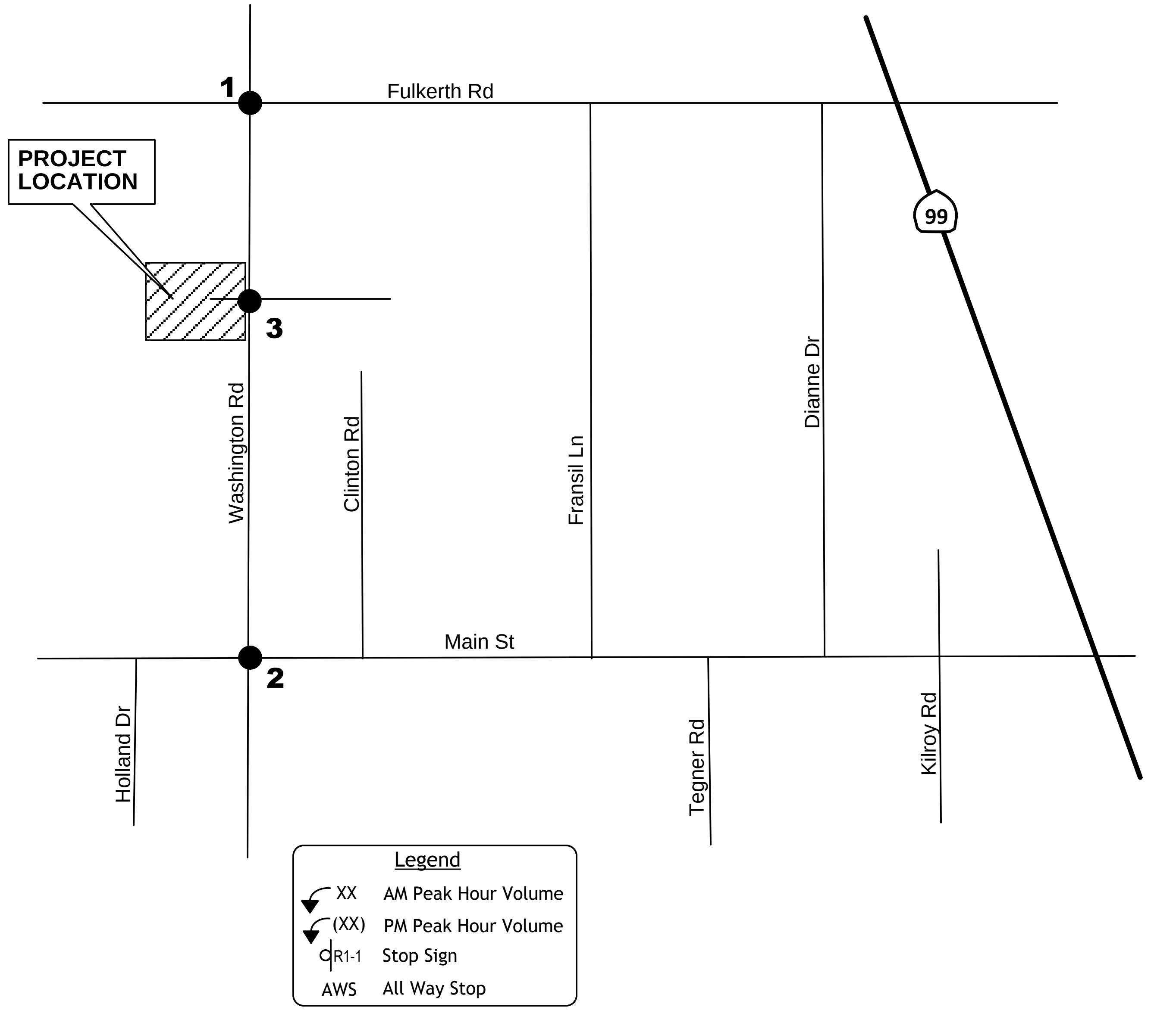
- Northbound – 1 Left, 2 Through, 1 Right
- Southbound – 1 Left, 1 Through, 1 Through-Right
- Eastbound – 1 Left-Through-Right
- Westbound – 1 Left-Through-Right

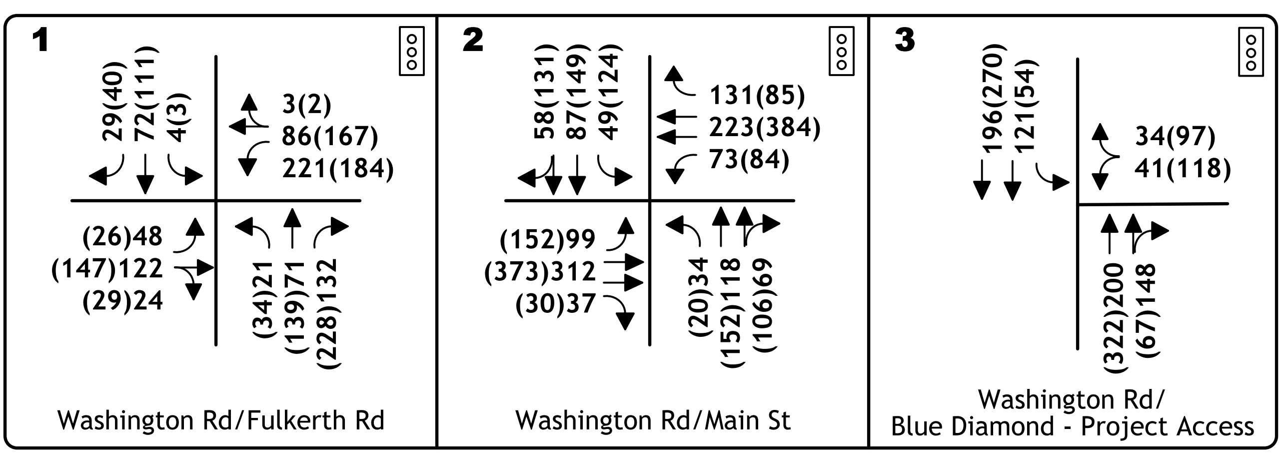
**Cumulative Intersection Levels of Service Levels of Service.** "2035 No Project" traffic volumes are shown in Figure 9. 2035 intersection Levels of Service are shown in Table 11. The projected Levels of Service during the a.m. and p.m. peak hours are within the adopted standards at all study locations.

**Cumulative Roadway Segment Levels of Service.** Table 12 summarizes the Level of Service for the Washington Road study segment. The segment is projected to have a daily volume of 13,235 vehicles. The segment will operate within acceptable Level of Service thresholds, operating at an LOS B or better condition.

**Cumulative Plus Project Intersection Levels of Service Levels of Service.** Trips generated by the proposed project were superimposed onto background year 2035 volumes to create the "2035 Plus Project" conditions shown in Figure 10. Table 11 displays the a.m. and p.m. peak hour Levels of Service at each study intersection in this time frame. Each of the three intersections will continue to operate within acceptable LOS thresholds, at LOS C or better.

**Cumulative Plus Project Roadway Segment Levels of Service.** Table 12 summarizes the Level of Service for the Washington Road study segment. The segment is projected to have daily volumes of 13,911 vpd. This segment will continue to operate at an LOS B or better condition.

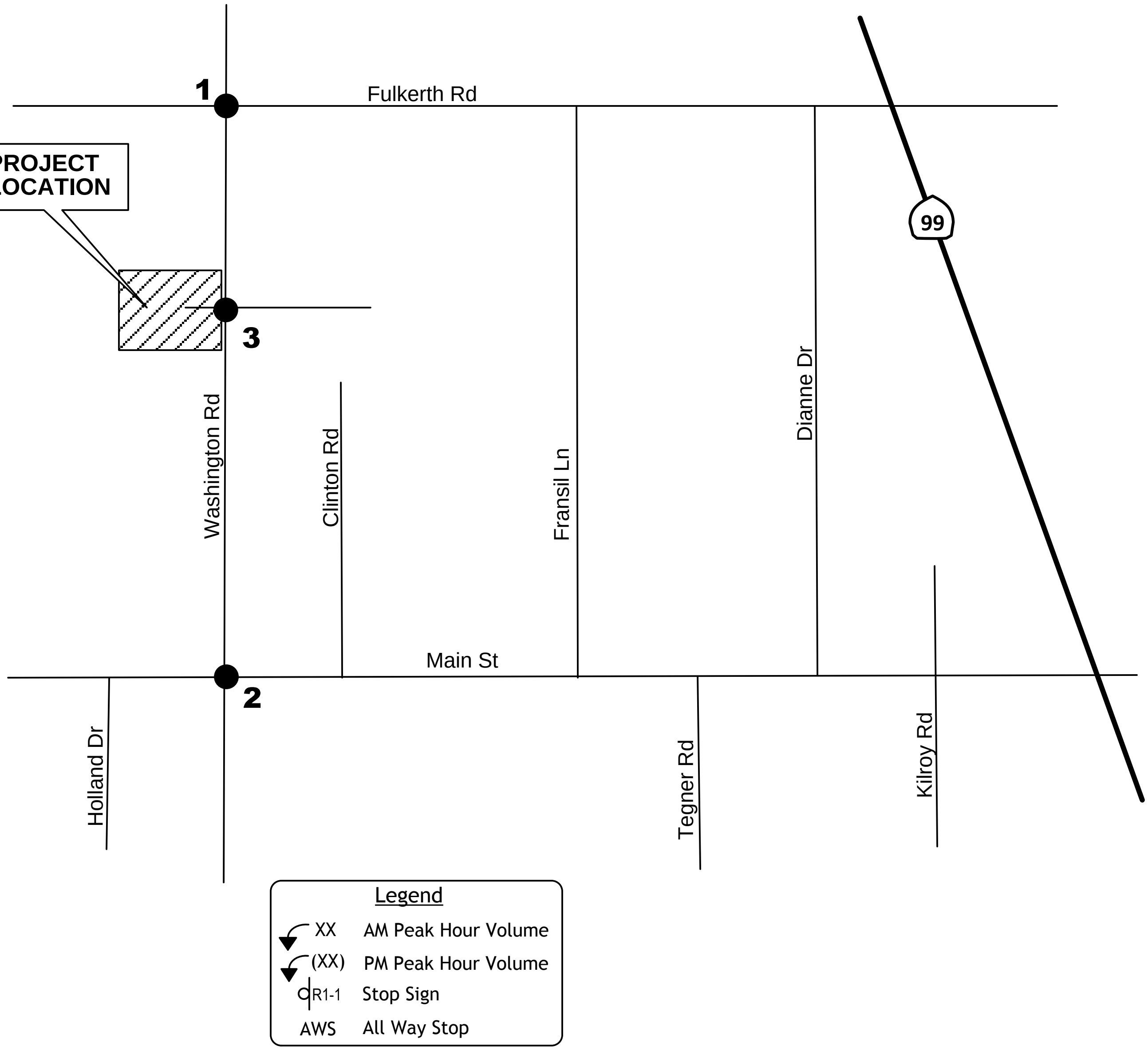


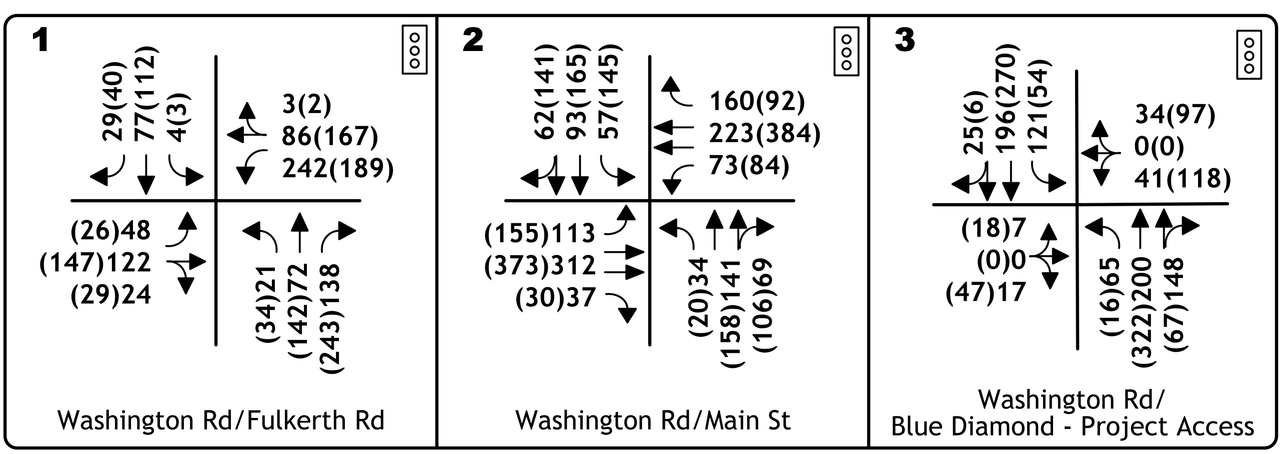




CUMULATIVE TRAFFIC VOLUMES
AND LANE CONFIGURATIONS

*KD Anderson & Associates, Inc.*
Transportation Engineers
0620-01 LT Rev. 10/11/2013

figure 9

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Transportation Engineers

CUMULATIVE PLUS PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

0620-01 LT Rev. 10/11/2013

figure 10

## TABLE 11
## AM / PM PEAK HOUR INTERSECTION LEVELS OF SERVICE
## CUMULATIVE PLUS PROJECT CONDITIONS

| Location | Control | Cumulative A.M. Peak Hour | | Cumulative P.M. Peak Hour | | Cumulative + Project A.M. Peak Hour | | Cumulative + Project P.M. Peak Hour | |
|---|---|---|---|---|---|---|---|---|---|
| | | Average Delay | LOS | Average Delay | LOS | Average Delay | LOS | Average Delay | LOS |
| 1. Washington Rd / Fulkerth Rd | Signal* | 23.3 | C | 17.4 | B | 28.4 | C | 17.9 | B |
| 2. Washington Rd / Main St | Signal* | 19.3 | B | 22.1 | C | 19.9 | B | 26.0 | C |
| 3. Washington Rd / Blue Diamond Access | Signal | 6.0 | A | 3.5 | A | 11.8 | B | 12.5 | B |

* - signalized based on WISP improvements

N/A - not applicable

## TABLE 12
## CUMULATIVE PLUS PROJECT
## ROADWAY SEGMENT LEVELS OF SERVICE

| Roadway | Location | | Class | Lanes | Standard | | Cumulative Conditions | | Cumulative + Project Conditions | |
|---|---|---|---|---|---|---|---|---|---|---|
| | From | To | | | LOS | Daily Volume Threshold | LOS | Daily Volume | LOS | Daily Volume |
| Washington Road | Main Street | Fulkerth Road | Arterial | 4 | C/D | 20,100 / 29,000 | B / A | 13,235 | B / A | 13,911 |

Sources: Stanislaus County Circulation Element / City of Turlock General Plan Update

## ACCESS AND CIRCULATION

While the preceding analysis is a reasonable indicator of the project's relative impacts to the study area street system under the typical CEQA parameters, it is important to consider the adequacy of site access and internal circulation within the context of peak period conditions.

### Queuing

A queuing analysis was conducted at each of the intersections. A 95% confidence level was assumed, meaning that the forecast queue length should be exceeded only 5% of the time. Standard queuing theory was used at signalized and side street stop controlled intersections to calculate the number of vehicles that would be queued.

There is no adopted methodology to determine queues at all-way stop intersections; however, *Tian and Kyte* have modeled several methodologies to analyze queue length models for all-way stop controlled intersections (AWSC). Based on field data comparisons to analysis results they have concluded that the two-way stop controlled methodology identified in the Highway Capacity Manual can be applied to AWSC intersections to estimate vehicle queues.

A significant portion of the traffic into and out of the project site will be trucks, and the queue lengths cited are based on the number of vehicles. Table 13 shows the projected queues under the Existing, EPAP and Cumulative scenarios. Under Existing condition queues are generally two vehicles or less in both a.m. and p.m. peak hours at the Washington Road / Fulkerth Road intersection.

At the Washington Road / Main Street intersection the queues are up to four vehicles on the east and west approaches and two or less on the north and south approaches. At the Washington Road / Blue Diamond intersection the queues are less than a vehicle for the southbound left turn lane and the westbound leg.

In the Existing plus Project scenario queues will lengthen by up to an additional vehicle along some approaches. The longest queue at the Washington Road / Fulkerth Road intersection will remain two vehicles while at the Washington Road / Main Street intersection the eastbound and westbound approaches will continue to have four queued vehicles. Queues at the Washington Road / Blue Diamond intersection will change as the project leg is added to the west. Two vehicles are projected to queue in the northbound left turn lane. The remaining turn lanes and approaches will have a single queued vehicle.

The EPAP scenario is projected to have queues similar to the Existing No Project condition. Queues are projected to increase by up to a single vehicle along various approaches. The projected worst queues will occur along the westbound approach of the Washington Road / Main Street intersection during both peak hours as four vehicles are projected and along the northbound and westbound approaches of the Washington Road / Fulkerth Road intersection where three vehicles will queue.

In the EPAP plus Project scenario queues will lengthen at the Washington Road / Main Street intersection where the eastbound queue is projected to lengthen to six vehicles in the p.m. peak hour; the westbound approach will lengthen to five vehicles. Queues at the Washington Road / Fulkerth Road intersection will remain at up to three vehicles. The queues at the Washington Road / Blue Diamond intersection appear to decline. This is due to a fourth leg added to the intersection and the re-optimization of the traffic signal timing. The longest queue will be three vehicles in the southbound left lane and along the westbound approach.

In the Cumulative No Project scenario the queues in the westbound left turn lane at the Washington Road / Fulkerth Road intersection are projected to lengthen to 8 vehicles in the a.m. peak hour. At the Washington Road/ Main Street intersection the queue will lengthen in the eastbound left turn lane to six vehicles in the p.m. peak hour. At the Washington Road / Blue Diamond access intersection the queue is projected to lengthen to five vehicles along the westbound approach in the p.m. peak hour. The southbound left turn lane queue will be 3 vehicles.

In the Cumulative plus Project scenario the queues will lengthen at the Washington Road / Fulkerth Road intersection to nine vehicles in the westbound left turn lane. At the Washington Road / Main Street intersection the queue will lengthen to seven vehicles in the eastbound approach and to six vehicles along the southbound approach. At the Washington Road / Blue Diamond intersection the queues in the westbound approach will decrease from five to three vehicles. This due to the fourth leg added to the intersection and the re-optimization of the traffic signal timing. Two vehicles will be queued in the northbound left lane while three vehicles will continue to be queued in the southbound left lane.

**TABLE 13**
**PROJECTED QUEUES (VEHICLES)**

| Location | Existing | | EPAP | | Cumulative* | |
|---|---|---|---|---|---|---|
| | No Project | Plus Project | No Project | Plus Project | No Project | Plus Project |
| 1. Washington Rd / Fulkerth Rd | | | | | | |
| NB | 1 / 2 | 1 / 2 | 2 / 3 | 2 / 2 | 1 / 1 | 1 / 1 |
| SB | 1 / 2 | 1 / 2 | 1 / 2 | 1 / 2 | <1 / <1 | <1 / <1 |
| EB | 2 / 2 | 2 / 2 | 2 / 2 | 2 / 3 | 2 / 1 | 2 / 1 |
| WB | 1 / 2 | 2 / 2 | 2 / 3 | 3 / 3 | 8 / 6 | 9 / 7 |
| 2. Washington Rd / Main St | | | | | | |
| NB | 1 / 1 | 1 / 1 | 1 / 1 | 1 / 2 | 2 / 1 | 2 / 1 |
| SB | 1 / 2 | 1 / 2 | 2 / 2 | 2 / 3 | 2 / 5 | 3 / 6 |
| EB | 3 / 4 | 3 / 4 | 3 / 3 | 4 / 6 | 3 / 6 | 3 / 7 |
| WB | 2 / 4 | 3 / 4 | 4 / 4 | 4 / 5 | 3 / 3 | 3 / 3 |
| 3. Washington Rd / Blue Diamond / Project Access | | | | | | |
| NB Left | N/A | 2 / <1 | N/A | 2 / 1 | N/A | 2 / <1 |
| SB Left | <1 / <1 | <1 / <1 | 4 / 2 | 3 / 2 | 3 / 2 | 3 / 1 |
| EB | N/A | <1 / <1 | N/A | <1 / <1 | N/A | <1 / <1 |
| WB | <1 / <1 | <1 / <1 | 2 / 4 | <1 / 3 | 2 / 5 | <1 / 3 |

AM / PM

* - number of vehicles queued in left turn lane; if no left turn lane is present, queue is in through lane
N/A – not applicable

## RECOMMENDATIONS / MITIGATION MEASURES

### Existing Conditions

All intersections and roadway segments operate at acceptable Levels of Service. No recommendations are made.

### Existing plus Project

All study intersections and road segments will operate within accepted Level of Service threshold levels. The following mitigation measures are identified under this planning horizon:

1. **Pay County Traffic Impact Mitigation Fees.** The project should pay the Traffic Impact Fees as set forth by Stanislaus County.

2. **Pay City of Turlock Capital Facility Development Fees.** The project is located outside of the City of Turlock Sphere of Influence, just west of Washington Road. Access to the site will be via Washington Road, which is part of the City. The project should pay the City of Turlock Capital Facility Development Fees which provides for the construction of Public Facilities and to purchase capital items to allow for city services. The City's fees change quarterly; therefore, the amount will be determined with approval of the project.

3. **Construct Half-Street Improvements.** The applicant should install half street improvements along the project frontage to meet the future lane configurations along Washington Road. This will also include addition of a northbound left turn lane at the Washington Road / Blue Diamond / Project Access intersection. These improvements should also include traffic signal modifications to the existing signal. A residential driveway should also be constructed on Washington Road to provide access for the single family residence that will remain. This resident is located about 350' south of the Blue Diamond / project driveway.

### EPAP Conditions

All intersections and roadway segments will continue to operate at acceptable Levels of Service. No recommendations are made.

### EPAP plus Project

All study intersections and road segments will continue to operate within accepted Level of Service threshold levels. No mitigations are necessary.

**Cumulative Mitigations**

All intersections and roadway segments will continue to operate at acceptable Levels of Service. No recommendations are made.

**Cumulative plus Project**

All study intersections and road segments will continue to operate within accepted Level of Service threshold levels. No mitigations are necessary.

## REFERENCES

1. *Westside Industrial Specific Plan*, City of Turlock, November, 2006
2. *Westside Industrial Specific Plan Traffic / Circulation Study*, Omni Means, June 2003
3. City of Turlock General Plan – *Transportation Element*, 2012
4. *Highway Capacity Manual*, Transportation Research Board, Special Report 209, 2000
5. California MUTCD, 2012 Edition
6. *A Policy on Geometric Design of Highways and Streets*, AASHTO, 2002
7. Tian, Zong and Michael Kyte. *Queue Length Models for All-Way Stop-controlled Intersections*, Reno, NV. Aug 2005

# APPENDICES

(under separate cover)

# TECHNICAL APPENDIX

**FOR**

**WASHINGTON ROAD WAREHOUSE**
**TRAFFIC IMPACT ANALYSIS**

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October 11, 2013

0620-02

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.4 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 58 | 69 | 2 | 33 | 53 | 3 | 4 | 43 | 28 | 2 | 45 | 39 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Mvmt Flow | 63 | 75 | 2 | 36 | 58 | 3 | 4 | 47 | 30 | 2 | 49 | 42 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 8.7 | 8.4 | 8.1 | 8.1 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 5% | 45% | 37% | 2% |
| Vol Thru, % | 57% | 53% | 60% | 52% |
| Vol Right, % | 37% | 2% | 3% | 45% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 75 | 129 | 89 | 86 |
| LT Vol | 43 | 69 | 53 | 45 |
| Through Vol | 28 | 2 | 3 | 39 |
| RT Vol | 4 | 58 | 33 | 2 |
| Lane Flow Rate | 82 | 140 | 97 | 93 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.103 | 0.182 | 0.126 | 0.116 |
| Departure Headway (Hd) | 4.535 | 4.668 | 4.692 | 4.468 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 791 | 770 | 764 | 803 |
| Service Time | 2.559 | 2.691 | 2.717 | 2.492 |
| HCM Lane V/C Ratio | 0.104 | 0.182 | 0.127 | 0.116 |
| HCM Control Delay | 8.1 | 8.7 | 8.4 | 8.1 |
| HCM Lane LOS | A | A | A | A |
| HCM 95th-tile Q | 0.3 | 0.7 | 0.4 | 0.4 |

Notes

~ : Volume Exceeds Capacity; $ : Delay Exceeds 300 Seconds; Error : Computation Not Defined

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 9.8 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 34 | 207 | 13 | 20 | 154 | 10 | 12 | 29 | 18 | 7 | 21 | 28 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Mvmt Flow | 37 | 225 | 14 | 22 | 167 | 11 | 13 | 32 | 20 | 8 | 23 | 30 |
| Number of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 2 | 2 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 2 | 2 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 2 | 2 |
| HCM Control Delay | 10.3 | 9.7 | 8.8 | 8.6 |
| HCM LOS | B | A | A | A |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBLn1 |
|---|---|---|---|---|---|---|
| Vol Left, % | 20% | 100% | 0% | 100% | 0% | 12% |
| Vol Thru, % | 49% | 0% | 94% | 0% | 94% | 38% |
| Vol Right, % | 31% | 0% | 6% | 0% | 6% | 50% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 59 | 34 | 220 | 20 | 164 | 56 |
| LT Vol | 29 | 0 | 207 | 0 | 154 | 21 |
| Through Vol | 18 | 0 | 13 | 0 | 10 | 28 |
| RT Vol | 12 | 34 | 0 | 20 | 0 | 7 |
| Lane Flow Rate | 64 | 37 | 239 | 22 | 178 | 61 |
| Geometry Grp | 2 | 7 | 7 | 7 | 7 | 2 |
| Degree of Util (X) | 0.092 | 0.058 | 0.341 | 0.035 | 0.258 | 0.086 |
| Departure Headway (Hd) | 5.184 | 5.678 | 5.133 | 5.749 | 5.203 | 5.059 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 689 | 630 | 698 | 622 | 688 | 705 |
| Service Time | 3.236 | 3.418 | 2.874 | 3.492 | 2.946 | 3.11 |
| HCM Lane V/C Ratio | 0.093 | 0.059 | 0.342 | 0.035 | 0.259 | 0.087 |
| HCM Control Delay | 8.8 | 8.8 | 10.5 | 8.7 | 9.8 | 8.6 |
| HCM Lane LOS | A | A | B | A | A | A |
| HCM 95th-tile Q | 0.3 | 0.2 | 1.5 | 0.1 | 1 | 0.3 |

Notes

~ : Volume Exceeds Capacity; $ : Delay Exceeds 300 Seconds; Error : Computation Not Defined

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 1 | 2 | 74 | 7 | 23 | 64 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow veh/h/ln | 108.6 | 190.0 | 172.7 | 108.6 | 108.6 | 172.7 |
| Lanes | 0 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 0 | 0 | 1252 | 669 | 26 | 1497 |
| Arrive On Green | 0.00 | 0.00 | 0.72 | 0.72 | 0.03 | 0.87 |
| Sat Flow, veh/h | 0 | 0 | 1727 | 923 | 1034 | 1727 |
| Grp Volume(v), veh/h | 0 | 0 | 80 | 8 | 25 | 70 |
| Grp Sat Flow(s),veh/h/ln | 0 | 0 | 1727 | 923 | 1034 | 1727 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.4 | 0.1 | 0.7 | 0.2 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 0.4 | 0.1 | 0.7 | 0.2 |
| Prop In Lane | 0.00 | 0.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 0 | 0 | 1252 | 669 | 26 | 1497 |
| V/C Ratio(X) | 0.00 | 0.00 | 0.06 | 0.01 | 0.96 | 0.05 |
| Avail Cap(c_a), veh/h | 0 | 0 | 1252 | 669 | 155 | 1497 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 0.0 | 1.2 | 1.1 | 14.6 | 0.3 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 0.1 | 0.0 | 73.0 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile Back of Q (50%), veh/ln | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 |
| Lane Grp Delay (d), s/veh | 0.0 | 0.0 | 1.3 | 1.2 | 87.6 | 0.3 |
| Lane Grp LOS | | | A | A | F | A |
| Approach Vol, veh/h | 0 | | 88 | | | 95 |
| Approach Delay, s/veh | 0.0 | | 1.3 | | | 23.3 |
| Approach LOS | | | A | | | C |
| **Timer** | | | | | | |
| Assigned Phs | | | 2 | | 1 | 6 |
| Phs Duration (G+Y+Rc), s | | | 25.7 | | 4.3 | 30.0 |
| Change Period (Y+Rc), s | | | 4.0 | | 3.5 | 4.0 |
| Max Green Setting (Gmax), s | | | 18.0 | | 4.5 | 26.0 |
| Max Q Clear Time (g_c+I1), s | | | 2.4 | | 2.7 | 2.2 |
| Green Ext Time (p_c), s | | | 0.6 | | 0.0 | 0.7 |
| **Intersection Summary** | | | | | | |
| HCM 2010 Ctrl Delay | | | 12.7 | | | |
| HCM 2010 LOS | | | B | | | |
| **Notes** | | | | | | |
| User approved volume balancing among the lanes for turning movement. | | | | | | |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 9.2 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 47 | 92 | 4 | 34 | 100 | 2 | 3 | 89 | 32 | 5 | 67 | 58 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Mvmt Flow | 51 | 100 | 4 | 37 | 109 | 2 | 3 | 97 | 35 | 5 | 73 | 63 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 9.4 | 9.3 | 9 | 8.9 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 2% | 33% | 25% | 4% |
| Vol Thru, % | 72% | 64% | 74% | 52% |
| Vol Right, % | 26% | 3% | 1% | 45% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 124 | 143 | 136 | 130 |
| LT Vol | 89 | 92 | 100 | 67 |
| Through Vol | 32 | 4 | 2 | 58 |
| RT Vol | 3 | 47 | 34 | 5 |
| Lane Flow Rate | 135 | 155 | 148 | 141 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.182 | 0.215 | 0.204 | 0.186 |
| Departure Headway (Hd) | 4.855 | 4.973 | 4.975 | 4.741 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 736 | 718 | 718 | 753 |
| Service Time | 2.908 | 3.028 | 3.031 | 2.793 |
| HCM Lane V/C Ratio | 0.183 | 0.216 | 0.206 | 0.187 |
| HCM Control Delay | 9 | 9.4 | 9.3 | 8.9 |
| HCM Lane LOS | A | A | A | A |
| HCM 95th-tile Q | 0.7 | 0.8 | 0.8 | 0.7 |

Notes

~ : Volume Exceeds Capacity; $ : Delay Exceeds 300 Seconds; Error : Computation Not Defined

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 11.9 |
| Intersection LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 73 | 251 | 13 | 22 | 252 | 10 | 9 | 36 | 30 | 12 | 36 | 56 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Mvmt Flow | 79 | 273 | 14 | 24 | 274 | 11 | 10 | 39 | 33 | 13 | 39 | 61 |
| Number of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 2 | 2 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 2 | 2 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 2 | 2 |
| HCM Control Delay | 12.2 | 12.7 | 9.8 | 9.9 |
| HCM LOS | B | B | A | A |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBLn1 |
|---|---|---|---|---|---|---|
| Vol Left, % | 12% | 100% | 0% | 100% | 0% | 12% |
| Vol Thru, % | 48% | 0% | 95% | 0% | 96% | 35% |
| Vol Right, % | 40% | 0% | 5% | 0% | 4% | 54% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 75 | 73 | 264 | 22 | 262 | 104 |
| LT Vol | 36 | 0 | 251 | 0 | 252 | 36 |
| Through Vol | 30 | 0 | 13 | 0 | 10 | 56 |
| RT Vol | 9 | 73 | 0 | 22 | 0 | 12 |
| Lane Flow Rate | 82 | 79 | 287 | 24 | 285 | 113 |
| Geometry Grp | 2 | 7 | 7 | 7 | 7 | 2 |
| Degree of Util (X) | 0.132 | 0.135 | 0.446 | 0.041 | 0.449 | 0.178 |
| Departure Headway (Hd) | 5.835 | 6.131 | 5.591 | 6.205 | 5.673 | 5.681 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 615 | 586 | 646 | 578 | 635 | 632 |
| Service Time | 3.871 | 3.852 | 3.312 | 3.928 | 3.395 | 3.716 |
| HCM Lane V/C Ratio | 0.133 | 0.135 | 0.444 | 0.042 | 0.449 | 0.179 |
| HCM Control Delay | 9.8 | 9.8 | 12.8 | 9.2 | 13 | 9.9 |
| HCM Lane LOS | A | A | B | A | B | A |
| HCM 95th-tile Q | 0.5 | 0.5 | 2.3 | 0.1 | 2.3 | 0.6 |

Notes

~ : Volume Exceeds Capacity; $ : Delay Exceeds 300 Seconds; Error : Computation Not Defined

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 4 | 17 | 124 | 0 | 1 | 99 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow veh/h/ln | 108.6 | 190.0 | 172.7 | 108.6 | 108.6 | 172.7 |
| Lanes | 0 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 0 | 0 | 1294 | 691 | 3 | 1497 |
| Arrive On Green | 0.00 | 0.00 | 0.75 | 0.00 | 0.00 | 0.87 |
| Sat Flow, veh/h | 0 | 0 | 1727 | 923 | 1034 | 1727 |
| Grp Volume(v), veh/h | 0 | 0 | 135 | 0 | 1 | 108 |
| Grp Sat Flow(s),veh/h/ln | 0 | 0 | 1727 | 923 | 1034 | 1727 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.3 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.3 |
| Prop In Lane | 0.00 | 0.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 0 | 0 | 1294 | 691 | 3 | 1497 |
| V/C Ratio(X) | 0.00 | 0.00 | 0.10 | 0.00 | 0.29 | 0.07 |
| Avail Cap(c_a), veh/h | 0 | 0 | 1294 | 691 | 155 | 1497 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 0.0 | 1.0 | 0.0 | 14.9 | 0.3 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 0.2 | 0.0 | 40.9 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile Back of Q (50%), veh/ln | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| Lane Grp Delay (d), s/veh | 0.0 | 0.0 | 1.2 | 0.0 | 55.8 | 0.4 |
| Lane Grp LOS | | | A | | E | A |
| Approach Vol, veh/h | 0 | | 135 | | | 109 |
| Approach Delay, s/veh | 0.0 | | 1.2 | | | 0.9 |
| Approach LOS | | | A | | | A |

| Timer | | | | | | |
|---|---|---|---|---|---|---|
| Assigned Phs | | | 2 | | 1 | 6 |
| Phs Duration (G+Y+Rc), s | | | 26.5 | | 3.5 | 30.0 |
| Change Period (Y+Rc), s | | | 4.0 | | 3.5 | 4.0 |
| Max Green Setting (Gmax), s | | | 18.0 | | 4.5 | 26.0 |
| Max Q Clear Time (g_c+I1), s | | | 2.6 | | 2.0 | 2.3 |
| Green Ext Time (p_c), s | | | 1.0 | | 0.0 | 1.2 |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2010 Ctrl Delay | | | 1.1 |
| HCM 2010 LOS | | | A |

| Notes |
|---|
| User approved volume balancing among the lanes for turning movement. |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.5 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 58 | 69 | 2 | 54 | 53 | 3 | 4 | 44 | 34 | 2 | 50 | 39 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Mvmt Flow | 63 | 75 | 2 | 59 | 58 | 3 | 4 | 48 | 37 | 2 | 54 | 42 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 8.8 | 8.7 | 8.2 | 8.2 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 5% | 45% | 49% | 2% |
| Vol Thru, % | 54% | 53% | 48% | 55% |
| Vol Right, % | 41% | 2% | 3% | 43% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 82 | 129 | 110 | 91 |
| LT Vol | 44 | 69 | 53 | 50 |
| Through Vol | 34 | 2 | 3 | 39 |
| RT Vol | 4 | 58 | 54 | 2 |
| Lane Flow Rate | 89 | 140 | 120 | 99 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.113 | 0.184 | 0.158 | 0.125 |
| Departure Headway (Hd) | 4.578 | 4.731 | 4.757 | 4.553 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 783 | 759 | 754 | 787 |
| Service Time | 2.607 | 2.759 | 2.785 | 2.581 |
| HCM Lane V/C Ratio | 0.114 | 0.184 | 0.159 | 0.126 |
| HCM Control Delay | 8.2 | 8.8 | 8.7 | 8.2 |
| HCM Lane LOS | A | A | A | A |
| HCM 95th-tile Q | 0.4 | 0.7 | 0.6 | 0.4 |

Notes

~ : Volume Exceeds Capacity; $ : Delay Exceeds 300 Seconds; Error : Computation Not Defined

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 10.2 |
| Intersection LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 48 | 207 | 13 | 20 | 154 | 39 | 12 | 52 | 18 | 15 | 27 | 32 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Mvmt Flow | 52 | 225 | 14 | 22 | 167 | 42 | 13 | 57 | 20 | 16 | 29 | 35 |
| Number of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 2 | 2 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 2 | 2 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 2 | 2 |
| HCM Control Delay | 10.7 | 10.3 | 9.3 | 9.1 |
| HCM LOS | B | B | A | A |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBLn1 |
|---|---|---|---|---|---|---|
| Vol Left, % | 15% | 100% | 0% | 100% | 0% | 20% |
| Vol Thru, % | 63% | 0% | 94% | 0% | 80% | 36% |
| Vol Right, % | 22% | 0% | 6% | 0% | 20% | 43% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 82 | 48 | 220 | 20 | 193 | 74 |
| LT Vol | 52 | 0 | 207 | 0 | 154 | 27 |
| Through Vol | 18 | 0 | 13 | 0 | 39 | 32 |
| RT Vol | 12 | 48 | 0 | 20 | 0 | 15 |
| Lane Flow Rate | 89 | 52 | 239 | 22 | 210 | 80 |
| Geometry Grp | 2 | 7 | 7 | 7 | 7 | 2 |
| Degree of Util (X) | 0.133 | 0.085 | 0.352 | 0.036 | 0.307 | 0.118 |
| Departure Headway (Hd) | 5.377 | 5.848 | 5.303 | 5.917 | 5.271 | 5.277 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 661 | 610 | 674 | 602 | 678 | 673 |
| Service Time | 3.452 | 3.611 | 3.065 | 3.683 | 3.036 | 3.354 |
| HCM Lane V/C Ratio | 0.135 | 0.085 | 0.355 | 0.037 | 0.31 | 0.119 |
| HCM Control Delay | 9.3 | 9.2 | 11 | 8.9 | 10.4 | 9.1 |
| HCM Lane LOS | A | A | B | A | B | A |
| HCM 95th-tile Q | 0.5 | 0.3 | 1.6 | 0.1 | 1.3 | 0.4 |

Notes

~ : Volume Exceeds Capacity; $ : Delay Exceeds 300 Seconds; Error : Computation Not Defined

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 7 | 0 | 17 | 1 | 0 | 2 | 65 | 74 | 7 | 23 | 64 | 25 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow veh/h/ln | 190.0 | 108.6 | 190.0 | 190.0 | 108.6 | 190.0 | 108.6 | 172.7 | 108.6 | 172.7 | 108.6 | 172.7 |
| Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 165 | 0 | 18 | 170 | 0 | 21 | 62 | 977 | 522 | 38 | 593 | 801 |
| Arrive On Green | 0.03 | 0.00 | 0.03 | 0.03 | 0.00 | 0.03 | 0.06 | 0.57 | 0.57 | 0.02 | 0.55 | 0.55 |
| Sat Flow, veh/h | 279 | 0 | 628 | 362 | 0 | 724 | 1034 | 1727 | 923 | 1645 | 1086 | 1468 |
| Grp Volume(v), veh/h | 26 | 0 | 0 | 3 | 0 | 0 | 71 | 80 | 8 | 25 | 70 | 27 |
| Grp Sat Flow(s),veh/h/ln | 908 | 0 | 0 | 1086 | 0 | 0 | 1034 | 1727 | 923 | 1645 | 1086 | 1468 |
| Q Serve(g_s), s | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.8 | 0.6 | 0.1 | 0.5 | 0.9 | 0.3 |
| Cycle Q Clear(g_c), s | 0.9 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 1.8 | 0.6 | 0.1 | 0.5 | 0.9 | 0.3 |
| Prop In Lane | 0.31 | | 0.69 | 0.33 | | 0.67 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 183 | 0 | 0 | 191 | 0 | 0 | 62 | 977 | 522 | 38 | 593 | 801 |
| V/C Ratio(X) | 0.14 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 1.15 | 0.08 | 0.02 | 0.66 | 0.12 | 0.03 |
| Avail Cap(c_a), veh/h | 823 | 0 | 0 | 826 | 0 | 0 | 189 | 977 | 522 | 246 | 593 | 801 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 14.6 | 0.0 | 0.0 | 14.2 | 0.0 | 0.0 | 14.1 | 3.0 | 2.9 | 14.6 | 3.3 | 3.2 |
| Incr Delay (d2), s/veh | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 101.5 | 0.2 | 0.1 | 17.6 | 0.4 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile Back of Q (50%), veh/ln | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.1 | 0.2 | 0.0 | 0.3 | 0.2 | 0.1 |
| Lane Grp Delay (d), s/veh | 14.9 | 0.0 | 0.0 | 14.3 | 0.0 | 0.0 | 115.6 | 3.1 | 2.9 | 32.1 | 3.7 | 3.2 |
| Lane Grp LOS | B | | | B | | | F | A | A | C | A | A |
| Approach Vol, veh/h | | 26 | | | 3 | | | 159 | | | 122 | |
| Approach Delay, s/veh | | 14.9 | | | 14.3 | | | 53.4 | | | 9.4 | |
| Approach LOS | | B | | | B | | | D | | | A | |
| **Timer** | | | | | | | | | | | | |
| Assigned Phs | | 4 | | | 8 | | 5 | 2 | | 1 | 6 | |
| Phs Duration (G+Y+Rc), s | | 4.4 | | | 4.4 | | 5.3 | 21.0 | | 4.7 | 20.4 | |
| Change Period (Y+Rc), s | | 3.5 | | | 3.5 | | 3.5 | 4.0 | | 4.0 | 4.0 | |
| Max Green Setting (Gmax), s | | 22.5 | | | 22.5 | | 5.5 | 17.0 | | 4.5 | 16.0 | |
| Max Q Clear Time (g_c+I1), s | | 2.9 | | | 2.1 | | 3.8 | 2.6 | | 2.5 | 2.9 | |
| Green Ext Time (p_c), s | | 0.1 | | | 0.1 | | 0.0 | 0.3 | | 0.0 | 0.3 | |
| **Intersection Summary** | | | | | | | | | | | | |
| HCM 2010 Ctrl Delay | | | 32.5 | | | | | | | | | |
| HCM 2010 LOS | | | C | | | | | | | | | |
| **Notes** | | | | | | | | | | | | |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 9.3 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 47 | 92 | 4 | 39 | 100 | 2 | 3 | 92 | 47 | 5 | 68 | 58 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Mvmt Flow | 51 | 100 | 4 | 42 | 109 | 2 | 3 | 100 | 51 | 5 | 74 | 63 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 9.5 | 9.5 | 9.2 | 9 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 2% | 33% | 28% | 4% |
| Vol Thru, % | 65% | 64% | 71% | 52% |
| Vol Right, % | 33% | 3% | 1% | 44% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 142 | 143 | 141 | 131 |
| LT Vol | 92 | 92 | 100 | 68 |
| Through Vol | 47 | 4 | 2 | 58 |
| RT Vol | 3 | 47 | 39 | 5 |
| Lane Flow Rate | 154 | 155 | 153 | 142 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.207 | 0.217 | 0.214 | 0.189 |
| Departure Headway (Hd) | 4.832 | 5.033 | 5.033 | 4.786 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 739 | 709 | 710 | 745 |
| Service Time | 2.889 | 3.093 | 3.094 | 2.844 |
| HCM Lane V/C Ratio | 0.208 | 0.219 | 0.215 | 0.191 |
| HCM Control Delay | 9.2 | 9.5 | 9.5 | 9 |
| HCM Lane LOS | A | A | A | A |
| HCM 95th-tile Q | 0.8 | 0.8 | 0.8 | 0.7 |

Notes

~ : Volume Exceeds Capacity; $ : Delay Exceeds 300 Seconds; Error : Computation Not Defined

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 12.6 |
| Intersection LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 76 | 251 | 13 | 22 | 252 | 17 | 9 | 42 | 30 | 33 | 52 | 66 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Mvmt Flow | 83 | 273 | 14 | 24 | 274 | 18 | 10 | 46 | 33 | 36 | 57 | 72 |
| Number of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 2 | 2 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 2 | 2 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 2 | 2 |
| HCM Control Delay | 12.8 | 13.7 | 10.2 | 11.1 |
| HCM LOS | B | B | B | B |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBLn1 |
|---|---|---|---|---|---|---|
| Vol Left, % | 11% | 100% | 0% | 100% | 0% | 22% |
| Vol Thru, % | 52% | 0% | 95% | 0% | 94% | 34% |
| Vol Right, % | 37% | 0% | 5% | 0% | 6% | 44% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 81 | 76 | 264 | 22 | 269 | 151 |
| LT Vol | 42 | 0 | 251 | 0 | 252 | 52 |
| Through Vol | 30 | 0 | 13 | 0 | 17 | 66 |
| RT Vol | 9 | 76 | 0 | 22 | 0 | 33 |
| Lane Flow Rate | 88 | 83 | 287 | 24 | 292 | 164 |
| Geometry Grp | 2 | 7 | 7 | 7 | 7 | 2 |
| Degree of Util (X) | 0.148 | 0.146 | 0.465 | 0.043 | 0.479 | 0.267 |
| Departure Headway (Hd) | 6.066 | 6.379 | 5.838 | 6.453 | 5.901 | 5.867 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 590 | 563 | 617 | 555 | 611 | 611 |
| Service Time | 4.12 | 4.115 | 3.573 | 4.189 | 3.637 | 3.913 |
| HCM Lane V/C Ratio | 0.149 | 0.147 | 0.465 | 0.043 | 0.478 | 0.268 |
| HCM Control Delay | 10.2 | 10.2 | 13.6 | 9.5 | 14 | 11.1 |
| HCM Lane LOS | B | B | B | A | B | B |
| HCM 95th-tile Q | 0.5 | 0.5 | 2.5 | 0.1 | 2.6 | 1.1 |

Notes

~ : Volume Exceeds Capacity; $ : Delay Exceeds 300 Seconds; Error : Computation Not Defined

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✣ | | | ✣ | | ↰ | ↑ | ↱ | ↰ | ↑ | ↱ |
| Volume (veh/h) | 18 | 0 | 47 | 4 | 0 | 17 | 16 | 124 | 0 | 1 | 99 | 6 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow veh/h/ln | 190.0 | 108.6 | 190.0 | 190.0 | 108.6 | 190.0 | 108.6 | 172.7 | 108.6 | 108.6 | 172.7 | 108.6 |
| Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 170 | 0 | 57 | 150 | 2 | 72 | 18 | 942 | 503 | 3 | 942 | 503 |
| Arrive On Green | 0.08 | 0.00 | 0.08 | 0.08 | 0.00 | 0.08 | 0.02 | 0.55 | 0.00 | 0.00 | 0.55 | 0.55 |
| Sat Flow, veh/h | 264 | 0 | 672 | 165 | 25 | 854 | 1034 | 1727 | 923 | 1034 | 1727 | 923 |
| Grp Volume(v), veh/h | 71 | 0 | 0 | 22 | 0 | 0 | 17 | 135 | 0 | 1 | 108 | 7 |
| Grp Sat Flow(s),veh/h/ln | 936 | 0 | 0 | 1044 | 0 | 0 | 1034 | 1727 | 923 | 1034 | 1727 | 923 |
| Q Serve(g_s), s | 1.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 1.2 | 0.0 | 0.0 | 0.9 | 0.1 |
| Cycle Q Clear(g_c), s | 2.3 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.5 | 1.2 | 0.0 | 0.0 | 0.9 | 0.1 |
| Prop In Lane | 0.28 | | 0.72 | 0.18 | | 0.82 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 227 | 0 | 0 | 225 | 0 | 0 | 18 | 942 | 503 | 3 | 942 | 503 |
| V/C Ratio(X) | 0.31 | 0.00 | 0.00 | 0.10 | 0.00 | 0.00 | 0.94 | 0.14 | 0.00 | 0.30 | 0.11 | 0.01 |
| Avail Cap(c_a), veh/h | 793 | 0 | 0 | 794 | 0 | 0 | 149 | 942 | 503 | 149 | 942 | 503 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 14.1 | 0.0 | 0.0 | 13.4 | 0.0 | 0.0 | 15.3 | 3.5 | 0.0 | 15.5 | 3.4 | 3.3 |
| Incr Delay (d2), s/veh | 0.8 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 81.7 | 0.3 | 0.0 | 44.4 | 0.2 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile Back of Q (50%), veh/ln | 0.5 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.5 | 0.3 | 0.0 | 0.0 | 0.2 | 0.0 |
| Lane Grp Delay (d), s/veh | 14.9 | 0.0 | 0.0 | 13.6 | 0.0 | 0.0 | 97.0 | 3.8 | 0.0 | 59.9 | 3.7 | 3.3 |
| Lane Grp LOS | B | | | B | | | F | A | | E | A | A |
| Approach Vol, veh/h | | 71 | | | 22 | | | 152 | | | 116 | |
| Approach Delay, s/veh | | 14.9 | | | 13.6 | | | 14.2 | | | 4.2 | |
| Approach LOS | | B | | | B | | | B | | | A | |
| **Timer** | | | | | | | | | | | | |
| Assigned Phs | | 4 | | | 8 | | 5 | 2 | | 1 | 6 | |
| Phs Duration (G+Y+Rc), s | | 6.1 | | | 6.1 | | 4.0 | 21.0 | | 4.0 | 21.0 | |
| Change Period (Y+Rc), s | | 3.5 | | | 3.5 | | 3.5 | 4.0 | | 4.0 | 4.0 | |
| Max Green Setting (Gmax), s | | 22.5 | | | 22.5 | | 4.5 | 17.0 | | 4.5 | 17.0 | |
| Max Q Clear Time (g_c+I1), s | | 4.3 | | | 2.6 | | 2.5 | 3.2 | | 2.0 | 2.9 | |
| Green Ext Time (p_c), s | | 0.4 | | | 0.5 | | 0.0 | 0.5 | | 0.1 | 0.4 | |
| **Intersection Summary** | | | | | | | | | | | | |
| HCM 2010 Ctrl Delay | | | 11.1 | | | | | | | | | |
| HCM 2010 LOS | | | B | | | | | | | | | |
| **Notes** | | | | | | | | | | | | |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 9.4 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 58 | 71 | 18 | 142 | 54 | 4 | 10 | 44 | 64 | 5 | 46 | 39 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Mvmt Flow | 63 | 77 | 20 | 154 | 59 | 4 | 11 | 48 | 70 | 5 | 50 | 42 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 9.3 | 10.1 | 8.9 | 8.7 |
| HCM LOS | A | B | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 8% | 39% | 71% | 6% |
| Vol Thru, % | 37% | 48% | 27% | 51% |
| Vol Right, % | 54% | 12% | 2% | 43% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 118 | 147 | 200 | 90 |
| LT Vol | 44 | 71 | 54 | 46 |
| Through Vol | 64 | 18 | 4 | 39 |
| RT Vol | 10 | 58 | 142 | 5 |
| Lane Flow Rate | 128 | 160 | 217 | 98 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.172 | 0.217 | 0.299 | 0.134 |
| Departure Headway (Hd) | 4.819 | 4.898 | 4.946 | 4.919 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 740 | 729 | 724 | 725 |
| Service Time | 2.877 | 2.956 | 3.001 | 2.979 |
| HCM Lane V/C Ratio | 0.173 | 0.219 | 0.3 | 0.135 |
| HCM Control Delay | 8.9 | 9.3 | 10.1 | 8.7 |
| HCM Lane LOS | A | A | B | A |
| HCM 95th-tile Q | 0.6 | 0.8 | 1.3 | 0.5 |

Notes

~ : Volume Exceeds Capacity; $ : Delay Exceeds 300 Seconds; Error : Computation Not Defined

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 11.2 |
| Intersection LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 78 | 214 | 13 | 23 | 159 | 121 | 12 | 31 | 22 | 41 | 21 | 40 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Mvmt Flow | 85 | 233 | 14 | 25 | 173 | 132 | 13 | 34 | 24 | 45 | 23 | 43 |
| Number of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 2 | 2 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 2 | 2 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 2 | 2 |
| HCM Control Delay | 11.1 | 12 | 9.5 | 9.9 |
| HCM LOS | B | B | A | A |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBLn1 |
|---|---|---|---|---|---|---|
| Vol Left, % | 18% | 100% | 0% | 100% | 0% | 40% |
| Vol Thru, % | 48% | 0% | 94% | 0% | 57% | 21% |
| Vol Right, % | 34% | 0% | 6% | 0% | 43% | 39% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 65 | 78 | 227 | 23 | 280 | 102 |
| LT Vol | 31 | 0 | 214 | 0 | 159 | 21 |
| Through Vol | 22 | 0 | 13 | 0 | 121 | 40 |
| RT Vol | 12 | 78 | 0 | 23 | 0 | 41 |
| Lane Flow Rate | 71 | 85 | 247 | 25 | 304 | 111 |
| Geometry Grp | 2 | 7 | 7 | 7 | 7 | 2 |
| Degree of Util (X) | 0.114 | 0.141 | 0.374 | 0.042 | 0.441 | 0.176 |
| Departure Headway (Hd) | 5.797 | 6.102 | 5.556 | 6.132 | 5.321 | 5.718 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 622 | 591 | 651 | 588 | 682 | 631 |
| Service Time | 3.802 | 3.802 | 3.256 | 3.832 | 3.021 | 3.722 |
| HCM Lane V/C Ratio | 0.114 | 0.144 | 0.379 | 0.043 | 0.446 | 0.176 |
| HCM Control Delay | 9.5 | 9.8 | 11.5 | 9.1 | 12.2 | 9.9 |
| HCM Lane LOS | A | A | B | A | B | A |
| HCM 95th-tile Q | 0.4 | 0.5 | 1.7 | 0.1 | 2.3 | 0.6 |

Notes

~ : Volume Exceeds Capacity; $ : Delay Exceeds 300 Seconds; Error : Computation Not Defined

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 41 | 34 | 77 | 148 | 121 | 69 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow veh/h/ln | 108.6 | 190.0 | 172.7 | 108.6 | 108.6 | 172.7 |
| Lanes | 1 | 0 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 0 | 0 | 790 | 422 | 325 | 1530 |
| Arrive On Green | 0.00 | 0.00 | 0.46 | 0.46 | 0.31 | 0.89 |
| Sat Flow, veh/h | 0 | 0 | 1727 | 923 | 1034 | 1727 |
| Grp Volume(v), veh/h | 0 | 0 | 84 | 161 | 132 | 75 |
| Grp Sat Flow(s),veh/h/ln | 0 | 0 | 1727 | 923 | 1034 | 1727 |
| Q Serve(g_s), s | 0.0 | 0.0 | 1.0 | 4.0 | 3.5 | 0.2 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 1.0 | 4.0 | 3.5 | 0.2 |
| Prop In Lane | 0.00 | 0.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 0 | 0 | 790 | 422 | 325 | 1530 |
| V/C Ratio(X) | 0.00 | 0.00 | 0.11 | 0.38 | 0.41 | 0.05 |
| Avail Cap(c_a), veh/h | 0 | 0 | 790 | 422 | 340 | 1530 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 0.0 | 5.4 | 6.2 | 9.4 | 0.2 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 0.3 | 2.6 | 0.8 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile Back of Q (50%), veh/ln | 0.0 | 0.0 | 0.3 | 0.8 | 0.7 | 0.0 |
| Lane Grp Delay (d), s/veh | 0.0 | 0.0 | 5.7 | 8.9 | 10.2 | 0.3 |
| Lane Grp LOS | | | A | A | B | A |
| Approach Vol, veh/h | 0 | | 245 | | | 207 |
| Approach Delay, s/veh | 0.0 | | 7.8 | | | 6.6 |
| Approach LOS | | | A | | | A |

| Timer | | | | | | |
|---|---|---|---|---|---|---|
| Assigned Phs | | | 2 | | 1 | 6 |
| Phs Duration (G+Y+Rc), s | | | 20.0 | | 15.0 | 35.0 |
| Change Period (Y+Rc), s | | | 4.0 | | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | | | 16.0 | | 11.5 | 31.0 |
| Max Q Clear Time (g_c+I1), s | | | 6.0 | | 5.5 | 2.2 |
| Green Ext Time (p_c), s | | | 0.7 | | 0.4 | 0.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 7.3 |
| HCM 2010 LOS | A |

Notes

User approved volume balancing among the lanes for turning movement.

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 10.6 |
| Intersection LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 47 | 93 | 15 | 87 | 101 | 4 | 21 | 91 | 119 | 6 | 71 | 58 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Mvmt Flow | 51 | 101 | 16 | 95 | 110 | 4 | 23 | 99 | 129 | 7 | 77 | 63 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 10.4 | 11.1 | 10.9 | 9.7 |
| HCM LOS | B | B | B | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 9% | 30% | 45% | 4% |
| Vol Thru, % | 39% | 60% | 53% | 53% |
| Vol Right, % | 52% | 10% | 2% | 43% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 231 | 155 | 192 | 135 |
| LT Vol | 91 | 93 | 101 | 71 |
| Through Vol | 119 | 15 | 4 | 58 |
| RT Vol | 21 | 47 | 87 | 6 |
| Lane Flow Rate | 251 | 168 | 209 | 147 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.353 | 0.256 | 0.318 | 0.215 |
| Departure Headway (Hd) | 5.065 | 5.471 | 5.477 | 5.265 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 711 | 657 | 657 | 681 |
| Service Time | 3.096 | 3.503 | 3.507 | 3.299 |
| HCM Lane V/C Ratio | 0.353 | 0.256 | 0.318 | 0.216 |
| HCM Control Delay | 10.9 | 10.4 | 11.1 | 9.7 |
| HCM Lane LOS | B | B | B | A |
| HCM 95th-tile Q | 1.6 | 1 | 1.4 | 0.8 |

Notes

~ : Volume Exceeds Capacity; $ : Delay Exceeds 300 Seconds; Error : Computation Not Defined

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 16 |
| Intersection LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 92 | 265 | 13 | 29 | 265 | 68 | 9 | 36 | 37 | 107 | 37 | 91 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Mvmt Flow | 100 | 288 | 14 | 32 | 288 | 74 | 10 | 39 | 40 | 116 | 40 | 99 |
| Number of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 2 | 2 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 2 | 2 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 2 | 2 |
| HCM Control Delay | 15.2 | 18.8 | 11.2 | 14.6 |
| HCM LOS | C | C | B | B |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBLn1 |
|---|---|---|---|---|---|---|
| Vol Left, % | 11% | 100% | 0% | 100% | 0% | 46% |
| Vol Thru, % | 44% | 0% | 95% | 0% | 80% | 16% |
| Vol Right, % | 45% | 0% | 5% | 0% | 20% | 39% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 82 | 92 | 278 | 29 | 333 | 235 |
| LT Vol | 36 | 0 | 265 | 0 | 265 | 37 |
| Through Vol | 37 | 0 | 13 | 0 | 68 | 91 |
| RT Vol | 9 | 92 | 0 | 29 | 0 | 107 |
| Lane Flow Rate | 89 | 100 | 302 | 32 | 362 | 255 |
| Geometry Grp | 2 | 7 | 7 | 7 | 7 | 2 |
| Degree of Util (X) | 0.169 | 0.193 | 0.538 | 0.061 | 0.634 | 0.45 |
| Departure Headway (Hd) | 6.838 | 6.95 | 6.407 | 6.965 | 6.31 | 6.341 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 528 | 513 | 559 | 511 | 568 | 562 |
| Service Time | 4.838 | 4.743 | 4.2 | 4.755 | 4.1 | 4.438 |
| HCM Lane V/C Ratio | 0.169 | 0.195 | 0.54 | 0.063 | 0.637 | 0.454 |
| HCM Control Delay | 11.2 | 11.4 | 16.5 | 10.2 | 19.5 | 14.6 |
| HCM Lane LOS | B | B | C | B | C | B |
| HCM 95th-tile Q | 0.6 | 0.7 | 3.2 | 0.2 | 4.4 | 2.3 |

Notes

~ : Volume Exceeds Capacity; $ : Delay Exceeds 300 Seconds; Error : Computation Not Defined

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 118 | 97 | 133 | 67 | 54 | 112 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow veh/h/ln | 108.6 | 190.0 | 172.7 | 108.6 | 108.6 | 172.7 |
| Lanes | 1 | 0 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 0 | 0 | 979 | 523 | 172 | 1497 |
| Arrive On Green | 0.00 | 0.00 | 0.57 | 0.57 | 0.17 | 0.87 |
| Sat Flow, veh/h | 0 | 0 | 1727 | 923 | 1034 | 1727 |
| Grp Volume(v), veh/h | 0 | 0 | 145 | 73 | 59 | 122 |
| Grp Sat Flow(s),veh/h/ln | 0 | 0 | 1727 | 923 | 1034 | 1727 |
| Q Serve(g_s), s | 0.0 | 0.0 | 1.2 | 1.1 | 1.5 | 0.3 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 1.2 | 1.1 | 1.5 | 0.3 |
| Prop In Lane | 0.00 | 0.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 0 | 0 | 979 | 523 | 172 | 1497 |
| V/C Ratio(X) | 0.00 | 0.00 | 0.15 | 0.14 | 0.34 | 0.08 |
| Avail Cap(c_a), veh/h | 0 | 0 | 979 | 523 | 190 | 1497 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 0.0 | 3.1 | 3.1 | 11.0 | 0.3 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 0.3 | 0.6 | 1.2 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile Back of Q (50%), veh/ln | 0.0 | 0.0 | 0.2 | 0.2 | 0.3 | 0.0 |
| Lane Grp Delay (d), s/veh | 0.0 | 0.0 | 3.4 | 3.6 | 12.2 | 0.4 |
| Lane Grp LOS | | | A | A | B | A |
| Approach Vol, veh/h | 0 | | 218 | | | 181 |
| Approach Delay, s/veh | 0.0 | | 3.5 | | | 4.2 |
| Approach LOS | | | A | | | A |

| Timer | | | | | | |
|---|---|---|---|---|---|---|
| Assigned Phs | | | 2 | | 1 | 6 |
| Phs Duration (G+Y+Rc), s | | | 21.0 | | 9.0 | 30.0 |
| Change Period (Y+Rc), s | | | 4.0 | | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | | | 17.0 | | 5.5 | 26.0 |
| Max Q Clear Time (g_c+I1), s | | | 3.2 | | 3.5 | 2.3 |
| Green Ext Time (p_c), s | | | 0.7 | | 0.1 | 0.7 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 3.8 |
| HCM 2010 LOS | | A |

Notes

User approved volume balancing among the lanes for turning movement.

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 9.7 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 58 | 71 | 18 | 163 | 54 | 4 | 10 | 45 | 70 | 5 | 51 | 39 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Mvmt Flow | 63 | 77 | 20 | 177 | 59 | 4 | 11 | 49 | 76 | 5 | 55 | 42 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 9.5 | 10.6 | 9.1 | 8.9 |
| HCM LOS | A | B | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 8% | 39% | 74% | 5% |
| Vol Thru, % | 36% | 48% | 24% | 54% |
| Vol Right, % | 56% | 12% | 2% | 41% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 125 | 147 | 221 | 95 |
| LT Vol | 45 | 71 | 54 | 51 |
| Through Vol | 70 | 18 | 4 | 39 |
| RT Vol | 10 | 58 | 163 | 5 |
| Lane Flow Rate | 136 | 160 | 240 | 103 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.184 | 0.221 | 0.333 | 0.144 |
| Departure Headway (Hd) | 4.882 | 4.97 | 4.994 | 5.009 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 730 | 717 | 716 | 710 |
| Service Time | 2.948 | 3.035 | 3.055 | 3.079 |
| HCM Lane V/C Ratio | 0.186 | 0.223 | 0.335 | 0.145 |
| HCM Control Delay | 9.1 | 9.5 | 10.6 | 8.9 |
| HCM Lane LOS | A | A | B | A |
| HCM 95th-tile Q | 0.7 | 0.8 | 1.5 | 0.5 |

Notes

~ : Volume Exceeds Capacity; $ : Delay Exceeds 300 Seconds; Error : Computation Not Defined

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 12.2 |
| Intersection LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 92 | 214 | 13 | 23 | 159 | 150 | 12 | 54 | 22 | 49 | 27 | 44 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Mvmt Flow | 100 | 233 | 14 | 25 | 173 | 163 | 13 | 59 | 24 | 53 | 29 | 48 |
| Number of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 2 | 2 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 2 | 2 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 2 | 2 |
| HCM Control Delay | 11.8 | 13.6 | 10.3 | 10.6 |
| HCM LOS | B | B | B | B |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBLn1 |
|---|---|---|---|---|---|---|
| Vol Left, % | 14% | 100% | 0% | 100% | 0% | 41% |
| Vol Thru, % | 61% | 0% | 94% | 0% | 51% | 23% |
| Vol Right, % | 25% | 0% | 6% | 0% | 49% | 37% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 88 | 92 | 227 | 23 | 309 | 120 |
| LT Vol | 54 | 0 | 214 | 0 | 159 | 27 |
| Through Vol | 22 | 0 | 13 | 0 | 150 | 44 |
| RT Vol | 12 | 92 | 0 | 23 | 0 | 49 |
| Lane Flow Rate | 96 | 100 | 247 | 25 | 336 | 130 |
| Geometry Grp | 2 | 7 | 7 | 7 | 7 | 2 |
| Degree of Util (X) | 0.161 | 0.176 | 0.396 | 0.044 | 0.512 | 0.216 |
| Departure Headway (Hd) | 6.053 | 6.323 | 5.776 | 6.338 | 5.488 | 5.956 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 591 | 568 | 624 | 566 | 658 | 601 |
| Service Time | 4.102 | 4.056 | 3.509 | 4.071 | 3.22 | 4 |
| HCM Lane V/C Ratio | 0.162 | 0.176 | 0.396 | 0.044 | 0.511 | 0.216 |
| HCM Control Delay | 10.3 | 10.4 | 12.3 | 9.4 | 13.9 | 10.6 |
| HCM Lane LOS | B | B | B | A | B | B |
| HCM 95th-tile Q | 0.6 | 0.6 | 1.9 | 0.1 | 2.9 | 0.8 |

Notes

~ : Volume Exceeds Capacity; $ : Delay Exceeds 300 Seconds; Error : Computation Not Defined

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 7 | 0 | 17 | 41 | 0 | 34 | 65 | 77 | 148 | 121 | 69 | 25 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow veh/h/ln | 190.0 | 186.3 | 190.0 | 190.0 | 108.6 | 190.0 | 186.3 | 172.7 | 108.6 | 108.6 | 172.7 | 186.3 |
| Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 157 | 18 | 125 | 187 | 5 | 42 | 97 | 704 | 376 | 188 | 924 | 847 |
| Arrive On Green | 0.10 | 0.00 | 0.10 | 0.10 | 0.00 | 0.10 | 0.05 | 0.41 | 0.41 | 0.18 | 0.53 | 0.53 |
| Sat Flow, veh/h | 357 | 176 | 1199 | 433 | 50 | 397 | 1774 | 1727 | 923 | 1034 | 1727 | 1583 |
| Grp Volume(v), veh/h | 26 | 0 | 0 | 82 | 0 | 0 | 71 | 84 | 161 | 132 | 75 | 27 |
| Grp Sat Flow(s),veh/h/ln | 1732 | 0 | 0 | 881 | 0 | 0 | 1774 | 1727 | 923 | 1034 | 1727 | 1583 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 1.5 | 1.2 | 4.9 | 4.7 | 0.8 | 0.3 |
| Cycle Q Clear(g_c), s | 0.6 | 0.0 | 0.0 | 3.6 | 0.0 | 0.0 | 1.5 | 1.2 | 4.9 | 4.7 | 0.8 | 0.3 |
| Prop In Lane | 0.31 | | 0.69 | 0.55 | | 0.45 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 301 | 0 | 0 | 234 | 0 | 0 | 97 | 704 | 376 | 188 | 924 | 847 |
| V/C Ratio(X) | 0.09 | 0.00 | 0.00 | 0.35 | 0.00 | 0.00 | 0.73 | 0.12 | 0.43 | 0.70 | 0.08 | 0.03 |
| Avail Cap(c_a), veh/h | 758 | 0 | 0 | 505 | 0 | 0 | 271 | 704 | 376 | 303 | 924 | 847 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 16.0 | 0.0 | 0.0 | 17.3 | 0.0 | 0.0 | 18.3 | 7.2 | 8.3 | 15.1 | 4.4 | 4.3 |
| Incr Delay (d2), s/veh | 0.1 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 | 9.9 | 0.3 | 3.5 | 4.7 | 0.2 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile Back of Q (50%), veh/ln | 0.2 | 0.0 | 0.0 | 0.8 | 0.0 | 0.0 | 0.8 | 0.4 | 1.2 | 1.2 | 0.3 | 0.1 |
| Lane Grp Delay (d), s/veh | 16.1 | 0.0 | 0.0 | 18.2 | 0.0 | 0.0 | 28.2 | 7.6 | 11.9 | 19.7 | 4.6 | 4.4 |
| Lane Grp LOS | B | | | B | | | C | A | B | B | A | A |
| Approach Vol, veh/h | | 26 | | | 82 | | | 316 | | | 234 | |
| Approach Delay, s/veh | | 16.1 | | | 18.2 | | | 14.4 | | | 13.1 | |
| Approach LOS | | B | | | B | | | B | | | B | |
| **Timer** | | | | | | | | | | | | |
| Assigned Phs | | 4 | | | 8 | | 5 | 2 | | 1 | 6 | |
| Phs Duration (G+Y+Rc), s | | 8.1 | | | 8.1 | | 6.2 | 20.0 | | 11.2 | 25.0 | |
| Change Period (Y+Rc), s | | 4.0 | | | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Max Green Setting (Gmax), s | | 16.0 | | | 16.5 | | 6.0 | 16.0 | | 11.5 | 21.0 | |
| Max Q Clear Time (g_c+I1), s | | 2.6 | | | 5.6 | | 3.5 | 6.9 | | 6.7 | 2.8 | |
| Green Ext Time (p_c), s | | 0.4 | | | 0.3 | | 0.1 | 0.6 | | 0.2 | 0.3 | |
| **Intersection Summary** | | | | | | | | | | | | |
| HCM 2010 Ctrl Delay | | | 14.5 | | | | | | | | | |
| HCM 2010 LOS | | | B | | | | | | | | | |
| **Notes** | | | | | | | | | | | | |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 10.8 |
| Intersection LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 47 | 93 | 15 | 92 | 101 | 4 | 21 | 94 | 134 | 6 | 72 | 58 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Mvmt Flow | 51 | 101 | 16 | 100 | 110 | 4 | 23 | 102 | 146 | 7 | 78 | 63 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 10.5 | 11.3 | 11.2 | 9.9 |
| HCM LOS | B | B | B | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 8% | 30% | 47% | 4% |
| Vol Thru, % | 38% | 60% | 51% | 53% |
| Vol Right, % | 54% | 10% | 2% | 43% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 249 | 155 | 197 | 136 |
| LT Vol | 94 | 93 | 101 | 72 |
| Through Vol | 134 | 15 | 4 | 58 |
| RT Vol | 21 | 47 | 92 | 6 |
| Lane Flow Rate | 271 | 168 | 214 | 148 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.382 | 0.26 | 0.33 | 0.219 |
| Departure Headway (Hd) | 5.082 | 5.548 | 5.547 | 5.327 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 706 | 647 | 649 | 673 |
| Service Time | 3.116 | 3.583 | 3.58 | 3.367 |
| HCM Lane V/C Ratio | 0.384 | 0.26 | 0.33 | 0.22 |
| HCM Control Delay | 11.2 | 10.5 | 11.3 | 9.9 |
| HCM Lane LOS | B | B | B | A |
| HCM 95th-tile Q | 1.8 | 1 | 1.4 | 0.8 |

Notes

~ : Volume Exceeds Capacity; $ : Delay Exceeds 300 Seconds; Error : Computation Not Defined

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 18.4 |
| Intersection LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 95 | 265 | 13 | 29 | 265 | 75 | 9 | 42 | 37 | 128 | 53 | 101 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Mvmt Flow | 103 | 288 | 14 | 32 | 288 | 82 | 10 | 46 | 40 | 139 | 58 | 110 |
| Number of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 2 | 2 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 2 | 2 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 2 | 2 |
| HCM Control Delay | 16.8 | 21.9 | 11.9 | 17.8 |
| HCM LOS | C | C | B | C |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBLn1 |
|---|---|---|---|---|---|---|
| Vol Left, % | 10% | 100% | 0% | 100% | 0% | 45% |
| Vol Thru, % | 48% | 0% | 95% | 0% | 78% | 19% |
| Vol Right, % | 42% | 0% | 5% | 0% | 22% | 36% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 88 | 95 | 278 | 29 | 340 | 282 |
| LT Vol | 42 | 0 | 265 | 0 | 265 | 53 |
| Through Vol | 37 | 0 | 13 | 0 | 75 | 101 |
| RT Vol | 9 | 95 | 0 | 29 | 0 | 128 |
| Lane Flow Rate | 96 | 103 | 302 | 32 | 370 | 307 |
| Geometry Grp | 2 | 7 | 7 | 7 | 7 | 2 |
| Degree of Util (X) | 0.191 | 0.211 | 0.573 | 0.064 | 0.687 | 0.562 |
| Departure Headway (Hd) | 7.179 | 7.366 | 6.821 | 7.361 | 6.692 | 6.599 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 498 | 487 | 529 | 486 | 540 | 546 |
| Service Time | 5.241 | 5.115 | 4.569 | 5.107 | 4.437 | 4.644 |
| HCM Lane V/C Ratio | 0.193 | 0.211 | 0.571 | 0.066 | 0.685 | 0.562 |
| HCM Control Delay | 11.9 | 12.1 | 18.4 | 10.6 | 22.9 | 17.8 |
| HCM Lane LOS | B | B | C | B | C | C |
| HCM 95th-tile Q | 0.7 | 0.8 | 3.6 | 0.2 | 5.3 | 3.4 |

Notes

~ : Volume Exceeds Capacity; $ : Delay Exceeds 300 Seconds; Error : Computation Not Defined

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 18 | 0 | 47 | 118 | 0 | 97 | 16 | 133 | 67 | 54 | 112 | 6 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow veh/h/ln | 190.0 | 186.3 | 190.0 | 190.0 | 108.6 | 190.0 | 186.3 | 172.7 | 108.6 | 108.6 | 172.7 | 186.3 |
| Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 191 | 47 | 345 | 249 | 20 | 118 | 30 | 655 | 350 | 49 | 708 | 649 |
| Arrive On Green | 0.31 | 0.00 | 0.31 | 0.31 | 0.00 | 0.31 | 0.02 | 0.38 | 0.38 | 0.05 | 0.41 | 0.41 |
| Sat Flow, veh/h | 288 | 156 | 1132 | 407 | 66 | 388 | 1774 | 1727 | 923 | 1034 | 1727 | 1583 |
| Grp Volume(v), veh/h | 71 | 0 | 0 | 233 | 0 | 0 | 17 | 145 | 73 | 59 | 122 | 7 |
| Grp Sat Flow(s),veh/h/ln | 1576 | 0 | 0 | 862 | 0 | 0 | 1774 | 1727 | 923 | 1034 | 1727 | 1583 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 9.8 | 0.0 | 0.0 | 0.4 | 2.5 | 2.4 | 2.1 | 2.0 | 0.1 |
| Cycle Q Clear(g_c), s | 1.4 | 0.0 | 0.0 | 11.5 | 0.0 | 0.0 | 0.4 | 2.5 | 2.4 | 2.1 | 2.0 | 0.1 |
| Prop In Lane | 0.28 | | 0.72 | 0.55 | | 0.45 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 584 | 0 | 0 | 387 | 0 | 0 | 30 | 655 | 350 | 49 | 708 | 649 |
| V/C Ratio(X) | 0.12 | 0.00 | 0.00 | 0.60 | 0.00 | 0.00 | 0.56 | 0.22 | 0.21 | 1.20 | 0.17 | 0.01 |
| Avail Cap(c_a), veh/h | 661 | 0 | 0 | 441 | 0 | 0 | 158 | 655 | 350 | 127 | 708 | 649 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 11.3 | 0.0 | 0.0 | 14.7 | 0.0 | 0.0 | 21.9 | 9.4 | 9.4 | 21.3 | 8.4 | 7.8 |
| Incr Delay (d2), s/veh | 0.1 | 0.0 | 0.0 | 1.8 | 0.0 | 0.0 | 15.4 | 0.8 | 1.3 | 123.5 | 0.5 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile Back of Q (50%), veh/ln | 0.5 | 0.0 | 0.0 | 2.4 | 0.0 | 0.0 | 0.3 | 0.9 | 0.5 | 2.2 | 0.7 | 0.0 |
| Lane Grp Delay (d), s/veh | 11.4 | 0.0 | 0.0 | 16.5 | 0.0 | 0.0 | 37.2 | 10.2 | 10.7 | 144.8 | 8.9 | 7.9 |
| Lane Grp LOS | B | | | B | | | D | B | B | F | A | A |
| Approach Vol, veh/h | | 71 | | | 233 | | | 235 | | | 188 | |
| Approach Delay, s/veh | | 11.4 | | | 16.5 | | | 12.3 | | | 51.5 | |
| Approach LOS | | B | | | B | | | B | | | D | |
| **Timer** | | | | | | | | | | | | |
| Assigned Phs | | 4 | | | 8 | | 5 | 2 | | 1 | 6 | |
| Phs Duration (G+Y+Rc), s | | 17.7 | | | 17.7 | | 4.8 | 21.0 | | 6.1 | 22.4 | |
| Change Period (Y+Rc), s | | 4.0 | | | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Max Green Setting (Gmax), s | | 16.0 | | | 16.5 | | 4.0 | 17.0 | | 5.5 | 18.0 | |
| Max Q Clear Time (g_c+I1), s | | 3.4 | | | 13.5 | | 2.4 | 4.5 | | 4.1 | 4.0 | |
| Green Ext Time (p_c), s | | 1.5 | | | 0.5 | | 0.0 | 0.7 | | 0.0 | 0.6 | |
| **Intersection Summary** | | | | | | | | | | | | |
| HCM 2010 Ctrl Delay | | | 23.7 | | | | | | | | | |
| HCM 2010 LOS | | | C | | | | | | | | | |
| **Notes** | | | | | | | | | | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 48 | 122 | 24 | 221 | 86 | 3 | 21 | 71 | 132 | 4 | 72 | 29 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow veh/h/ln | 172.7 | 172.7 | 190.0 | 172.7 | 172.7 | 190.0 | 172.7 | 172.7 | 172.7 | 172.7 | 172.7 | 172.7 |
| Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 340 | 196 | 38 | 277 | 168 | 5 | 33 | 608 | 516 | 7 | 581 | 494 |
| Arrive On Green | 0.21 | 0.14 | 0.14 | 0.17 | 0.10 | 0.10 | 0.02 | 0.35 | 0.35 | 0.00 | 0.34 | 0.34 |
| Sat Flow, veh/h | 1645 | 1404 | 275 | 1645 | 1664 | 54 | 1645 | 1727 | 1468 | 1645 | 1727 | 1468 |
| Grp Volume(v), veh/h | 52 | 0 | 159 | 240 | 0 | 96 | 23 | 77 | 143 | 4 | 78 | 32 |
| Grp Sat Flow(s),veh/h/ln | 1645 | 0 | 1679 | 1645 | 0 | 1718 | 1645 | 1727 | 1468 | 1645 | 1727 | 1468 |
| Q Serve(g_s), s | 1.2 | 0.0 | 4.3 | 6.8 | 0.0 | 2.5 | 0.7 | 1.4 | 1.6 | 0.1 | 1.5 | 0.7 |
| Cycle Q Clear(g_c), s | 1.2 | 0.0 | 4.3 | 6.8 | 0.0 | 2.5 | 0.7 | 1.4 | 1.6 | 0.1 | 1.5 | 0.7 |
| Prop In Lane | 1.00 | | 0.16 | 1.00 | | 0.03 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 340 | 0 | 234 | 277 | 0 | 174 | 33 | 608 | 516 | 7 | 581 | 494 |
| V/C Ratio(X) | 0.15 | 0.00 | 0.68 | 0.87 | 0.00 | 0.55 | 0.71 | 0.13 | 0.28 | 0.56 | 0.13 | 0.06 |
| Avail Cap(c_a), veh/h | 340 | 0 | 565 | 277 | 0 | 650 | 138 | 608 | 516 | 138 | 581 | 494 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.97 | 0.97 | 0.97 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 15.5 | 0.0 | 19.5 | 19.3 | 0.0 | 20.4 | 23.2 | 10.5 | 2.6 | 23.6 | 11.0 | 10.7 |
| Incr Delay (d2), s/veh | 0.2 | 0.0 | 3.4 | 24.1 | 0.0 | 2.7 | 23.8 | 0.4 | 1.3 | 54.8 | 0.5 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile Back of Q (50%), veh/ln | 0.4 | 0.0 | 1.8 | 4.2 | 0.0 | 1.1 | 0.5 | 0.6 | 1.0 | 0.1 | 0.6 | 0.2 |
| Lane Grp Delay (d), s/veh | 15.7 | 0.0 | 22.9 | 43.3 | 0.0 | 23.1 | 46.9 | 10.9 | 3.9 | 78.4 | 11.5 | 11.0 |
| Lane Grp LOS | B | | C | D | | C | D | B | A | E | B | B |
| Approach Vol, veh/h | | 211 | | | 336 | | | 243 | | | 114 | |
| Approach Delay, s/veh | | 21.1 | | | 37.5 | | | 10.2 | | | 13.7 | |
| Approach LOS | | C | | | D | | | B | | | B | |
| **Timer** | | | | | | | | | | | | |
| Assigned Phs | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Phs Duration (G+Y+Rc), s | 13.8 | 10.6 | | 12.0 | 8.8 | | 4.9 | 20.7 | | 4.2 | 20.0 | |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Max Green Setting (Gmax), s | 6.0 | 16.0 | | 8.0 | 18.0 | | 4.0 | 16.0 | | 4.0 | 16.0 | |
| Max Q Clear Time (g_c+I1), s | 3.2 | 6.3 | | 8.8 | 4.5 | | 2.7 | 3.6 | | 2.1 | 3.5 | |
| Green Ext Time (p_c), s | 0.2 | 0.5 | | 0.0 | 0.3 | | 0.0 | 0.7 | | 0.0 | 0.3 | |
| **Intersection Summary** | | | | | | | | | | | | |
| HCM 2010 Ctrl Delay | | | 23.3 | | | | | | | | | |
| HCM 2010 LOS | | | C | | | | | | | | | |
| **Notes** | | | | | | | | | | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 99 | 312 | 37 | 73 | 223 | 131 | 34 | 118 | 69 | 49 | 87 | 58 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow veh/h/ln | 172.7 | 172.7 | 172.7 | 172.7 | 172.7 | 172.7 | 172.7 | 172.7 | 190.0 | 172.7 | 172.7 | 190.0 |
| Lanes | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 2 | 0 |
| Cap, veh/h | 146 | 660 | 280 | 96 | 554 | 236 | 54 | 766 | 421 | 69 | 751 | 460 |
| Arrive On Green | 0.09 | 0.19 | 0.19 | 0.06 | 0.16 | 0.16 | 0.03 | 0.37 | 0.37 | 0.04 | 0.37 | 0.37 |
| Sat Flow, veh/h | 1645 | 3455 | 1468 | 1645 | 3455 | 1468 | 1645 | 2097 | 1154 | 1645 | 2007 | 1230 |
| Grp Volume(v), veh/h | 108 | 339 | 40 | 79 | 242 | 142 | 37 | 104 | 99 | 53 | 81 | 77 |
| Grp Sat Flow(s),veh/h/ln | 1645 | 1727 | 1468 | 1645 | 1727 | 1468 | 1645 | 1727 | 1524 | 1645 | 1727 | 1510 |
| Q Serve(g_s), s | 3.0 | 4.1 | 1.1 | 2.2 | 2.9 | 4.2 | 1.0 | 1.9 | 2.1 | 1.5 | 1.4 | 1.6 |
| Cycle Q Clear(g_c), s | 3.0 | 4.1 | 1.1 | 2.2 | 2.9 | 4.2 | 1.0 | 1.9 | 2.1 | 1.5 | 1.4 | 1.6 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.76 | 1.00 | | 0.81 |
| Lane Grp Cap(c), veh/h | 146 | 660 | 280 | 96 | 554 | 236 | 54 | 631 | 556 | 69 | 647 | 565 |
| V/C Ratio(X) | 0.74 | 0.51 | 0.14 | 0.82 | 0.44 | 0.60 | 0.69 | 0.16 | 0.18 | 0.77 | 0.12 | 0.14 |
| Avail Cap(c_a), veh/h | 247 | 1187 | 505 | 247 | 1187 | 505 | 141 | 631 | 556 | 141 | 647 | 565 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.99 | 0.99 | 0.99 |
| Uniform Delay (d), s/veh | 20.7 | 16.9 | 15.7 | 21.7 | 17.6 | 18.2 | 22.3 | 10.0 | 10.0 | 22.1 | 9.6 | 9.6 |
| Incr Delay (d2), s/veh | 7.1 | 0.6 | 0.2 | 15.7 | 0.5 | 2.5 | 14.5 | 0.6 | 0.7 | 16.1 | 0.4 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile Back of Q (50%), veh/ln | 1.4 | 1.6 | 0.3 | 1.2 | 1.2 | 1.4 | 0.6 | 0.7 | 0.7 | 0.8 | 0.6 | 0.6 |
| Lane Grp Delay (d), s/veh | 27.8 | 17.5 | 15.9 | 37.4 | 18.2 | 20.6 | 36.8 | 10.5 | 10.7 | 38.2 | 10.0 | 10.1 |
| Lane Grp LOS | C | B | B | D | B | C | D | B | B | D | A | B |
| Approach Vol, veh/h | | 487 | | | 463 | | | 240 | | | 211 | |
| Approach Delay, s/veh | | 19.7 | | | 22.2 | | | 14.7 | | | 17.1 | |
| Approach LOS | | B | | | C | | | B | | | B | |
| **Timer** | | | | | | | | | | | | |
| Assigned Phs | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Phs Duration (G+Y+Rc), s | 8.1 | 12.9 | | 6.7 | 11.5 | | 5.5 | 21.0 | | 5.9 | 21.4 | |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Max Green Setting (Gmax), s | 7.0 | 16.0 | | 7.0 | 16.0 | | 4.0 | 17.0 | | 4.0 | 17.0 | |
| Max Q Clear Time (g_c+I1), s | 5.0 | 6.1 | | 4.2 | 6.2 | | 3.0 | 4.1 | | 3.5 | 3.6 | |
| Green Ext Time (p_c), s | 0.5 | 1.7 | | 0.0 | 1.3 | | 0.0 | 0.8 | | 0.0 | 0.7 | |
| **Intersection Summary** | | | | | | | | | | | | |
| HCM 2010 Ctrl Delay | | | 19.3 | | | | | | | | | |
| HCM 2010 LOS | | | B | | | | | | | | | |
| **Notes** | | | | | | | | | | | | |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 41 | 34 | 200 | 148 | 121 | 196 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow veh/h/ln | 108.6 | 190.0 | 138.0 | 190.0 | 108.6 | 172.7 |
| Lanes | 1 | 0 | 2 | 0 | 1 | 2 |
| Cap, veh/h | 0 | 0 | 603 | 426 | 414 | 3109 |
| Arrive On Green | 0.00 | 0.00 | 0.40 | 0.40 | 0.80 | 1.00 |
| Sat Flow, veh/h | 0 | 0 | 1506 | 1065 | 1034 | 3455 |
| Grp Volume(v), veh/h | 0 | 0 | 198 | 180 | 132 | 213 |
| Grp Sat Flow(s),veh/h/ln | 0 | 0 | 1380 | 1192 | 1034 | 1727 |
| Q Serve(g_s), s | 0.0 | 0.0 | 4.0 | 4.3 | 1.4 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 4.0 | 4.3 | 1.4 | 0.0 |
| Prop In Lane | 0.00 | 0.00 | | 0.89 | 1.00 | |
| Lane Grp Cap(c), veh/h | 0 | 0 | 552 | 477 | 414 | 3109 |
| V/C Ratio(X) | 0.00 | 0.00 | 0.36 | 0.38 | 0.32 | 0.07 |
| Avail Cap(c_a), veh/h | 0 | 0 | 552 | 477 | 427 | 3109 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 0.00 | 0.00 | 0.97 | 0.97 | 0.84 | 0.84 |
| Uniform Delay (d), s/veh | 0.0 | 0.0 | 8.4 | 8.5 | 2.5 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 1.8 | 2.2 | 0.4 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile Back of Q (50%), veh/ln | 0.0 | 0.0 | 1.2 | 1.1 | 0.2 | 0.0 |
| Lane Grp Delay (d), s/veh | 0.0 | 0.0 | 10.2 | 10.7 | 2.9 | 0.0 |
| Lane Grp LOS | | | B | B | A | A |
| Approach Vol, veh/h | 0 | | 378 | | | 345 |
| Approach Delay, s/veh | 0.0 | | 10.4 | | | 1.1 |
| Approach LOS | | | B | | | A |

| Timer | | | | | | |
|---|---|---|---|---|---|---|
| Assigned Phs | | | 2 | | 1 | 6 |
| Phs Duration (G+Y+Rc), s | | | 20.0 | | 20.0 | 40.0 |
| Change Period (Y+Rc), s | | | 4.0 | | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | | | 16.0 | | 16.5 | 36.0 |
| Max Q Clear Time (g_c+I1), s | | | 6.3 | | 3.4 | 2.0 |
| Green Ext Time (p_c), s | | | 1.4 | | 1.3 | 1.7 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 6.0 |
| HCM 2010 LOS | | A |

| Notes |
|---|
| User approved volume balancing among the lanes for turning movement. |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 26 | 147 | 29 | 184 | 167 | 2 | 34 | 139 | 228 | 3 | 111 | 40 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow veh/h/ln | 172.7 | 172.7 | 190.0 | 172.7 | 172.7 | 190.0 | 172.7 | 172.7 | 172.7 | 172.7 | 172.7 | 172.7 |
| Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 42 | 222 | 44 | 263 | 499 | 5 | 47 | 625 | 531 | 5 | 581 | 494 |
| Arrive On Green | 0.03 | 0.16 | 0.16 | 0.16 | 0.29 | 0.29 | 0.02 | 0.24 | 0.24 | 0.00 | 0.34 | 0.34 |
| Sat Flow, veh/h | 1645 | 1398 | 280 | 1645 | 1705 | 19 | 1645 | 1727 | 1468 | 1645 | 1727 | 1468 |
| Grp Volume(v), veh/h | 28 | 0 | 192 | 200 | 0 | 184 | 37 | 151 | 248 | 3 | 121 | 43 |
| Grp Sat Flow(s),veh/h/ln | 1645 | 0 | 1678 | 1645 | 0 | 1724 | 1645 | 1727 | 1468 | 1645 | 1727 | 1468 |
| Q Serve(g_s), s | 0.9 | 0.0 | 5.5 | 5.9 | 0.0 | 4.3 | 1.1 | 3.6 | 3.7 | 0.1 | 2.5 | 0.7 |
| Cycle Q Clear(g_c), s | 0.9 | 0.0 | 5.5 | 5.9 | 0.0 | 4.3 | 1.1 | 3.6 | 3.7 | 0.1 | 2.5 | 0.7 |
| Prop In Lane | 1.00 | | 0.17 | 1.00 | | 0.01 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 42 | 0 | 266 | 263 | 0 | 504 | 47 | 625 | 531 | 5 | 581 | 494 |
| V/C Ratio(X) | 0.66 | 0.00 | 0.72 | 0.76 | 0.00 | 0.36 | 0.78 | 0.24 | 0.47 | 0.56 | 0.21 | 0.09 |
| Avail Cap(c_a), veh/h | 163 | 0 | 531 | 423 | 0 | 819 | 130 | 625 | 531 | 130 | 581 | 494 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.67 | 0.67 | 0.67 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.97 | 0.97 | 0.97 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 24.4 | 0.0 | 20.2 | 20.3 | 0.0 | 14.2 | 24.6 | 13.6 | 3.8 | 25.2 | 12.0 | 6.0 |
| Incr Delay (d2), s/veh | 16.2 | 0.0 | 3.7 | 4.5 | 0.0 | 0.4 | 22.8 | 0.9 | 2.8 | 68.2 | 0.8 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile Back of Q (50%), veh/ln | 0.5 | 0.0 | 2.3 | 2.4 | 0.0 | 1.6 | 0.7 | 1.4 | 2.3 | 0.1 | 1.0 | 0.3 |
| Lane Grp Delay (d), s/veh | 40.6 | 0.0 | 23.9 | 24.9 | 0.0 | 14.6 | 47.4 | 14.4 | 6.6 | 93.4 | 12.8 | 6.3 |
| Lane Grp LOS | D | | C | C | | B | D | B | A | F | B | A |
| Approach Vol, veh/h | | 220 | | | 384 | | | 436 | | | 167 | |
| Approach Delay, s/veh | | 26.0 | | | 19.9 | | | 12.8 | | | 12.6 | |
| Approach LOS | | C | | | B | | | B | | | B | |
| **Timer** | | | | | | | | | | | | |
| Assigned Phs | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Phs Duration (G+Y+Rc), s | 5.3 | 12.0 | | 12.1 | 18.8 | | 5.5 | 22.3 | | 4.2 | 21.0 | |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Max Green Setting (Gmax), s | 5.0 | 16.0 | | 13.0 | 24.0 | | 4.0 | 17.0 | | 4.0 | 17.0 | |
| Max Q Clear Time (g_c+I1), s | 2.9 | 7.5 | | 7.9 | 6.3 | | 3.1 | 5.7 | | 2.1 | 4.5 | |
| Green Ext Time (p_c), s | 0.0 | 0.5 | | 0.7 | 1.4 | | 0.0 | 1.3 | | 0.0 | 0.5 | |
| **Intersection Summary** | | | | | | | | | | | | |
| HCM 2010 Ctrl Delay | | | 17.4 | | | | | | | | | |
| HCM 2010 LOS | | | B | | | | | | | | | |
| **Notes** | | | | | | | | | | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 152 | 373 | 30 | 84 | 384 | 85 | 20 | 152 | 106 | 124 | 149 | 131 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow veh/h/ln | 172.7 | 172.7 | 172.7 | 172.7 | 172.7 | 172.7 | 172.7 | 172.7 | 190.0 | 172.7 | 172.7 | 190.0 |
| Lanes | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 2 | 0 |
| Cap, veh/h | 215 | 830 | 353 | 114 | 616 | 262 | 34 | 590 | 387 | 169 | 678 | 554 |
| Arrive On Green | 0.13 | 0.24 | 0.24 | 0.07 | 0.18 | 0.18 | 0.02 | 0.30 | 0.30 | 0.10 | 0.38 | 0.38 |
| Sat Flow, veh/h | 1645 | 3455 | 1468 | 1645 | 3455 | 1468 | 1645 | 1950 | 1279 | 1645 | 1762 | 1439 |
| Grp Volume(v), veh/h | 165 | 405 | 33 | 91 | 417 | 92 | 22 | 145 | 135 | 135 | 159 | 145 |
| Grp Sat Flow(s),veh/h/ln | 1645 | 1727 | 1468 | 1645 | 1727 | 1468 | 1645 | 1727 | 1502 | 1645 | 1727 | 1473 |
| Q Serve(g_s), s | 5.4 | 5.7 | 1.0 | 3.1 | 6.3 | 3.1 | 0.7 | 3.6 | 3.9 | 4.5 | 3.5 | 3.8 |
| Cycle Q Clear(g_c), s | 5.4 | 5.7 | 1.0 | 3.1 | 6.3 | 3.1 | 0.7 | 3.6 | 3.9 | 4.5 | 3.5 | 3.8 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.85 | 1.00 | | 0.98 |
| Lane Grp Cap(c), veh/h | 215 | 830 | 353 | 114 | 616 | 262 | 34 | 523 | 455 | 169 | 665 | 567 |
| V/C Ratio(X) | 0.77 | 0.49 | 0.09 | 0.80 | 0.68 | 0.35 | 0.65 | 0.28 | 0.30 | 0.80 | 0.24 | 0.26 |
| Avail Cap(c_a), veh/h | 264 | 985 | 418 | 264 | 985 | 418 | 117 | 523 | 455 | 234 | 665 | 567 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.91 | 0.91 |
| Uniform Delay (d), s/veh | 23.6 | 18.4 | 16.6 | 25.7 | 21.5 | 20.2 | 27.3 | 14.9 | 15.0 | 24.6 | 11.7 | 11.8 |
| Incr Delay (d2), s/veh | 10.3 | 0.4 | 0.1 | 12.1 | 1.3 | 0.8 | 18.7 | 1.3 | 1.7 | 11.4 | 0.8 | 1.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile Back of Q (50%), veh/ln | 2.6 | 2.2 | 0.3 | 1.5 | 2.6 | 1.0 | 0.5 | 1.5 | 1.5 | 2.2 | 1.4 | 1.3 |
| Lane Grp Delay (d), s/veh | 33.9 | 18.8 | 16.7 | 37.8 | 22.9 | 21.0 | 46.0 | 16.2 | 16.7 | 36.0 | 12.5 | 12.8 |
| Lane Grp LOS | C | B | B | D | C | C | D | B | B | D | B | B |
| Approach Vol, veh/h | | 603 | | | 600 | | | 302 | | | 439 | |
| Approach Delay, s/veh | | 22.8 | | | 24.8 | | | 18.6 | | | 19.8 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Phs Duration (G+Y+Rc), s | 11.3 | 17.5 | | 7.9 | 14.0 | | 5.2 | 21.0 | | 9.8 | 25.6 | |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Max Green Setting (Gmax), s | 9.0 | 16.0 | | 9.0 | 16.0 | | 4.0 | 17.0 | | 8.0 | 21.0 | |
| Max Q Clear Time (g_c+I1), s | 7.4 | 7.7 | | 5.1 | 8.3 | | 2.7 | 5.9 | | 6.5 | 5.8 | |
| Green Ext Time (p_c), s | 0.5 | 2.0 | | 0.1 | 1.7 | | 0.0 | 1.1 | | 0.1 | 1.8 | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2010 Ctrl Delay | | | 22.1 |
| HCM 2010 LOS | | | C |

Notes

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 118 | 97 | 322 | 67 | 54 | 270 |
| Number | 3 | 18 | 2 | 12 | 1 | 6 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow veh/h/ln | 108.6 | 190.0 | 156.7 | 190.0 | 108.6 | 172.7 |
| Lanes | 1 | 0 | 2 | 0 | 1 | 2 |
| Cap, veh/h | 0 | 0 | 1364 | 281 | 252 | 3081 |
| Arrive On Green | 0.00 | 0.00 | 0.54 | 0.54 | 0.49 | 1.00 |
| Sat Flow, veh/h | 0 | 0 | 2523 | 520 | 1034 | 3455 |
| Grp Volume(v), veh/h | 0 | 0 | 216 | 207 | 59 | 293 |
| Grp Sat Flow(s),veh/h/ln | 0 | 0 | 1567 | 1476 | 1034 | 1727 |
| Q Serve(g_s), s | 0.0 | 0.0 | 2.7 | 2.8 | 1.2 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 2.7 | 2.8 | 1.2 | 0.0 |
| Prop In Lane | 0.00 | 0.00 | | 0.35 | 1.00 | |
| Lane Grp Cap(c), veh/h | 0 | 0 | 847 | 798 | 252 | 3081 |
| V/C Ratio(X) | 0.00 | 0.00 | 0.25 | 0.26 | 0.23 | 0.10 |
| Avail Cap(c_a), veh/h | 0 | 0 | 847 | 798 | 265 | 3081 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 0.00 | 0.00 | 0.93 | 0.93 | 0.87 | 0.87 |
| Uniform Delay (d), s/veh | 0.0 | 0.0 | 4.5 | 4.5 | 7.5 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 0.7 | 0.7 | 0.4 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile Back of Q (50%), veh/ln | 0.0 | 0.0 | 0.7 | 0.7 | 0.2 | 0.0 |
| Lane Grp Delay (d), s/veh | 0.0 | 0.0 | 5.2 | 5.3 | 7.9 | 0.1 |
| Lane Grp LOS | | | A | A | A | A |
| Approach Vol, veh/h | 0 | | 423 | | | 352 |
| Approach Delay, s/veh | 0.0 | | 5.2 | | | 1.4 |
| Approach LOS | | | A | | | A |
| **Timer** | | | | | | |
| Assigned Phs | | | 2 | | 1 | 6 |
| Phs Duration (G+Y+Rc), s | | | 24.0 | | 13.0 | 37.0 |
| Change Period (Y+Rc), s | | | 4.0 | | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | | | 20.0 | | 9.5 | 33.0 |
| Max Q Clear Time (g_c+I1), s | | | 4.8 | | 3.2 | 2.0 |
| Green Ext Time (p_c), s | | | 2.0 | | 1.0 | 2.0 |
| **Intersection Summary** | | | | | | |
| HCM 2010 Ctrl Delay | | | 3.5 | | | |
| HCM 2010 LOS | | | A | | | |
| **Notes** | | | | | | |
| User approved volume balancing among the lanes for turning movement. | | | | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 48 | 122 | 24 | 242 | 86 | 3 | 21 | 72 | 138 | 4 | 77 | 29 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow veh/h/ln | 172.7 | 172.7 | 190.0 | 172.7 | 172.7 | 190.0 | 172.7 | 172.7 | 172.7 | 172.7 | 172.7 | 172.7 |
| Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 340 | 196 | 38 | 277 | 168 | 5 | 32 | 608 | 516 | 7 | 581 | 494 |
| Arrive On Green | 0.21 | 0.14 | 0.14 | 0.17 | 0.10 | 0.10 | 0.02 | 0.35 | 0.35 | 0.00 | 0.34 | 0.34 |
| Sat Flow, veh/h | 1645 | 1404 | 275 | 1645 | 1664 | 54 | 1645 | 1727 | 1468 | 1645 | 1727 | 1468 |
| Grp Volume(v), veh/h | 52 | 0 | 159 | 263 | 0 | 96 | 23 | 78 | 150 | 4 | 84 | 32 |
| Grp Sat Flow(s),veh/h/ln | 1645 | 0 | 1679 | 1645 | 0 | 1718 | 1645 | 1727 | 1468 | 1645 | 1727 | 1468 |
| Q Serve(g_s), s | 1.2 | 0.0 | 4.3 | 7.5 | 0.0 | 2.5 | 0.7 | 1.5 | 1.7 | 0.1 | 1.6 | 0.7 |
| Cycle Q Clear(g_c), s | 1.2 | 0.0 | 4.3 | 7.5 | 0.0 | 2.5 | 0.7 | 1.5 | 1.7 | 0.1 | 1.6 | 0.7 |
| Prop In Lane | 1.00 | | 0.16 | 1.00 | | 0.03 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 340 | 0 | 234 | 277 | 0 | 174 | 32 | 608 | 516 | 7 | 581 | 494 |
| V/C Ratio(X) | 0.15 | 0.00 | 0.68 | 0.95 | 0.00 | 0.55 | 0.71 | 0.13 | 0.29 | 0.56 | 0.14 | 0.06 |
| Avail Cap(c_a), veh/h | 340 | 0 | 565 | 277 | 0 | 650 | 138 | 608 | 516 | 138 | 581 | 494 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.97 | 0.97 | 0.97 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 15.5 | 0.0 | 19.5 | 19.6 | 0.0 | 20.4 | 23.2 | 10.5 | 2.6 | 23.6 | 11.0 | 10.7 |
| Incr Delay (d2), s/veh | 0.2 | 0.0 | 3.4 | 40.8 | 0.0 | 2.7 | 24.3 | 0.4 | 1.4 | 54.8 | 0.5 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile Back of Q (50%), veh/ln | 0.4 | 0.0 | 1.8 | 5.8 | 0.0 | 1.1 | 0.5 | 0.6 | 1.1 | 0.1 | 0.6 | 0.2 |
| Lane Grp Delay (d), s/veh | 15.7 | 0.0 | 22.9 | 60.3 | 0.0 | 23.1 | 47.4 | 10.9 | 4.0 | 78.4 | 11.5 | 11.0 |
| Lane Grp LOS | B | | C | E | | C | D | B | A | E | B | B |
| Approach Vol, veh/h | | 211 | | | 359 | | | 251 | | | 120 | |
| Approach Delay, s/veh | | 21.1 | | | 50.4 | | | 10.1 | | | 13.6 | |
| Approach LOS | | C | | | D | | | B | | | B | |
| **Timer** | | | | | | | | | | | | |
| Assigned Phs | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Phs Duration (G+Y+Rc), s | 13.8 | 10.6 | | 12.0 | 8.8 | | 4.9 | 20.7 | | 4.2 | 20.0 | |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Max Green Setting (Gmax), s | 6.0 | 16.0 | | 8.0 | 18.0 | | 4.0 | 16.0 | | 4.0 | 16.0 | |
| Max Q Clear Time (g_c+I1), s | 3.2 | 6.3 | | 9.5 | 4.5 | | 2.7 | 3.7 | | 2.1 | 3.6 | |
| Green Ext Time (p_c), s | 0.3 | 0.5 | | 0.0 | 0.3 | | 0.0 | 0.7 | | 0.0 | 0.3 | |
| **Intersection Summary** | | | | | | | | | | | | |
| HCM 2010 Ctrl Delay | | | 28.4 | | | | | | | | | |
| HCM 2010 LOS | | | C | | | | | | | | | |
| **Notes** | | | | | | | | | | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 113 | 312 | 37 | 73 | 223 | 160 | 34 | 141 | 69 | 57 | 93 | 62 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow veh/h/ln | 172.7 | 172.7 | 172.7 | 172.7 | 172.7 | 172.7 | 172.7 | 172.7 | 190.0 | 172.7 | 172.7 | 190.0 |
| Lanes | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 2 | 0 |
| Cap, veh/h | 163 | 753 | 320 | 96 | 614 | 261 | 53 | 778 | 363 | 76 | 727 | 447 |
| Arrive On Green | 0.10 | 0.22 | 0.22 | 0.06 | 0.18 | 0.18 | 0.03 | 0.35 | 0.35 | 0.05 | 0.36 | 0.36 |
| Sat Flow, veh/h | 1645 | 3455 | 1468 | 1645 | 3455 | 1468 | 1645 | 2230 | 1041 | 1645 | 2005 | 1232 |
| Grp Volume(v), veh/h | 123 | 339 | 40 | 79 | 242 | 174 | 37 | 117 | 111 | 62 | 86 | 82 |
| Grp Sat Flow(s),veh/h/ln | 1645 | 1727 | 1468 | 1645 | 1727 | 1468 | 1645 | 1727 | 1544 | 1645 | 1727 | 1510 |
| Q Serve(g_s), s | 3.5 | 4.1 | 1.1 | 2.3 | 3.0 | 5.4 | 1.1 | 2.3 | 2.5 | 1.8 | 1.6 | 1.8 |
| Cycle Q Clear(g_c), s | 3.5 | 4.1 | 1.1 | 2.3 | 3.0 | 5.4 | 1.1 | 2.3 | 2.5 | 1.8 | 1.6 | 1.8 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.67 | 1.00 | | 0.82 |
| Lane Grp Cap(c), veh/h | 163 | 753 | 320 | 96 | 614 | 261 | 53 | 602 | 538 | 76 | 627 | 548 |
| V/C Ratio(X) | 0.76 | 0.45 | 0.12 | 0.82 | 0.39 | 0.67 | 0.70 | 0.19 | 0.21 | 0.81 | 0.14 | 0.15 |
| Avail Cap(c_a), veh/h | 236 | 1134 | 482 | 236 | 1134 | 482 | 135 | 602 | 538 | 135 | 627 | 548 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 21.4 | 16.5 | 15.3 | 22.7 | 17.7 | 18.7 | 23.3 | 11.1 | 11.1 | 23.0 | 10.4 | 10.5 |
| Incr Delay (d2), s/veh | 8.0 | 0.4 | 0.2 | 15.4 | 0.4 | 2.9 | 15.0 | 0.7 | 0.9 | 18.2 | 0.5 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile Back of Q (50%), veh/ln | 1.6 | 1.6 | 0.3 | 1.2 | 1.2 | 1.9 | 0.6 | 0.9 | 0.9 | 1.1 | 0.7 | 0.6 |
| Lane Grp Delay (d), s/veh | 29.3 | 16.9 | 15.5 | 38.1 | 18.1 | 21.6 | 38.4 | 11.8 | 12.0 | 41.3 | 10.9 | 11.0 |
| Lane Grp LOS | C | B | B | D | B | C | D | B | B | D | B | B |
| Approach Vol, veh/h | | 502 | | | 495 | | | 265 | | | 230 | |
| Approach Delay, s/veh | | 19.9 | | | 22.5 | | | 15.6 | | | 19.1 | |
| Approach LOS | | B | | | C | | | B | | | B | |
| **Timer** | | | | | | | | | | | | |
| Assigned Phs | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Phs Duration (G+Y+Rc), s | 8.8 | 14.6 | | 6.9 | 12.7 | | 5.6 | 21.0 | | 6.3 | 21.7 | |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Max Green Setting (Gmax), s | 7.0 | 16.0 | | 7.0 | 16.0 | | 4.0 | 17.0 | | 4.0 | 17.0 | |
| Max Q Clear Time (g_c+I1), s | 5.5 | 6.1 | | 4.3 | 7.4 | | 3.1 | 4.5 | | 3.8 | 3.8 | |
| Green Ext Time (p_c), s | 0.4 | 1.8 | | 0.0 | 1.3 | | 0.0 | 0.9 | | 0.0 | 0.8 | |
| **Intersection Summary** | | | | | | | | | | | | |
| HCM 2010 Ctrl Delay | | | 19.9 | | | | | | | | | |
| HCM 2010 LOS | | | B | | | | | | | | | |
| **Notes** | | | | | | | | | | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 7 | 0 | 17 | 41 | 0 | 34 | 65 | 200 | 148 | 121 | 196 | 25 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow veh/h/ln | 190.0 | 186.3 | 190.0 | 190.0 | 108.6 | 190.0 | 186.3 | 138.0 | 190.0 | 108.6 | 174.2 | 190.0 |
| Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |
| Cap, veh/h | 139 | 22 | 126 | 167 | 8 | 42 | 93 | 534 | 377 | 283 | 1748 | 219 |
| Arrive On Green | 0.11 | 0.00 | 0.11 | 0.11 | 0.00 | 0.11 | 0.05 | 0.35 | 0.35 | 0.55 | 1.00 | 1.00 |
| Sat Flow, veh/h | 323 | 205 | 1187 | 408 | 73 | 396 | 1774 | 1506 | 1065 | 1034 | 3036 | 380 |
| Grp Volume(v), veh/h | 26 | 0 | 0 | 82 | 0 | 0 | 71 | 198 | 180 | 132 | 121 | 119 |
| Grp Sat Flow(s),veh/h/ln | 1715 | 0 | 0 | 877 | 0 | 0 | 1774 | 1380 | 1192 | 1034 | 1742 | 1674 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 3.5 | 0.0 | 0.0 | 1.8 | 4.9 | 5.2 | 3.5 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.6 | 0.0 | 0.0 | 4.1 | 0.0 | 0.0 | 1.8 | 4.9 | 5.2 | 3.5 | 0.0 | 0.0 |
| Prop In Lane | 0.31 | | 0.69 | 0.55 | | 0.45 | 1.00 | | 0.89 | 1.00 | | 0.23 |
| Lane Grp Cap(c), veh/h | 287 | 0 | 0 | 217 | 0 | 0 | 93 | 489 | 422 | 283 | 1002 | 964 |
| V/C Ratio(X) | 0.09 | 0.00 | 0.00 | 0.38 | 0.00 | 0.00 | 0.77 | 0.40 | 0.43 | 0.47 | 0.12 | 0.12 |
| Avail Cap(c_a), veh/h | 661 | 0 | 0 | 439 | 0 | 0 | 236 | 489 | 422 | 378 | 1002 | 964 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.96 | 0.96 | 0.96 | 0.83 | 0.83 | 0.83 |
| Uniform Delay (d), s/veh | 18.3 | 0.0 | 0.0 | 19.8 | 0.0 | 0.0 | 21.1 | 11.0 | 11.1 | 8.2 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.1 | 0.0 | 0.0 | 1.1 | 0.0 | 0.0 | 11.9 | 2.4 | 3.0 | 1.0 | 0.2 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile Back of Q (50%), veh/ln | 0.3 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 | 1.0 | 1.6 | 1.6 | 0.7 | 0.1 | 0.1 |
| Lane Grp Delay (d), s/veh | 18.5 | 0.0 | 0.0 | 20.9 | 0.0 | 0.0 | 33.0 | 13.4 | 14.1 | 9.2 | 0.2 | 0.2 |
| Lane Grp LOS | B | | | C | | | C | B | B | A | A | A |
| Approach Vol, veh/h | | 26 | | | 82 | | | 449 | | | 372 | |
| Approach Delay, s/veh | | 18.5 | | | 20.9 | | | 16.8 | | | 3.4 | |
| Approach LOS | | B | | | C | | | B | | | A | |
| **Timer** | | | | | | | | | | | | |
| Assigned Phs | | 4 | | | 8 | | 5 | 2 | | 1 | 6 | |
| Phs Duration (G+Y+Rc), s | | 8.8 | | | 8.8 | | 6.4 | 20.0 | | 16.4 | 30.0 | |
| Change Period (Y+Rc), s | | 4.0 | | | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Max Green Setting (Gmax), s | | 16.0 | | | 16.5 | | 6.0 | 16.0 | | 16.5 | 26.0 | |
| Max Q Clear Time (g_c+I1), s | | 2.6 | | | 6.1 | | 3.8 | 7.2 | | 5.5 | 2.0 | |
| Green Ext Time (p_c), s | | 0.4 | | | 0.3 | | 0.0 | 1.3 | | 1.2 | 1.6 | |
| **Intersection Summary** | | | | | | | | | | | | |
| HCM 2010 Ctrl Delay | | | 11.8 | | | | | | | | | |
| HCM 2010 LOS | | | B | | | | | | | | | |
| **Notes** | | | | | | | | | | | | |

 

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 26 | 147 | 29 | 189 | 167 | 2 | 34 | 142 | 243 | 3 | 112 | 40 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow veh/h/ln | 172.7 | 172.7 | 190.0 | 172.7 | 172.7 | 190.0 | 172.7 | 172.7 | 172.7 | 172.7 | 172.7 | 172.7 |
| Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cap, veh/h | 43 | 224 | 45 | 250 | 489 | 5 | 47 | 613 | 521 | 5 | 569 | 484 |
| Arrive On Green | 0.03 | 0.16 | 0.16 | 0.15 | 0.29 | 0.29 | 0.05 | 0.59 | 0.59 | 0.00 | 0.33 | 0.33 |
| Sat Flow, veh/h | 1645 | 1398 | 280 | 1645 | 1705 | 19 | 1645 | 1727 | 1468 | 1645 | 1727 | 1468 |
| Grp Volume(v), veh/h | 28 | 0 | 192 | 205 | 0 | 184 | 37 | 154 | 264 | 3 | 122 | 43 |
| Grp Sat Flow(s),veh/h/ln | 1645 | 0 | 1678 | 1645 | 0 | 1724 | 1645 | 1727 | 1468 | 1645 | 1727 | 1468 |
| Q Serve(g_s), s | 0.8 | 0.0 | 5.3 | 5.9 | 0.0 | 4.1 | 1.1 | 2.1 | 2.6 | 0.1 | 2.5 | 0.7 |
| Cycle Q Clear(g_c), s | 0.8 | 0.0 | 5.3 | 5.9 | 0.0 | 4.1 | 1.1 | 2.1 | 2.6 | 0.1 | 2.5 | 0.7 |
| Prop In Lane | 1.00 | | 0.17 | 1.00 | | 0.01 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 43 | 0 | 269 | 250 | 0 | 494 | 47 | 613 | 521 | 5 | 569 | 484 |
| V/C Ratio(X) | 0.66 | 0.00 | 0.71 | 0.82 | 0.00 | 0.37 | 0.79 | 0.25 | 0.51 | 0.56 | 0.21 | 0.09 |
| Avail Cap(c_a), veh/h | 135 | 0 | 553 | 271 | 0 | 710 | 135 | 613 | 521 | 135 | 569 | 484 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.67 | 1.67 | 1.67 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.97 | 0.97 | 0.97 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 23.4 | 0.0 | 19.3 | 19.9 | 0.0 | 13.8 | 23.0 | 6.8 | 1.9 | 24.2 | 11.8 | 5.8 |
| Incr Delay (d2), s/veh | 15.8 | 0.0 | 3.5 | 16.7 | 0.0 | 0.5 | 23.6 | 1.0 | 3.4 | 68.1 | 0.9 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile Back of Q (50%), veh/ln | 0.5 | 0.0 | 2.2 | 3.3 | 0.0 | 1.5 | 0.7 | 0.8 | 1.5 | 0.1 | 1.0 | 0.3 |
| Lane Grp Delay (d), s/veh | 39.3 | 0.0 | 22.8 | 36.6 | 0.0 | 14.3 | 46.6 | 7.8 | 5.3 | 92.3 | 12.6 | 6.1 |
| Lane Grp LOS | D | | C | D | | B | D | A | A | F | B | A |
| Approach Vol, veh/h | | 220 | | | 389 | | | 455 | | | 168 | |
| Approach Delay, s/veh | | 24.9 | | | 26.1 | | | 9.5 | | | 12.4 | |
| Approach LOS | | C | | | C | | | A | | | B | |
| **Timer** | | | | | | | | | | | | |
| Assigned Phs | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Phs Duration (G+Y+Rc), s | 5.3 | 11.8 | | 11.4 | 17.9 | | 5.4 | 21.2 | | 4.2 | 20.0 | |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Max Green Setting (Gmax), s | 4.0 | 16.0 | | 8.0 | 20.0 | | 4.0 | 16.0 | | 4.0 | 16.0 | |
| Max Q Clear Time (g_c+I1), s | 2.8 | 7.3 | | 7.9 | 6.1 | | 3.1 | 4.6 | | 2.1 | 4.5 | |
| Green Ext Time (p_c), s | 0.0 | 0.6 | | 0.0 | 1.3 | | 0.0 | 1.4 | | 0.0 | 0.5 | |
| **Intersection Summary** | | | | | | | | | | | | |
| HCM 2010 Ctrl Delay | | | 17.9 | | | | | | | | | |
| HCM 2010 LOS | | | B | | | | | | | | | |
| **Notes** | | | | | | | | | | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 155 | 373 | 30 | 84 | 384 | 92 | 20 | 158 | 106 | 145 | 165 | 141 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow veh/h/ln | 172.7 | 172.7 | 172.7 | 172.7 | 172.7 | 172.7 | 172.7 | 172.7 | 190.0 | 172.7 | 172.7 | 190.0 |
| Lanes | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 0 | 1 | 2 | 0 |
| Cap, veh/h | 184 | 778 | 330 | 113 | 629 | 267 | 34 | 590 | 372 | 184 | 690 | 553 |
| Arrive On Green | 0.11 | 0.23 | 0.23 | 0.07 | 0.18 | 0.18 | 0.02 | 0.30 | 0.30 | 0.11 | 0.39 | 0.39 |
| Sat Flow, veh/h | 1645 | 3455 | 1468 | 1645 | 3455 | 1468 | 1645 | 1982 | 1252 | 1645 | 1777 | 1426 |
| Grp Volume(v), veh/h | 168 | 405 | 33 | 91 | 417 | 100 | 22 | 149 | 138 | 158 | 174 | 158 |
| Grp Sat Flow(s),veh/h/ln | 1645 | 1727 | 1468 | 1645 | 1727 | 1468 | 1645 | 1727 | 1506 | 1645 | 1727 | 1476 |
| Q Serve(g_s), s | 5.4 | 5.5 | 1.0 | 2.9 | 6.0 | 3.2 | 0.7 | 3.6 | 3.8 | 5.1 | 3.7 | 4.0 |
| Cycle Q Clear(g_c), s | 5.4 | 5.5 | 1.0 | 2.9 | 6.0 | 3.2 | 0.7 | 3.6 | 3.8 | 5.1 | 3.7 | 4.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.83 | 1.00 | | 0.97 |
| Lane Grp Cap(c), veh/h | 184 | 778 | 330 | 113 | 629 | 267 | 34 | 514 | 448 | 184 | 671 | 573 |
| V/C Ratio(X) | 0.92 | 0.52 | 0.10 | 0.81 | 0.66 | 0.37 | 0.64 | 0.29 | 0.31 | 0.86 | 0.26 | 0.28 |
| Avail Cap(c_a), veh/h | 184 | 1028 | 437 | 184 | 1028 | 437 | 122 | 514 | 448 | 184 | 671 | 573 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.99 | 0.99 | 0.99 |
| Uniform Delay (d), s/veh | 23.6 | 18.3 | 16.5 | 24.7 | 20.5 | 19.3 | 26.1 | 14.5 | 14.6 | 23.5 | 11.2 | 11.3 |
| Incr Delay (d2), s/veh | 43.2 | 0.5 | 0.1 | 12.7 | 1.2 | 0.9 | 18.3 | 1.4 | 1.8 | 31.5 | 0.9 | 1.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile Back of Q (50%), veh/ln | 4.2 | 2.1 | 0.3 | 1.5 | 2.4 | 1.1 | 0.4 | 1.5 | 1.4 | 3.5 | 1.4 | 1.3 |
| Lane Grp Delay (d), s/veh | 66.8 | 18.8 | 16.7 | 37.4 | 21.7 | 20.2 | 44.4 | 15.9 | 16.4 | 54.9 | 12.1 | 12.5 |
| Lane Grp LOS | E | B | B | D | C | C | D | B | B | D | B | B |
| Approach Vol, veh/h | | 606 | | | 608 | | | 309 | | | 490 | |
| Approach Delay, s/veh | | 32.0 | | | 23.8 | | | 18.2 | | | 26.0 | |
| Approach LOS | | C | | | C | | | B | | | C | |
| **Timer** | | | | | | | | | | | | |
| Assigned Phs | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Phs Duration (G+Y+Rc), s | 10.0 | 16.1 | | 7.7 | 13.8 | | 5.1 | 20.0 | | 10.0 | 24.9 | |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Max Green Setting (Gmax), s | 6.0 | 16.0 | | 6.0 | 16.0 | | 4.0 | 16.0 | | 6.0 | 18.0 | |
| Max Q Clear Time (g_c+I1), s | 7.4 | 7.5 | | 4.9 | 8.0 | | 2.7 | 5.8 | | 7.1 | 6.0 | |
| Green Ext Time (p_c), s | 0.0 | 2.0 | | 0.0 | 1.7 | | 0.0 | 1.0 | | 0.0 | 1.8 | |
| **Intersection Summary** | | | | | | | | | | | | |
| HCM 2010 Ctrl Delay | | | 26.0 | | | | | | | | | |
| HCM 2010 LOS | | | C | | | | | | | | | |
| **Notes** | | | | | | | | | | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 18 | 0 | 47 | 118 | 0 | 97 | 16 | 322 | 67 | 54 | 270 | 6 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow veh/h/ln | 190.0 | 186.3 | 190.0 | 190.0 | 108.6 | 190.0 | 186.3 | 156.7 | 190.0 | 108.6 | 173.0 | 190.0 |
| Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |
| Cap, veh/h | 187 | 44 | 352 | 243 | 18 | 121 | 30 | 870 | 179 | 101 | 1434 | 34 |
| Arrive On Green | 0.31 | 0.00 | 0.31 | 0.31 | 0.00 | 0.31 | 0.02 | 0.34 | 0.34 | 0.20 | 0.85 | 0.85 |
| Sat Flow, veh/h | 299 | 142 | 1124 | 414 | 59 | 387 | 1774 | 2523 | 520 | 1034 | 3366 | 80 |
| Grp Volume(v), veh/h | 71 | 0 | 0 | 233 | 0 | 0 | 17 | 216 | 207 | 59 | 150 | 150 |
| Grp Sat Flow(s),veh/h/ln | 1565 | 0 | 0 | 859 | 0 | 0 | 1774 | 1567 | 1476 | 1034 | 1730 | 1716 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 10.9 | 0.0 | 0.0 | 0.5 | 5.2 | 5.3 | 2.6 | 0.8 | 0.8 |
| Cycle Q Clear(g_c), s | 1.5 | 0.0 | 0.0 | 12.5 | 0.0 | 0.0 | 0.5 | 5.2 | 5.3 | 2.6 | 0.8 | 0.8 |
| Prop In Lane | 0.28 | | 0.72 | 0.55 | | 0.45 | 1.00 | | 0.35 | 1.00 | | 0.05 |
| Lane Grp Cap(c), veh/h | 584 | 0 | 0 | 383 | 0 | 0 | 30 | 541 | 509 | 101 | 737 | 731 |
| V/C Ratio(X) | 0.12 | 0.00 | 0.00 | 0.61 | 0.00 | 0.00 | 0.57 | 0.40 | 0.41 | 0.58 | 0.20 | 0.20 |
| Avail Cap(c_a), veh/h | 812 | 0 | 0 | 520 | 0 | 0 | 144 | 541 | 509 | 178 | 737 | 731 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 0.92 | 0.92 | 0.92 | 0.86 | 0.86 | 0.86 |
| Uniform Delay (d), s/veh | 12.1 | 0.0 | 0.0 | 15.8 | 0.0 | 0.0 | 24.0 | 12.3 | 12.3 | 18.9 | 2.1 | 2.1 |
| Incr Delay (d2), s/veh | 0.1 | 0.0 | 0.0 | 1.6 | 0.0 | 0.0 | 14.7 | 2.0 | 2.2 | 4.5 | 0.5 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile Back of Q (50%), veh/ln | 0.6 | 0.0 | 0.0 | 2.5 | 0.0 | 0.0 | 0.3 | 1.9 | 1.9 | 0.7 | 0.3 | 0.3 |
| Lane Grp Delay (d), s/veh | 12.2 | 0.0 | 0.0 | 17.3 | 0.0 | 0.0 | 38.7 | 14.3 | 14.5 | 23.4 | 2.7 | 2.7 |
| Lane Grp LOS | B | | | B | | | D | B | B | C | A | A |
| Approach Vol, veh/h | | 71 | | | 233 | | | 440 | | | 359 | |
| Approach Delay, s/veh | | 12.2 | | | 17.3 | | | 15.3 | | | 6.1 | |
| Approach LOS | | B | | | B | | | B | | | A | |
| **Timer** | | | | | | | | | | | | |
| Assigned Phs | | 4 | | | 8 | | 5 | 2 | | 1 | 6 | |
| Phs Duration (G+Y+Rc), s | | 19.4 | | | 19.4 | | 4.8 | 21.0 | | 8.8 | 25.0 | |
| Change Period (Y+Rc), s | | 4.0 | | | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Max Green Setting (Gmax), s | | 23.0 | | | 23.5 | | 4.0 | 17.0 | | 8.5 | 21.0 | |
| Max Q Clear Time (g_c+I1), s | | 3.5 | | | 14.5 | | 2.5 | 7.3 | | 4.6 | 2.8 | |
| Green Ext Time (p_c), s | | 1.8 | | | 1.2 | | 0.0 | 1.6 | | 0.6 | 1.6 | |
| **Intersection Summary** | | | | | | | | | | | | |
| HCM 2010 Ctrl Delay | | | 12.5 | | | | | | | | | |
| HCM 2010 LOS | | | B | | | | | | | | | |
| **Notes** | | | | | | | | | | | | |

| Lane Group | WBL | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 3 | 80 | 8 | 25 | 70 |
| v/c Ratio | 0.02 | 0.05 | 0.01 | 0.24 | 0.04 |
| Control Delay | 13.7 | 2.9 | 2.9 | 23.4 | 1.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 13.7 | 2.9 | 2.9 | 23.4 | 1.2 |
| Queue Length 50th (ft) | 0 | 0 | 0 | 6 | 0 |
| Queue Length 95th (ft) | 5 | 24 | 4 | 21 | 11 |
| Internal Link Dist (ft) | 1089 | 4131 | | | 1025 |
| Turn Bay Length (ft) | | | 200 | 200 | |
| Base Capacity (vph) | 365 | 1543 | 825 | 105 | 1611 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.01 | 0.05 | 0.01 | 0.24 | 0.04 |

Intersection Summary

| Lane Group | WBL | NBT | SBL | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 22 | 135 | 1 | 108 |
| v/c Ratio | 0.15 | 0.09 | 0.01 | 0.07 |
| Control Delay | 11.7 | 3.2 | 17.0 | 1.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 11.7 | 3.2 | 17.0 | 1.4 |
| Queue Length 50th (ft) | 1 | 0 | 0 | 0 |
| Queue Length 95th (ft) | 14 | 40 | 3 | 18 |
| Internal Link Dist (ft) | 1089 | 4131 | | 1025 |
| Turn Bay Length (ft) | | | 200 | |
| Base Capacity (vph) | 368 | 1534 | 105 | 1600 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.06 | 0.09 | 0.01 | 0.07 |

Intersection Summary

| Lane Group | EBT | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 26 | 3 | 71 | 80 | 8 | 25 | 70 | 27 |
| v/c Ratio | 0.09 | 0.01 | 0.44 | 0.05 | 0.01 | 0.12 | 0.09 | 0.02 |
| Control Delay | 0.6 | 0.0 | 24.8 | 2.9 | 0.0 | 14.9 | 5.0 | 0.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 0.6 | 0.0 | 24.8 | 2.9 | 0.0 | 14.9 | 5.0 | 0.4 |
| Queue Length 50th (ft) | 0 | 0 | 13 | 0 | 0 | 4 | 4 | 0 |
| Queue Length 95th (ft) | 0 | 0 | #51 | 23 | 0 | 19 | 24 | 2 |
| Internal Link Dist (ft) | 549 | 1089 | | 4131 | | | 1025 | |
| Turn Bay Length (ft) | | | 200 | | 200 | 200 | | 200 |
| Base Capacity (vph) | 699 | 701 | 163 | 1536 | 831 | 213 | 783 | 1081 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.04 | 0.00 | 0.44 | 0.05 | 0.01 | 0.12 | 0.09 | 0.02 |

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Lane Group | EBT | WBT | NBL | NBT | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 71 | 22 | 17 | 135 | 1 | 108 | 7 |
| v/c Ratio | 0.24 | 0.08 | 0.13 | 0.10 | 0.01 | 0.08 | 0.01 |
| Control Delay | 2.1 | 0.5 | 16.8 | 3.7 | 14.0 | 3.7 | 0.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 2.1 | 0.5 | 16.8 | 3.7 | 14.0 | 3.7 | 0.0 |
| Queue Length 50th (ft) | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| Queue Length 95th (ft) | 2 | 0 | 15 | 35 | 3 | 30 | 0 |
| Internal Link Dist (ft) | 620 | 1089 | | 4131 | | 1025 | |
| Turn Bay Length (ft) | | | 200 | | 200 | | 200 |
| Base Capacity (vph) | 678 | 670 | 129 | 1401 | 129 | 1401 | 763 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.10 | 0.03 | 0.13 | 0.10 | 0.01 | 0.08 | 0.01 |

Intersection Summary

| Lane Group | WBL | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 82 | 84 | 161 | 132 | 75 |
| v/c Ratio | 0.40 | 0.08 | 0.26 | 0.60 | 0.06 |
| Control Delay | 17.0 | 11.2 | 4.4 | 29.9 | 3.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 17.0 | 11.2 | 4.4 | 29.9 | 3.4 |
| Queue Length 50th (ft) | 11 | 15 | 0 | 30 | 5 |
| Queue Length 95th (ft) | 40 | 43 | 34 | #95 | 19 |
| Internal Link Dist (ft) | 1089 | 4131 | | | 1025 |
| Turn Bay Length (ft) | | | 200 | 200 | |
| Base Capacity (vph) | 383 | 1034 | 617 | 260 | 1357 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.21 | 0.08 | 0.26 | 0.51 | 0.06 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Lane Group | WBL | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 233 | 145 | 73 | 59 | 122 |
| v/c Ratio | 0.74 | 0.18 | 0.15 | 0.49 | 0.12 |
| Control Delay | 24.6 | 11.3 | 4.8 | 38.0 | 6.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 24.6 | 11.3 | 4.8 | 38.0 | 6.1 |
| Queue Length 50th (ft) | 33 | 25 | 0 | 15 | 13 |
| Queue Length 95th (ft) | #103 | 63 | 21 | #59 | 36 |
| Internal Link Dist (ft) | 1089 | 4131 | | | 1025 |
| Turn Bay Length (ft) | | | 200 | 200 | |
| Base Capacity (vph) | 407 | 821 | 477 | 121 | 1013 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.57 | 0.18 | 0.15 | 0.49 | 0.12 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Lane Group | EBT | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 26 | 82 | 71 | 84 | 161 | 132 | 75 | 27 |
| v/c Ratio | 0.07 | 0.29 | 0.27 | 0.08 | 0.25 | 0.52 | 0.06 | 0.02 |
| Control Delay | 0.3 | 2.8 | 19.7 | 9.3 | 3.2 | 22.0 | 6.3 | 0.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 0.3 | 2.8 | 19.7 | 9.3 | 3.2 | 22.0 | 6.3 | 0.0 |
| Queue Length 50th (ft) | 0 | 0 | 17 | 14 | 0 | 28 | 10 | 0 |
| Queue Length 95th (ft) | 0 | 3 | 44 | 35 | 25 | #71 | 25 | 0 |
| Internal Link Dist (ft) | 283 | 1089 | | 4131 | | | 1025 | |
| Turn Bay Length (ft) | | | 200 | | 200 | 200 | | 200 |
| Base Capacity (vph) | 770 | 485 | 272 | 1063 | 637 | 303 | 1179 | 1113 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.03 | 0.17 | 0.26 | 0.08 | 0.25 | 0.44 | 0.06 | 0.02 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Lane Group | EBT | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 71 | 233 | 17 | 145 | 73 | 59 | 122 | 7 |
| v/c Ratio | 0.15 | 0.70 | 0.10 | 0.16 | 0.13 | 0.42 | 0.11 | 0.01 |
| Control Delay | 0.7 | 16.5 | 21.6 | 10.3 | 2.3 | 32.1 | 7.3 | 0.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 0.7 | 16.5 | 21.6 | 10.3 | 2.3 | 32.1 | 7.3 | 0.0 |
| Queue Length 50th (ft) | 0 | 7 | 4 | 20 | 0 | 13 | 8 | 0 |
| Queue Length 95th (ft) | 0 | #65 | 20 | 63 | 13 | #59 | 52 | 0 |
| Internal Link Dist (ft) | 283 | 1089 | | 4131 | | | 1025 | |
| Turn Bay Length (ft) | | | 200 | | 200 | 200 | | 200 |
| Base Capacity (vph) | 713 | 446 | 176 | 929 | 547 | 141 | 1079 | 1030 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.10 | 0.52 | 0.10 | 0.16 | 0.13 | 0.42 | 0.11 | 0.01 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 52 | 159 | 240 | 96 | 23 | 77 | 143 | 4 | 78 | 32 |
| v/c Ratio | 0.21 | 0.52 | 0.65 | 0.18 | 0.21 | 0.11 | 0.21 | 0.03 | 0.11 | 0.05 |
| Control Delay | 23.0 | 25.7 | 35.0 | 18.2 | 21.9 | 6.8 | 1.3 | 27.0 | 14.4 | 0.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 23.0 | 25.7 | 35.0 | 18.2 | 21.9 | 6.8 | 1.3 | 27.0 | 14.4 | 0.1 |
| Queue Length 50th (ft) | 18 | 47 | 79 | 18 | 8 | 10 | 0 | 1 | 17 | 0 |
| Queue Length 95th (ft) | 41 | 89 | #207 | 65 | 24 | 21 | 2 | 9 | 51 | 0 |
| Internal Link Dist (ft) | | 3997 | | 5277 | | 1025 | | | 3564 | |
| Turn Bay Length (ft) | 200 | | 200 | | 150 | | | 150 | | 150 |
| Base Capacity (vph) | 248 | 460 | 369 | 631 | 109 | 706 | 697 | 117 | 706 | 697 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.21 | 0.35 | 0.65 | 0.15 | 0.21 | 0.11 | 0.21 | 0.03 | 0.11 | 0.05 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 108 | 339 | 40 | 79 | 242 | 142 | 37 | 203 | 53 | 158 |
| v/c Ratio | 0.45 | 0.43 | 0.08 | 0.43 | 0.44 | 0.32 | 0.25 | 0.14 | 0.49 | 0.11 |
| Control Delay | 29.4 | 21.1 | 0.3 | 32.6 | 24.5 | 2.5 | 30.2 | 9.7 | 35.2 | 2.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 29.4 | 21.1 | 0.3 | 32.6 | 24.5 | 2.5 | 30.2 | 9.7 | 35.2 | 2.9 |
| Queue Length 50th (ft) | 36 | 57 | 0 | 27 | 42 | 0 | 12 | 16 | 19 | 0 |
| Queue Length 95th (ft) | 77 | 85 | 0 | 63 | 66 | 8 | 39 | 40 | #57 | 1 |
| Internal Link Dist (ft) | | 3778 | | | 5853 | | | 2089 | | 4131 |
| Turn Bay Length (ft) | 200 | | 200 | 200 | | 200 | 150 | | 200 | |
| Base Capacity (vph) | 245 | 924 | 582 | 191 | 875 | 564 | 150 | 1402 | 109 | 1455 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.44 | 0.37 | 0.07 | 0.41 | 0.28 | 0.25 | 0.25 | 0.14 | 0.49 | 0.11 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Lane Group | WBL | NBT | SBL | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 82 | 378 | 132 | 213 |
| v/c Ratio | 0.47 | 0.27 | 0.53 | 0.08 |
| Control Delay | 22.9 | 3.3 | 18.1 | 0.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 22.9 | 3.3 | 18.1 | 0.5 |
| Queue Length 50th (ft) | 15 | 6 | 44 | 2 |
| Queue Length 95th (ft) | 46 | 21 | m72 | m1 |
| Internal Link Dist (ft) | 1089 | 4131 | | 1025 |
| Turn Bay Length (ft) | | | 200 | |
| Base Capacity (vph) | 299 | 1393 | 283 | 2683 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.27 | 0.27 | 0.47 | 0.08 |

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 28 | 192 | 200 | 184 | 37 | 151 | 248 | 3 | 121 | 43 |
| v/c Ratio | 0.23 | 0.61 | 0.67 | 0.29 | 0.37 | 0.20 | 0.32 | 0.02 | 0.17 | 0.06 |
| Control Delay | 33.4 | 30.7 | 36.8 | 15.8 | 28.0 | 6.0 | 1.1 | 29.7 | 17.3 | 0.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 33.4 | 30.7 | 36.8 | 15.8 | 28.0 | 6.0 | 1.1 | 29.7 | 17.3 | 0.1 |
| Queue Length 50th (ft) | 11 | 66 | 74 | 44 | 14 | 16 | 0 | 1 | 28 | 0 |
| Queue Length 95th (ft) | 33 | 117 | #149 | 96 | m33 | 33 | 1 | 9 | 79 | 0 |
| Internal Link Dist (ft) | | 3997 | | 5277 | | 1025 | | | 3564 | |
| Turn Bay Length (ft) | 200 | | 200 | | 150 | | | 150 | | 150 |
| Base Capacity (vph) | 124 | 418 | 332 | 662 | 99 | 743 | 773 | 122 | 701 | 723 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.23 | 0.46 | 0.60 | 0.28 | 0.37 | 0.20 | 0.32 | 0.02 | 0.17 | 0.06 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 165 | 405 | 33 | 91 | 417 | 92 | 22 | 280 | 135 | 304 |
| v/c Ratio | 0.69 | 0.48 | 0.06 | 0.46 | 0.63 | 0.20 | 0.19 | 0.26 | 0.70 | 0.22 |
| Control Delay | 44.7 | 23.5 | 0.2 | 34.5 | 28.1 | 0.9 | 33.6 | 12.0 | 48.0 | 6.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 44.7 | 23.5 | 0.2 | 34.5 | 28.1 | 0.9 | 33.6 | 12.0 | 48.0 | 6.8 |
| Queue Length 50th (ft) | 62 | 74 | 0 | 34 | 81 | 0 | 9 | 27 | 53 | 23 |
| Queue Length 95th (ft) | #153 | 114 | 0 | 74 | 117 | 0 | 29 | 56 | #131 | 48 |
| Internal Link Dist (ft) | | 3778 | | | 5853 | | | 2089 | | 4131 |
| Turn Bay Length (ft) | 200 | | 200 | 200 | | 200 | 150 | | 200 | |
| Base Capacity (vph) | 244 | 853 | 540 | 223 | 795 | 518 | 114 | 1073 | 198 | 1364 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.68 | 0.47 | 0.06 | 0.41 | 0.52 | 0.18 | 0.19 | 0.26 | 0.68 | 0.22 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Lane Group | WBL | NBT | SBL | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 233 | 423 | 59 | 293 |
| v/c Ratio | 0.77 | 0.28 | 0.46 | 0.14 |
| Control Delay | 31.4 | 4.9 | 25.1 | 1.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 31.4 | 4.9 | 25.1 | 1.7 |
| Queue Length 50th (ft) | 59 | 17 | 20 | 6 |
| Queue Length 95th (ft) | 112 | 30 | m37 | 10 |
| Internal Link Dist (ft) | 1089 | 4131 | | 1025 |
| Turn Bay Length (ft) | | | 200 | |
| Base Capacity (vph) | 428 | 1522 | 148 | 2089 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.54 | 0.28 | 0.40 | 0.14 |

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 52 | 159 | 263 | 96 | 23 | 78 | 150 | 4 | 84 | 32 |
| v/c Ratio | 0.21 | 0.52 | 0.67 | 0.17 | 0.21 | 0.11 | 0.22 | 0.03 | 0.12 | 0.05 |
| Control Delay | 23.0 | 25.7 | 35.8 | 18.2 | 23.1 | 7.8 | 1.3 | 27.0 | 14.5 | 0.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 23.0 | 25.7 | 35.8 | 18.2 | 23.1 | 7.8 | 1.3 | 27.0 | 14.5 | 0.1 |
| Queue Length 50th (ft) | 18 | 47 | 88 | 18 | 7 | 9 | 0 | 1 | 18 | 0 |
| Queue Length 95th (ft) | 41 | 89 | #230 | 65 | 24 | 32 | 0 | 9 | 53 | 0 |
| Internal Link Dist (ft) | | 3997 | | 5277 | | 1025 | | | 3564 | |
| Turn Bay Length (ft) | 200 | | 200 | | 150 | | | 150 | | 150 |
| Base Capacity (vph) | 248 | 460 | 391 | 651 | 109 | 682 | 679 | 117 | 682 | 679 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.21 | 0.35 | 0.67 | 0.15 | 0.21 | 0.11 | 0.22 | 0.03 | 0.12 | 0.05 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 123 | 339 | 40 | 79 | 242 | 174 | 37 | 228 | 62 | 168 |
| v/c Ratio | 0.49 | 0.42 | 0.07 | 0.43 | 0.44 | 0.39 | 0.25 | 0.16 | 0.57 | 0.12 |
| Control Delay | 29.8 | 20.6 | 0.3 | 32.6 | 24.5 | 4.1 | 30.7 | 10.3 | 40.8 | 1.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 29.8 | 20.6 | 0.3 | 32.6 | 24.5 | 4.1 | 30.7 | 10.3 | 40.8 | 1.7 |
| Queue Length 50th (ft) | 41 | 56 | 0 | 27 | 42 | 0 | 12 | 20 | 22 | 0 |
| Queue Length 95th (ft) | 86 | 85 | 0 | 63 | 66 | 21 | 39 | 45 | #70 | 8 |
| Internal Link Dist (ft) | | 3778 | | | 5853 | | | 2089 | | 4131 |
| Turn Bay Length (ft) | 200 | | 200 | 200 | | 200 | 150 | | 200 | |
| Base Capacity (vph) | 256 | 931 | 585 | 191 | 875 | 564 | 146 | 1389 | 109 | 1444 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.48 | 0.36 | 0.07 | 0.41 | 0.28 | 0.31 | 0.25 | 0.16 | 0.57 | 0.12 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Lane Group | EBT | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 26 | 82 | 71 | 378 | 132 | 240 |
| v/c Ratio | 0.09 | 0.36 | 0.31 | 0.26 | 0.53 | 0.11 |
| Control Delay | 0.6 | 4.8 | 27.9 | 2.6 | 19.2 | 0.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 0.6 | 4.8 | 27.9 | 2.6 | 19.2 | 0.6 |
| Queue Length 50th (ft) | 0 | 0 | 19 | 6 | 45 | 0 |
| Queue Length 95th (ft) | 0 | 4 | m52 | 21 | m70 | m1 |
| Internal Link Dist (ft) | 283 | 1089 | | 4131 | | 1025 |
| Turn Bay Length (ft) | | | 200 | | 200 | |
| Base Capacity (vph) | 536 | 347 | 233 | 1428 | 283 | 2253 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.05 | 0.24 | 0.30 | 0.26 | 0.47 | 0.11 |

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 28 | 192 | 205 | 184 | 37 | 154 | 264 | 3 | 122 | 43 |
| v/c Ratio | 0.26 | 0.57 | 0.68 | 0.27 | 0.34 | 0.22 | 0.36 | 0.02 | 0.19 | 0.06 |
| Control Delay | 32.7 | 26.4 | 39.2 | 14.6 | 23.7 | 6.4 | 1.3 | 26.7 | 16.5 | 0.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 32.7 | 26.4 | 39.2 | 14.6 | 23.7 | 6.4 | 1.3 | 26.7 | 16.5 | 0.2 |
| Queue Length 50th (ft) | 10 | 58 | 68 | 37 | 12 | 15 | 0 | 1 | 27 | 0 |
| Queue Length 95th (ft) | 32 | 103 | #186 | 93 | m23 | 33 | 1 | 8 | 73 | 0 |
| Internal Link Dist (ft) | | 3997 | | 5277 | | 1025 | | | 3564 | |
| Turn Bay Length (ft) | 200 | | 200 | | 150 | | | 150 | | 150 |
| Base Capacity (vph) | 109 | 460 | 303 | 672 | 109 | 686 | 742 | 122 | 640 | 692 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.26 | 0.42 | 0.68 | 0.27 | 0.34 | 0.22 | 0.36 | 0.02 | 0.19 | 0.06 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 168 | 405 | 33 | 91 | 417 | 100 | 22 | 287 | 158 | 332 |
| v/c Ratio | 0.68 | 0.41 | 0.05 | 0.56 | 0.59 | 0.20 | 0.19 | 0.31 | 0.96 | 0.25 |
| Control Delay | 46.0 | 19.4 | 0.2 | 41.2 | 24.5 | 0.9 | 30.8 | 11.4 | 89.7 | 4.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 46.0 | 19.4 | 0.2 | 41.2 | 24.5 | 0.9 | 30.8 | 11.4 | 89.7 | 4.0 |
| Queue Length 50th (ft) | 58 | 64 | 0 | 32 | 72 | 0 | 8 | 25 | 54 | 0 |
| Queue Length 95th (ft) | #170 | 101 | 0 | #86 | 103 | 0 | 27 | 52 | #157 | 23 |
| Internal Link Dist (ft) | | 3778 | | | 5853 | | | 2089 | | 4131 |
| Turn Bay Length (ft) | 200 | | 200 | 200 | | 200 | 150 | | 200 | |
| Base Capacity (vph) | 246 | 977 | 602 | 164 | 875 | 564 | 113 | 914 | 164 | 1339 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.68 | 0.41 | 0.05 | 0.55 | 0.48 | 0.18 | 0.19 | 0.31 | 0.96 | 0.25 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

| Lane Group | EBT | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 71 | 233 | 17 | 423 | 59 | 300 |
| v/c Ratio | 0.16 | 0.76 | 0.10 | 0.27 | 0.45 | 0.14 |
| Control Delay | 0.8 | 22.7 | 28.6 | 4.5 | 22.2 | 1.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 0.8 | 22.7 | 28.6 | 4.5 | 22.2 | 1.6 |
| Queue Length 50th (ft) | 0 | 22 | 7 | 13 | 18 | 4 |
| Queue Length 95th (ft) | 0 | 74 | m10 | 26 | m33 | m12 |
| Internal Link Dist (ft) | 283 | 1089 | | 4131 | | 1025 |
| Turn Bay Length (ft) | | | 200 | | 200 | |
| Base Capacity (vph) | 685 | 427 | 162 | 1588 | 146 | 2078 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.10 | 0.55 | 0.10 | 0.27 | 0.40 | 0.14 |

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Existing AM

Signal Warrant Summary Report

| Intersection | Base Met [Del / Vol] | Future Met [Del / Vol] |
|---|---|---|
| # 1 Fulkreth / Washington | No | No |
| # 2 Main / Washington | No | No |



Existing PM

Signal Warrant Summary Report

| Intersection | Base Met [Del / Vol] | Future Met [Del / Vol] |
|---|---|---|
| # 1 Fulkreth / Washington | No | No |
| # 2 Main / Washington | No | Yes |

Existing AM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #1 Fulkreth / Washington

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach: | North Bound | | | | | South Bound | | | | | East Bound | | | | | West Bound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - | R | L | - | T | - | R | L | - | T | - | R | L | - | T | - | R |
| Control: | Stop Sign | | | | | Stop Sign | | | | | Stop Sign | | | | | Stop Sign | | | | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 |
| Initial Vol: | 4 | | 43 | | 28 | 2 | | 45 | | 39 | 58 | | 69 | | 2 | 33 | | 53 | | 3 |

Major Street Volume: 218
Minor Approach Volume: 86
Minor Approach Volume Threshold: 347

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Existing + Project AM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #1 Fulkreth / Washington

Future Volume Alternative: Peak Hour Warrant NOT Met

| Approach: | North Bound | | | | | South Bound | | | | | East Bound | | | | | West Bound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - | R | L | - | T | - | R | L | - | T | - | R | L | - | T | - | R |
| Control: | Stop Sign | | | | | Stop Sign | | | | | Stop Sign | | | | | Stop Sign | | | | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 |
| Initial Vol: | 10 | | 45 | | 70 | 5 | | 51 | | 39 | 58 | | 71 | | 18 | 163 | | 54 | | 4 |

Major Street Volume: 368
Minor Approach Volume: 125
Minor Approach Volume Threshold: 260

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing AM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #2 Main / Washington

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach: | North Bound | | | | | South Bound | | | | | East Bound | | | | | West Bound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - | R | L | - | T | - | R | L | - | T | - | R | L | - | T | - | R |
| Control: | Stop Sign | | | | | Stop Sign | | | | | Stop Sign | | | | | Stop Sign | | | | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| Initial Vol: | 12 | | 29 | | 18 | 7 | | 21 | | 28 | 34 | | 207 | | 13 | 20 | | 154 | | 10 |

Major Street Volume: 438
Minor Approach Volume: 59
Minor Approach Volume Threshold: 312

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing + Project AM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #2 Main / Washington

Future Volume Alternative: Peak Hour Warrant NOT Met

| Approach: | North Bound | South Bound | East Bound | West Bound |
|---|---|---|---|---|
| Movement: | L - T - R | L - T - R | L - T - R | L - T - R |
| Control: | Stop Sign | Stop Sign | Stop Sign | Stop Sign |
| Lanes: | 0 0 1! 0 0 | 0 0 1! 0 0 | 1 0 0 1 0 | 1 0 0 1 0 |
| Initial Vol: | 12 54 22 | 49 27 44 | 92 214 13 | 23 159 150 |

Major Street Volume: 651
Minor Approach Volume: 120
Minor Approach Volume Threshold: 221

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing PM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #1 Fulkreth / Washington

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Stop Sign | | | Stop Sign | | | Stop Sign | | | Stop Sign | | |
| Lanes: | 0 0 | 1! | 0 0 | 0 0 | 1! | 0 0 | 0 0 | 1! | 0 0 | 0 0 | 1! | 0 0 |
| Initial Vol: | 3 | 89 | 32 | 5 | 67 | 58 | 47 | 92 | 4 | 34 | 100 | 2 |

Major Street Volume: 279
Minor Approach Volume: 130
Minor Approach Volume Threshold: 306

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing + Project PM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #1 Fulkreth / Washington

Future Volume Alternative: Peak Hour Warrant NOT Met

| Approach: | North Bound | | | | | South Bound | | | | | East Bound | | | | | West Bound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | | T | | R | L | | T | | R | L | | T | | R | L | | T | | R |
| Control: | Stop Sign | | | | | Stop Sign | | | | | Stop Sign | | | | | Stop Sign | | | | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 |
| Initial Vol: | 21 | | 94 | | 134 | 6 | | 72 | | 58 | 47 | | 93 | | 15 | 92 | | 101 | | 4 |

Major Street Volume: 385
Minor Approach Volume: 197
Minor Approach Volume Threshold: 253

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Existing PM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #2 Main / Washington

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Stop Sign | | | Stop Sign | | | Stop Sign | | | Stop Sign | | |
| Lanes: | 0 0 | 1! | 0 0 | 0 0 | 1! | 0 0 | 1 0 | 0 | 1 0 | 1 0 | 0 | 1 0 |
| Initial Vol: | 9 | 36 | 30 | 12 | 36 | 56 | 73 | 251 | 13 | 22 | 252 | 10 |

Major Street Volume: 621
Minor Approach Volume: 104
Minor Approach Volume Threshold: 232

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Existing + Project PM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #2 Main / Washington

Future Volume Alternative: Peak Hour Warrant Met

| Approach: | North Bound | | | | | South Bound | | | | | East Bound | | | | | West Bound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - | R | L | - | T | - | R | L | - | T | - | R | L | - | T | - | R |
| Control: | Stop Sign | | | | | Stop Sign | | | | | Stop Sign | | | | | Stop Sign | | | | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| Initial Vol: | 9 | | 42 | | 37 | 128 | | 53 | | 101 | 95 | | 265 | | 13 | 29 | | 265 | | 75 |

Major Street Volume: 742
Minor Approach Volume: 282
Minor Approach Volume Threshold: 191

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP AM

Signal Warrant Summary Report

| Intersection | Base Met [Del / Vol] | Future Met [Del / Vol] |
|---|---|---|
| # 1 Fulkreth / Washington | No | No |
| # 2 Main / Washington | No | No |



EPAP PM

Signal Warrant Summary Report

| Intersection | Base Met [Del / Vol] | Future Met [Del / Vol] |
|---|---|---|
| # 1 Fulkreth / Washington | No | No |
| # 2 Main / Washington | Yes | Yes |

EPAP AM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #1 Fulkreth / Washington

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach: | North Bound | | | | | South Bound | | | | | East Bound | | | | | West Bound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - | R | L | - | T | - | R | L | - | T | - | R | L | - | T | - | R |
| Control: | Stop Sign | | | | | Stop Sign | | | | | Stop Sign | | | | | Stop Sign | | | | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 |
| Initial Vol: | 10 | | 44 | | 64 | 5 | | 46 | | 39 | 58 | | 71 | | 18 | 142 | | 54 | | 4 |

Major Street Volume: 347
Minor Approach Volume: 118
Minor Approach Volume Threshold: 270

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP AM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #2 Main / Washington

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Stop Sign | | | Stop Sign | | | Stop Sign | | | Stop Sign | | |
| Lanes: | 0 0 | 1! | 0 0 | 0 0 | 1! | 0 0 | 1 0 | 0 | 1 0 | 1 0 | 0 | 1 0 |
| Initial Vol: | 12 | 31 | 22 | 41 | 21 | 40 | 78 | 214 | 13 | 23 | 159 | 121 |

Major Street Volume: 608
Minor Approach Volume: 102
Minor Approach Volume Threshold: 236

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP + Project AM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #1 Fulkreth / Washington

Future Volume Alternative: Peak Hour Warrant NOT Met

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Stop Sign | | | Stop Sign | | | Stop Sign | | | Stop Sign | | |
| Lanes: | 0 0 | 1! | 0 0 | 0 0 | 1! | 0 0 | 0 0 | 1! | 0 0 | 0 0 | 1! | 0 0 |
| Initial Vol: | 10 | 45 | 70 | 5 | 51 | 39 | 58 | 71 | 18 | 163 | 54 | 4 |

Major Street Volume: 368
Minor Approach Volume: 125
Minor Approach Volume Threshold: 260

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

```
--------------------------------------------------------------------------------
                              EPAP + Project AM
--------------------------------------------------------------------------------
                Peak Hour Volume Signal Warrant Report [Rural]
********************************************************************************
Intersection #2 Main / Washington
********************************************************************************
Future Volume Alternative: Peak Hour Warrant NOT Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Lanes:        0  0  1! 0  0   0  0  1! 0  0   1  0  0  1  0   1  0  0  1  0
Initial Vol:   12   54    22   49   27    44   92  214    13   23  159   150
------------|---------------||---------------||---------------||---------------|
Major Street Volume:            651
Minor Approach Volume:          120
Minor Approach Volume Threshold: 221
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SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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EPAP PM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #1 Fulkreth / Washington

Base Volume Alternative: Peak Hour Warrant NOT Met

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Stop Sign | | | Stop Sign | | | Stop Sign | | | Stop Sign | | |
| Lanes: | 0 0 | 1! | 0 0 | 0 0 | 1! | 0 0 | 0 0 | 1! | 0 0 | 0 0 | 1! | 0 0 |
| Initial Vol: | 21 | 91 | 119 | 6 | 71 | 58 | 47 | 93 | 15 | 87 | 101 | 4 |

Major Street Volume: 366
Minor Approach Volume: 192
Minor Approach Volume Threshold: 261

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP PM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #2 Main / Washington

Base Volume Alternative: Peak Hour Warrant Met

| Approach: | North Bound | | | | | South Bound | | | | | East Bound | | | | | West Bound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - | R | L | - | T | - | R | L | - | T | - | R | L | - | T | - | R |
| Control: | Stop Sign | | | | | Stop Sign | | | | | Stop Sign | | | | | Stop Sign | | | | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| Initial Vol: | 9 | | 36 | | 37 | 107 | | 37 | | 91 | 92 | | 265 | | 13 | 29 | | 265 | | 68 |

Major Street Volume: 732
Minor Approach Volume: 235
Minor Approach Volume Threshold: 194

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

EPAP + Project PM

Peak Hour Volume Signal Warrant Report [Rural]

Intersection #1 Fulkreth / Washington

Future Volume Alternative: Peak Hour Warrant NOT Met

| Approach: | North Bound | | | | | South Bound | | | | | East Bound | | | | | West Bound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | - | T | - | R | L | - | T | - | R | L | - | T | - | R | L | - | T | - | R |
| Control: | Stop Sign | | | | | Stop Sign | | | | | Stop Sign | | | | | Stop Sign | | | | |
| Lanes: | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 1! | 0 | 0 |
| Initial Vol: | 21 | | 94 | | 134 | 6 | | 72 | | 58 | 47 | | 93 | | 15 | 92 | | 101 | | 4 |

Major Street Volume: 385
Minor Approach Volume: 197
Minor Approach Volume Threshold: 253

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

```
--------------------------------------------------------------------------------
                              EPAP + Project PM
--------------------------------------------------------------------------------
                Peak Hour Volume Signal Warrant Report [Rural]
********************************************************************************
Intersection #2 Main / Washington
********************************************************************************
Future Volume Alternative: Peak Hour Warrant Met
------------|---------------||---------------||---------------||---------------|
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Lanes:        0  0  1! 0  0   0  0  1! 0  0   1  0  0  1  0   1  0  0  1  0
Initial Vol:    9   42    37   128   53   101    95  265    13    29  265    75
------------|---------------||---------------||---------------||---------------|
Major Street Volume:            742
Minor Approach Volume:          282
Minor Approach Volume Threshold: 191
--------------------------------------------------------------------------------
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SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

# APPENDIX G

# MITIGATION MONITORING AND REPORTING PROGRAM

Section 21081.6 of the California Environmental Quality Act (CEQA) requires a public agency to adopt a reporting or monitoring program in those cases where the public agency finds that changes or alterations have been required in, or incorporated into, a project, and that those changes mitigate or avoid a significant effect on the environment. A public agency may delegate the monitoring or reporting responsibilities to another public agency or private entity that accepts the delegation, but the lead agency remains responsible for ensuring that the mitigation measures have been implemented (CEQA Guidelines § 15097).

Table MMRP-1 identifies each mitigation measure identified in the Draft EIR, and identifies the monitoring or reporting program and timing for such efforts.

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**Table MMRP-1**
**Mitigation Monitoring Program**

| Mitigation Number | Mitigation Measure | Timing | Responsible Parties | Verification (Date/Initials) |
|---|---|---|---|---|
| **Aesthetics** | | | | |
| #3.1-3 | ▪ Lighting shall employ shielding that would direct light in a downward direction.<br><br>▪ Lighting shall generally occur at intersections, areas of pedestrian activity, and building entrances, and be minimized elsewhere.<br><br>▪ Lighting shall be designed and located to minimize glare and the direct view of light sources.<br><br>▪ Metal halide, incandescent, or color-balanced fluorescent fixtures shall be employed. Low pressure sodium fixtures are prohibited. | Prior to construction | Contractor | |
| **Biological Resources** | | | | |
| #3.4-1a | 1. In accordance with the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012), pre-construction surveys shall be conducted to determine the presence of occupied burrows if ground clearing or construction activities will be initiated during the nesting season or during the non-breeding season. The portion of the project site on which construction is to take place and potential nesting areas within 500 feet of the proposed construction area shall be surveyed no more than 30 days prior to the initiation of construction. Surveys shall be performed by a qualified biologist or ornithologist to verify the presence or absence of nesting birds. Construction shall not occur within a 500 foot buffer surrounding active nests of raptors or a 250 foot buffer surrounding active nests of migratory birds. | During construction | Contractor | |

| Mitigation Number | Mitigation Measure | Timing | Responsible Parties | Verification (Date/Initials) |
|---|---|---|---|---|
| | If construction within these buffer areas is required or if nests must be removed to allow continuation of construction, then approval and specific removal methodologies shall be obtained from CDFW.<br><br>2. If during pre-construction nest surveys, burrowing owls are found to be present, the following measures shall be implemented:<br><br>a. Compensation for the loss of burrowing owl habitat will be negotiated with the responsible wildlife agencies. Appropriate mitigation may include participation in an approved mitigation bank, establishing a conservation easement, or other means acceptable to the responsible agency;<br><br>b. Exclusion areas will be established around occupied burrows in which no construction activities would occur. During the non-breeding season (September 1 through January 31), the exclusion area would extend 160 feet around any occupied burrows. During the breeding season of burrowing owls (February 1 through August 31), exclusion areas of 250 feet surrounding occupied burrows would be installed; and<br><br>c. If construction must occur within these exclusion areas, passive relocation of burrowing owls may be implemented as an alternative, but only during the non-breeding season and only with the concurrence of the CDFW. Passive relocation of burrowing owls would be implemented by a qualified biologist using accepted techniques. Burrows from which owls had been relocated shall be excavated using | | | |

| Mitigation Number | Mitigation Measure | Timing | Responsible Parties | Verification (Date/Initials) |
|---|---|---|---|---|
| | hand tools and under direct supervision of a qualified biologist. | | | |
| #3.4.1b | A Swainson's hawk survey shall be completed within 0.5 mile of the project site. If potential nests are located within this search radius, those nests must be monitored for activity on a routine and repeating basis throughout the breeding season, or until a Swainson's hawk or other raptor species is verified to be using each nest. A total of up to 10 visits shall be made to each nest: one between January and April to identify nests, three in April, three in May, and three between June 1 and July 15. To meet the minimum level of protection for the species, surveys shall be completed for at least two survey periods immediately prior to a project's initiation. All surveys shall be conducted in accordance with the *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California* (CDFG 1994), which includes the following guidelines:<br><br>1. A pre-construction survey shall be conducted to determine the presence of nesting birds if ground clearing or construction activities will be initiated during the breeding season (February 15 through September 15). The project site and potential nesting areas within 500 feet of the site shall be surveyed 14 to 30 days prior to the initiation of construction. Surveys will be performed by a qualified biologist or ornithologist to verify the presence or absence of nesting birds. Construction shall not occur within a 500 foot buffer surrounding nests of raptors or a 250 foot buffer surrounding nests of migratory birds. If construction within these buffer areas is required or if nests must be removed to allow continuation of construction, then approval will be obtained from | Prior to construction | Consulting Biologist | |

| Mitigation Number | Mitigation Measure | Timing | Responsible Parties | Verification (Date/Initials) |
|---|---|---|---|---|
| | California Department of Fish and Wildlife (CDFW);<br><br>2. All trees which are suitable for Swainson's hawk nesting that are within 2,640 feet of construction activities shall be inspected for nests by a qualified biologist;<br><br>3. If potential Swainson's hawk nests are located, surveys to determine whether Swainson's hawks use those nests will be determined by conducting surveys at the following intensities, depending upon dates of initiation of construction: | | | |

| Construction start | Survey period | Number of surveys |
|---|---|---|
| 1 January to 20 March | 1 January to 20 March | 1 |
| 21 March to 24 March | 1 January to 20 March | 1 |
| | 21 March to 24 March | Up to 3 |
| 24 March to 5 April | 1 January to 20 March | 1 |
| | 21 March to 5 April | 3 |
| | 21 March to 5 April | 3 |
| 6 April to 9 April | 6 April to 9 April | Up to 3 |
| | 1 January to 20 March | 1 (if all 3 surveys are performed between 6 and 9 April, then this survey need not be conducted) |
| 10 April to 30 July | 21 March to 5 April | 3 |
| | 6 April to 20 April | 3 |
| 31 July to 15 September | 6 to 20 April | 3 |
| | 10 to 30 July | 3 |

| Mitigation Number | Mitigation Measure | Timing | Responsible Parties | Verification (Date/Initials) |
|---|---|---|---|---|
| | 4. If Swainson's hawks are detected to be nesting in trees within 600 feet of the construction area, construction will not occur within this zone until after young Swainson's hawks have fledged (this usually occurs by early June). The nest will be monitored by a qualified biologist to determine fledging date. If Swainson's hawks are found within the project area, the project site would be considered foraging habitat and compensation for foraging habitat would be required by CDFW at a ratio of 0.75 to 1 (0.75 acre for every 1.0 acre adversely affected). | | | |
| #3.4.1c | A pre-construction survey shall be performed on the project site in areas where there is a potential for nesting raptors and nesting migratory birds to occur if construction occurs during the breeding season (loosely defined as February 15 to August 15). These include all areas of the project site that contain or are within 500 feet of power poles or trees that are suitable for the establishment of raptor nests. These areas should also include non-native annual grassland habitat and unharvested alfalfa and grain crops, which provide potential breeding habitat for ground-nesting birds such as northern harriers, horned larks, and other migratory ground-nesting birds. The pre-construction survey shall be performed within 14 days of construction to identify active nests and mark those nests for avoidance. During the nesting period, raptor nests should be avoided by 500 feet and all other migratory bird nests should be avoided by 250 feet. | Prior to construction | Consulting Biologist | |
| #3.4.1d | To preclude potential project-related impacts to the San Joaquin kit fox, a series of avoidance and minimization measures shall be implemented in accordance with the *Standardized Recommendations for Protection of the* | Prior to construction | Consulting Biologist | |

<table>
<tr><th>Mitigation Number</th><th>Mitigation Measure</th><th>Timing</th><th>Responsible Parties</th><th>Verification (Date/Initials)</th></tr>
<tr><td></td><td>Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS 2011). The measures that are listed below have been excerpted from these guidelines and will protect the San Joaquin kit fox from direct mortality or den destruction.<br><br>1. Pre-construction surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities, or any project activity likely to impact the San Joaquin kit fox. Exclusion zones shall be placed around dens in accordance with USFWS recommendations using the following:<br><br>
<table>
<tr><td>Potential Den</td><td>50 foot radius</td></tr>
<tr><td>Known Den</td><td>100 foot radius</td></tr>
<tr><td>Natal/Pupping Den (Occupied and Unoccupied)</td><td>Contact U.S. Fish and Wildlife Service for guidance</td></tr>
<tr><td>Atypical Den</td><td>50 foot radius</td></tr>
</table>
<br>If dens must be removed, they shall be appropriately monitored and excavated by a trained wildlife biologist. Replacement dens would be required. Destruction of natal dens and other “known” kit fox dens shall not occur until authorized by USFWS.<br><br>2. Project-related vehicles shall observe a 20-mph speed limit in all project areas, except on County roads and State and federal highways; this is particularly important at night when kit foxes are most active. Nighttime construction shall be avoided, unless the construction area is appropriately fenced to exclude kit foxes. The area within any such fence shall be determined to be uninhabited by San Joaquin kit foxes</td><td></td><td></td><td></td></tr>
</table>

| Mitigation Number | Mitigation Measure | Timing | Responsible Parties | Verification (Date/Initials) |
|---|---|---|---|---|
| | prior to initiation of construction. Off-road traffic outside of designated project areas shall be prohibited.<br><br>3. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of the project, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals.<br><br>4. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipe, becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in anyway. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the USFWS has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the fox has escaped.<br><br>5. All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in closed containers and removed at least once a week from a construction or project Site.<br><br>6. No firearms shall be allowed on the project site during the construction phase. | | | |

| Mitigation Number | Mitigation Measure | Timing | Responsible Parties | Verification (Date/Initials) |
|---|---|---|---|---|
| | 7. To prevent harassment, mortality of kit foxes or destruction of dens by dogs or cats, no pets shall be permitted on the project site.<br><br>8. Use of rodenticides and herbicides in project areas shall be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and federal legislation, as well as additional project-related restriction deemed necessary by the USFWS. If rodent control must be conducted, zinc phosphide shall be used because of a proven lower risk to kit fox.<br><br>9. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured, or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the USFWS.<br><br>10. An employee education program shall be conducted for any project that has anticipated impacts to kit fox or other endangered species. The program shall consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and/or agency personnel involved in the project. The program shall include the following: A description of the San Joaquin kit fox and its habitat | | | |

| Mitigation Number | Mitigation Measure | Timing | Responsible Parties | Verification (Date/Initials) |
|---|---|---|---|---|
| | needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information shall be prepared for distribution to the previously referenced people and anyone else who may enter the project site.<br><br>11. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. shall be re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas shall be determined on a site-specific basis in consultation with the USFWS, California Department of Fish and Wildlife (CDFW), and revegetation experts.<br><br>12. In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape, or the USFWS shall be contacted for guidance.<br><br>13. Any contractor, employee, or military or agency personnel who are responsible for inadvertently killing or injuring a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFW immediately in the case of a dead, injured, or entrapped kit fox. The | | | |

| Mitigation Number | Mitigation Measure | Timing | Responsible Parties | Verification (Date/Initials) |
|---|---|---|---|---|
| | CDFW contact for immediate assistance is State Dispatch at (916) 445-0045. They will contact the local warden or Mr. Paul Hofmann, the wildlife biologist, at (530) 934-9309. The USFWS shall be contacted at the numbers below.<br><br>14. The Sacramento USFWS and CDFW shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The USFWS contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFW contact is Mr. Paul Hofmann at 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670, (530) 934-9309.<br><br>15. New sightings of kit foxes shall be reported to the California Natural Diversity Database (CNDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed shall also be provided to the USFWS at the address below.<br><br>Any project-related information required by the USFWS or questions concerning the above conditions or their implementation may be directed in writing to the U.S. Fish and Wildlife USFWS at:<br><br>Endangered Species Division<br>2800 Cottage Way, Suite W2605<br>Sacramento, California 95825-1846<br>(916) 414-66200 or (916) 414-6600 | | | |

| Mitigation Number | Mitigation Measure | Timing | Responsible Parties | Verification (Date/Initials) |
|---|---|---|---|---|
| **Cultural Resources** | | | | |
| #3.5.1a | In accordance with State law, if any historical resources are discovered during project-related activities, all work is to stop and the lead agency and a qualified professional are to be consulted to determine the importance and appropriate treatment of the find. If Native American remains are found the County Coroner and the Native American Heritage Commission, Sacramento (916-653-4082) is to be notified immediately for recommended procedures. | During construction | Contractor | |
| #3.5.1b | In the event that a historical resources consultant is retained, the firm or individual shall be responsible for submitting any report of findings prepared for the proposed project to the Central California Information Center, including one copy of the narrative report and two copies of any records that document historical resources found as a result of field work. | During construction | Contractor | |
| **Greenhouse Gases** | | | | |
| #3.7-1 | The applicant shall implement an employer-based trip reduction program in compliance with SJVAPCD Rule 9410. The trip reduction program may include ride-sharing information, carpools, and vanpools. | Prior to construction | Applicant | |
| **Hazards and Hazardous Materials** | | | | |
| #3.8-2a | During construction of the proposed project, work areas and areas with heavy foot traffic inside the eastern, unpaved portion of the barn/packing shed shall be surfaced to reduce worker exposure to dust in this area, where concentrations of 4,4'-DDT (2,600 micrograms per kilogram [ug/kg]) and 4,4'-DDD (240 ug/kg) were detected in soil. | During construction | Contractor | |

| Mitigation Number | Mitigation Measure | Timing | Responsible Parties | Verification (Date/Initials) |
|---|---|---|---|---|
| #3.8-2b | Before building permit issuance, the owner shall hire a biologist to complete a Pest Management Plan which will make recommendations for addressing both pest-birds and rodents inside and around the warehouse. The plan shall be submitted to the Stanislaus County Environmental Health Department and made available to employees at the warehouse. | Prior to construction | Applicant | |
| #3.8-7 | The applicant shall notify the City of Turlock's fire, sheriff, and ambulance service which serve the proposed project site, as well as the Office of Emergency Services (OES) Division (Modesto Regional Fire Authority) of the proposed project and construction dates. This notification shall occur two weeks prior to the start of construction. | Prior to construction | Applicant | |
| **Hydrology and Water Quality** | | | | |
| #3.9-5 | Prior to issuance of grading and building permits, the applicant shall meet with the Stanislaus County Public Works Department to determine the appropriate BMPs for filtration of storm water and to determine the best method of treatment and required size of retention basin. | Prior to construction | Applicant and Stanislaus County Public Works Department | |
| **Public Services and Utilities** | | | | |
| #3.12-1 | The access to the site from Washington Road shall be provided with radio frequency gate opening devices (i.e. "Click-to-enter") in addition to the standard police/fire bypass keyway. Manually operated gates across required fire access roadways are prohibited. | Prior to construction | Applicant and Stanislaus County Public Works Department | |
| **Transportation and Traffic** | | | | |
| #3.13.1a | The project shall pay the Traffic Impact Fees as set forth by Stanislaus County. | Prior to construction | Applicant | |

| Mitigation Number | Mitigation Measure | Timing | Responsible Parties | Verification (Date/Initials) |
|---|---|---|---|---|
| #3.13.1b | The applicant shall pay the City of Turlock Capital Facility Development Fees which provides for the construction of Public Facilities and to purchase capital items to allow for City services. The City's fees change quarterly, therefore the amount will be determined with approval of the project. | Prior to construction | Applicant | |
| #3.13.1c | The applicant shall install half street improvements along the project frontage to meet the future lane configurations along Washington Road. This will also include addition of a northbound left turn lane at the Washington Road/Blue Diamond/Project Access intersection. These improvements shall also include traffic signal modifications to the existing signal. A residential driveway should also be constructed on Washington Road to provide access for the single family residence that will remain. This residence is located about 350 feet south of the Blue Diamond/project driveway. | Prior to construction | Applicant | |
| #3.13-5 | Proposed project site plans shall be reviewed by the City fire and police departments to ensure adequate emergency access. | Prior to construction | Turlock Police Department and Turlock Fire Department | |